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DETERMINANTS AND PREFERENCES FOR MARKETABILITY OF FIRMS SHARES FOR INVESTORS: A CAUSAL STUDY OF PAKISTAN'S FERTILIZER SECTOR

Maryum Ashraf
Government Sadiq College Women University, Bahawalpur, Pakistan
Corresponding Email: Maryum_ashraf@live.com
Wasim Abbas Shaheen
Email: wasimabbas54@yahoo.com
University of International Business & Economics, Beijing, P.R. China

Abstract

Pakistan is basically an agricultural country. Main components of its GDP are directly and indirectly linked with the agriculture products. In order to increase the growth of agricultural products, fertilizer products including Urea and Pesticides are very important. The fertilizer industry is also considered as most flourishing industry in Pakistan in recent era having huge abnormal profits and best return. Our study have basically analyzed the financial performance of that sectors to provide some key indicators to the investors that will help them to make sure that their investments are going in the right directions. Four major Pakistan Stock Exchange listed companies for data analysis and the results shows that the profitability is the main cause that will help these companies to increase their marketability from investor's point of view. Also in profitability it is the Net Profit Margin (NPM) and Return on Equity (ROE) that play a vital role in enhancing the marketability of the company's share in the market.

Key-words: Profitability, Liquidity, Market Value, GWC, NWC, QR, CR, NPM, GPM, ROA, ROE, DPS, EPS, MPS, BPS, DPR, DYR, P/E Ratio

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% (Ravi, 2015). 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 (Ali & Byerlee, 2002).

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), FaujiFauji 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).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 et al., 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 liquidity 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 shareholders or they are just exploiting their investments.

Hypothesis:

H_0: There is no relationship of Profitability and Liquidity on the Market value of Fertilizer Industry.

H_1: There is a relationship of Profitability and Liquidity on the Market value of Fertilizer Industry.

H_2: The components of profitability and liquidity will also have some kind of relationship with market value.

Aim of Study:

The aim of study is to provide necessary information to the investors about the reliability of their investment in Fertilizer sector. It is not only the profitability which matters while making the investment but the marketability of the investment also has an equal importance.

Variables:

a. Dependent Variable:

i. Market Value of the Firm:

It will be measured with the help following ratios:

a) Earnings Per Share Ratio (EPSR)
b) Dividend Per Share Ratio (DPS)
c) Book Value Per Share Ratio (BPSR)
d) Market Price Per Share (MPS)
e) Price Earnings Ratio (P/E Ratio)
f) Dividend Yield Ratio (DYR)
g) Dividend Payout Ratio (DPR)

b. Independent Variable:

i. Profitability:

It will be measured with the help following ratios:

h) Gross Profit Margin (GPM)
i) Net Profit Margin (NPM)

j) Return on Assets (ROA)
k) Return on Equity (ROE)

ii. Liquidity:

It will be measured with the help following ratios:

l) Gross Working Capital (GWC)
m) Net Working Capital (NWC)
n) Current Ratio (CR)
o) Quick Ratio (QR)

Study Design:

It is correlational study type because here we have found the effect of profitability and liquidity on market value 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 will be 10 years data from 2006 to 2015.

Data Collection Methods and Instruments:

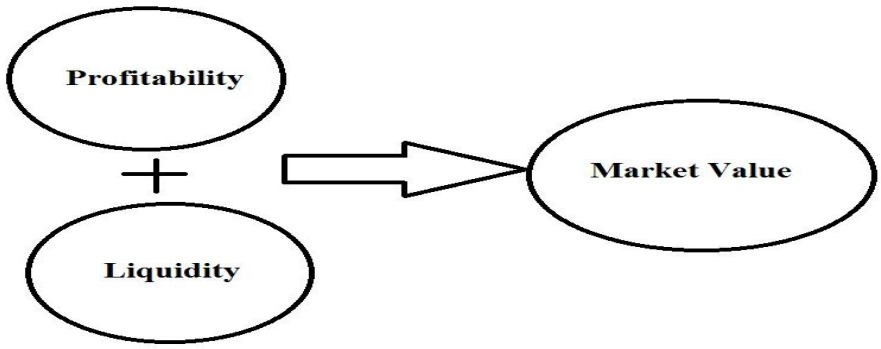
The research study includes only secondary data which is taken from the Annual Financial Statements of the Fertilizer Industry. Data is extracted from the financial statement of 4 top ranked listed Fertilizer Companies in Pakistan.

