Impact of Capital Structure on Banking Profitability

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Abstract- This paper scrutinizes the consequence of capital structure on execution of Pakistani banks. Sample of study include 25 banks, which are listed at (KSE) or schedule banks in (SBP) state bank of Pakistan. Multiple regression models are pragmatic to guesstimate the liaison between capital structure and banking performance. Performance is measured by Earnings Per Share (EPS), Return on Asset (ROA), Return on Equity (ROE), Total Liability to total Asset (TDTA), Total Liability to total Equity (TDTQ), Short Term Liability to Asset (SDTA), Long Term Liability to Asset (LDTA). Findings of the study authenticated a positive relationship between determinants of capital structure and performance of banking industry.

Index Terms- Capital, Long term Debt, short term Debt, Return on Assets, Return on Equity and Earnings per share

I. INTRODUCTION

A. Overview and Background

This study focuses the affiliation between capital structure and performance of banks that are licensed   by State bank of Pakistan. Most of the researches on capital structure are conduct in developed countries therefore their results are different from under developed countries. Capital refers property, money and other valuable cooperatively characterizing the wealth of an individual or business. Structure is the combination of two or more things. If firm capital structure consist of Rs. 60 million equity and Rs. 40 million debt, this structure is 60 percent equity financed and 40 percent debt financed. Firm debt to equity ratio defines investors about the risk in investment if firm is highly finance by debt, there is high risk. It's very important in business to know about the impact of financing choices.

Some of debt instrument are government bonds, corporate bonds, CDs, municipal bonds, preferred stock, etc. Debt approach is considerable to grow business especially lender issue debt on the base of assets valuation and as for the lender point of view debt is consider safe. It also provides opportunity for repay you're loan in installment with time relaxation but if borrower fails to pay amount the bank recuperate amount by the sale of property and assets. Debt financing is help full for a firm to pay for new assets like, buildings, equipment etc but interest rate must be low. Lenders have no privileges to get a control or ownership of firm and they do not interfere in management matters. If firm is extremely debt finance, lender refuse any new request of money borrowing, which limit company to raise its capital. High debt raises high monthly installment payments which can create risk of cash shortage. Debt is further spread in two portions i.e. long term debt and short term debt. Short term debts are usually for less than a year and it is shown on equity

side as short term liability. If cash account of firm is lower than short term debt account it shows that firm have serious issues and firm is unable to right of its short term liabilities. Debt more than an year must be consider as long term debt its shown on equity side of balance sheet as a form of long term liabilities. Long term liabilities will right off by future earnings.

Equity is ownership interest in business or generally it's an investment used in company to earn profit by the shareholders. Equity or shareholders´ equity is part of the total capital of a business. Equity is classified as common stock, preferred stock or retained earnings. For expanding a business more capital is required therefore company issued share to general public. Issuance of share is known as equity financing. Share issued as common stock and preferred stock. Main benefit of equity is that no pay back is required by company to share holder and as compare to debt financing no interest payment is required. Only dividend is paid to share holder if management decide (preferred stock must get dividend as agreement) no obligation is found on company to pay dividend. Share holders are considered as owner and shareholder hope that upcoming value of share must be increase as compare to amount that they paid for share. Share holder has great risk because it's not always necessary that value of share increase it might be go down and share holder loses his actual amount. If company is not able to survive in market, claim of share holder is not consider because creditor must be paid first.

The factors recognized by decision of financial management are very important in determining the optimal capital structure. The management of the company itself, to maximize their capital structures in a way their business value and this decision is really important. However, companies should try debt levels and different managers to get the best together to achieve an optimal capital structure. If company is too much equity finance that there is chance of changing ownership. It is necessary for company managers to maintain lowest cost of capital because if cost of capital is high company needs to pay high amount on it. On right side of balance sheet in liability Colum capital structure is defined as manager usually try to make optimal capital structure. Change in capital structure increase or decrease worth of company.

