



ORIGINAL ARTICLE

Foreign Exchange Risk Management and the Derivatives Impact on the Firm Value within the Non Financial Institutions in Pakistan: An Empirical Investigation from the Kse-100 Index

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ABSTRACT

The current study investigates the hypothesis whether firms using derivatives are valued higher or not. In doing so a sample of 50 non financial Pakistani firms listed in the KSE-100 index for the period of 2009-2014 is considered. Firm value is measured and the impact of derivatives usage is tested on the value of the firm. In order to assess Panel Data Regression Model, with the assistance of E Views software, present empirical investigation passed through the following assumptions test first: Multicollinearity Test, Autocorrelation Test, Heteroskedasticity Test. Hausman specification tests and the fixed effect are applied in order to analyze whether the use of the derivatives increases, decreases or does not have any impact on the value of the firm. The current study finds significant impact of the derivatives on the value of the firm. And the results showed us that the use of the derivatives like IRD and FCD has the positive impacts on the value of the firm.

Key Words: Foreign Exchange, Derivatives, Firm Value, Hedging

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INTRODUCTION

Foreign exchange is defined as the means and methods by which the currency of one country is exchanged with the currency of others. Due to the financial reforms and the globalization most of the investors invests globally and also across the world as a result of which international trade and business growth opportunities takes place. In the current period of global competition every country is in competition, so due to this different policies are made and implemented for investors. The aim of which is to facilitate investors to invests in the portfolios to get returns which at the end results in the financial competitiveness and also growth in the economy of that particular country.

The result of those implications are the loosening of the trade barriers and also cash flows, to encourage the role of the information technology and the MFN status, by the countries intends their investors and people to invest globally. Now the issue for the firm is that to identify the risk which arises due to the foreign exchange exposure that's why does the risk management as a result of which they stabilize their profits. In corporate sector for different kinds of entrepreneurial

risks different hedging techniques are used and it becomes an important activity of many companies from last couple of decades.

By large multinational corporations (MNCs) and also by small and medium enterprises this type of management brings under consideration which are dynamic on domestic and also in regional scale. As per the researchers of classical era diversification facilitate us in risk management. (Modigliani and Miller 1958)

In the middle of 2007 and into 2008 global financial crisis started to show its effects. Stock Markets started to crash across the world, and the large financial institutions been bought out or collapsed and even the government of the wealthiest nations have had to appear with the rescue packages to help their financial institutions. But it is difficult to manage the affairs for those firms who deal internationally, because the economic and political conditions affect the firm's decision. So this is the cause of instability by using the foreign exchange and this instability will become the cause of introducing the derivatives devices and their usage mostly in Asian countries.

As per all of the above given scenario it is confirm that if financial system declines than it has the capability to push whole of the economy into crises irrespective of some of the macroeconomic base of an economy, for example due to the financial decomposition there is a great economic recession in Mexico and also in South Korea and at the same time the subprime mortgage crises in US leads the economy as a whole towards the credit crisis and it affects all of the world's economy at large scale (Carter *et al.* 2006; Bartram 2008; Pramborg 2004).

LITERATURE REVIEW

Hamid, Khurram and Omar (2013) in their research the impact of the use of the derivatives on the value of the firm: Evidences from the non financial firms of the Pakistan in Pakistan. The current research tried to investigate the impact of the use of derivatives on the value of the firm. The present study finds no noteworthy impact of the use of derivatives on the value of the firm while the Tobin's Q was used as the valuation measure. But the use of the FCD was related with the lower value of the firm while the use of the IRD adds the value only in that case when the alternative measures of the value of the firm (Alt. Q1 and Alt. Q2) were considered. Zhao (2009) in his paper Dynamic relationship between the rate of exchange and the prices of stock: Evidences from China in China. The paper empirically analyzes the dynamic relationship between Renminbi (RMB) real effective rate of exchange and the prices of stock with VAR and the multivariate (GARCH) models. The result of this study shows that there exists an unstable relationship between the prices of stock and the RMB real effective rate of exchange. There was also not the mean that spillover between markets of stock and the foreign exchange. Additionally, this paper also investigates the effects of the cross-volatility between the markets of stocks and the foreign exchange by using the ratio sign of probability. And between the 2 markets there also exists the effects of the bidirectional spillovers of the volatility, indicating that the effect of the past improvements in the market of stock on the future volatility in the market of foreign exchange, and vice versa.

