Research

ECONOMIC VALUE ADDITION IMPLICATIONS: A STUDY OF THE PAKISTANI BANKING INDUSTRY

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Abstract

Human beings are mostly concerned about value addition in almost every aspect of life. Does this reality prove accurate in secondary markets investment? This empirical study deals with the Economic Value Addition of major seventeen banks of Pakistan including national and public limited banks. In this research, ROE, ROCE, and OCF are taken as parameters of profitability while marketability parameters are PE and MB ratio. Two sample t-tests show that a new banks value creation is more in comparison with old banks in the context of EVA. Private and Government bank are not significantly different in EVA. Fixed effect modeling and Cluster estimation infer that Profitability parameters positively impact EVA. Marketability parameter MB positively impacts EVA while PE ratio is statistically insignificant. Correlation analysis shows that investors of the banking sector in Pakistan do not pay special attention to EVA in their investment decisions.

Keywords: EVA, Profitability, Marketability, Two sample t-test, banks

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Introduction

Economic value added (EVA) has a relationship with performance and marketability, the very relationship is nowadays the object of particular attention of investors, managers, institutes, and academia. For corporations, this issue gets more significance especially in their investment decisions to achieve the desired long-run objectives. Literature reveals that investors in advanced countries pay special attention to value addition in their investment for future and long run financial gains (Jensen, 2002) which also proves as a foundation stone to broader financial infrastructure (Taufik et al., 2008). In the recent era, Economic Value Added (EVA) has been empirically tested and found a better indicator for shareholders' wealth maximization rather than relying upon accounting or conventional measures (Teker, Teker, and Sonmez, 2011). Heffernan & Fu (2010) also endorsed empirically that EVA and Net Interest Margin (NIM) were better parameters for value creation the rather then traditional ones. This study explores whether this concept has similar weight in developing countries like Pakistan. Do investors in Pakistan pay special attention to value addition mechanism or ignore it? This study is unique in the context of the banking sector of Pakistan although literature reveals handful scholarly work on manufacturing concern yet banking sector is not adequately addressed in the context of EVA.

Maximization of shareholders' wealth is the heart of finance theories; however, it depends on lots of other factors like institutional investment approach, diverse investor's attitude toward investment, globalization, I.T evolution and people's saving habits in any economic setup. Besides value creation or shareholders' wealth maximization maxim, corporate thinking of hire-ups in management is a key factor towards the future destination of corporations (Young & O'Byrne, 2001). Early thinking of dividend has been replaced by the modern approach of value maximization. The notion kept on progressing and now it may rightly be called the golden rule for the advancement of any company in the long-run. Cash dividend disbursements approach not only having flaws but its room in the financial press is being shrinking also (lee, 2000). Neither the stock dividend nor cash dividend is now considered as a promising factor. Miller & Modigliani (1961) approach of dividend irrelevancy has been empirically proved. A company's long run survival and goal are tied up with its value addition concept and mechanism (Phani and Bhattacharyya, 2000). Professional

management and corporate mindsets have changed the basic objective of corporates' philosophy of profitability into value creation perspectives. Historical philosophy of higher level about accounting income generation has been shifted towards shareholders wealth maximization (Parasuraman, 2000). The value creation concept is achieved by getting performance measurement keeping in view the long run perspective.

In the past, management or managerial performance was evaluated by the traditional accounting methods which were more prone to window dressing, had no assumption of implicit cost and had less immunity to mathematical manipulation. In recent times, management is judged by value addition concepts along with better performance in the traditional methods. The world constantly evolves in every theory or phenomena; the same reality has been witnessed in finance. Nowadays, stakeholders give more weight to value creation or wealth maximization because it not only considers financial factors into consideration but also takes the long run perspectives of non-financial issues. In Europe or developed countries, value creation concept is quite obvious and more appealing for shareholders (Kaplan & Atkinson, 1989). Microsoft and many other famous I.T multinational companies are brilliant examples in this regards. Different companies set their own rules to check value creation or performance management. For instance, McDonald judges management performance on the factors like quality, sales volume, service cleanliness, personal training and cost control (Kaplan & Atkinson, 1989) but these may vary from corporation to corporation and economy to economy. However, the truth is that; value creation is the net gain by subtracting all the implicit and explicit costs.