Industry type also affects capital structure. If companies are from services, utilities and the industrial goods sector usually use debt and in defense, aerospace, broad casting, homebuilding and tobacco usually use equity. Companies that rely on debt must have return otherwise it create difficult for firm to pay its debt.

As tax point of view debt is cheaper as compare to equity because different tax behavior is found for interest and dividend. Before tax calculation interest is subtracted from company account which gives relief in tax payment over interest on other

side tax is subtracted before dividend payment and no tax relief is avail by company.

B. History and structure of banking sector

Banks are back bone of economy and directly proportional to economic growth. Pakistan banking sector is different from developed countries. State bank of Pakistan formed in 1947 under the control of government of Pakistan after that habib bank limited, allied bank and national bank of Pakistan are the banks that start their operations with heavy-duty backing of central bank of Pakistan. Commercial banking raise in Pakistan till 1974 after that government of Pakistan nationalize 13 banks under the nationalization policy. After sometimes impact was seen in banking sector by different politicians and government. Lending decisions were not made on role and regulation and billions of rupees loans were become bad loan. In this era commercial bank are not motivated. By 1991 privatization policy was implementing and 23 banks were established. Muslim commercial bank and allied banks (portion of share) were privatized in 1991 and 1993 respectively. Banking reforms are seen after the era of 1999 which are still continue, these reforms changeover the banking industry of Pakistan. Market shares of private banks increase from 0% to 80%. A lot of new banks enter in market and give tough time to old one. State bank of Pakistan strictly regulate these banks. In tough competitions it's necessary for banks to survive in market because any wrong decision can create hazard for bank and it also minimize banks profit, minimization of profit can create bad reputation in market. Choosing of capital structure is an important matter for bank.

Optimal capital structure increases bank profit, causing increase in profit which is actually increase in market value of bank Balance sheet of Pakistan banking sector expanded in financial year 2013. During the era of 2013 assets of Pakistani banking sector were raised. Assets of Pakistan banking sector in financial year 2012 were Rs. 9.9 trillion and in financial year 2013 Rs.10.7 trillion which is showing a remarkable increase of 7.8 percent in assets of Pakistan Banking sector.

During the analysis of share holder equity, there is increase in the equity of banking sector of Pakistan. There is increase of Rs. 46.0 billion or 5.5 percent of equity during the year 2013. There is decrease of approximately 1.9 percent seen in the total equity of foreign banks over the previous year.

Pakistan Banking industry is divided into more segments.
- Local Banks
- Public Sector Banks
- Private Sector Banks
- Specialized Banks

C Problem Statement

Banking sector of Pakistan grew rapidly in last decade, which created new and better opportunities in banking industry so the researcher in this research tries to find out whether capital structure have a significant impact on the profitability of banks or not.

D Research Objectives

These research objectives are:
- The purpose of this study is to acknowledge whether capital structure is an appropriate policy to bring in the financial sector especially in the banking sector of Pakistan.

- Understand the impact of capital structure in banking industry.
- Assess how capital structure affects: the firm efficiency (profitability).
- Find out the way to optimize financial resources.

E Benefits of the study

The study is very favorable for the citizens who want to know the impacts of capital structure on the banking Industry and the relationship between the current liabilities, long-term liabilities, total liability to assets, total liability to equity, profitability; such as, return on equity, return on assets and EPS. This study recommended to analysts and financial managers should focus on the extreme level of capital structure and the competent use and allocation of resources. This will support to reach the extreme production efficiency in the banking industry of Pakistan.

F Scope of the study

The scope of this research study is not only limited to any Bank but it is related to all the banking Industry of Pakistan. Its scope is also related to the investors/depositors because the study suggests the regression for the prediction of the net Income of the bank.

G Hypothesis

H: Capital Structure has a significant impact on banking profitability.