Muller and Verschoor (2006) in their paper Asymmetric exposure of the foreign exchange risk: Evidences from the multinational firms of the U.S. in Netherland. This study observes that how the multinational firms of U.S. get suffered from the movements regarding foreign exchange. And the result shows that the stock

return of U.S. reacts asymmetrically to the movements of currency. By observing the nonlinearity in the risk exposure of the foreign currency, the author noticeably increases the significance and the accuracy of the exposure estimates. The author further expresses that asymmetries towards the large currencies fluctuations was pronounced more against the small currencies fluctuations cycles of over depreciation and appreciation.

Pramborg (2004) in his research derivatives hedging, geographical variation, as well as organization market importance in Sweden. In this study the author scrutinizes from various features the effect of the activities of hedging and the foreign operations on the value by using the sample of the firms of Sweden. The main finding of this study was that the effect of hedging the transaction exposure was positive and adds value, but translation exposure does not adds value if hedged. Further the outcomes of this study propose that there exists a positive relation between the geographical diversification and the value.

Crabb (2002) in his study International organizations as well as hedging swap rate exposure in USA. In this study the author evaluates the net effect of the motions of the rate of exchange on the returns of stock of multinationals. And that exposure of the rate of exchange was measured while controlling for FCD usage. According to findings, there exists no significant exposure, in some of the samples and the significant exposure in the others due to the financial strategies of hedging, effects of offsetting for the multinational corporations, or simply the noisy data. But significant exposure was found in some of the smaller firms and in certain industries.

METHODOLOGY

Modes of data collection are generally referred as data sources. Data sources are normally classified into Primary data and secondary data. Primary data is congregated by the investigators directly from the participants while the secondary data is such type of data which has been already gathered by and eagerly available from the other sources.

For the present empirical investigation secondary source and quantitative research technique are applied. For this research study data is collected for six years time period i.e. 2009 to 2014 from different sources and these sources are:

1. Previous articles
2. Books
3. Audited financial reports

SAMPLING

For this research study 50 non-financial firms are selected as a sample from KSE-100 index. Financial sector has been expelled from the sample data since their business activities require derivatives to be used for the purpose of trading or speculative motive.

TARGET POPULATION

This investigation focuses on all the non-financial firms that are quoted in KSE-100 index as its target population.

ECONOMETRIC MODEL

$Fmv = \beta_0 + \beta_1 \text{ Derivi}_{i,t} + \beta_2 \text{ Size}_{i,t} + \beta_3 \text{ CR}_{i,t} + \beta_4 \text{ ROA}_{i,t} + \beta_5 \log(\text{LEV})_{i,t} + \beta_6 \text{ Diversification}_{i,t} + \epsilon_{i,t}$

Where,

α = constant term

β = Coefficient term

FMV = Firm value is measured through the ratio of market capitalization to total sales

DERIV = Use of general derivatives, FCD and IRD are taken as independent variables.

Diversification = natural log of foreign sales, representing FX exposure.

SIZE = natural log of total assets.

CR = ratio of current assets to current liabilities, representing liquidity

ROA = is measured through the ratio of net profit after tax to total assets and it is considered as a measure of profitability.

Leverage = Ratio of total debt divided by total assets.

ϵ = Error term

HYPOTHESIS

H1: There is a positive relationship between liquidity and Firm value.

H2: There is a negative relationship between the foreign sales and firm value.

H3: There is a positive relationship between the size and derivatives.

H4: There is a positive relationship between leverage and firm value.

H5: There is a positive relationship between the ROA and firm value.

VARIABLES

Dependent Variable: The dependent variable used under the research study is:

➤ FMV = Firm value is taken as dependent variable of the study which is measured through the ratio of market capitalization to total sales.