Conventional or the traditional school of thought considers some accounting measures to predict corporations' future. These measures include Earnings per Share (EPS), Return on Assets (ROA), Return on Equity (ROE) and Net Profit (NP) figures. On the other hand, modern or value creation school of thought gives more priority to Shareholder Value Addition (SVA), Cash Flows Return on Investment (CFROI), Free Cash Flows Return on Investment (FFROI), Economic Profit (EP) and Cash Value Added (CVA) and these proxies of value addition are called EVA methods. EVA concept mostly captures residual income perspectives and is gaining popularity with the passage of time in this era. Before 1970, the traditional approach was

dominant and limited focus was given to the modern approach (Makelainen, 1998). Now, consultants and institutes give more weight to EVA and their recommendations normally based on this parameter because of the long-run relationship of EVA and corporation future (Wallace, 2003).There is a major distinction between traditional and modern approach; the latter captures cost of capital to get clearer and lucid picture of performance. Modern approach has also some advantages i.e. it is based on long-run phenomena, it takes opportunity cost into consideration, it adjusts operating income with necessary implicit costs and it never neglects current market interest and inputs it indirectly into the calculation.

EVA mechanism has little bit more complexity and difficulty in implementation in developing countries. It gets further difficulty in financial sector especially in banking sector irrespective of the prime objective of shareholders wealth maximization. Though ample amount of literature exists on value maximization in Non-Financial sector and in developed countries, yet EVA research is rare especially in the context of the banking sector in Pakistan.

Literature Review

Economic profit, an EVA approach, has a relationship with the firm performance and its future. This relationship in the context of listed companies at Turkish Stock Market was measured by Erdogan et al. (2000). They explored the nature of the nexus between the firm performance and economic profit. Empirical evidence of their work was the existence of painting relationship. In recent studies, EVA-Profitability positive nexus reveled in manufacturing (Yaqub. S.M et al., 2015) while (Hassanet al., 2014) in the banking sector.

Varma (2000) empirically checked the relationship of firm profitability and performance on EVA basis. He found Indian banks capable enough to create shareholders value addition from 1996-97 to 2000-01. He also found similar results of direct correlation between firm performance and Market Value Addition (MVA) but, a year later, Thampy and Beheli (2001) found that EVA was not significant in 12 Indian commercial banks including private and public sector banks. They found that non-significance of EVA was due to banks' inability to be overcapitalized and poor returns in the market which hindered investors' confidence. Verma (2002) again found that equity of banking sector and attractiveness of investment in the banking sector would

be at stake without value creation. Brigham and Ehrhardt (2002) found that EVA was a better method for managerial compensation programs to enlighten an organization's future. They further explored the association between MVA and EVA; they explored an anomaly which revealed negative EVA gave room to positive MVA. Ultimately, this procedure improves investor confidence and hope for future profitability.

Many scholars have worked on the banking sector and found the relationship of Value Addition Indicators with firm performance. Heffernan (2008) explored EVA and performance management in china and found EVA and (NIM) were better indicators of performance in comparison to traditional accounting measures. Taufik et al. (2008) found the nexus of traditional and modern measures of performance indicators in Indonesia. They studied the banks listed on Jakarta Stock Exchange from 2002 to 2005. They explored that the effect of EVA was more than conventional or traditional measures i.e ROA or ROE and it also proved as a better parameter in stock returns. Heffernan & Fu (2010) also empirically endorsed that EVA and NIM are better parameters rather then traditional. Value Addition concept is the focal point of hire-ups and EVA should be a prominent factor in policies formulation (Teker, Teker, and Sonmez, 2011).

The relationship is the key and a basic step in advance research technique as it provides further grounds to dig deep the direction, intensity, and causality. Sivakumaran&Saravanakumar (2011) empirically checked the relationship among EVA and EPS and ROA through Pearson's Coefficient of Correlation, Their research sample included 39 Indian banks and time period of study was 2005-2011. They found an insignificant relationship between EVA and share prices. Costa (2012) empirically studied the topic in the context of Brazilian Banks. His findings revealed that EVA significantly explained the stock prices or stock returns. He used interest margin and assets liquidity, assets quality along with Basel ratio.

The literature review provides sound justification to use EVA as modern performance measure rather than accounting measures. Insofar as impact of accounting measures on stock prices or stock return has been researched many times but there is a limited amount of empirical work on value creation indictor in Pakistan. This study uses all significant measures used in previous literature. The motive of the study is to validate accounting-based measures in

explaining the wealth maximization in the context of EVA. Nevertheless, handy empirical pieces of evidence have not been found from the emerging banking industry through which it can be concluded that economic value added is a superior measure of the performance. Barely touched EVA concept in the banking sector is the foremost justification of this study.