II. LITERATURE REVIEW

A, R., zulqar, B., & mustafa , M. (2007) examine the relation b/w capital structure and performance of firm. Result shows that there is a relationship between capital structure and firm performance. S, T., & wessels, R. (1988) study the relationship of capital structure with firm performance. Sixty four companies are taken as sample these companies are listed in capital market of Egypt. Velnampya and Niresh (2012) studied the relation among capital structure and profitability. Association between capital structure and profitability is analyze with the help of correlation. kester, & Carl, w. (1986). study the capital structure impact on performance of Malaysian firm. Pratomo, WA, I. a., & AG. (n.d.).investigate the association between capital structure and firm performance. The investigation specifies that the capital structure is considerably and positively associated with firm's performance which is deliberate by earning per share (EPS)**.**

III. METHODOLOGY

For the analysis of data we use Multivariate liner regression model and correlation matrix were used. Data is taken from financial reports and the journal of performance of financial sector in Pakistan Efficiency and performance of banking industry. The research sample consists of All banks that are operating in Pakistan are the population of the study. Sample of study include 25 banks, which are listed at (KSE) or schedule banks in (SBP) state bank of Pakistan.

Dependent Variables:

Earnings per Share (EPS), Return on Asset (ROA), Return on Equity (ROE),
Independent Variables:
Total Liability to total Asset (TDTA), Total Liability to total Equity (TDTQ),

Short Term Liability to Asset (SDTA), Long Term Liability to Asset (LDTA),
Model:
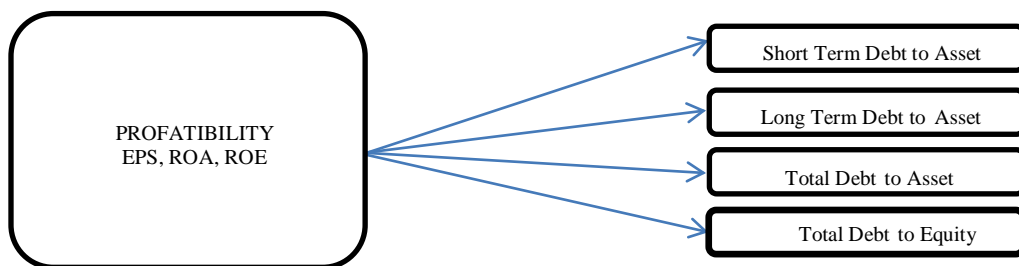
$$Y_{ROA} = \beta_0 + \beta_1(SDTA) + \beta_2(LDTA) + \beta_3(TDTA) + \beta_4(TDTQ) + \varepsilon$$

$$Y_{ROE} = \beta_0 + \beta_1(SDTA) + \beta_2(LDTA) + \beta_3(TDTA) + \beta_4(TDTQ) + \varepsilon$$

$$Y_{EPS} = \beta_0 + \beta_1(SDTA) + \beta_2(LDTA) + \beta_3(TDTA) + \beta_4(TDTQ) + \varepsilon$$

Where,

β_0 Is the intercept, $\beta_1, \beta_2, \beta_3, \beta_4$ is the independent Variable. ε Are the error terms

IV.   DATA ANALYSIS

For the purpose of data analysis, MS Excel and E-views were used.
Equation # 1

In the given hypothesis Dependent Variable is Return on Asset (ROA) and Independent Variables are Short Term Debt to Asset (STDA), Total Debt to total Asset (TDTA), Total Debt to total Equity (TDTQ), Long Term Debt to Asset (LDTA) Fist we run multivariate linear regression on equation # 1. Table of equation # 1 is given in Appendix # 1.

$$Y_{ROA} = \beta_0 + \beta_1(SDTA) + \beta_2(LDTA) + \beta_3(TDTA) + \beta_4(TDTQ) + \varepsilon$$