Independent Variable: The independent variables used under the research study are:

1. Use of the general derivatives, FCD and IRD are taken as independent variables. Hedging by the use of general derivatives is measured through a dummy variable which takes the value of 1 if firm use any type of derivatives otherwise it will be 0.
2. Diversification = natural log of the foreign sales (representing the FX exposure)
3. SIZE = for measuring size I take the natural log of the total assets and it represents the total amount of the assets which the company has.
4. CR = Current ratio represents liquidity and it should be calculated by taking the ratio of current assets to current liabilities of a company.
5. Leverage = Debt of a company should be calculated as by taking the ratio of total debt divided by total assets.
6. ROA = is measured through the ratio of net profit after tax to total assets and is considered as a measure of profitability.

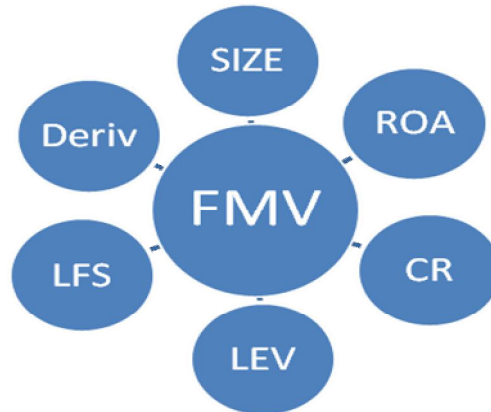
RESEARCH DESIGN

1. To make a shape to your Research effort, Research design is genuinely needed. It endures significant influence on reliability (truth) of the outcomes attained and therefore gives a concrete base for the entire research.

2. Thus for the target of the research study E Views 8 (Econometric Views) Software will be used and with its assistance Panel Regression Analysis will execute in which Fixed and Random Effect Models will run and further for decision making about which estimation is suitable from both Fixed and Random Effect, Hausman Specification test will be applied.

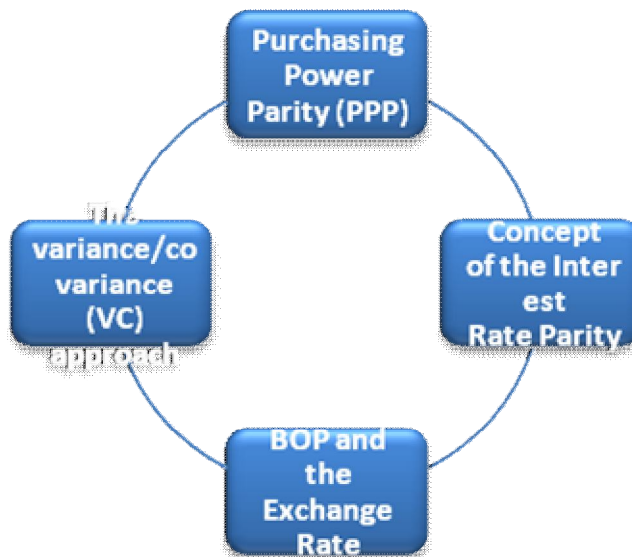
CONCEPTUAL FRAMEWORK

Figure 1



THEORETICAL FRAMEWORK

Figure 2



EMPIRICAL RESULTS

Descriptive Statistics:

Table 1 presents the results of the descriptive statistics of the variables of the current study in the three panels named as A, B and C for full sample, hedgers and the non hedgers respectively. Panel a shows statistics for the full sample that contains 50 firms and 300 observations.

Panel A: Full Sample:

Variables	No	Mean	Std. Dev	Median	Min	Max
Fmv	300	0.897	1.02	0.53	0	4.69
Size	300	23.56	1.35	23.73	19.11	26.93
Lev	300	0.47	0.22	0.47	0.01	1.1
Roa	300	0.1	0.09	0.08	-0.24	0.41
Diversification	300	0.14	0.24	0.01	0	1.02
C.Ratio	300	1.73	1.31	1.34	0.26	12.23
Hedge	300	0.21	0.41	0	0	1

Starting from the dependent variable mean value of the Firm is 90% in the full sample. Mean value of the size (Total assets) is 23.56 in the full sample, and the portion of the capital that is financed through debt is 47%. The mean value of ROA in the full sample is 10%. The percentages of the firms that are geographically diversified are 14%. The mean value of the current ratio is 1.73 in the full sample which shows the strong position of liquidity. And 21% of the firms use derivatives in the whole sample.

