IS LEVERAGE MAGNIFYINGTHE PROFITABILITY OF A COMPANY? (SOME FACTS ABOUT PAKISTAN'S FERTILIZER SECTOR)

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Abstract

Agriculture products are actually the backbone of any country in terms of their contribution in the growth and GDP directly or indirectly. Pakistan's economy is also mainly depends upon the agricultural products. Agricultural products are solely depends upon the availability of their right ingredients like Urea and Pesticides.The production of the fertilizer companies always depends upon the availability of the financial resources. We have analyzed the availability of financial resources and their impact on the profitability. This study shows that debt source of financing has a positive impact on the profitability. Mainly the most importantly the companies should focus on the long term side of debt financing. This will magnify their returns. The data for past 10 years of Pakistan Stock Exchange (PSE) listed top fertilizer companies has been analyzedand the factual results are giving a positive indication regarding the impact of leverage on profitability.

Keywords: Leverage, Profitability, ROA, ROE, GPM, NPM, TAT, CAT, FAT, TDTAR, TDCAR, TDFAR, CDTAR, CDCAR, CDFAR, FDTAR, FDCAR, FDFAR

Introduction:

Financial statement analysis is usually used to analyze the financial status of the company. Financial analysis of listed fertilizer companies of PSE will project its situation in today's scenario. Pakistan is basically an agricultural country. This is the major sector of Pakistan. Because it contributes 24% of country's GDP, almost half of population earning based on agriculture sector, major contributor in export, and growth rate of 3 to 4%. According to population size Pakistan stands among top six most populous countries that lead to huge food consumption. Fertilizer usage will increased food production. Fertilizers provide essential nutrients to the soil including potassium nitrogen proteins and phosphorus. This increased the productivity of land and ultimately increased food production.

Fertilizer industry of Pakistan is central part of Pakistan economy. Fertilizer sector flourished during the era of green revolution in Pakistan in 1958. After that with the passage of time new plants and fertilizer companies were established. This study is based on the analysis of the financial statement leading 4 fertilizer companies which are listed on Pakistan Stock Exchange (PSE). These companies are Arif Habib Corporation (AHCL), Dawood Hercules (DAWH), Fauji

Fauji Fertilizer Corporation (FFC) and Fertilizer Bin Qasim Limited (FFBL).All major production of fertilizer including urea and ADP has been taken from these companies. So these are the key players of fertilizer industry. These 4 companies have more than 70% of the market share in that industry.

Literature review:

Financial ratios analysis is a method to find out position of a company in terms of its strengths and weakness as compared to the other companies in an industry.There are major five types of ratios that can be evaluated for the purpose of comprehensive analysis including efficiency, profitability, solvency, liquidity and market ratios (Memon & Tahir, 2012). For liquidity analysis mostly current ratio and quick ratio had been used and for fertilizer sector 1:1 considered to be good as this sector hold less liquid assets (Masood, 2014). Financial ratio analysis was better as compared to the other techniques because it is used to analyze the data of past years and make a comparison where the company stands over different periods that is also called trend analysis (Tirkey& Khilkhal, 2014). Ratios were related to each other some are direct and some had inverse relations. In the fertilizer and chemical industry the liquidity ratios were positively correlated to the ROA and ROE, while solvency ratios were inversely related with ROA and ROE (Khidmat & Rehman, 2014).

Financial ratio analysis was actually addressed all the stakeholders including creditors and shareholders, who wanted to see the pattern of fulfilling the liabilities as well as to see the earnings of the company, Actually shareholders wealth maximization (Tugas, 2012). A Study of fertilizer and oil and gas sector of Pakistan revealed that there exist positive relationship between ROE and profit margin with the corporate governance indicator included board size and annual general meeting and having negative relation for chief executive status and audit committee (Dar et al 2011). A study determined that ratio analysis also provided a comprehensive analysis about corporate governance and performance measurement of the companies. Financial analysis of non-financial companies of Pakistan suggested that capital structure of large companies consist of more debt than equity and it has an inverse relation with growth. Growing companies in Pakistan preferred more equity investment as compared to debt. Because studies suggested that profitable of firm has mostly greater equity investment then debt taken (Shah &Hijazi, 2004).

Eljelly (2004) says that to reduce the business risk and unrequired investment in assets and to be able to meet short term business commitments an organization should be able to calculate as well as forecast its liquid assets and liabilities. Liquidity of the company is calculated by dividing its short term assets to its short term liabilities. Liquidity of the company shows the amount available to the business to invest in the business and also for the expenses of the company. It also shows the amount available to meet long term and short term liabilities (Ross, 1977). A firm which own some extra amount of short term assets can increase the chance of internal funding which will further result in relationship between leverage and liquidity(S., 1977)(Bhunia, 2012)(Qureshi, 2012) . A reasonable liquidity position has an impact on the financial position of the business (Zhao Bei, 2012) Many studies have proven a statistical relationship between leverage and liquidity (Harris, 1991)(Al-Najjar, 2011)(Al-Najjar B. T., 2008)(Eriotis N, 2007)(Rajan, 1995)(Sheikh NA, 2011)(Titman, 1988)(Qureshi1, 2012)

The financial structure of a firm of mostly profitable firms had positive relation between short term financing and ROE and profitability and an inverse relation between long term financing and profitability (Abor, 2005). Similar study revealed that financial analysis through ratio analysis had a significant importance and reliability. Financial ratio analysis is fundamental

analysis of profitability, equity and growth analysis. Because it tells about the past as well as predict future trends. Financial statement analysis basically considered the first thing to make future decisions and in this ratio analysis predict the future outcomes. (Nissim & Penaman, 2001).

Pakistan is basically an agriculture country. Major part of Pakistani earning is comprises of earning from the agriculture sector. After green revolution in Pakistan productivity of the crops increased due to the labor saving technologies and fertilizers which make soul better for crops.(Ali & Byerlee, 2002). Majority of the farmers in Pakistan had small farms therefore they needed fertilizers to increase productivity but could not afford high prices of fertilizers. Because it increased cost of production (Khan etal 2010).So financial analysis of fertilizer sector will predict the production, profitability, liquidity and solvency of the companies.

