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RESEARCH ARTICLE

EARNINGS PER SHARE AND MARKET VS FIRM BASED FACTORS IN BANKING SECTOR OF PAKISTAN

*Hafiz Waqas Kamran, Mariyam Yaseen, Saima Ashraf and Hifza Haroon

University of Central Punjab, Faisalabad Pakistan

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ABSTRACT

This paper refers the discussion of earning per share with the predictors in evidence of banking sector in Pakistan. In this we analysis the sample of 12 from 2007 to 2011.A conceptual model has been developed for the understanding the whole model and key findings have been explained for the future decision makers which involve the investors and decision makers. We use the different model to analysis that market based factors have no significant effect on outcome and firm based factors have a significant effect on the outcome and this result is derived by random effect model.

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INTRODUCTION

In contemporary business environment, organizations are striving to increase the profitability to sustain well in the competition. The price of outstanding share determine the value of a company. In order to understand the dealing with the operations and financial situation of the company ratios are used. The investor and stock holder focus on the market price per share of the company before making an investment. One of the important factor to determine the value of the firm is earning per share. Earnings per share are an indicator of any company's profitability and it is a portion of the company's profit allocated to each outstanding share of common stock. Earnings per share is also important criteria for investor to make investment related decisions Earning per share is the proxy of a firm's valuein present study analysis our focus is to check the impact of market vs. firm based factors on the earning per share of a firm. Price earnings ratio is the most common factor that is used in stock market. Earnings per share helps the creditors to know that if they lend the money will they be able to pay back the amount of principle and interest. Users can compare the earnings per share and price-earnings ratio of different companies reliably if earning per share is calculated by all companies in a standard way. Users need the earnings per share to be calculated on a consistent basis, so that they can compare the results to previous periods, or other similar companies.

By standardizing the calculation and presentation of EPS it makes it easier for the users of financial statements to compare the performance of different companies in the same accounting period, and the same company for different accounting periods. EPS can be calculated via two different methods: basic and fully diluted .Diluted shares is used to calculate the total number of shares used in the calculation, FASB(financial accounting standards board) prescribes using the treasury method to calculate the dilutive effect of any instruments that could result in the issuance of shares, including Stock options, Warrants, Convertible preferred stock, Convertible bonds, Share-based payment arrangements, Written put options and Contingently issuable share. EPS can be subdivided further according to the time period involved. Cash EPS is operating cash flow (not EBITDA) divided by diluted shares outstanding. Cash EPS is more important than other EPS numbers, due to "purer" number. When the earning per share of the company influence the market price of its stock the relationship is rarely inverse. Earnings per share (basic formula) can be calculated by subtracting the preferred dividends from profit and dividing the sum by average common share According to International Financial Reporting Standards, diluted earnings per share are calculated by adjusting the earnings and number of shares for the effects of dilutive options and other dilutive potential common stock.

Research questions

• What are the factors affecting the earning per share?

- Which factors closely affect the earning per share out of market based and the firm based factors?
- What kind of policy should be adopted to achieve the optimal earning per share of the company?

Literature Review

(Islam, Khan, Choudhury, and Adnan, 2014) stated the empirical evidence on how EPS affect the share price movement. They have shown many micro (investment, loanable funds) and macroeconomic (inflation, interest rate etc) factors of the economy has an effect on the share price movement. One of the important decision making factor for the investors before investing into a market is the earning per share of the firm. The pattern of the share price increase is not the same as earning per share increase pattern and the reasons that why the share price is not increasing on the trend of EPS or we can say what was the reason for shareprice not increasing with the same consistency of the earning per share increase rate. Four factors were studied in the research microeconomic factors, macroeconomic factors, director's role and company's factors. The result is not to look upon the Earning per share only while deciding to make an investment because other factors also have an impact on the firm value. Therefore other indicators should be used as well