Now, the panel B and C helps to compare the mean results for the Hedgers and the non Hedgers.

PANEL B: HEDGERS

Variables	No	Mean	Std. Dev	Median	Min	Max
Fmv	63	0.92	1.09	0.48	0.06	4.69
Size	63	23.73	1.03	23.79	21.57	26.19
Lev	63	0.51	0.22	0.5	0.19	1.1
Roa	63	0.08	0.1	0.07	-0.24	0.33
Diversification	63	0.23	0.29	0.12	0	0.87
C.Ratio	63	1.6	0.13	1.19	0.38	4.38
Hedge	63	1	0	1	1	1

Panel C: Non Hedgers

Variables	No	Mean	Std. Dev	Median	Min	Max
Fmv	237	0.89	1	0.54	0	4.4
Size	237	23.51	1.43	23.69	19.11	26.93
Lev	237	0.46	0.21	0.46	0.01	0.91
Roa	237	0.1	0.08	0.08	-0.1	0.41
Diversification	237	0.12	0.23	0.01	0	1.02
C.Ratio	237	1.77	0.23	0.01	0	1.02
Hedge	237	0	0	0	0	0

On average the firm value of hedgers is 0.92 and the mean value of non hedgers is 0.89 means the mean value of firm value of hedgers is higher than the non hedgers. So this result is consistent with the argument that the investors that manage their risks by hedging have high value than the non hedger firms. The mean value of the hedging firms is 23.73 which are greater than the non hedgers

mean value which is 23.51. And this result is also in accordance with the previous studies results which show that the use of derivatives by larger firms is more than that of the smaller firms. More hedging is done by the larger firms because of the two reasons; first reason is that to establish the markets of derivatives some initial costs are required and for the larger firms it is easy to pay this cost due to the economies of the scale. And the second reason is that the larger firms do hedging because heavy fixed costs have been installed by them so that it becomes necessary for them to hedge that huge cost. The mean value of the leverage of the hedgers is 0.51, which is significantly greater than that of the mean value of the non hedgers which is 0.46. These results shows that the hedgers are more leveraged than the non hedgers and this results is according to the previous results which shows that the hedging increases the debt capacity which allows the firms to take the advantage of tax shield. The mean value of ROA of hedgers is 0.08 and the mean value of non hedgers is 0.10 which means that the profitability level of the hedgers is lower than that of the non users. The mean value of diversification of hedgers is 0.23 and the non hedgers mean value of diversification is 0.12, which means that the hedgers are more diversified geographically and having more foreign currency exposure. These results are in line with the argument that the diversified firms in the different states are more likely to do hedging against the risk of interest rate and foreign exchange. The mean value of the current ratio of the hedgers is 1.60 and the non hedgers is 1.77, these results shows us that the users of derivatives are identified as the liquidity constrained firms, hence the liquidity of the firms decreases by doing hedging.

MULTIVARIATE ANALYSIS

Impacts of derivatives usage on firm value is estimated through the model:

$$Fmv = \beta_0 + \beta_1 \text{ Deriv}_{i,t} + \beta_2 \text{ Size}_{i,t} + \beta_3 \text{ CR}_{i,t} + \beta_4 \text{ ROA}_{i,t} + \beta_5 \log(\text{LEV})_{i,t} + \beta_6 \text{ Diversification}_{i,t} + \varepsilon_{i,t}$$

In the above given equation, Fmv is taken as a measure of firm value α is the constant coefficient and β is the coefficient of use of derivatives, whereas λ denotes to coefficient of control variables and ε is the error term.

In order to assess Panel Data Regression Model, with the assistance of E Views software, present empirical investigation passed through the following assumptions test first: Multicollinearity Test, Autocorrelation Test, Heteroskedasticity Test.