Methodology:

In order to find a relationship between leverage and profitability in the fertilizer sector in Pakistan, the data from these 4 PSE listed companies were gathered for the period of 10 years starting from 2006 to 2015. The detail of the methodology and data is given below:

Problem Statement:

The purpose of the study is to examine the performance of fertilizer industry in Pakistan and to find out the real opportunity in this field and to check out that whether the fertilizer firms safeguard the rights of their creditors or they are just exploiting their loans. Also to find out whether the existing of leverage in the financial statements of fertilizer firms are really magnifying their profitability or not.

Hypothesis:

H_0: There is no relationship of profitability and leverage in fertilizer industry.

H_1: Leverage decreases the profitability in fertilizer industry.

H_2: Leverage increases the profitability in fertilizer industry.

Aim of Study:

The aim of study is to provide necessary information to the creditors of the fertilizer industry. So that they may identify that the real position of the company to whom they are planning to grant some loan that whether that company really will be able to pay back their loan on due time or not. Also to identify that which king of loan is more important in the current era to be preferred.

Variables:

a. Dependent Variable:

i. Profitability:

It will be measured with the help following ratios:

a) Gross Profit Margin (GPM)
b) Net Profit Margin (NPM)
c) Return on Assets (ROA)
d) Return on Equity (ROE)
e) Total Assets Turnover (TAT)
f) Current Assets Turnover (CAT)
g) Fixed Assets Turnover (FAT)

b. Independent Variable:

i. Leverage:

It will be measured with the help following ratios:

a) Total Debts to Total Assets Ratio (TDTAR)

b) Total Debts to Current Assets Ratio (TDCAR)
c) Total Debts to Fixed Assets Ratio (TDFAR)
d) Current Debts to Total Assets Ratio (CDTAR)
e) Current Debts to Current Assets Ratio (CDCAR)
f) Current Debts to Fixed Assets Ratio (CDFAR)
g) Fixed Debts to Total Assets Ratio (FDTAR)
h) Fixed Debts to Current Assets Ratio (FDCAR)
i) Fixed Debts to Fixed Assets Ratio (FDTAR)

Study Design:

It is correlational as well as exploratory type study because here we have found the effect of leverage on profitability as well as we gave some important facts with reference to type of loan and type of assets based on the available data of the fertilizer companies.

Study Population and Sampling:

The population is the fertilizer companies in Pakistan. But for the purpose specific study top 4 public sector stock exchange listed companies are targeted for analysis. These companies are listed in Pakistan Stock Exchange (PSE). The sample interval is 10 years data from 2006 to 2015.

Data Collection Methods and Instruments:

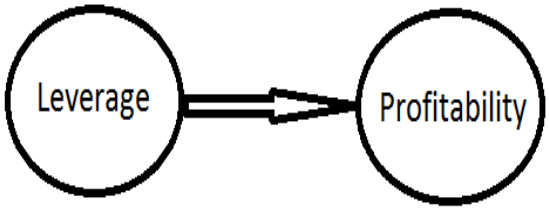
The research study includes only secondary data which is taken from the Annual Financial Statements of the Fertilizer Industry. Data is extracted from the financial statement of 4 top ranked listed Fertilizer Companies in Pakistan.

Data Analysis Methods:

The data is analyzed in different ways by using two data analysis software Minitab and Stata. Firstly, we analyzed the cause and effect relationship between the leverage and profitability by using different regression techniques and secondly we use different graphics representation of the assets and liabilities to show their relationships over the past decade. For the former one we applied multiple regression technique as well as partial regression techniques for analysis. And for later we use different sort of charts to give a quick eye view of the important movements of different category of accounts. In the first stage, some basic ratio analysis techniques have been applied to find out the some basic results then in the second stage multiple regression model have been applied to find out within company effect and the whole industry effect because these companies holds more than 80% market share in Pakistan FertilizerSector. Then the individual and combined effects have been found.

Schematic Diagram:

Following is the schematic diagram of study:



Empirical Model:

a) Model 1:

In this model the impact of total debts with respect to different assets level on profitability will be measured.

i. $ROA = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \varepsilon$

ii. $ROE = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \varepsilon$

iii. $GPM = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \varepsilon$

iv. $NPM = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \varepsilon$

v. $TAT = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \varepsilon$

vi. $FAT = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \varepsilon$

vii. $CAT = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \varepsilon$

b) Model 2:

In this model the impact of current debts with respect to different assets level on profitability will be measured.

i. $ROA = \beta_0 + \beta_1 CDTAR + \beta_2 CDCAR + \beta_3 CDFAR + \varepsilon$

ii. $ROE = \beta_0 + \beta_1 CDTAR + \beta_2 CDCAR + \beta_3 CDFAR + \varepsilon$

iii. $GPM = \beta_0 + \beta_1 CDTAR + \beta_2 CDCAR + \beta_3 CDFAR + \varepsilon$

iv. $NPM = \beta_0 + \beta_1 CDTAR + \beta_2 CDCAR + \beta_3 CDFAR + \varepsilon$

v. $TAT = \beta_0 + \beta_1 CDTAR + \beta_2 CDCAR + \beta_3 CDFAR + \varepsilon$

vi. $CAT = \beta_0 + \beta_1 CDTAR + \beta_2 CDCAR + \beta_3 CDFAR + \varepsilon$

vii. $FAT = \beta_0 + \beta_1 CDTAR + \beta_2 CDCAR + \beta_3 CDFAR + \varepsilon$

c) Model 3:

In this model the impact of fixed debts with respect to different assets level on profitability will be measured.

i. $ROA = \beta_0 + \beta_1 FDTAR + \beta_2 FDCAR + \beta_3 FDFAR + \varepsilon$

ii. $ROE = \beta_0 + \beta_1 FDTAR + \beta_2 FDCAR + \beta_3 FDFAR + \varepsilon$

iii. $GPM = \beta_0 + \beta_1 FDTAR + \beta_2 FDCAR + \beta_3 FDFAR + \varepsilon$

iv. $NPM = \beta_0 + \beta_1 FDTAR + \beta_2 FDCAR + \beta_3 FDFAR + \varepsilon$

v. $TAT = \beta_0 + \beta_1 FDTAR + \beta_2 FDCAR + \beta_3 FDFAR + \varepsilon$

vi. $CAT = \beta_0 + \beta_1 FDTAR + \beta_2 FDCAR + \beta_3 FDFAR + \varepsilon$

vii. $FAT = \beta_0 + \beta_1 FDTAR + \beta_2 FDCAR + \beta_3 FDFAR + \varepsilon$

d) Model 4:

In this model the impact of total debts with respect to different assets level on profitability will be measured.

i. $ROA = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \beta_4 CDTAR + \beta_5 CDCAR + \beta_6 CDFAR + \beta_7 FDTAR + \beta_8 FDCAR + \beta_9 FDFAR + \varepsilon$

ii. $ROE = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \beta_4 CDTAR + \beta_5 CDCAR + \beta_6 CDFAR + \beta_7 FDTAR + \beta_8 FDCAR + \beta_9 FDFAR + \varepsilon$

iii. $GPM = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \beta_4 CDTAR + \beta_5 CDCAR + \beta_6 CDFAR + \beta_7 FDTAR + \beta_8 FDCAR + \beta_9 FDFAR + \varepsilon$

iv. $NPM = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \beta_4 CDTAR + \beta_5 CDCAR + \beta_6 CDFAR + \beta_7 FDTAR + \beta_8 FDCAR + \beta_9 FDFAR + \varepsilon$

v. $TAT = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \beta_4 CDTAR + \beta_5 CDCAR + \beta_6 CDFAR + \beta_7 FDTAR + \beta_8 FDCAR + \beta_9 FDFAR + \varepsilon$

vi. $FAT = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \beta_4 CDTAR + \beta_5 CDCAR + \beta_6 CDFAR + \beta_7 FDTAR + \beta_8 FDCAR + \beta_9 FDFAR + \varepsilon$

vii. $CAT = \beta_0 + \beta_1 TDTAR + \beta_2 TDCAR + \beta_3 TDFAR + \beta_4 CDTAR + \beta_5 CDCAR + \beta_6 CDFAR + \beta_7 FDTAR + \beta_8 FDCAR + \beta_9 FDFAR + \varepsilon$

Results:

Model 1:

a) The regression equation is

ROA = 4.31 + 26.3 TDTAR - 0.035 TDCAR - 8.16 TDFAR

Source	SS	df	MS		Number of obs =	40
					F(3, 36) =	0.83
Model	472.186038	3	157.395346		Prob > F =	0.4887
Residual	6867.98802	36	190.777445		R-squared =	0.0643
					Adj R-squared =	-0.0136
Total	7340.17405	39	188.209591		Root MSE =	13.812

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tdtar	26.34219	18.99769	1.39	0.174	-12.18692	64.8713
tdcar	-.0345664	.4799445	-0.07	0.943	-1.007939	.9388062
tdfar	-8.162717	8.972721	-0.91	0.369	-26.36024	10.03481
_cons	4.306997	5.014299	0.86	0.396	-5.862472	14.47647

From the above model we can easily observe that only Total Debts to Total Assets Ratio (TDTAR) has a positive relationship with the Return on Assets (ROA). All other remaining variables have negative impact on Return on Assets (ROA).

b) The regression equation is

ROE = 0.1 + 80.7 TDTAR + 0.06 TDCAR - 17.8 TDFAR

Source	SS	df	MS		Number of obs =	40
					F(3, 36) =	2.35
Model	6193.57085	3	2064.52362		Prob > F =	0.0891
Residual	31679.3786	36	879.98274		R-squared =	0.1635
					Adj R-squared =	0.0938
Total	37872.9495	39	971.101269		Root MSE =	29.665

roe	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tdtar	80.6745	40.80134	1.98	0.056	-2.074459	163.4235
tdcar	.0634566	1.030777	0.06	0.951	-2.027055	2.153969
tdfar	-17.80404	19.27071	-0.92	0.362	-56.88685	21.27878
_cons	.137579	10.76921	0.01	0.990	-21.70339	21.97854

From the above model we can easily observe that only Total Debts to Fixed Assets Ratio (TDFAR) has a negative relationship with the Return on Equity (ROE). All other remaining variables have positive impact on Return on Equity (ROE).

c) The regression equation is

GPM = 27.1 + 6.0 TDTAR + 3.16 TDCAR - 3.5 TDFAR

Source	SS	df	MS	Number of obs =	40
				F(3, 36) =	4.84
Model	9604.91195	3	3201.63732	Prob > F =	0.0062
Residual	23806.5759	36	661.293775	R-squared =	0.2875
				Adj R-squared =	0.2281
Total	33411.4878	39	856.704817	Root MSE =	25.716

gpm	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tdtar	5.990867	35.36996	0.17	0.866	-65.74274	77.72448
tdcar	3.162821	.8935621	3.54	0.001	1.350593	4.975049
tdfar	-3.54152	16.70544	-0.21	0.833	-37.42172	30.33868
_cons	27.09403	9.335636	2.90	0.006	8.160484	46.02758

From the above model we can easily observe that only Total Debts to Fixed Assets Ratio (TDFAR) has a negative relationship with the Gross Profit Margin (GPM). All other remaining variables have positive impact on Gross Profit Margin (GPM).

d) The regression equation is

NPM = 31.4 - 14.0 TDTAR + 0.65 TDCAR - 3.4 TDFAR

Source	SS	df	MS	Number of obs =	40
				F(3, 36) =	0.48
Model	1898.41253	3	632.804176	Prob > F =	0.7002
Residual	47750.8961	36	1326.41378	R-squared =	0.0382
				Adj R-squared =	-0.0419
Total	49649.3086	39	1273.0592	Root MSE =	36.42

npm	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tdtar	-14.02476	50.09298	-0.28	0.781	-115.618	87.56851
tdcar	.6496283	1.265514	0.51	0.611	-1.916953	3.21621
tdfar	-3.399465	23.65921	-0.14	0.887	-51.38256	44.58363
_cons	31.38507	13.22167	2.37	0.023	4.570291	58.19985

From the above model we can easily observe that only Total Debts to Current Assets Ratio (TDCAR) has a positive relationship with the Net Profit Margin (NPM). All other remaining variables have positive impact on Net Profit Margin (NPM).