Equation # 1 interpretation of multivariate linear regression analysis

Holding other variables constant, one unit increase in Short Term Debt to Asset (SDTA), will lead Return on Asset (ROA), to increase by 0.062319 units. Holding other variables constant, one unit increase in), Total Debt to total Asset (TDTA), will lead Return on Asset (ROA), to increase by 0.063307 units. Holding other variables constant, one unit increase in Total Debt to total Equity (TDTQ) will lead Return on Asset (ROA), to decrease by 0.063704units . Holding other variables constant, one unit increase in Long Term Debt to Asset (LDTA), will lead Return on Asset (ROA), to decrease by 0.000032 units. The Probability of all Variables shows the Significance of Coefficients with the R Square. The lesser the Probability the better it is. R Square is 46.83% means the Data is by some means explaining the Model but not fairly well. AIC and BIC is close to each other. However, we can afford 5% Difference. Durbin Watson is close to 2.00 in this case.
Equation # 2 Interpretation of covariance analysis

Correlation Analysis of "ROA" with "STDA, TDTA, TDTQ, and LDTA" shows that Short Term Debt To Asset

(SDTA) is 15% Positively Correlated with Return On Asset (ROA). Total Debt To Total Asset (TDTA) is 6% Positively Correlated with Return On Asset (ROA). Total Debt To Total Equity is 5% Negatively Correlated with Return On Asset (ROA). Long Term Debt To Asset (LDTA) is 3.5% Positively Correlated with Return On Asset (ROA)

Correlation Analysis of "Short Term Debt To Asset (SDTA)" with "Total Debt To Total Asset (TDTA)" show that Total Debt To Total Asset (TDTA) is 21% Negatively Correlated with Short Term Debt To Asset (SDTA).

Correlation Analysis of "Total Debt To Total Equity" with "Short Term Debt To Asset (SDTA) and Total Debt To Total Asset (TDTA)" state that Total Debt To Total Equity is 8% Positively Correlated with SHORT Term Debt To Asset (SDTA).Total Debt To Total Equity is 5% Negatively Correlated with Total Debt To Total Asset (TDTA).

Correlation Analysis of "Long Term Debt To Asset (LDTA)" with "Short Term Debt To Asset (SDTA), Total Debt To Total Asset (TDTA)and Total Debt To Total Equity" define that Long Term Debt To Asset (LDTA) is 38% Negatively Correlated with Short Term Debt To Asset (SDTA). Long Term Debt To Asset (LDTA) is 98% Positively Correlated with Total Debt To Total Asset (TDTA). Long Term Debt To Asset (LDTA) is 6% Negatively Correlated with Total Debt To Total Equity.
Equation # 2

Dependent Variable is Return on Equity (ROE) and Independent Variables are Short Term Debt to Asset (SDTA) ,Total Debt to total Asset (TDTA) , Total Debt to total Equity (TDTQ) and Long Term Debt to Asset (LDTA).
Equation #2interpretation of multivariate linear regression analysis

Holding other variables constant, one unit increase in Short Term Debt to Asset (SDTA), will lead Return on Equity (ROE), to decrease by 1.572 units. Holding other variables constant, one

unit increase in, Total Debt to total Asset (TDTA),   will lead Return on Equity (ROE), to increase by 2.749 units. Holding other variables constant, one unit increase in Total Debt to total Equity (TDTQ) will lead Return on Equity (ROE), to decrease by 0.018 units. Holding other variables constant, one unit increase in Long Term Debt to Asset (LDTA), will lead Return on Equity (ROE), to decrease by 2.693 units. The Probability of all Variables shows the Significance of Coefficients with the R Square. The lesser the Probability the better it is. R Square is 29.8% means the Data is by some means explaining the Model but not fairly well. AIC and BIC is close to each other. However, we can afford 5% Difference. Durbin Watson is close to 2.00 in this case.

Equation # 2 Interpretation of covariance analysis

Correlation Analysis of "Return on Equity (ROE)" with "STDA, TDTA, TDTQ, and LDTA" Short Term Debt to Asset (SDTA) is 11% Positively Correlated with Return On Equity (ROE). Total Debt to Total Asset (TDTA) is 1.8% Positively Correlated with Return On Equity (ROE). Total Debt To Total Equity is 49% Negatively Correlated with Return On Equity (ROE). Long Term Debt To Asset (LDTA) is 0.04% Negatively Correlated with Return On Equity (ROE).