TABLE 1
Multicollinearity Test:

	FMV	DERIV	SIZE	CR	ROA	LOG(LEV)	GD
FMV	1.000000						
DERIV	0.011653	1.000000					
SIZE	0.264102	0.065061	1.000000				
CR	0.307061	-0.051994	0.042140	1.000000			
ROA	0.554299	-0.074737	0.067372	0.390696	1.000000		
LOG(LEV)	-0.154963	0.102643	0.027006	-0.599650	-0.179609	1.000000	
GD	-0.166243	0.181806	-0.078661	-0.159366	-0.185894	0.092966	1.000000

In the Model of the Linear Regression (LRM), there is an assumption that no Multicollinearity (Correlation) should be present among all of the variables. For this purpose of the Multicollinearity, Correlation Matrix was used. The method

which was employed to scrutinize the existence of Multicollinearity among all the Dependent and Independent Variables in the study was Variance Inflation Factor (VIF). If value of VIF exceeds to 10 then a problem of Multicollinearity will arise. As the Table IV depicted that the VIF values of all the above mentioned Variables that are firm value, derivative (derive), size (total assets), cr (current ratio), roa (return on asset), lev (leverage) and gd (geographical diversification) were below 10 which represented that Multicollinearity did not exist among the prescribed variables.

	DERIV	SIZE	CR	ROA	LOG(LEV)	GD
DERIV	1.000000					
SIZE	0.065061	1.000000				
CR	-0.051994	0.042140	1.000000			
ROA	-0.074737	0.067372	0.390696	1.000000		
LOG(LEV)	0.102643	0.027006	-0.599650	-0.179609	1.000000	
GD	0.181806	-0.078661	-0.159366	-0.185894	0.092966	1.000000

This table of Correlation Matrix is also depicted to find out the correlation between all the independent variables highlighted under the study that are derivative (derive), size (total assets), cr (current ratio), roa (return on asset), lev (leverage) and gd (geographical diversification). As numerical figures portrayed that all the Variance Inflation Factor (VIF) values are less than 10, signifying the absence of Multicollinearity problem in the Regression model.

TABLE 2
Heteroskedasticity Test
 Heteroskedasticity Test: White

F-statistic	1.199247	Prob. F(26,273)	0.2358
Obs*R-squared	30.75190	Prob. Chi-Square(26)	0.2376
Scaled explained SS	75.34588	Prob. Chi-Square(26)	0.0000

Another important assumption of Linear Regression Model (LRM) is Heteroskedasticity Test. The assumption stated that variance of Error Term (Residuals) should be constant (there is no Heteroskedasticity or existence of Homoskedasticity) in Regression results. For observing that essential assumption as shown in Table 2, White Test was applied and statistics disclosed that observed r square and its opposite probability chi-square value in the table is greater than 5%.

For panel Regression analysis with the assistance of EVIEWS Software, this investigation administered two momentous models before applying Hausman Test, the first model is: Fixed Effect Model (as shown in Table 4). since results demonstrated that overall Model is good fit because the Significance level is below 5 % or 0.05 (i.e. 0.000) and the value of R Square (R²) is 0.74 or 74 % which highlighted that 78 % of the diversity in firm value is due to derivative (derive), size (total assets), cr (current ratio), roa (return on asset), lev (leverage), diversification (foreign sales) and the remaining 26 % is unexplained due to other Factors. An Autocorrelation was one of the essential Linear Regression Model (LRM) assumptions which were also applied under the study as illustrated in the above table whose value is 1.92 which was determined through Durbin Watson (DW) Test.