e) The regression equation is

TAT = 12.1 + 2.3 TDTAR - 0.214 TDCAR - 8.65 TDFAR

Source	SS	df	MS	Number of obs =	40
				F(3, 36) =	1.28
Model	585.313918	3	195.104639	Prob > F =	0.2943
Residual	5466.64519	36	151.851255	R-squared =	0.0967
				Adj R-squared =	0.0214
Total	6051.95911	39	155.178439	Root MSE =	12.323

tat	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tdtar	2.30724	16.9491	0.14	0.892	-32.06712	36.6816
tdcar	-.2140975	.4281902	-0.50	0.620	-1.082507	.6543124
tdfar	-8.64795	8.005157	-1.08	0.287	-24.88316	7.587261
_cons	12.09579	4.473587	2.70	0.010	3.02294	21.16865

From the above model we can easily observe that only Total Debts to Current Assets Ratio (TDCAR) and Total Debts to Fixed Assets Ratio (TDFAR) have a negative relationship with the

Total Assets Turnover (TAT). All other remaining variables have positive impact on Total Assets Turnover (TAT).

f) The regression equation is

CAT = 148 - 464 TDTAR + 91.4 TDCAR + 7 TDFAR

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. reg  cat  tdtar tdcar tdfar

      Source |       SS       df       MS              Number of obs =      40
-------------+------------------------------           F(  3,    36) =   40.81
       Model |  9724145.02     3  3241381.67            Prob > F      =  0.0000
    Residual |  2859248.83    36  79423.5785            R-squared     =  0.7728
-------------+------------------------------           Adj R-squared =  0.7538
       Total |  12583393.8    39  322651.124            Root MSE      =  281.82

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         cat |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       tdtar |  -463.6889   387.6253    -1.20   0.239    -1249.829    322.4516
       tdcar |   91.42857   9.792695     9.34   0.000     71.56807    111.2891
       tdfar |   6.748366   183.0777     0.04   0.971    -364.5504    378.0471
       _cons |   148.4966   102.3108     1.45   0.155    -58.99931    355.9925
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From the above model we can easily observe that only Total Debts to Total Assets Ratio (TDTAR) has a negative relationship with the Current Assets Turnover (CAT). All other remaining variables have positive impact on Current Assets Turnover (CAT).

g) The regression equation is

FAT = 14.9 + 1.8 TDTAR - 0.347 TDCAR - 8.9 TDFAR

```
      Source |       SS       df       MS              Number of obs =      40
-------------+------------------------------           F(  3,    36) =    0.88
       Model |  647.219636     3  215.739879            Prob > F      =  0.4628
    Residual |  8870.63427    36  246.406508            R-squared     =  0.0680
-------------+------------------------------           Adj R-squared = -0.0097
       Total |  9517.85391    39  244.047536            Root MSE      =  15.697

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         fat |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       tdtar |   1.835373   21.59054     0.09   0.933    -41.95227    45.62301
       tdcar |  -.3467421   .5454483    -0.64   0.529    -1.452963    .7594783
       tdfar |  -8.863956   10.19734    -0.87   0.390    -29.54511     11.8172
       _cons |   14.86966    5.69866     2.61   0.013     3.312242    26.42708
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From the above model we can easily observe that only Total Debts to Current Assets Ratio (TDCAR) and Total Debts to Fixed Assets Ratio (TDFAR) have a negative relationship with the Fixed Assets Turnover (FAT). All other remaining variables have positive impact on Fixed Assets Turnover (FAT).

Model 2:

a) The regression equation is

ROA = 3.44 + 78.1 CDTAR - 0.137 CDCAR - 30.8 CDFAR

Source	SS	df	MS	Number of obs =	40
				F(3, 36) =	1.63
Model	876.456176	3	292.152059	Prob > F =	0.2001
Residual	6463.71788	36	179.547719	R-squared =	0.1194
				Adj R-squared =	0.0460
Total	7340.17405	39	188.209591	Root MSE =	13.4

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cdtar	78.10487	44.00189	1.78	0.084	-11.1351	167.3448
cdcar	-.1373848	.6418459	-0.21	0.832	-1.439109	1.164339
cdfar	-30.83552	21.68237	-1.42	0.164	-74.8094	13.13837
_cons	3.439331	3.859033	0.89	0.379	-4.387151	11.26581

From the above model we can easily observe that only Current Debts to Total Assets Ratio (CDTAR) has a positive relationship with the Return on Assets (ROA). All other remaining variables have negative impact on Return on Assets (ROA).

b) The regression equation is

ROE = - 1.02 + 249 CDTAR - 0.10 CDCAR - 91.6 CDFAR

Source	SS	df	MS	Number of obs =	40
				F(3, 36) =	4.85
Model	10894.3135	3	3631.43785	Prob > F =	0.0062
Residual	26978.636	36	749.406554	R-squared =	0.2877
				Adj R-squared =	0.2283
Total	37872.9495	39	971.101269	Root MSE =	27.375

roe	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cdtar	249.0813	89.89595	2.77	0.009	66.76383	431.3987
cdcar	-.0972657	1.311292	-0.07	0.941	-2.75669	2.562159
cdfar	-91.55599	44.29713	-2.07	0.046	-181.3947	-1.717251
_cons	-1.024093	7.884013	-0.13	0.897	-17.01361	14.96543

From the above model we can easily observe that only Current Debts to Total Assets Ratio (CDTAR) has a positive relationship with the Return on Equity (ROE). All other remaining variables have negative impact on Return on Equity (ROE).

c) The regression equation is

GPM = 30.2 - 26.2 CDTAR + 4.14 CDCAR + 11.7 CDFAR

Source	SS	df	MS	Number of obs =	40
				F(3, 36) =	3.68
Model	7841.39185	3	2613.79728	Prob > F =	0.0207
Residual	25570.096	36	710.280444	R-squared =	0.2347
				Adj R-squared =	0.1709
Total	33411.4878	39	856.704817	Root MSE =	26.651

gpm	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cdtar	-26.21169	87.51779	-0.30	0.766	-203.706	151.2826
cdcar	4.143831	1.276603	3.25	0.003	1.554761	6.732901
cdfar	11.70984	43.12526	0.27	0.788	-75.75225	99.17193
_cons	30.16372	7.675444	3.93	0.000	14.5972	45.73024

From the above model we can easily observe that only Current Debts to Total Assets Ratio (CDTAR) has a negative relationship with the Gross Profit Margin (GPM). All other remaining variables have positive impact on Gross Profit Margin (GPM).

d) The regression equation is

NPM = 30.1 - 53 CDTAR + 1.00 CDCAR + 14.5 CDFAR