Data Analysis Methods:

Data analysis has been done by using Minitab and Stata 11.0softwares. The data is analyzed in two different ways. First the individual performance of the company is measured and relationship is identified. Then the combine effect of all the companies is identified. 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 Fertilizer Sector. 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 profitability on market value is measured.

i. $PER = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \varepsilon$

ii. $DPS = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \varepsilon$

iii. $EPSR = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \varepsilon$

iv. $BPSR = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \varepsilon$

v. $DYR = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \varepsilon$

vi. $DPR = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \varepsilon$

b) Model 2:

In this model the impact of liquidity on market value is measured.

i. $PER = \beta_0 + \beta_1 CR + \beta_2 QR + \beta_3 NWC + \beta_4 GWC + \varepsilon$

ii. $DPS = \beta_0 + \beta_1 CR + \beta_2 QR + \beta_3 NWC + \beta_4 GWC + \varepsilon$

iii. $EPSR = \beta_0 + \beta_1 CR + \beta_2 QR + \beta_3 NWC + \beta_4 GWC + \varepsilon$

iv. $BPSR = \beta_0 + \beta_1 CR + \beta_2 QR + \beta_3 NWC + \beta_4 GWC + \varepsilon$

v. $DYR = \beta_0 + \beta_1 CR + \beta_2 QR + \beta_3 NWC + \beta_4 GWC + \varepsilon$

vi. $DPR = \beta_0 + \beta_1 CR + \beta_2 QR + \beta_3 NWC + \beta_4 GWC + \varepsilon$

c) Model 3:

In this model the combined impact of profitability and liquidity on market value is measured.

i. $PER = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \beta_5 CR + \beta_6 QR + \beta_7 NWC + \beta_8 GWC + \varepsilon$

ii. $DPS = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \beta_5 CR + \beta_6 QR + \beta_7 NWC + \beta_8 GWC + \varepsilon$

iii. $EPSR = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \beta_5 CR + \beta_6 QR + \beta_7 NWC + \beta_8 GWC + \varepsilon$

iv. $BPSR = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \beta_5 CR + \beta_6 QR + \beta_7 NWC + \beta_8 GWC + \varepsilon$

v. $DYR = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \beta_5 CR + \beta_6 QR + \beta_7 NWC + \beta_8 GWC + \varepsilon$

vi. $DPR = \beta_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 NPM + \beta_4 GPM + \beta_5 CR + \beta_6 QR + \beta_7 NWC + \beta_8 GWC + \varepsilon$

d) Model 4:

In this model the aggregate impact of profitability and liquidity on market value is measured.

$Mkt = \beta_0 + \beta_1 Liquidity + \beta_2 profitability + \varepsilon$

Results:

Model 1:

a) The regression equation is

P/E Ratio = 4.15 + 0.0586 GPM + 0.0343 NPM - 0.261 ROA + 0.113 ROE

Source	SS	df	MS	Number of obs =	40
				F(4, 35) =	1.62
Model	206.915155	4	51.7287889	Prob > F =	0.1914
Residual	1118.64396	35	31.9612559	R-squared =	0.1561
				Adj R-squared =	0.0597
Total	1325.55911	39	33.9886952	Root MSE =	5.6534

peratio	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gpm	.0586365	.0362073	1.62	0.114	-.0148682	.1321413
npm	.0343087	.0374366	0.92	0.366	-.0416917	.110309
roa	-.2605537	.2194517	-1.19	0.243	-.7060642	.1849569
roe	.1126451	.0856937	1.31	0.197	-.0613224	.2866125
_cons	4.147203	1.469775	2.82	0.008	1.1634	7.131005

From this model we can see that only ROA has a negative effect on the P/E ratio. Remaining has positive effect on the P/R ratio.

b) The regression equation is

DPS = 4.33 + 0.204 GPM - 0.266 NPM + 4.64 ROA - 1.55 ROE

Source	SS	df	MS	Number of obs =	40
				F(4, 35) =	25.26
Model	22570.736	4	5642.68399	Prob > F =	0.0000
Residual	7819.68897	35	223.419685	R-squared =	0.7427
				Adj R-squared =	0.7133
Total	30390.4249	39	779.241665	Root MSE =	14.947

dps	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gpm	.2036354	.0957293	2.13	0.041	.0092945	.3979763
npm	-.2657843	.0989795	-2.69	0.011	-.4667233	-.0648453
roa	4.643455	.5802133	8.00	0.000	3.46556	5.821351
roe	-1.552483	.2265675	-6.85	0.000	-2.01244	-1.092527
_cons	4.329209	3.885973	1.11	0.273	-3.559736	12.21815