TABLE 3**Fixed Effect Model**

Dependent Variable: FMV

Method: Panel Least Squares

Date: 09/09/15 Time: 19:46

Sample: 2009 2014

Periods included: 6

Cross-sections included: 50

Total panel (balanced) observations: 300

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-10.87975	2.354767	-4.620310	0.0000
DERIV	0.329487	0.131820	2.499512	0.0131
SIZE	0.492690	0.099408	4.956253	0.0000
CR	0.023536	0.046086	0.510698	0.6100
ROA	2.668868	0.799846	3.336726	0.0010
LEV	0.131804	0.563389	0.233949	0.8152
GD	-1.776787	0.840989	-2.112735	0.0356
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.742084	Mean dependent var		0.897000
Adjusted R-squared	0.683947	S.D. dependent var		1.019348
S.E. of regression	0.573063	Akaike info criterion		1.891079
Sum squared resid	80.13002	Schwarz criterion		2.582451
Log likelihood	-227.6618	Hannan-Quinn criter.		2.167767
F-statistic	12.76441	Durbin-Watson stat		1.924573
Prob(F-statistic)	0.000000			

The subsequent imperative Model administered before applying Hausman Test is Random Effect Model (as exposed in Table 5). Probability (F statistics) revealed that overall Model is good fit because the level of Significance is not more than 5 % or below 0.05 whereas the value of R square (R^2) exposed that 21 % (0.212) of the oscillation in firm value is due to derivative (derive), size (total assets), cr (current ratio), roa (return on asset), lev (leverage), diversification (foreign sales) and the remaining 83 % is due to other Factors. An Autocorrelation test was also implemented under the study as demonstrated in the above table whose value is 1.69 which was determined through Durbin Watson (DW) Test.

TABLE 4**Random Effect Model**

Dependent Variable: FMV

Method: Panel EGLS (Cross-section random effects)

Date: 09/09/15 Time: 19:44

Sample: 2009 2014

Periods included: 6

Cross-sections included: 50

Total panel (balanced) observations: 300

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.285425	1.308096	-4.040547	0.0001
DERIV	0.274970	0.118234	2.325639	0.0207
SIZE	0.251747	0.055381	4.545769	0.0000
CR	0.025794	0.043008	0.599759	0.5491
ROA	3.694043	0.658752	5.607637	0.0000
LEV	-0.271083	0.376070	-0.720831	0.4716
GD	-0.515927	0.338346	-1.524850	0.1284
Effects Specification				
			S.D.	Rho
Cross-section random			0.564386	0.4924
Idiosyncratic random			0.573063	0.5076
Weighted Statistics				
R-squared	0.212853	Mean dependent var		0.343488
Adjusted R-squared	0.196734	S.D. dependent var		0.658839
S.E. of regression	0.590485	Sum squared resid		102.1611
F-statistic	13.20503	Durbin-Watson stat		1.693160
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.326430	Mean dependent var		0.897000
Sum squared resid	209.2663	Durbin-Watson stat		1.020808

TABLE 5

Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	
Cross-section random	24.085842	6	0.0005	
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
DERIV	0.329487	0.274970	0.003397	0.3496
SIZE	0.492690	0.251747	0.006815	0.0035
CR	0.023536	0.025794	0.000274	0.8915
ROA	2.668868	3.694043	0.205800	0.0238
LEV	0.131804	-0.271083	0.175979	0.3369
GD	-1.776787	-0.515927	0.592785	0.1015

Now decision making is essential after running both the above declared estimations in order to test the research Hypothesis that which model is suitable for proper analysis either Fixed or Random and for that verdict in Table 7 Hausman (1978) Specification Test is applied and results shown that P value is less than 0.05 (0.0005), which revealed that for the current empirical analysis Fixed Effect Model should be employed.

TABLE 6**Final Model with Fixed Effect Estimation**

Dependent Variable: FMV

Method: Panel EGLS (Cross-section weights)

Date: 09/09/15 Time: 19:47

Sample: 2009 2014

Periods included: 6

Cross-sections included: 50

Total panel (balanced) observations: 300

Linear estimation after one-step weighting matrix

Cross-section SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.396666	2.155212	-2.967999	0.0033
DERIV	0.147521	0.061151	2.412399	0.0166
SIZE	0.307895	0.090724	3.393754	0.0008
CR	0.099152	0.025508	3.887079	0.0001
ROA	2.214359	0.375817	5.892120	0.0000
LOG(LEV)	0.240971	0.121171	1.988695	0.0479
GD	-1.097531	0.417875	-2.626461	0.0092