```
. reg npm cdtar cdcar cdfar
```

Source	SS	df	MS		
Model	1690.85672	3	563.618907	Number of obs	40
Residual	47958.4519	36	1332.17922	F(3, 36)	0.42
				Prob > F	0.7376
Total	49649.3086	39	1273.0592	R-squared	0.0341
				Adj R-squared	-0.0464
				Root MSE	36.499

npm	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cdtar	-52.86652	119.8568	-0.44	0.662	-295.9474	190.2144
cdcar	.997823	1.748325	0.57	0.572	-2.547944	4.54359
cdfar	14.46567	59.06064	0.24	0.808	-105.3149	134.2462
_cons	30.05346	10.51163	2.86	0.007	8.734899	51.37203

From the above model we can easily observe that only Current Debts to Total Assets Ratio (CDTAR) has a negative relationship with the Net Profit Margin (NPM). All other remaining variables have positive impact on Net Profit Margin (NPM).

e) The regression equation is

TAT = 11.6 - 25.5 CDTAR - 0.347 CDCAR + 3.1 CDFAR

Source	SS	df	MS		
Model	613.225504	3	204.408501	Number of obs	40
Residual	5438.7336	36	151.075933	F(3, 36)	1.35
				Prob > F	0.2726
Total	6051.95911	39	155.178439	R-squared	0.1013
				Adj R-squared	0.0264
				Root MSE	12.291

tat	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cdtar	-25.50578	40.36259	-0.63	0.531	-107.3649	56.35335
cdcar	-.3465023	.5887602	-0.59	0.560	-1.540563	.8475587
cdfar	3.064697	19.88907	0.15	0.878	-37.27221	43.4016
_cons	11.64628	3.539861	3.29	0.002	4.46711	18.82545

From the above model we can easily observe that only Current Debts to Total Assets Ratio (CDTAR) and Current Debts to Current Assets Ratio (CDCAR) have a negative relationship with the Total Assets Turnover (TAT). All other remaining variables have positive impact on Total Assets Turnover (TAT).

f) The regression equation is

CAT = 233 - 1485 CDTAR + 119 CDCAR + 365 CDFAR

Source	SS	df	MS		
Model	8135918.43	3	2711972.81	Number of obs	40
Residual	4447475.42	36	123540.984	F(3, 36)	21.95
				Prob > F	0.0000
Total	12583393.8	39	322651.124	R-squared	0.6466
				Adj R-squared	0.6171
				Root MSE	351.48

cat	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cdtar	-1484.58	1154.216	-1.29	0.207	-3825.438	856.2777
cdcar	119.1751	16.83629	7.08	0.000	85.02948	153.3206
cdfar	364.6576	568.7513	0.64	0.525	-788.8234	1518.139
_cons	232.638	101.2265	2.30	0.027	27.34122	437.9348

From the above model we can easily observe that only Current Debts to Total Assets Ratio (CDTAR) has a negative relationship with the Current Assets Turnover (CAT). All other remaining variables have positive impact on Current Assets Turnover (CAT).

g) The regression equation is

FAT = 14.2 - 40.3 CDTAR - 0.492 CDCAR + 10.7 CDFAR

Source	SS	df	MS		
Model	674.313646	3	224.771215	Number of obs	= 40
Residual	8843.54026	36	245.653896	F(3, 36)	= 0.91
				Prob > F	= 0.4434
				R-squared	= 0.0708
				Adj R-squared	= -0.0066
Total	9517.85391	39	244.047536	Root MSE	= 15.673

fat	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cdtar	-40.27677	51.4687	-0.78	0.439	-144.6601	64.1066
cdcar	-.4920846	.7507626	-0.66	0.516	-2.014702	1.030533
cdfar	10.65864	25.36172	0.42	0.677	-40.7773	62.09459
_cons	14.18626	4.513884	3.14	0.003	5.031677	23.34084

From the above model we can easily observe that only Current Debts to Total Assets Ratio (CDTAR) and Current Debts to Current Assets Ratio (CDCAR) have a negative relationship with the Fixed Assets Turnover (FAT). All other remaining variables have positive impact on Fixed Assets Turnover (FAT).

Model 3:

a) The regression equation is

ROA = 11.5 - 14.4 FDTAR - 0.64 FDCAR + 3.7 FDFAR

Source	SS	df	MS		
Model	185.03428	3	61.6780934	Number of obs	= 40
Residual	7155.13977	36	198.753883	F(3, 36)	= 0.31
				Prob > F	= 0.8178
				R-squared	= 0.0252
				Adj R-squared	= -0.0560
Total	7340.17405	39	188.209591	Root MSE	= 14.098

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fdtar	-14.41556	27.45886	-0.52	0.603	-70.10472	41.27359
fdcar	-.635197	1.307153	-0.49	0.630	-3.286226	2.015832
fdfar	3.706038	23.25173	0.16	0.874	-43.45065	50.86272
_cons	11.45348	4.332927	2.64	0.012	2.665898	20.24107

From the above model we can easily observe that only Fixed Debts to Fixed Assets Ratio (FDFAR) has a positive relationship with the Return on Assets (ROA). All other remaining variables have negative impact on Return on Assets (ROA).

b) The regression equation is

ROE = 25.8 - 52.6 FDTAR - 2.75 FDCAR + 27.5 FDFAR

Source	SS	df	MS		
Model	1920.55573	3	640.185244	Number of obs	= 40
Residual	35952.3938	36	998.677605	F(3, 36)	= 0.64
				Prob > F	= 0.5936
				R-squared	= 0.0507
				Adj R-squared	= -0.0284
Total	37872.9495	39	971.101269	Root MSE	= 31.602

roe	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fdtar	-52.59964	61.55132	-0.85	0.398	-177.4315	72.23222
fdcar	-2.747424	2.930091	-0.94	0.355	-8.689925	3.195076
fdfar	27.51283	52.12068	0.53	0.601	-78.1928	133.2185
_cons	25.81897	9.712617	2.66	0.012	6.120867	45.51707

From the above model we can easily observe that only Fixed Debts to Fixed Assets Ratio (FDFAR) has a positive relationship with the Return on Equity (ROE). All other remaining variables have negative impact on Return on Equity (ROE).

c) The regression equation is

GPM = 28.4 - 75.1 FDTAR + 8.54 FDCAR + 41.2 FDFAR