From this model we can see that only NPM and ROE have negative effect on the DPS. Remaining has positive effect on the DPS.

c) The regression equation is
EPS = 8.65 - 0.361 GPM + 0.555 NPM + 0.367 ROA - 0.0121 ROE

Source	SS	df	MS	Number of obs =	40
				F(4, 35) =	87.97
Model	14827.0578	4	3706.76444	Prob > F =	0.0000
Residual	1474.76775	35	42.1362213	R-squared =	0.9095
				Adj R-squared =	0.8992
Total	16301.8255	39	417.995526	Root MSE =	6.4912

eps	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gpm	-.3609721	.0415731	-8.68	0.000	-.44537	-.2765743
npm	.5552166	.0429845	12.92	0.000	.4679534	.6424799
roa	.3673171	.2519734	1.46	0.154	-.1442162	.8788504
roe	-.0120616	.0983931	-0.12	0.903	-.2118102	.187687
_cons	8.654629	1.68759	5.13	0.000	5.22864	12.08062

From this model we can see that only GPM and ROE have negative effect on the EPS. Remaining has positive effect on the EPS.

d) The regression equation is
BPS = 27.4 - 0.548 GPM + 0.798 NPM - 2.66 ROA + 2.13 ROE

Source	SS	df	MS	Number of obs =	40
				F(4, 35) =	6.46
Model	73564.4736	4	18391.1184	Prob > F =	0.0005
Residual	99599.7158	35	2845.70617	R-squared =	0.4248
				Adj R-squared =	0.3591
Total	173164.189	39	4440.10742	Root MSE =	53.345

bps	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gpm	-.5479481	.3416483	-1.60	0.118	-1.241531	.1456349
npm	.7981807	.3532478	2.26	0.030	.0810496	1.515312
roa	-2.660258	2.070723	-1.28	0.207	-6.864049	1.543533
roe	2.128284	.8085966	2.63	0.013	.4867457	3.769823
_cons	27.37199	13.86865	1.97	0.056	-.7828625	55.52684

From this model we can see that only GPM and ROA have negative effect on the BPS. Remaining has positive effect on the BPS.

e) The regression equation is
DYR = 10.7 - 0.0357 GPM - 0.0743 NPM + 0.227 ROA - 0.0140 ROE

Source	SS	df	MS	Number of obs =	40
				F(4, 35) =	2.48
Model	309.056401	4	77.2641003	Prob > F =	0.0617
Residual	1090.47126	35	31.1563218	R-squared =	0.2208
				Adj R-squared =	0.1318
Total	1399.52766	39	35.8853247	Root MSE =	5.5818

dyr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gpm	-.0356792	.0357485	-1.00	0.325	-.1082525	.036894
npm	-.0743152	.0369622	-2.01	0.052	-.1493524	.000722
roa	.2267078	.2166706	1.05	0.303	-.213157	.6665726
roe	-.0139584	.0846077	-0.16	0.870	-.1857212	.1578044
_cons	10.69116	1.45115	7.37	0.000	7.745165	13.63715

From this model we can see that only ROA has a positive effect on the DYR. Remaining has negative effect on the DYR.

f) The regression equation is
DPR = 56.1 - 0.075 GPM - 0.274 NPM - 0.79 ROA + 0.796 ROE

Source	SS	df	MS	Number of obs =	40
				F(4, 35) =	2.52
Model	11899.2507	4	2974.81267	Prob > F =	0.0586
Residual	41328.7819	35	1180.82234	R-squared =	0.2236
				Adj R-squared =	0.1348
Total	53228.0326	39	1364.82135	Root MSE =	34.363

dpr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gpm	-.0748862	.220078	-0.34	0.736	-.5216683	.3718958
npm	-.274264	.2275499	-1.21	0.236	-.736215	.1876869
roa	-.7865753	1.333888	-0.59	0.559	-3.494511	1.921361
roe	.7955501	.5208698	1.53	0.136	-.2618718	1.852972
_cons	56.12467	8.9337	6.28	0.000	37.9883	74.26105

From this model we can see that only ROE has a positive effect on the DPR. Remaining has negative effect on the DPR.