Effects Specifica

Cross-section fixed (dummy variables)

Weighted Statistics			
R-squared	0.856381	Mean dependent var	1.252740
Adjusted R-squared	0.824008	S.D. dependent var	1.109071
S.E. of regression	0.522978	Sum squared resid	66.73556
F-statistic	26.45350	Durbin-Watson stat	1.807453
Prob(F-statistic)	0.000000		
Unweighted Statistics			
R-squared	0.741216	Mean dependent var	0.897000
Sum squared resid	80.39949	Durbin-Watson stat	1.919876

REGRESSION RESULTS

In order to dissect the association between Dependent and Independent Variables, Panel Regression results are shown using Fixed Effect Estimation in Table 8. Statistics divulged that overall model is good fit because the significance level or Probability (F Statistics) is below 0.05 (i.e. 0.000) and the value of R² is 0.86 which indicated that 86% of the deviation (variation) in Firm value is due to derivative (derive), size (total assets), cr (current ratio), roa (return on asset), lev (leverage), diversification (foreign sales) and the remaining 14% is unexplained due to other factors.

Table 7 presents the regression results in the below table. In table the hedging coefficient negates the main hypothesis that the firms using any type of derivatives for hedging are valued higher. The hedging coefficient with value of 0.15 shows positive relationship between the use of derivatives and firm value and this relationship is statistically significant with a p-value of 0.02. The significant relationship of this study is similar to the previous studies like Graham

and Rogers (2001), where they proposed that the hedging added the value to the firm, while, Kapitsinas (2008), reported the value premium of 4.6%. And this positive and the significant relationship of this study is also in accordance with the study of Bartram et al. (2004), whose results showed us that the use of the derivatives like IRD and FCD has the positive impacts on the value of the firm.

Most of the control variables of this study indicate the expected relationships and all of the variables are statistically significant. The value of the coefficient of the size is 0.31 which shows positive relationship between firm value and size as was confirmed by earlier researchers like Nance et al. (1993) and this relationship is also statistically significant with a p-value of .00. This positive and significant relation of my study is also consistent with findings of Ushijima (2003) and according to those results the firm value increases with the size of the firm. The value of the coefficient of the liquidity in my research is .10 with the p-value .0001 which means the significant relationship with the value of the firm and this relationship are consistent for the hedgers and according to the previous studies the liquidity shows the positive relation with the value of the firm. The reality of the positive relationship between the liquidity and the value of the firm is that the liquidity enhances the internal financing which can be used by the firms to undertake the profitable projects. The Firm's profitability which is measured through the ratio of net profit after tax divided by the total assets is positively related with the value of the firm and the value of the coefficient is 2.21 with the p-value .0000 which means the profitability is significantly correlated with the value of the firm. Modigliani and Miller (1958) declared that the value of the firm could be maximized by the use of the more debt in its capital structure; the debt allowed the firm to decrease their average cost of the capital and enhance the profitability, as long as its ROA was greater than before tax interest paid on the debt. For the purpose of 'improving specific Regression Model' assumptions and for handling the situation of Non Linear relationship between the stipulated Dependent and Independent Variables, Log transformation of Lev is applied. The value of the leverage coefficient is 0.24 which shows positive relationship with the value of the firm and this relationship is significant with a p value of 0.05. This positive relationship between the leverage and the value of the firm shows that the high leveraged firms use more derivatives for the purpose of hedging (Campbell & Kracaw, 1987), (Dolde 1995) and (Tufano, 2012). Graham and Smith (1999) documented that the hedging increases the capacity of debt, and this increased in the capacity of debt allows the firms to use debt more and this practice yields the advantage of tax shield. Ward and price (2006), was also documented the same results. They show that the increase in the ratio of debt to equity, the returns of shareholders would also increases. The log of the foreign sales is used as the measure of the geographical diversification, shows negative relationship with firm value and the value of the coefficient is -1.09 and this negative relationship is also significant with the p-value of .01. This negative but significant relationship with the value of the firm indicates that the diversification decreases the value of the firm due to more foreign currency exposure.