(Blankley, Comprix, and Hong, 2013) states that if there is an increasing-decreasing changes in pension cost than it will cause the firm to miss it earning forecast. Because the pension cost is associated with the earning forecast. Apart from this the theory also provided the evidence based on the theory of Brown and Pinello (2007) that pension cost provides a mechanism managers may use to meet the earning target

(Mun, Courtenay, and Rahman, 2011)states the relation between the early disclosure of annual report and the market reaction to the earning announcement. In order to improve the market's earning assessment capabilities, the annual reports should be voluntarily disclosed prior to the earnings announcement. If there is a higher voluntary disclosure, then it helps the contributors to anticipate the earning related news and reduces the extent of reaction to announcement. A benefit to this policy implication is that it helps in keeping the investors better informed about the performance of a firm.

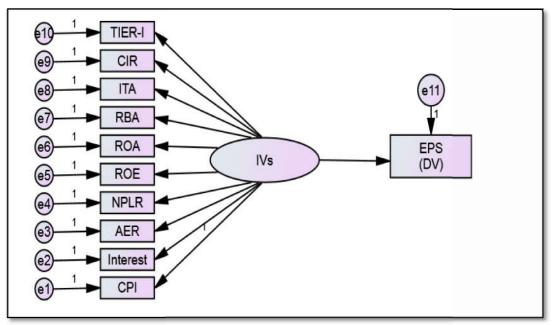
(Gao and Zhang, 2015) states that earning smoothing through accounting decision can either improve or twist the earning related information. According to the previous studies there is no relation between the smoothing and the firms value. Financial reporting and the earning management of the socially responsible firms are different from other firms because the reported earnings of smoothers deviate less showing the more value relevant earnings. The tests conducted in this study showed that firms with greater corporate social responsibility have higher earning-return relationship. Corporate social responsibility in a firm adds a new aspect of quality to the earnings thus helping out the firm valuation. The basis of this study was to understand whether those organizations that are working to implementing the CSR practices are likely to be a victim of manipulation in earning and provide more accurate financial information. The study helps the investors with a tool for identifying firms with different degrees of value relevant earnings.

(Rogers, Skinner, and Van Buskirk, 2009) states how management earnings forecasts affects the stock market volatility. Management earnings forecasts increase short-term volatility. As for the long run the market uncertainty declines as the earnings are announced. It is difficult to measure the forecasts on volatility (effect) therefore the implied volatilities are compared with the before and after the forecast releases of the volatility measures. As it shows the changes in volatility with the short run effect as well as the long run uncertainty of the forecast. In case if a forecast conveys any negative news then it increases the investors uncertainty regarding firms underlying profitability.

(Wu, Ting, Lu, Nourani, and Kweh, 2016) states the analysis the Singaporean banks have obtained highest overall profitability efficiency, while Bruneian banks had the lowest rates of banking performance. In the stage of managerial efficiency, the most inefficient banks are those of the Philippines, whereas the greatest level is related to Malaysian banks. As for the efficient management of expenditures and long term assets the Malaysian banks are more efficient In generating income in longrun. According to the search there is a greater room for improvement in efficiency domain of the banks i-e the need for better strategy formulation in order to boost the banking sector upwards

(Kasipillai and Mahenthiran, 2013) states that the Public listed companies in Malaysia use the deferred taxes to avoid a decline in earning. Two different components of deferred tax liabilities are used by these PLCs in order to manage earnings. The Malaysian standard of tax does not require any valuation allowance to adjust the deferred tax assets. Therefore the author used the components of deferred tax liability in order to manage the earning activities for the firms where the ownership is more concentrated. As for the emerging markets this study is very important because the listed companies do not possess market analysts to predict earning per share targets and the companies also have their own corporate governance issues in a concentrated issue.