```
. reg gpm fdtar fdcar fdfar

      Source |       SS       df       MS              Number of obs =      40
-------------+------------------------------           F(  3,    36) =    6.63
       Model |  11889.4991     3  3963.16637            Prob > F      =  0.0011
    Residual |  21521.9887    36   597.83302            R-squared     =  0.3559
-------------+------------------------------           Adj R-squared =  0.3022
       Total |  33411.4878    39  856.704817            Root MSE      =  24.451

------------------------------------------------------------------------------
         gpm |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       fdtar |  -75.05361   47.62277    -1.58   0.124    -171.6371    21.52984
       fdcar |   8.541871   2.267036     3.77   0.001     3.944109    13.13963
       fdfar |   41.15803    40.3262     1.02   0.314     -40.6273    122.9434
       _cons |   28.39621   7.514733     3.78   0.001     13.15563     43.6368
------------------------------------------------------------------------------
```

From the above model we can easily observe that only Fixed Debts to Total Assets Ratio (FDTAR) has a negative relationship with the Gross Profit Margin (GPM). All other remaining variables have positive impact on Gross Profit Margin (GPM).

d) The regression equation is

NPM = 24.7 - 29.5 FDTAR + 2.78 FDCAR + 8.9 FDFAR

```
      Source |       SS       df       MS              Number of obs =      40
-------------+------------------------------           F(  3,    36) =    0.47
       Model |  1875.86613     3  625.288709            Prob > F      =  0.7042
    Residual |  47773.4425    36  1327.04007            R-squared     =  0.0378
-------------+------------------------------           Adj R-squared = -0.0424
       Total |  49649.3086    39   1273.0592            Root MSE      =  36.429

------------------------------------------------------------------------------
         npm |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       fdtar |  -29.52401   70.95234    -0.42   0.680     -173.422     114.374
       fdcar |   2.779436   3.377618     0.82   0.416    -4.070691    9.629563
       fdfar |   8.905152   60.08131     0.15   0.883    -112.9454    130.7557
       _cons |   24.65526   11.19607     2.20   0.034     1.948574    47.36194
------------------------------------------------------------------------------
```

From the above model we can easily observe that only Fixed Debts to Total Assets Ratio (FDTAR) has a negative relationship with the Net Profit Margin (NPM). All other remaining variables have positive impact on Net Profit Margin (NPM).

e) The regression equation is

TAT = 7.89 + 19.1 FDTAR + 0.56 FDCAR - 21.8 FDFAR

```
      Source |       SS       df       MS              Number of obs =      40
-------------+------------------------------           F(  3,    36) =    0.68
       Model |  324.033612     3  108.011204            Prob > F      =  0.5707
    Residual |  5727.9255     36  159.109042            R-squared     =  0.0535
-------------+------------------------------           Adj R-squared = -0.0253
       Total |  6051.95911    39  155.178439            Root MSE      =  12.614

------------------------------------------------------------------------------
         tat |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       fdtar |   19.06986   24.56813     0.78   0.443    -30.75662    68.89634
       fdcar |   .5626646   1.169542     0.48   0.633    -1.809277    2.934606
       fdfar |  -21.83476    20.8039    -1.05   0.301    -64.02703    20.35751
       _cons |   7.888444   3.876779     2.03   0.049     .0259723    15.75092
------------------------------------------------------------------------------
```

From the above model we can easily observe that only Fixed Debts to Fixed Assets Ratio (FDFAR) has a negative relationship with the Total Assets Turnover (TAT). All other remaining variables have positive impact on Total Assets Turnover (TAT).

f) The regression equation is

CAT = - 48.9 + 104 FDTAR + 274 FDCAR - 258 FDFAR

```
. reg cat fdtar fdcar fdfar

      Source |       SS       df       MS              Number of obs =      40
-------------+------------------------------           F(  3,    36) =   59.32
       Model |  10466156.5     3  3488718.85            Prob > F      =  0.0000
    Residual |  2117237.31    36  58812.1475            R-squared     =  0.8317
-------------+------------------------------           Adj R-squared =  0.8177
       Total |  12583393.8    39  322651.124            Root MSE      =  242.51

------------------------------------------------------------------------------
         cat |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       fdtar |    103.6666   472.3438     0.22   0.828    -854.2911    1061.624
       fdcar |    274.1908   22.48547    12.19   0.000     228.5882    319.7935
       fdfar |   -258.1351   399.9732    -0.65   0.523    -1069.318    553.0482
       _cons |   -48.89049   74.53446    -0.66   0.516    -200.0534    102.2724
------------------------------------------------------------------------------
```

From the above model we can easily observe that only Fixed Debts to Fixed Assets Ratio (FDFAR) has a negative relationship with the Current Assets Turnover (CAT). All other remaining variables have positive impact on Current Assets Turnover (CAT).

g) The regression equation is

FAT = 11.4 + 20.5 FDTAR + 0.11 FDCAR - 26.2 FDFAR

```
. reg fat fdtar fdcar fdfar

      Source |       SS       df       MS              Number of obs =      40
-------------+------------------------------           F(  3,    36) =    0.51
       Model |  387.320508     3  129.106836            Prob > F      =  0.6786
    Residual |  9130.5334     36  253.625928            R-squared     =  0.0407
-------------+------------------------------           Adj R-squared = -0.0392
       Total |  9517.85391    39  244.047536            Root MSE      =  15.926

------------------------------------------------------------------------------
         fat |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       fdtar |    20.48541   31.01855     0.66   0.513    -42.42313    83.39395
       fdcar |    .1092348   1.476608     0.07   0.941    -2.885466    3.103935
       fdfar |   -26.20917   26.26602    -1.00   0.325    -79.47912    27.06078
       _cons |    11.43807   4.894636     2.34   0.025     1.511287    21.36485
------------------------------------------------------------------------------
```

From the above model we can easily observe that only Fixed Debts to Fixed Assets Ratio (FDFAR) has a negative relationship with the Fixed Assets Turnover (FAT). All other remaining variables have positive impact on Fixed Assets Turnover (FAT).

Model 4:

a) The regression equation is

ROA = 6.48 - 39.1 TDTAR + 1.42 TDCAR + 17.6 TDFAR + 141 CDTAR - 2.37 CDCAR - 59 CDFAR - 18.5 FDTAR