Objectives of the study

To determine the impact of Bank Age and Bank Holding on EVA in Pakistan

To determine the relationship of selected profitability and marketability measures on EVA in Pakistan

Methodology

Dependent and independent Variabled

In this research, EVA is dependent while five explanatory variables have been selected i.e. ROE, ROCE, OCF, PE ratio, MB ratio. Four are traditional measures of performance ROE, ROCE, PE ratio, MB ratio while EVA is the dependent variable of the study. Annualized data of explanatory variables is produced by taking Values from audited financial statements of Banks under consideration and from the official website of State Bank of Pakistan (SBP).

Computational Procedure of EVA: Stern Stewart (1960), discoverer of EVA, computed the variable by deducting cost (WACC) from net operating profit. The mathematical style to calculate is given in 1.1

1.1 EVA = NOPAT – (IC× WACC) where;

IC= equity book value,

WACC= weighted cost of capital of capital

EVA calculations are a little bit different in banking case; the above-mentioned approach (1.1) is called the equity approach and need some amendments for the banking sector. We adopted Parasuraman (1996) and Baheti (2001) approach for EVA because banks' major part in financial statements the based on liabilities instead of assets. But, in general, there are only ten adjustments necessary to

yield the appropriate values of EVA. Out of these, two are the most common adjustments. These adjustments are classified into provisions which are further split into loans losses and tax losses.

To calculate Net Profit after Tax (NPT), some adjustments are needed in taxes, loan losses and net charge-off. We can write these adjustments in equation form as 1.2

NPT = EBIT*(1-t) + R&D Exp + TE + (LP – NC) + (BP – CT) + (GR – NC)

Where,

TE = training expense LP=Loan Loss Provisions   NC=   Net Charge off BP= Book Tax Provisions CT= Cash Operating Taxes GR= General Risk Provision

Cost of equity

Capital Asset Pricing Model (CAPM*) method has been applied to calculate cost of equity in this article

1.3 $C_e = R_f + â(R_m – R_{fr})$

(C_e) = cost of equity

(R_{fr}) = *SBP t-bill rate*

$(â)$ = beta

$$\beta = \frac{Cov(R_I . R_M)}{\sigma^2 R_M}$$

(R_i)Stock returns are daily averages of specific banks' stocks. KSE opening and closing values of specific stocks were changed into average prices by taking account of dividend amount disbursement in that period. The below-given formula is used for average prices and specific stocks' returns respectively.

$$R_i = \left(\frac{(P_{It} - P_{I\,t-1}) + DIV_t}{P_{I\,t-1}} \right)$$

*Originally developed by William Sharp (1972)

(R_m) or market return is also average returns of KSE100 index. The selection of KSE 100 index is because of market leader index and widely empirically tested-one for stock market performance in Pakistan.

$$R_m = \left(\frac{Index_t - Index_{t-1}}{Index_{t-1}} \right)$$

(Rm – Rf) is market risk premium of KSE 100 index. It is basically return of market over risk free return of one year T-bills.

[1]Hypothesis of the study

(H 1) Ho: difference of average values of EVA in old banks and new banks
(H 2) Ho: difference of average values of EVA in private banks and Government banks

(H 3) Ho: impact of profitability parameters on EVA in banking sector

(H 4) Ho: impact of marketability parameters on EVA in banking sector

(H 5) Ho: impact of profitability and marketability parameters on EVA in banking sector

Figure 01:

Theoretical Framework
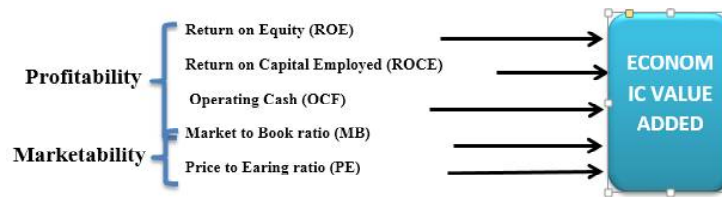
[**]H1 & H2 are tested with two independent sample t-test by SPSS while H3, H4 and H5 are tested by Cluster panel estimation technique. Individual hypothesis are tested by t- test while model fitness hypothesis is verified by chi-Square method in Stata.

In this theoretical framework, we tested the hypothesis of profitability and market ratios and their effect on EVA. These parameters may be true reflectors of marketability of shares along with profitability of entities. This study will examine the type of information and how these are related to EVA in the banking sector. To achieve this task, panel fixed and random effect modeling will be tested because these methods provide the justification for observing the changes in explanatory variables to outcome variable.

The second task of this empirical wok is to identify, how banking age and banking holding are related to EVA concept. For this task, two independent sample t-test are applied by using dummy mechanism for bank holding and bank age.