(Marra, Mazzola, and Prencipe, 2011) states the impact of characteristics like board independence and existence of audit committee son the earnings management. According to this study the above mentioned two characters play an important role in the earning management and are important determinants of earning quality. Previous studies have shown the existence of relationship between board characteristics and earnings management. The study analyzes the board and audit committees' effectiveness in monitoring the earning management. (Barnhart and Giannetti, 2009) states the decomposition of aggregate earning-price ratio into its positive and negative modules and found that the negative modules have the most predictive ability. Earning-price ratios help the firm to forecast the future returns as well as earnings growth. It also concludes the two components as the representation for winning and losing firms. An indication that the negative earnings components are the driving factor behind the aggregate earning-price yield also came in forward



Theoretical framework

EPS Determinants

Variables and hypothesis

- EPS: Earning per share measures the value/Profitability
 of the firm i-e how many dollars of net income have
 been earned by each share of common stock. It is
 calculated by dividing net income by total outstanding
 shares
- ROE: Return on equity measures the efficiency of a firm at gathering profits for each unit of shareholders equity. In simple words return on equity means how much profit a company is earning on each dollar of stockholders equity. Return on equity is calculating by dividing the net income by the shareholders equity

Ho: There is no impact of return on equity on earning per share.

H1: There is a significant impact of return on equity on earning per share.

 ROA: Return on assets gives an idea to the firm that how efficient management is at using its assets to generate earnings. Return on assets tell what a company is capable of doing with its assets. Return on assets is calculated by dividing the net income by total assets

Ho: There is no impact of return on assets on earning per share

H2: There is a significant impact of return on assets on earning per share.

 A/E ratio: The financial leverage ratio is a comparison of asset hold to the equity of an organization. If the financial leverage ratio is high then it means the company is using the liabilities and debts to finance its assets. A high financial leverage ratio is more risky than a company with a lower leverage ratio. Asset to Equity ratio measure the company leverage and long term solvency

Ho: There is no impact of assets to equity ratio on earning per share.

H3: There is a significant impact of assets to equity ratio on earning per share.

• ITA: the ratio of investments to the total assets shows the amount invested in any business or a firm

Ho: There is no impact of investment to total assets on earning per share.

H4: There is a significant impact of investment to total assets on earning per share

 Cost to income ratio: determines the company costs in relation to its income particularly important in valuing banks. Lower cost to income ratio tells the bank is more profitable. Cost to income ratio is calculated by dividing the operating cost by operating income

Ho: There is no impact of cost to income ratio on earning per share.

H5: There is a significant impact of cost to income ratio on earning per share.

 Funding cost: refers to the price paid for obtaining equity capital. Funding cost matter for the financial stability of a firm. A rise in funding cost is likely to reduce the bank profitability as the lower cost will generate better returns

Ho: There is no impact of funding cost on earning per share. **H6:** There is a significant impact of funding cost on earning per share.

share.

 Risk based assets: It is an asset which has no certain return. Risk based asset is the amount of capital that is required within banks and other institutions, based on a percentage of the assets, weighted by risk. It provides an easier approach to compare banks in determining the capital requirement for a financial institution

Ho: There is no impact of risk based assets on earning per share

H7: There is a significant impact of risk based assets on earning per share.

• Tier 1: describes the capital adequacy of a bank includes equity capital and disclosed reserves

Ho: There is no impact of tier 1 on earning per share.

H8: There is a significant impact of tier 1 on earning per share.

 Reserve: Funds or material set aside to save for the future use.

Ho: There is no impact of reserve on earning per share.

H9: There is a significant impact of reserve on earning per share.

• Inflation: means higher consumer prices. This often slows sales and reduces profits. Higher prices will also often lead to higher interest rates **Ho:** There is no impact of inflation on earning per share. **H10:** There is a significant impact of inflationon earning per

 Non-performingloan: loan on which the borrower is not making interest payments or repaying any principal. The local regulations of a country define the criterion to classify the loan as non performing.

Ho: There is no impact of nonperforming loan on earning per share.