Correlation Analysis of "Short Term Debt To Asset (SDTA)" with "Total Debt To Total Asset (TDTA)" shows that Total Debt To Total Asset (TDTA) is 21% Negatively Correlated with Short Term Debt To Asset (SDTA).

Correlation Analysis of "Total Debt To Total Equity (TDTQ)" with "Short Term Debt To Asset (SDTA) and Total Debt To Total Asset (TDTA)" analyze that Total Debt To Total Equity is 8% Positively Correlated with Short Term Debt To Asset (SDTA). Total Debt To Total Equity is 5% Negatively Correlated with Total Debt To Total Asset (Tdta).

Correlation Analysis of "Long Term Debt To Asset (LDTA)" with "Short Term Debt To Asset (SDTA), Total Debt To Total Asset (TDTA) and Total Debt To Total Equity (TDTQ)" explain that Long Term Debt To Asset (LDTA) is 38% Negatively Correlated with Short Term Debt To Asset (SDTA). Long Term Debt To Asset (LDTA) is 98% Positively Correlated with Total Debt To Total Asset (TDTA). Long Term Debt to Asset (LDTA) is 6% Negatively Correlated with Total Debt To Total Equity TDTQ.

Equation # 3

Dependent Variable is Earning Per Share (EPS) and Independent Variables are Short Term Debt to Asset (SDTA) ,Total Debt to total Asset (TDTA) , Total Debt to total Equity (TDTQ) and Long Term Debt to Asset (LDTA).

Equation #3 Interpretation of multivariate linear regression analysis

Holding other variables constant, one unit increase in Short Term Debt to Asset (SDTA), will lead Earning Per Share (EPS), to decrease by 185.981 units. Holding other variables constant, one unit increase in, Total Debt to total Asset (TDTA),   will lead Earning Per Share (EPS), to increase by 188.521 units. Holding other variables constant, one unit increase in Total Debt to total Equity (TDTQ) will lead Earning per Share (EPS), to decrease by 0.017 units. Holding other variables constant, one unit decrease in Long Term Debt to Asset (LDTA), will lead Earning Per Share (EPS), to decrease by 130.322 units. The Probability of almost all Variables shows the Significance of Coefficients with

the R Square. The lesser the Probability the better it is. R Square is 80 % means the Data is excellently Explaining the Model very well. AIC and BIC is close to each other. However, we can afford 5% Difference. Durbin Watson is to 2.21 in this case. While using ARMA structure the results of Durbin Watson shall not be considered.

Equation # 3 Interpretation of covariance analysis

Correlation Analysis of "Earning per Share (EPS)" with "STDA, TDTA, TDTQ, and LDTA" Short Term Debt to Asset (SDTA) is 24 % Negatively Correlated with Earning per Share (EPS). Total Debt to Total Asset (TDTA) is 58 % Positively Correlated with Earning per Share (EPS). Total Debt to Total Equity is 5 % Negatively Correlated with Earning per Share (EPS). Long Term Debt to Asset (LDTA) is 59 % Positively Correlated with Earning Per Share (EPS). Correlation of "short term debt to asset (SDTA)" with "Total Debt to Total Asset (TDTA)". Total Debt to Total Asset (TDTA) is 21% Negatively Correlated with Short Term Debt To Asset (SDTA). Correlation Analysis of "Total Debt to Total Equity (TDTQ)" with "Short Term Debt to Asset (SDTA) and Total Debt To Total Asset (TDTA)". Total Debt to Total Equity (TDTQ) is 8% Positively Correlated with Short Term Debt to Asset (SDTA). Total Debt To Total Equity (TDTQ) is 5% Negatively Correlated with Total Debt To Total Asset (TDTA). Correlation Analysis of "Long Term Debt To Asset (LDTA)" with "Short Term Debt To Asset (SDTA), Total Debt To Total Asset (TDTA) and Total Debt To Total Equity (TDTQ)". Long Term Debt to Asset (LDTA) is 38% Negatively Correlated with Short Term Debt to Asset (SDTA). Long Term Debt To Asset (LDTA) is 98% Positively Correlated with Total Debt To Total Asset (TDTA). Long Term Debt to Asset (LDTA) is 6% Negatively Correlated with Total Debt to Total Equity (TDTQ).