Model 2:

a) The regression equation is
P/E Ratio = 7.31 - 392 CR + 392 QR - 0.000000 NWC + 0.000000 GWC

Source	SS	df	MS	Number of obs =	40
				F(4, 35) =	0.65
Model	91.3155402	4	22.8288851	Prob > F =	0.6325
Residual	1234.24357	35	35.264102	R-squared =	0.0689
				Adj R-squared =	-0.0375
Total	1325.55911	39	33.9886952	Root MSE =	5.9384

peratio	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cr	-391.9403	930.977	-0.42	0.676	-2281.924	1498.043
qr	391.9397	930.9868	0.42	0.676	-1498.064	2281.944
nwc	-3.06e-10	2.10e-10	-1.45	0.155	-7.33e-10	1.21e-10
gwc	5.42e-12	8.32e-11	0.07	0.948	-1.64e-10	1.74e-10
_cons	7.308281	1.625986	4.49	0.000	4.007355	10.60921

From this model we can see that only QR and GWC have positive effect on the P/E ratio. Remaining has negative effect on the P/R ratio.

b) The regression equation is

DPS = 23.9 - 4777 CR + 4777 QR - 0.000000 NWC - 0.000000 GWC

Source	SS	df	MS		
Model	2080.94628	4	520.23657	Number of obs	= 40
Residual	28309.4786	35	808.842247	F(4, 35)	= 0.64
				Prob > F	= 0.6353
Total	30390.4249	39	779.241665	R-squared	= 0.0685
				Adj R-squared	= -0.0380
				Root MSE	= 28.44

dps	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cr	-4776.955	4458.661	-1.07	0.291	-13828.52	4274.608
qr	4776.528	4458.708	1.07	0.291	-4275.13	13828.19
nwc	-2.92e-11	1.01e-09	-0.03	0.977	-2.07e-09	2.02e-09
gwc	-4.44e-10	3.99e-10	-1.11	0.273	-1.25e-09	3.65e-10
_cons	23.8984	7.787216	3.07	0.004	8.089506	39.70729

From this model we can see that only QR has positive effect on the DPS. Remaining has negative effect on the DPS ratio.

c) The regression equation is

EPS = 10.7 - 1400 CR + 1400 QR + 0.000000 NWC + 0.000000 GWC

Source	SS	df	MS		
Model	800.248789	4	200.062197	Number of obs	= 40
Residual	15501.5767	35	442.902192	F(4, 35)	= 0.45
				Prob > F	= 0.7704
Total	16301.8255	39	417.995526	R-squared	= 0.0491
				Adj R-squared	= -0.0596
				Root MSE	= 21.045

eps	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cr	-1399.769	3299.335	-0.42	0.674	-8097.776	5298.237
qr	1399.752	3299.37	0.42	0.674	-5298.326	8097.829
nwc	8.85e-10	7.45e-10	1.19	0.243	-6.28e-10	2.40e-09
gwc	1.29e-10	2.95e-10	0.44	0.664	-4.70e-10	7.28e-10
_cons	10.74818	5.762411	1.87	0.071	-.9501336	22.4465

From this model we can see that only CR has negative effect on the EPS. Remaining has positive effect on EPS.

d) The regression equation is

BPS = 38.0 - 6235 CR + 6235 QR - 0.000000 NWC + 0.000000 GWC

Source	SS	df	MS		
Model	16338.6684	4	4084.66711	Number of obs	= 40
Residual	156825.521	35	4480.72917	F(4, 35)	= 0.91
				Prob > F	= 0.4680
Total	173164.189	39	4440.10742	R-squared	= 0.0944
				Adj R-squared	= -0.0091
				Root MSE	= 66.938

bps	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cr	-6234.055	10494.14	-0.59	0.556	-27538.29	15070.18
qr	6234.463	10494.25	0.59	0.556	-15070	27538.93
nwc	-2.95e-09	2.37e-09	-1.24	0.222	-7.76e-09	1.87e-09
gwc	9.26e-10	9.38e-10	0.99	0.331	-9.79e-10	2.83e-09
_cons	38.04296	18.3284	2.08	0.045	.8343209	75.2516