```
note: cdfar omitted because of collinearity

      Source |       SS       df       MS              Number of obs =      40
-------------+------------------------------           F(  7,    32) =    0.88
       Model |  1180.64774     7  168.663963            Prob > F      =  0.5358
    Residual |  6159.52631    32  192.485197            R-squared     =  0.1608
-------------+------------------------------           Adj R-squared = -0.0227
       Total |  7340.17405    39  188.209591            Root MSE      =  13.874

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       tdtar |   -39.09657   62.48991    -0.63   0.536    -166.3843    88.19121
       tdcar |   -.9518951   1.060742    -0.90   0.376    -3.112556    1.208766
       tdfar |   -41.08039   37.92845    -1.08   0.287    -118.3381    36.17733
       cdtar |    140.6786   117.5803     1.20   0.240    -98.82465    380.1819
       cdcar |   (omitted)
       cdfar |   (omitted)
       fdtar |    -18.4541   69.79139    -0.26   0.793    -160.6145    123.7063
       fdcar |    2.374193   2.928053     0.81   0.423    -3.590055    8.338441
       fdfar |    58.69618   103.7101     0.57   0.575    -152.5544    269.9468
       _cons |    6.478495   7.865488     0.82   0.416     -9.54298    22.49997
------------------------------------------------------------------------------
```

From the above model we can easily observe that Total Debts to Total Assets Ratio (TDTAR), Total Debts to Current Assets Ratio (TDCAR), Total Debts to Fixed Assets Ratio (TDFAR) and Fixed Debts to Total Assets Ratio (FDTAR) has a positive relationship with the Return on Assets (ROA). All other remaining variables have negative impact on Return on Assets (ROA).

b) The regression equation is

ROE = 6.6 - 99 TDTAR + 1.88 TDCAR + 36 TDFAR + 406 CDTAR - 3.26 CDCAR - 153 CDFAR - 28 FDTAR

Source	SS	df	MS		Number of obs =	40
					F(7, 32) =	2.20
Model	12291.3181	7	1755.90259		Prob > F =	0.0612
Residual	25581.6314	32	799.42598		R-squared =	0.3245
					Adj R-squared =	0.1768
Total	37872.9495	39	971.101269		Root MSE =	28.274

roe	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tdtar	-99.21516	127.3504	-0.78	0.442	-358.6195	160.1891
tdcar	-1.383963	2.161725	-0.64	0.527	-5.787252	3.019325
tdfar	-116.8621	77.29574	-1.51	0.140	-274.3084	40.58418
cdtar	405.8291	239.6211	1.69	0.100	-82.26322	893.9213
cdcar	(omitted)					
cdfar	(omitted)					
fdtar	-27.82942	142.2304	-0.20	0.846	-317.5432	261.8843
fdcar	3.261223	5.967183	0.55	0.588	-8.89353	15.41598
fdfar	152.5062	211.3546	0.72	0.476	-278.009	583.0214
_cons	6.555638	16.02936	0.41	0.685	-26.0951	39.20637

From the above model we can easily observe that Total Debts to Total Assets Ratio (TDTAR), Current Debts to Current Assets Ratio (CDCAR), Current Debts to Fixed Assets Ratio (CDFAR) and Fixed Debts to Total Assets Ratio (FDTAR) has a negative relationship with the Return on Equity (ROE). All other remaining variables have positive impact on Return on Equity (ROE).

c) The regression equation is

GPM = 51.0 - 259 TDTAR + 6.65 TDCAR + 298 TDFAR + 433 CDTAR - 6.64 CDCAR - 410 CDFAR - 312 FDTAR

Source	SS	df	MS		Number of obs =	40
					F(7, 32) =	3.93
Model	15445.5229	7	2206.50327		Prob > F =	0.0034
Residual	17965.965	32	561.436405		R-squared =	0.4623
					Adj R-squared =	0.3447
Total	33411.4878	39	856.704817		Root MSE =	23.695

gpm	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tdtar	-259.1786	106.7239	-2.43	0.021	-476.568	-41.78925
tdcar	.0106016	1.811597	0.01	0.995	-3.6795	3.700703
tdfar	-112.3286	64.77639	-1.73	0.093	-244.2737	19.61662
cdtar	432.8917	200.8104	2.16	0.039	23.85418	841.9291
cdcar	(omitted)					
cdfar	(omitted)					
fdtar	-311.8278	119.1937	-2.62	0.013	-554.6175	-69.03808
fdcar	6.638969	5.000697	1.33	0.194	-3.547116	16.82505
fdfar	409.997	177.1221	2.31	0.027	49.211	770.7829
_cons	50.9907	13.43313	3.80	0.001	23.6283	78.35309

From the above model we can easily observe that only Total Debts to Total Assets Ratio (TDTAR), Current Debts to Current Assets Ratio (CDCAR), Current Debts to Fixed Assets Ratio (CDFAR) and Fixed Debts to Total Assets Ratio (FDTAR) has a negative relationship with the Gross Profit Margin (GPM). All other remaining variables have positive impact on Gross Profit Margin (GPM).

d) The regression equation is

NPM = 56.2 - 245 TDTAR + 0.46 TDCAR + 311 TDFAR + 373 CDTAR - 1.11 CDCAR - 422 CDFAR - 325 FDTAR

Source	SS	df	MS	Number of obs =	40
				F(7, 32) =	0.68
Model	6389.09083	7	912.727261	Prob > F =	0.6915
Residual	43260.2178	32	1351.88181	R-squared =	0.1287
				Adj R-squared =	-0.0619
Total	49649.3086	39	1273.0592	Root MSE =	36.768

npm	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tdtar	-244.9313	165.6077	-1.48	0.149	-582.2632	92.40057
tdcar	-.6499989	2.811128	-0.23	0.819	-6.376079	5.076081
tdfar	-111.3813	100.5161	-1.11	0.276	-316.1259	93.36342
cdtar	373.0708	311.6057	1.20	0.240	-261.6491	1007.791
cdcar	(omitted)					
cdfar	(omitted)					
fdtar	-324.9572	184.9578	-1.76	0.088	-701.7038	51.7894
fdcar	1.109598	7.759783	0.14	0.887	-14.69656	16.91576
fdfar	422.3218	274.8476	1.54	0.134	-137.5244	982.1679
_cons	56.18989	20.84473	2.70	0.011	13.73055	98.64922

From the above model we can easily observe that only Total Debts to Total Assets Ratio (TDTAR), Total Debts to Current Assets Ratio (TDCAR), Total Debts to Fixed Assets Ratio (TDFAR) and Fixed Debts to Total Assets Ratio (FDTAR) has a negative relationship with the Net Profit Margin (NPM). All other remaining variables have positive impact on Net Profit Margin (NPM).