Table 01:

Estimation of Two Sample T- Tests

	Bank Type	N	Mean	Std.	SE	stat.	P. values t
EVA	Old**	40	-8183.2	14255.4	2253.9	-2.05	0.04
	New	96	-4632.8	6026.2	615.1	-1.72	0.04
EVA	Private	111	-5179.8	7900.8	749.9	1.31	0.19
	Government***	25	-7884.8	14017.2	2803.4	0.93	0.36

Equation 01: $EVA_t = \alpha + \beta_1(ROCE_{it}) + \beta_2(ROE_{it})\ \beta_3(PE_{it}) + \beta_4(MB_{it}) + \beta_5(OCF_{it}) + \mu_{it}$

Independent two samples t-test compares two groups of the average value. It also compares the superiority of one group on other. All seventeen banks are divided into two groups to check EVA differences. The first group deals with banks ages while the other groups deal with bank holding. Both groups were tested with EVA differences in the banking sector.

The first group is divided into old banks and new banks. Results of independent two sample t-test reveal both groups are statistically different and significant. New banks create more EVA in comparison to old banks. Average value of new bank in the context of EVA is -4632.84 million while old banks Average EVA are -8183.24. Variation and standard errors of new banks are lower in contrast to old banks. Other assumptions of Independent two samples t-test like

randomness and equality of variance are also verified. New banks decrease in EVA is lessor than the old bank so it may be claimed that new banks are better in the context of EVA and they create more value for investors.

The second group is divided into government banks and private banks. Results of independent two sample t-test reveal both groups are not statistically different and significant. The decrease of EVA in Private Banks is lessor in contrast to Government Banks. Average value of private banks in the context of EVA is -5179.83 million while government banks' average EVA is —7884.86. Volatility and standard errors of private banks are lower in contrast to government banks. Other assumptions of Independent two samples t-test like randomness and equality of variance are also verified. We cannot generalize findings of the group because of non-significance or failure to reject the null hypothesis. It may be written on empirical grounds that private and government banks are not significantly different in the creation of EVA

The prime objective of the study is to find the nexus of selected variables which impact EVA in the banking sector. Fixed or random effect modeling gauges impact of variables change over time (Baltagi, 2008). So this modeling is applied on data of seventeen banks[#]. On the first stage, Hausman test provides justification that the error term of the model and intercept are correlated. This correlation compels us to select random effect model. In the second stage, random effects have been quantified by BPLM test which gives the conclusion that all banks are homogenous Herwartz,2006).We used cluster (entity) option in Stata because of heteroscedasticity and autocorrelation in data at a time which is also endorsed by (Baum, 2006).

**H1 & H2 are tested with two independent sample t-test by SPSS while H3, H4 and H5 are tested by Cluster panel estimation technique. Individual hypothesis are tested by t- test while model fitness hypothesis is verified by chi-Square method in Stata.

***In this analysis , old bank are those which are incorporated before 1995 other are new banks

Table 02:

Estimation of Coefficient of Model

	Cluster estimation		Fixed estimation		Random estimation	
	Coeff.	S.E	Coeff.	S.E	Coeff.	S.E
OCF	1.02**	0.22	0.8**	0.2	0.11**	0.02
ROCE	131040.6**	26849.4	172063.8**	35197	131041.1**	26849.4
ROE	1765.8*	910.1	2182.8*	1001.6	1765.8*	910.1
PE	-0.22	11.0	2.62	11.1	-0.22	11.1
MB	1276.1**	561.6	1378.2**	618.1	1276.1**	561.7
R-SQ	0.35		0.23		0.35	
Model fit	45.3**		7.9**		45.3**	

** 1% level of significance while * used for 05% level of significance

The value of models-stast shows all the models are statistically highly significant at the conventional level of significance i.e. 05%. It means explanatory variables jointly impact outcome variable in models. Cluster estimation model is our final model based on assumptions testing which is essential to present the real picture of estimation. Profitability parameters i.e. ROCE, OCF, and ROE positively impact EVA. Marketability parameter like MB impacts positively while PE ratio is insignificant. All explanatory variables explain 35% variation in EVA while 65% variation is because of other factors which are not included in the model. It is evident, the explanatory power of the model is a crucial factor in time series data but not having much weight in panel estimation (Baltagi, 2008). ROCE is a major factor that impacts EVA in the banking sector. We can say that profitability measure impacts EVA more than Marketability measures do. We conclude this on the basis of coefficients.