From this model we can see that only CR and NWC have negative effect on BPS. Remaining has positive effect on the BPS.

e) The regression equation is

DYR = 4.58 + 1305 CR - 1304 QR + 0.000000 NWC + 0.000000 GWC

Source	SS	df	MS		
Model	470.959418	4	117.739855	Number of obs	= 40
Residual	928.568246	35	26.5305213	F(4, 35)	= 4.44
				Prob > F	= 0.0053
Total	1399.52766	39	35.8853247	R-squared	= 0.3365
				Adj R-squared	= 0.2607
				Root MSE	= 5.1508

dyr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cr	1304.733	807.5054	1.62	0.115	-334.5896	2944.057
qr	-1304.586	807.5139	-1.62	0.115	-2943.926	334.7549
nwc	3.91e-11	1.82e-10	0.21	0.831	-3.31e-10	4.09e-10
gwc	2.88e-10	7.22e-11	3.99	0.000	1.41e-10	4.34e-10
_cons	4.578688	1.410338	3.25	0.003	1.71555	7.441826

From this model we can see that only QR has negative effect on DYR. Remaining has positive effect on the DYR.

f) The regression equation is

DPR = 30.0 + 5950 CR - 5951 QR - 0.000000 NWC + 0.000000 GWC

Source	SS	df	MS	Number of obs =	40
				F(4, 35) =	8.02
Model	25462.8653	4	6365.71633	Prob > F =	0.0001
Residual	27765.1673	35	793.290494	R-squared =	0.4784
				Adj R-squared =	0.4188
Total	53228.0326	39	1364.82135	Root MSE =	28.165

dpr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
cr	5949.748	4415.589	1.35	0.186	-3014.375	14913.87
qr	-5950.065	4415.636	-1.35	0.186	-14914.28	3014.153
nwc	-1.13e-09	9.98e-10	-1.13	0.267	-3.15e-09	8.99e-10
gwc	1.98e-09	3.95e-10	5.01	0.000	1.18e-09	2.78e-09
_cons	30.01984	7.71199	3.89	0.000	14.36367	45.67601

From this model we can see that only CR and GWC have positive effect on DPR. Remaining has negative effect on DPR.

Model 3:

a) The regression equation is

P/E Ratio = 4.06 - 0.194 ROA + 0.065 ROE + 0.0427 NPM + 0.0558 GPM + 327 CR - 327 QR - 0.000000 NWC + 0.000000 GWC

Source	SS	df	MS	Number of obs =	40
				F(8, 31) =	0.94
Model	258.472876	8	32.3091095	Prob > F =	0.4997
Residual	1067.08624	31	34.4221366	R-squared =	0.1950
				Adj R-squared =	-0.0128
Total	1325.55911	39	33.9886952	Root MSE =	5.867

peratio	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
roa	-.1935925	.2559688	-0.76	0.455	-.7156443	.3284594
roe	.0647441	.1190569	0.54	0.590	-.1780741	.3075623
npm	.042684	.0396058	1.08	0.289	-.0380925	.1234606
gpm	.055814	.0410469	1.36	0.184	-.0279017	.1395297
cr	326.7218	989.1975	0.33	0.743	-1690.76	2344.203
qr	-326.6976	989.1997	-0.33	0.743	-2344.184	1690.788
nwc	-2.77e-10	2.40e-10	-1.15	0.257	-7.67e-10	2.13e-10
gwc	3.02e-11	1.19e-10	0.25	0.802	-2.13e-10	2.74e-10
_cons	4.058269	2.378811	1.71	0.098	-.7933475	8.909885

From this model we can see that ROA, QR and NWC have negative effect on P/E Ratio. Remaining has positive effect on P/E Ratio.