V. FINDINGS AND CONCLUSION

Equation # 1

Short Term Debt To Asset (SDTA) is 15% positively correlated with return on asset (ROA). Total debt to total asset (TDTA) is 6% positively correlated with return on asset (ROA). Total debt to total equity is 5% negatively correlated with return on asset (ROA). Long term debt to asset (LDTA) is 3.5% positively correlated with return on asset (ROA). Strong correlation found between Long terms debts to asset (LDTA) with total debt to total asset (TDTA).

Equation # 2

Short Term Debt to Asset (SDTA) is 11% Positively Correlated with Return on Equity (ROE). Total Debt to Total Asset (TDTA) is 1.8% Positively Correlated with Return on Equity (ROE). Total Debt to Total Equity is 49% Negatively Correlated with Return on Equity (ROE). Long Term Debt to Asset (LDTA) is 0.04% Negatively Correlated with Return on Equity (ROE). Strong correlation found between Long Term Debt to Asset (LDTA) with Total Debt to Total Asset (TDTA).

Equation # 3

Short Term Debt To Asset (SDTA) is 24 % Negatively Correlated with Earning Per Share (EPS). Total Debt To Total Asset (TDTA) is 58 % Positively Correlated with Earning Per Share (EPS). Total Debt To Total Equity is 5 % Negatively Correlated with Earning Per Share (EPS). Long Term Debt To

Asset (LDTA) is 59 % Positively Correlated with Earning Per Share (EPS). Long Term Debt To Asset (LDTA) is 98% Positively Correlated with Total Debt To Total Asset (TDTA).

Conclusion

During the study of thrice equation findings explain the negative relation of Total Debt To Total Equity with Return on Asset (ROA), Return On Equity (ROE) and Earning Per Share (EPS). R^2 of Return on Asset (ROA) is 0.46843 which is 46.83% means the Data is by some means explaining the Model but not fairly well. R^2 of Return on Equity (ROE)is 0.298 which is 30% means the Data is by some means explaining the Model but not fairly well. R^2 of Earning Per Share (EPS), is 0.80 which is approx 80% means the Data is excellently Explaining the Model very well. Now, through the analysis of the results of the individual variables, we can conclude that there is a relationship and a positive relationship between capital structure and profitability of banks in Pakistan.

Appendix

Equation # 1 Multivariate Liner Regression and Correlation

Dependent Variable: ROA				
Method: Least Squares				
Sample (adjusted): 3 150				
Included observations: 148 after adjustments				
Convergence achieved after 9 iterations				
MA Backcast: 2				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDA(-1)	0.062319	0.021238	2.934298	0.003900
LDTA	0.063307	0.020722	3.054998	0.002689
TDTA	-0.063704	0.021063	-3.024456	0.002957
TDTQ(-1)	-0.000032	0.000050	-0.650155	0.516642
AR(1)	0.493640	0.104701	4.714743	0.000006
MA(1)	0.316220	0.114528	2.761064	0.006523
R-squared	0.46843	Mean dependent var		-0.00234
Adjusted R-squared	0.44972	S.D. dependent var		0.05049
S.E. of regression	0.03745	Akaike info criterion		-3.69189
Sum squared resid	0.19916	Schwarz criterion		-3.57038
Log likelihood	279.19980	Hannan-Quinn criter.		-3.64252
Durbin-Watson stat	2.02713			
Inverted AR Roots	.49			
Inverted MA Roots	-.32			

Correlation	ROA	STDA	TDTA	TDTQ	LDTA
ROA	0.002498				
	1.000000				
STDA	0.001576	0.041564			
	0.154698	1.000000			
TDTA	0.003585	-0.046895	1.150007		
	0.066892	-0.214493	1.000000		
TDTQ	-0.125314	0.752106	-2.566718	2040.852	
	-0.055499	0.081661	-0.052981	1.000000	
LDTA	0.002009	-0.088459	1.196899	-3.318695	1.285356
	0.035454	-0.382710	0.984455	-0.064796	1.000000