Total Debts to Total Assets Ratio (TDTAR)

e) The regression equation is

TAT = 2.65 + 110 TDTAR + 1.58 TDCAR - 113 TDFAR - 216 CDTAR - 2.14 CDCAR + 170 CDFAR + 97.3 FDTAR

Source	SS	df	MS	Number of obs =	40
				F(7, 32) =	1.41
Model	1425.6702	7	203.667172	Prob > F =	0.2360
Residual	4626.28891	32	144.571528	R-squared =	0.2356
				Adj R-squared =	0.0684
Total	6051.95911	39	155.178439	Root MSE =	12.024

tat	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tdtar	109.6962	54.15675	2.03	0.051	-.617447	220.0099
tdcar	-.5526528	.9192902	-0.60	0.552	-2.425186	1.31988
tdfar	56.36953	32.87061	1.71	0.096	-10.58572	123.3248
cdtar	-216.0343	101.9007	-2.12	0.042	-423.5993	-8.46925
cdcar	(omitted)					
cdfar	(omitted)					
fdtar	97.29554	60.48457	1.61	0.118	-25.90748	220.4986
fdcar	2.13597	2.537591	0.84	0.406	-3.032934	7.304873
fdfar	-169.7243	89.88018	-1.89	0.068	-352.8042	13.35562
_cons	2.649343	6.816609	0.39	0.700	-11.23564	16.53432

From the above model we can easily observe that only Total Debts to Fixed Assets Ratio (TDFAR), Current Debts to Total Assets Ratio (CDTAR) and Current Debts to Current Assets Ratio (CDCAR) has a negative relationship with the Total Assets Turnover (TAT). All other remaining variables have positive impact on Total Assets Turnover (TAT).

f) The regression equation is

CAT = 104 - 1195 TDTAR + 229 TDCAR + 782 TDFAR + 1020 CDTAR - 205 CDCAR - 826 CDFAR - 850 FDTAR

Source	SS	df	MS		Number of obs =	40
					F(7, 32) =	27.22
Model	10773876.4	7	1539125.21		Prob > F =	0.0000
Residual	1809517.4	32	56547.4187		R-squared =	0.8562
					Adj R-squared =	0.8247
Total	12583393.8	39	322651.124		Root MSE =	237.8

cat	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tdtar	-1194.732	1071.069	-1.12	0.273	-3376.429	986.9649
tdcar	23.82883	18.18099	1.31	0.199	-13.20464	60.8623
tdfar	-43.34587	650.089	-0.07	0.947	-1367.534	1280.842
cdtar	1019.639	2015.312	0.51	0.616	-3085.418	5124.696
cdcar	(omitted)					
cdfar	(omitted)					
fdtar	-849.6234	1196.216	-0.71	0.483	-3286.235	1586.989
fdcar	204.716	50.18647	4.08	0.000	102.4895	306.9425
fdfar	825.6416	1777.579	0.46	0.645	-2795.168	4446.452
_cons	104.0732	134.8135	0.77	0.446	-170.5329	378.6794

From the above model we can easily observe that only Total Debts to Total Assets Ratio (TDTAR), Total Debts to Fixed Assets Ratio (CDTAR) and Fixed Debts to Total Assets Ratio (FDTAR) has a negative relationship with the Current Assets Turnover (CAT). All other remaining variables have positive impact on Current Assets Turnover (CAT).

g) The regression equation is

FAT = 3.54 + 146 TDTAR + 1.33 TDCAR - 161 TDFAR - 299 CDTAR - 1.83 CDCAR + 246 CDFAR + 139 FDTAR

Source	SS	df	MS		Number of obs =	40
					F(7, 32) =	1.26
Model	2052.7311	7	293.247301		Prob > F =	0.3023
Residual	7465.1228	32	233.285088		R-squared =	0.2157
					Adj R-squared =	0.0441
Total	9517.85391	39	244.047536		Root MSE =	15.274

fat	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tdtar	145.6568	68.79466	2.12	0.042	5.526707	285.787
tdcar	-.4956328	1.167763	-0.42	0.674	-2.874288	1.883023
tdfar	85.05536	41.75514	2.04	0.050	.002928	170.1078
cdtar	-299.0547	129.4433	-2.31	0.027	-562.722	-35.38736
cdcar	(omitted)					
cdfar	(omitted)					
fdtar	139.4802	76.8328	1.82	0.079	-17.0231	295.9835
fdcar	1.825083	3.223471	0.57	0.575	-4.740911	8.391078
fdfar	-246.1558	114.1737	-2.16	0.039	-478.72	-13.5916
_cons	3.538952	8.659055	0.41	0.685	-14.09897	21.17687

From the above model we can easily observe that only Total Debts to Fixed Assets Ratio (TDFAR), Current Debts to Total Assets Ratio (CDTAR) and Current Debts to Current Assets Ratio (CDCAR) has a negative relationship with the Fixed Assets Turnover (FAT). All other remaining variables have positive impact on Fixed Assets Turnover (FAT).

Conclusion:

Based upon the regression results, we can conclude that in order to increase the profitability fertilizer firms have to utilize the debt option for their financing. The main reason for this is that is considered as a cheaper source of financing as compared to equity financing on some reasons. The results of our survey are clearly showing that in model 1 TDTAR has always a positive relationship with any of the profitability indicators while in model 2 overall current debts looks more important because it is showing an inverse relationship with most of the indicators. So the companies should focus on the fixed portion of the debts rather than that of the current portion. In the Model 3 actually representing the capital structure of the fertilizer firm in the form of the proportion of their fixed assets with respect to their different debts level and comparing it with the different profitability indicators. It is also showing a positive impact of existing debts on

profitability. In the last model no 4, we actually combine all debts indicators and check their impact on profitability in different ways. And it is also going to support our H1. So we can conclude that the leverage definitely has a positive impact on the profitability of the fertilizer firms. However what could the ideal capital structure, we can check it by using different models.

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