[#]Sample and Coding of entities in Stata as given below 1= Allied Bank of Pakistan Ltd., 2= Askari Bank Ltd., 3= Bank Al Falah Ltd., 4= Faysal Bank Ltd., 5=Habib Metropolitan Bank, 6=KASB Bank Ltd., 7=MCB Bank Ltd., 8=National Bank of Pakistan, 9=NIB Bank, 10=Samba Bank Ltd., 11= SilkBank Ltd., 12=Soneri Bank td.,13=The Bank of Khyber, 14=The Bank of Punjab, 15=United Bank Ltd.,16=Bank Al Habib Ltd., 17= Standard Chartered Bank Ltd.

Table 03:

Diagnostic test of Panel Estimation

Essential tests	Chi-SQ	P.Value
Hausman test	4.38	0.35
B& P Test for random effect	0.57	0.44
Wald test of Heteroskedasticity	15659	0.000
Panel serial correlation test	6.32	0.023

Hausman test fundamentally measures appropriateness between fixed effect model and random effect model. The gist of the test is to measure the systemic behavior of error term of the equation and its intercept. Failure in rejection of null hypothesis provides sound justification to pick random effect model. But final selection of random effect model comes true on the null hypothesis of BP LM test of random effects. BP LM test measures random effect existence in the equation. The null hypothesis of this test tells about the non-existence of random effect in the equation. A probability value (P.val) of this test accounts for type one errors chances and the exact level of hypothesis rejection. Acceptance of null hypothesis of BP LM test shows the non-existence of random effects in the model under consideration. We can say this test checks the alternative model of pool estimation rather than random effect model. BPLM test sheds light that pool estimation is better and it is final model. This test is also accounted for probability and homogeneity. So, pool estimation is plausible deniability based on Hausam and BP LM test.

Efficiency and accuracy have intimate relationship with empirical results. It is achieved by testing the assumption of any empirical modeling. To reach on Best Linear Unbiased Estimation (BLUE) nature of estimation, assumption rule is crucial and a major milestone. Wald test of Heteroskedasticity quantifies errors term equal variance across observation by the group-wise distribution of the sample. Rejection of its null hypothesis employs a decision of no homoscedasticity in errors term. Violation of homoscedasticity in error may result in higher standard errors estimation which ultimately raises some objections on hypothesis testing. Stata caters this problem by estimating equation with the robust command which rectifies and reduces standard errors of the equation.

Serial correlation problem is another crucial assumption of Mark Gauss theorem. Its violation also impacts BLUE nature of

estimation although consistency of estimation is not challenged. Serial correlation is apparently a problem of time series data but, in the long panel, it has also many implications. Rejection of null hypothesis of serial correlation test gives a hint of serial correlation in data. To cope with the problem of hetereorskedastity and autocorrelation, Cluster option in Stata provides GLS estimation in presence of auto and hetero issue simultaneously. So, this is the final model based on these reasons.

Conclusion

Maximization of shareholders' wealth and value addition are strongly correlated in developed countries. Is this truth valid in Pakistan and which major significant proxies are a crux of this study? This empirical study deals with value addition concept (EVA) of seventeen major national and public limited banks of Pakistan. This concept is empirically tested with the help of fixed and random effect modeling along with two independent sample t-test on data from 2006-2013. EVA concept is not unique in advanced countries but, in developing countries, a limited number of studies have been conducted on this topic. Especially in Pakistan, a limited amount of work on EVA has been conducted so far. We could not find any study which included profitability and marketability parameters along with Banks Age and Banks holding groups analysis. Computational Procedure of EVA has been applied by Stern Stewart (1997) while the cost of equity mechanism relies on CAPM model. In this research, five explanatory variables are selected i.e., ROE, ROCE, OCF, PE ratio, MB ratio. Three are conventional or traditional measures of performance ROE, ROCE, and OCF while two are marketability parameters PE ratio, MB ratio, and EVA is the dependent variable of the study. All seventeen banks are divided into two groups to check EVA differences with the help of two independent sample t-tests. First group deal with banks ages (old or new) while the other groups deal with bank holding (government or public Ltd).New banks' value creation is more in comparison to the old bank. Private and Government bank are not significantly different in the context of EVA. In the next stage, Cluster estimation model is our final model based on assumption testing which is essential to present the real picture of estimation. Profitability parameters i.e. ROCE, OCF and ROE positively impact EVA. Marketability parameter like MB impacts EVA positively while PE ratio is insignificant. Policy recommendation of the study is to enhance EVA bay taking low rate deposit and appropriate monetary policy to flourish banking sector; banks should focus on their liabilities and reduce their implicit and explicit costs for future long run results.

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   A BETTER PERFORMANCE MEASURE THAN ACCOUNTING
   MEASURES? EVIDENCE FROM PAKISTANI LISTED
   COMPANIES.

Appendix

Figure 02: EVA Behavior in banking sector of Pakistan

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