b) The regression equation is

DPS = 4.85 + 4.89 ROA - 1.73 ROE - 0.251 NPM + 0.178 GPM - 1186 CR + 1186 QR - 0.000000 NWC + 0.000000 GWC

Source	SS	df	MS	Number of obs =	40
				F(8, 31) =	11.73
Model	22843.4282	8	2855.42853	Prob > F =	0.0000
Residual	7546.99668	31	243.451506	R-squared =	0.7517
				Adj R-squared =	0.6876
Total	30390.4249	39	779.241665	Root MSE =	15.603

dps	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
roa	4.89346	.6807292	7.19	0.000	3.505103	6.281816
roe	-1.725324	.3166227	-5.45	0.000	-2.37108	-1.079568
npm	-.2512694	.1053285	-2.39	0.023	-.4660883	-.0364504
gpm	.1781667	.1091611	1.63	0.113	-.0444688	.4008022
cr	-1185.552	2630.694	-0.45	0.655	-6550.888	4179.784
qr	1185.538	2630.7	0.45	0.655	-4179.81	6550.885
nwc	-5.14e-10	6.39e-10	-0.80	0.427	-1.82e-09	7.89e-10
gwc	1.62e-10	3.18e-10	0.51	0.615	-4.87e-10	8.10e-10
_cons	4.850629	6.326262	0.77	0.449	-8.051868	17.75313

From this model we can see that ROE, NPM, CR and NWC have negative effect on DPS. Remaining has positive effect on DPS.

c) The regression equation is

EPS = 8.14 + 0.365 ROA - 0.007 ROE + 0.546 NPM - 0.358 GPM - 618 CR + 618 QR + 0.000000 NWC + 0.000000 GWC

Source	SS	df	MS	Number of obs =	40
				F(8, 31) =	41.78
Model	14918.1428	8	1864.76785	Prob > F =	0.0000
Residual	1383.68271	31	44.6349262	R-squared =	0.9151
				Adj R-squared =	0.8932
Total	16301.8255	39	417.995526	Root MSE =	6.6809

eps	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
roa	.3653483	.2914778	1.25	0.219	-.2291246	.9598213
roe	-.0068959	.135573	-0.05	0.960	-.2833989	.269607
npm	.5457386	.0451001	12.10	0.000	.4537564	.6377208
gpm	-.3576563	.0467411	-7.65	0.000	-.4529854	-.2623272
cr	-617.5185	1126.423	-0.55	0.587	-2914.873	1679.836
qr	617.5007	1126.425	0.55	0.587	-1679.859	2914.861
nwc	2.92e-10	2.73e-10	1.07	0.295	-2.66e-10	8.49e-10
gwc	4.17e-11	1.36e-10	0.31	0.761	-2.36e-10	3.19e-10
_cons	8.141981	2.708809	3.01	0.005	2.617329	13.66663

From this model we can see that ROE, GPM and CR have negative effect on EPS. Remaining has positive effect on EPS.

d) The regression equation is

BPS = 52.7 - 3.77 ROA + 2.89 ROE + 0.809 NPM - 0.728 GPM - 7296 CR + 7296 QR - 0.000000 NWC - 0.000000 GWC

Source	SS	df	MS	Number of obs =	40
				F(8, 31) =	3.51
Model	82258.5994	8	10282.3249	Prob > F =	0.0054
Residual	90905.5899	31	2932.43839	R-squared =	0.4750
				Adj R-squared =	0.3396
Total	173164.189	39	4440.10742	Root MSE =	54.152

bps	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
roa	-3.773643	2.362559	-1.60	0.120	-8.592113	1.044827
roe	2.89202	1.09888	2.63	0.013	.65084	5.1332
npm	.8093065	.3655563	2.21	0.034	.0637495	1.554863
gpm	-.7276339	.3788576	-1.92	0.064	-1.500319	.0450513
cr	-7294.391	9130.163	-0.80	0.430	-25915.48	11326.7
qr	7294.385	9130.183	0.80	0.430	-11326.75	25915.52
nwc	-8.31e-10	2.22e-09	-0.37	0.710	-5.35e-09	3.69e-09
gwc	-1.66e-09	1.10e-09	-1.50	0.144	-3.90e-09	5.94e-10
_cons	52.65129	21.95611	2.40	0.023	7.871508	97.43107

From this model we can see that ROA, GPM, CR, GWC and NWC have negative effect on BPS. Remaining has positive effect on BPS.