H11: There is a significant impact of nonperforming loan on earning per share

Ho: There is no impact of interest rate on earning per share.

H12: There is a significant impact of interest rate on earning per share

Key Findings

The mean of eps, assets to equity ratio, non performing loan, reserve, risk based assets and deposit interest rate are 4.88, 1887.5, 0.0303, 97414, 2.83 and 7.44 respectively. Standard deviation of eps, assets to equity ratio, non performing loan, reserve, risk based assets and deposit interest rate are 8.67, 932.62, 0.044, 1.21, 2.59 and 1.23 respectively. The minimum and maximum values of the variables are -19, 187.09, 0,384 and 8.7.

Table 1. Descriptive Statistics

Variable	Obs	Mean	Std.dev	Min	Max
EPS	60	4.885833	8.671727	-19	24.5
AERATIO	60	1887.545	932.6209	187.09	3708.36
NPL	60	0.030333	0.044186	0	0.16
RESERVE	60	9741406	1.21E+07	384	4.22E+07
RBA	60	2.83E+08	2.59E+08	1.46E+07	9.86E+08
TIER1	60	11.57083	13.4248	3.3	60.55
FC	60	6.55E+16	2.31E+17	0.01	1.28E+18
C2I	60	58.09483	25.98948	0	121.61
ROE	60	0.088667	0.09943	-0.02	0.3
ITA	60	0.328333	0.389246	0.12	3.21
ROA	60	0.001667	0.024298	-0.07	0.04
CPI	60	13.468	4.122833	7.6	20.29
IR	60	7.44	1.232773	5.3	8.7

Table 2. Correlation Matrix

	EPS	AERATION	NPL	RESERVE	RBA	TIER1	FC	C2I	ROE	ITA	ROA	CPI	IR
EPS	1												
AERATIO	0.1493	1											
	0.255												
NPL	0.3157	0.3043	1										
	0.014**	0.0181**											
RESERVE	0.7257	0.1222	0.1861	1									
	0***	0.3523	0.1544										
RBA	0.5841	0.4968	0.3428	0.786	1								
	0***	0.0001***	0.007***	0***									
TIER1	-0.308	-0.7169	-0.307	-0.274	-0.445	1							
	0.0166**	0***	0.017**	0.034**	4E-04								
FC	0.0061	0.1709	-0.198	0.427	0.521	-0.14	1						
	0.9633	0.1917	0.1298	7E-04	0***	0.2847							
C2I	-0.587	-0.1487	-0.225	-0.483	-0.493	0.2524	-0.173	1					
	0***	0.2569	0.0845*	1E-04	1E-04	0.0517**	0.1869						
ROE	0.2902	0.6334	0.3172	0.166	0.552	-0.456	0.3243	-0.521	1				
	0.0245**	0***	0.013**	0.206	0***	0.003***	0.0115**	0***					
ITA	0.3462	0.205	0.1774	0.165	0.281	-0.111	0.082	-0.23	0.292	1			
	0.0067***	0.1161	0.1751	0.208	0.03**	0.4005	0.5335	0.0775*	0.024**				
ROA	0.7165	0.3443	0.2931	0.579	0.56	-0.536	0.2008	-0.685	0.414	0.203	1		
	0***	0.0071***	0.023**	0***	0***	0***	0.124	0***	0.001***	0.12			
CPI	-0.165	-0.0581	0.0408	0.017	-0.01	0.0579	-0.008	0.0565	-0.107	-0.23	-0.128	1	
	0.2073	0.6595	0.7569	0.898	0.939	0.6603	0.9494	0.6679	0.414	0.072*	0.331		
IR	-0.137	0.0145	0.048	0.064	0.148	0.005	0.0689	0.0426	-0.066	-0.14	-0.088	0.328	1
	0.297	0.9121	0.7158	0.627	0.261	0.9696	0.6012	0.7463	0.615	0.3**	0.505	0.01**	

The table shows the level of association between the selected dependent and independent variables. There is the weak but positive relation between earning per share and assets to equity ratio it has not impact on EPS. NPL, ROE, ROA, ITA, C2I, reserve, Tier 1 and RBA have major impact on EPS.