Equation # 2 Multivariate Liner Regression and Correlation

Dependent Variable: ROE				
Method: Least Squares				
Sample (adjusted): 3 150				
Included observations: 148 after adjustments				
Convergence achieved after 23 iterations				
MA Backcast: 2				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDA(-1)	-1.572	1.190	-1.321	0.189
TDTA	2.749	1.211	2.270	0.025
TDTQ	-0.018	0.002	-7.164	0.000
LDTA	-2.693	1.177	-2.288	0.024
C	-0.799	0.419	-1.909	0.058
AR(1)	0.945	0.031	30.451	0.000
MA(1)	-0.987	0.009	-108.960	0.000
R-squared	0.298	Mean dependent var		-0.167
Adjusted R-squared	0.268	S.D. dependent var		1.567
S.E. of regression	1.340	Akaike info criterion		3.470
Sum squared resid	253.354	Schwarz criterion		3.612
Log likelihood	-249.784	Hannan-Quinn criter.		3.528
F-statistic	9.965	Durbin-Watson stat		1.974
Prob(F-statistic)	0			
Inverted AR Roots	0.94			
Inverted MA Roots	0.99			

Covariance Analysis: Ordinary					
Sample: 1 150					
Included observations: 150					
Covariance					
Correlation	ROE	STDA	TDTA	TDTQ	LDTA
ROE	2.405568				
	1.000000				
STDA	0.037926	0.041564			
	0.119941	1.000000			
TDTA	0.030339	-0.046895	1.150007		
	0.018241	-0.214493	1.000000		
TDTQ	-34.68443	0.752106	-2.566718	2040.852	
	-0.495017	0.081661	-0.052981	1.000000	
LDTA	-0.007586	-0.088459	1.196899	-3.318695	1.285356
	-0.004314	-0.382710	0.984455	-0.064796	1.000000

Equation # 3 Multivariate Liner Regression and Correlation

Dependent Variable: EPS		
Method: Least Squares		
Sample (adjusted): 6 149		
Included observations: 144 after adjustments		
Convergence achieved after 13 iterations		

MA Backcast: 2 5				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDA	-185.9811	13.17844	-14.11252	0.0000
TDTA	188.5215	7.478520	25.20840	0.0000
TDTQ	-0.179824	0.122805	-1.464308	0.1454
LDTA(1)	-130.3218	7.511625	-17.34935	0.0000
AR(5)	0.392516	0.089906	4.365847	0.0000
MA(4)	-0.333939	0.093116	-3.586261	0.0005
R-squared	0.800965	Mean dependent var		18.99611
Adjusted R-squared	0.793753	S.D. dependent var		172.3745
S.E. of regression	78.28280	Akaike info criterion		11.59931
Sum squared resid	845691.1	Schwarz criterion		11.72305
Log likelihood	-829.1501	Hannan-Quinn criter.		11.64959
Durbin-Watson stat	2.211633			
Inverted AR Roots	.83	.26-.79i	.26+.79i	-.67+.49i
	-.67-.49i			
Inverted MA Roots	.76	.00+.76i	-.00-.76i	-.76

Covariance Analysis: Ordinary				
Sample: 1 150				
Included observations: 150				
Covariance				
Correlation	EPS	STDA	TDTA	TDTQ	LDTA
EPS	28340.01				
	1.000000				
STDA	-8.273786	0.041564			
	-0.241070	1.000000			
TDTA	105.5201	-0.046895	1.150007		
	0.584500	-0.214493	1.000000		
TDTQ	-450.4454	0.752106	-2.566718	2040.852	
	-0.059229	0.081661	-0.052981	1.000000	
LDTA	113.7935	-0.088459	1.196899	-3.318695	1.285356
	0.596219	-0.382710	0.984455	-0.064796	1.000000

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