e) The regression equation is

DYR = 5.16 + 0.499 ROA - 0.192 ROE - 0.0776 NPM + 0.0019 GPM + 1104 CR - 1103 QR - 0.000000 NWC + 0.000000 GWC

Source	SS	df	MS	Number of obs =	40
				F(8, 31) =	3.42
Model	655.968296	8	81.996037	Prob > F =	0.0063
Residual	743.559368	31	23.9857861	R-squared =	0.4687
				Adj R-squared =	0.3316
Total	1399.52766	39	35.8853247	Root MSE =	4.8975

dyr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
roa	.4992612	.2136708	2.34	0.026	.0634768	.9350456
roe	-.1917775	.0993831	-1.93	0.063	-.3944707	.0109158
npm	-.0776443	.0330611	-2.35	0.025	-.1450727	-.0102158
gpm	.0018851	.034264	0.06	0.956	-.0679969	.071767
cr	1103.805	825.7357	1.34	0.191	-580.2942	2787.904
qr	-1103.638	825.7375	-1.34	0.191	-2787.741	580.4648
nwc	-2.87e-12	2.00e-10	-0.01	0.989	-4.12e-10	4.06e-10
gwc	3.42e-10	9.97e-11	3.43	0.002	1.39e-10	5.46e-10
_cons	5.155476	1.98572	2.60	0.014	1.105574	9.205378

From this model we can see that ROE, NPM, NWC and QR have negative effect on DYR. Remaining has positive effect on DYR.

f) The regression equation is

DPR = 31.9 + 1.43 ROA - 0.751 ROE - 0.203 NPM + 0.010 GPM + 5124 CR - 5124 QR - 0.000000 NWC + 0.000000 GWC

Source	SS	df	MS	Number of obs =	40
				F(8, 31) =	4.24
Model	27801.3551	8	3475.16938	Prob > F =	0.0016
Residual	25426.6776	31	820.215405	R-squared =	0.5223
				Adj R-squared =	0.3990
Total	53228.0326	39	1364.82135	Root MSE =	28.639

dpr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
roa	1.426761	1.249488	1.14	0.262	-1.121587	3.975108
roe	-.7505189	.5811654	-1.29	0.206	-1.935814	.4347756
npm	-.2034015	.193332	-1.05	0.301	-.5977047	.1909017
gpm	.0098644	.2003667	0.05	0.961	-.3987862	.4185149
cr	5123.043	4828.676	1.06	0.297	-4725.106	14971.19
qr	-5123.303	4828.687	-1.06	0.297	-14971.47	4724.868
nwc	-1.61e-09	1.17e-09	-1.37	0.179	-4.00e-09	7.80e-10
gwc	2.41e-09	5.83e-10	4.13	0.000	1.22e-09	3.60e-09
_cons	31.93772	11.61194	2.75	0.010	8.255004	55.62043

From this model we can see that ROE, NPM, QR and NWC have negative effect on DPR. Remaining has positive effect on DPR.

Model 4:

The regression equation is

MKT = 130.32 + 0.000000167 LIQUIDITY + 1.057382 PROFITABILITY

Source	SS	df	MS	Number of obs =	40
				F(2, 37) =	9.47
Model	349539.97	2	174769.985	Prob > F =	0.0005
Residual	682504.351	37	18446.0636	R-squared =	0.3387
				Adj R-squared =	0.3029
Total	1032044.32	39	26462.6749	Root MSE =	135.82

mkt	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
liquidity	1.67e-09	1.81e-09	0.92	0.362	-2.00e-09	5.34e-09
profitabil~y	1.057382	.2594335	4.08	0.000	.5317196	1.583044
_cons	130.3165	38.47467	3.39	0.002	52.35939	208.2736

From this model we can see that overall combined effect of liquidity and profitability on marketability is positive. But with that we can easily analyze that profitability has stronger effect on marketability rather than the effect of liquidity.

Conclusion:

Based upon the regression results, we can conclude that in order to increase the marketability of the firm's share in the market and to attract the new potential investors the fertilizer firms have to focus on both aspects i.e liquidity and profitability. Both variables are showing positive relationship with the marketability. But we can also identify that the relationship between liquidity and marketability is very weak. On the other hand, relationship between profitability is stronger with the marketability. From this we can conclude that profitability is more important rather than liquidity for the fertilizer firms in Pakistan to attract more investors. The firms having good profitability condition can better safeguard the investments of the investors. If we further breakdown the scenario then we can see that out of the contents of profitability the most important contents are NPM and ROE. So being an investor, the most important component in the financial analysis are Net Profit Margin (NPM) and Return on Equity (ROE). The rationale for this is that both of the components are showing a positive and strong relationship with almost all of the components of the marketability tools.

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