Table 3. VIF

VARIABLE	VIF	1/VIF
A-E RATIO	7.61	0.131421
NPL	5.43	0.18425
RESERVE	3.73	0.268047
RBA	3.66	0.27304
TIER 1	3.08	0.324626
FC	2.96	0.338336
C2I	2.7	0.37001
ROE	1.95	0.511806
ITA	1.58	0.632939
ROA	1.26	0.794211
CPI	1.22	0.820046
IR	1.2	0.832363
MEAN VIF	3.03	

The value of variance inflation factor is not more than 05 in the overall mean value so we have concluded that the level of correlation problem is low/reasonable and we have included all the variables for the further panel data analysis.

Regression outcomes

Table 4. Regression

Regression				
number of observation	60			
F(12, 47)	19.23			
Prob>F	0.000***			
R-squared	0.8308			
Adj R-squared	0.7876			
root MSE	3.9967			
EPS	Coefficients	Standard Error	t Stat	P-value
A-E RATIO	-0.0015034	0.0010776	-1.4	0.17
NPL	-9.503452	14.80149	-0.64	0.524
RESERVE	4.71E-07	1.00E-07	4.71	0***
RBA	1.86E-09	5.55E-09	0.34	0.739
TIER 1	0.0125519	0.0637176	0.2	0.845
FC	-1.63E-17	3.15E-18	-5.17	0***
C2I	0.0220557	0.0344193	0.64	0.525
ROE	21.29676	10.01482	2.13	0.039**
ITA	3.262431	1.476151	2.21	0.032**
ROA	132.8628	37.58465	3.54	0.001***
CPI	-0.1298804	0.1383317	-0.94	0.353
IR	-0.4690518	0.4736123	-0.99	0.327
Constant	4.593933	4.847345	0.95	0.348

Table 5. FEM

EPS	Coefficients	Standard Error	t Stat	P-value
A-E ratio	-0.0033848	0.0029894	-1.13	0.265
NPL	-19.68399	21.7363	-0.91	0.371
RESERVE	-1.97E+01	6.43E-07	-0.81	0.421
RBA	1.64E-08	2.40E-08	0.69	0.497
Tier 1	-0.1378909	0.1764308	-0.78	0.44
fc	-1.16E-18	8.13E-18	-0.14	0.887
c2i	0.0254625	0.0472567	0.54	0.593
ROE	15.17194	15.28995	0.99	0.328
ITA	2.57129	1.781895	1.44	0.158
ROA	155.9916	42.76216	1.44	0.001***
CPI	-0.0640797	0.1596459	-0.4	0.691
IR	-0.5388711	0.6372937	-0.85	0.403
constant	14.93249	8.217276	1.82	0.078

^{*, **, ***} explains that value is significant at 10, 05 and 01% respectively

Table 6. REM

EPS	Coefficients	Standard Error	Z	P-value
A-E RATIO	-0.0015034	0.0010776	-1.4	0.163
NPL	-9.503452	14.80149	-0.64	0.521
RESERVE	4.71E-07	1.00E-07	4.71	0***
RBA	1.86E-09	5.55E-09	0.34	0.737
TIER 1	0.0125519	0.0637176	0.2	0.844
FC	-1.63E-17	3.15E-18	-5.17	0***
C2I	0.0220557	0.0344193	0.64	0.522
ROE	21.29676	10.01482	2.13	0.033**
ITA	3.262431	1.476151	2.21	0.027**
ROA	132.8628	37.58465	3.54	0***
CPI	-0.1298804	0.1383317	-0.94	0.348
IR	-0.4690518	0.4736123	-0.99	0.322
Constant	4.593933	4.847345	0.95	0.343

^{*, **, ***} explains is that value is significant at 10, 05 and 01% respectively.

In this model we see that the value of the F test is less than 0.05 which shows this model is good fit. The value of R-square which shows the collective variation in the depended variable (earning per share) due to the independent variables (assets to equity ratio, ROE, ROA, investment to total assets, on performing loan, risked based assets, funding cost, cost to income ratio, CPI, Interest rate Tier 1) is 0.8308. This means that the collective affect of all independent variable on the depended variable is 83 %. Value of adjusted R square is 0.7876 which is primarily the adjusted value of R-Squared as per the sample size. In our present analysis this value is more reliable. Reserve, funding cost and return on assets is highly highly significant impact on Earnings per share of the various financial institutions and return on equity and investment to total assets is highly significant because its lie on 5%.

Table 7. Hausman effect

	Fixed		Random	Difference
A-E RATIO	-0.003385		-0.001503	-0.00188
NPL	-19.68399		-9.503452	-10.1805
RESERVE	-5.24E-07		4.71E-07	-9.94E-07
RBA	1.64E-08		1.86E-09	1.46E-08
TIER 1	-0.137891		0.0125519	-0.15044
FC	-1.16E-18		-1.63E-17	1.51E-17
C2I	0.025463		0.0220557	0.003407
ROE	15.17194		21.29676	-6.12482
ITA	2.57129		3.262431	-0.69114
ROA	155.9916		132.8628	23.1288
CPI	-0.06408		-0.12988	0.065801
IR	-0.538871		-0.469052	-0.06982
	Prob>chi2 =	0.9782		

In order to compare the result of random effect and fixed effect we have to go for the Hausman test. Here we develop null and alternate hypothesis

Ho: The difference in coefficient is not systematic

H1: Difference in co efficient is systematic.

If the results are less than 0.05 that shows a significant impact or effect than we go fixed effects. If the results are more than 0.05 that shows insignificant effect than we use random effects and we will further go to the Lagrange Multiplier

Table 8. Lagrange multiplier

chibar2(01) = 0	0.00
Prob > chibar2 =	1.0000

Table above describe the various outcomes of panel data analysis for dependent variable that is earning per share of banks. The result in the above table demonstrates the outcomes for Fixed Effect Model FEM, Random Effect Model REM, Hausman Test and Langrangian Multiplier. After to analysis the FEM and REM then we go for hausman test for conclude that either our model is fix effect model or random effect model. So, our model is referring to random effect because it is more than 0.05. And further we analysis that in Lagrange multiplier either we choose random effect model or pooled regress model. So, we choose random effect model because it is 1.0000 that is lay in 0.05.

Conclusion

This study discusses the earning per share and market versus firm based factors. Both the firm internal factors as well as the country specific factor have an effect on the earning per share. Our Lagrange multiplier falls within 0.05 that is why we accept the Random effect model rather than pooled regression model. And we also conclude that firm based factors like reserve, funding cost and return on assets, return on equity, and investment to total assets have significant impact on earnings per share in random effect model and we accept the alternative hypothesis H1. And in case of market based factors we accept the null hypothesis because CPI, interest rates have no significant impact on earnings per share that is H0.now our investigation on the EPS and market vs firm based factors which shows that form based have major impact on EPS. Now the banks should focus on firm based factors which are funding cost, return on asset, return on equity, reserve and investment to total asset. The most important factor for the banks that how to manage its asset it's a major source for earning profit and also effect on EPS.As banks have load of funding cost, if it should be less than firm can get batter return. Banks should have contain an amount which will use in uncertainty conditions as borrower sometime pay their loan and defaulting loan has affect badly on the performance of banks, so banks should improve reserve factor for batter return. Investment is another major source for earning profit, banks should invest on financial institutes. Banking firms need to improve their management process for overall efferent work.

So, the financial decision makers must consider firm based factors because it plays an important role in the firm earning valuation.

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