CONCLUSION

The current study investigates the hypothesis whether firms using derivatives are valued higher or not. In doing so a sample of 50 non financial Pakistani firms listed

in the KSE-100 index for the period of 2009-2014 is considered. Firm value is measured and the impact of derivatives usage is tested on the value of the firm. Previous studies show mix results of positive, negative and no effects of the derivatives usage on the value of the firm. Results of the current study are in consistent with the theories of the relationship between the use of derivatives and the value of the firm. From the current study analysis the significant relationship is similar to the previous studies like Graham and Rogers (2000), where they proposed that the hedging added the value premium of 1.1%, while, Kapitsinas (2008), reported the value premium of 4.6%. And this positive and the significant relationship of this study is also in accordance with the study of Bartram et al. (2004), whose results showed us that the use of the derivatives like IRD and FCD has the positive impacts on the value of the firm.

Most of the control variables of this study indicate the expected relationships and all of the variables are statistically significant. Like size, current ratio, ROA and leverage shows positive and significant relationship with the value of the firm but geographical diversification shows the negative but significant relation with the value of the firm.

RECOMMENDATIONS

This study has a number of significant suggestions:

1. Currently most of the firms that are listed on Karachi Stock Exchange 100 index are the non derivative users, so that they did not get benefits from the use of the derivatives so the need is to create the awareness about the existing products, and how they can use those products for hedging their enduring portfolios to get the benefits.
2. I take foreign sales as an explanatory variable but in the developing countries like Pakistan, there is a need to take foreign purchases as an explanatory variable because the general trend is of depreciating the local currency due to the high volatility of the political and economic situation, so the need of hedging the purchase price is more.
3. This study proposes that the future research should try to consider the factors other than the firm size, foreign sales, Liquidity, ROA and the leverage as the core issues of this study circles around these variables.
4. The properly planned and implemented financing, investment and the hedging policies will not only assist the firms in attaining their primary goal of maximizing the wealth of shareholders, but may also enhance the economic stability.

REFERENCES

1. Bartram S., Brown G.W. and Fehle F.R. (2004): International evidence on financial derivative usage. United States: Lancaster University.
2. Bartram, S.h.M. (2008). What lies beneath: Foreign exchange rate exposure, hedging and cash flows. *Journal of Banking & Finance*, 32, 1508-1521.
3. Bashir H., Sultan K. & Jghaf O.K. (2013): Impact of Derivatives Usage on Firm Value: Evidence from Non Financial Firms of Pakistan. *Journal of Management Research*, 5(4), 108-127.
4. Campbell, T.S., & Kracaw, W.A. (1987). Optimal managerial incentive contracts and the value of corporate insurance. *Journal of Financial and Quantitative Analysis*, 22(3), 315-328.
5. Carter, D. A.; Rogers, D. A.; Simkins, B. J. (2006). Does hedging affect firm value? Evidence from the US airline industry, *Financial Management* 35, 53-88.
6. Crabb, P. R. (2002). Multinational corporations and hedging exchange rate exposure. *International Review of Economics and Finance*, 11, 299-314.
7. Dolde, W. (1995). Hedging, leverage, and primitive risk. *Journal of Financial Engineering*, 4(2).
8. Graham, J. R., & Rogers, D. A. (2001). Do firms hedge in response to tax incentives? Durham, USA: Duke University, Fuqua School of Business & Boston.
9. Graham, J.R., & Smith, C.W. (1999). Tax incentives to hedge. *The Journal of Finance*, 54(6), 2241-2262.

10. Kapitsinas, S. (2008). The Impact of Derivatives Usage on Firm Value: Evidence from Greece (Paper No. 10947). Greece: National and Kapodistrian University of Athens.
11. Modigliani, F.; Miller M. H. (1958). The Cost of Capital, Corporation Finance and Theory of Investment, *The American Economic Review* 48(3): 261-297.
12. Muller, A., & Verschoor, W. F. C. (2006). Asymmetric foreign exchange risk exposure: Evidence from U.S. multinational firms. *Journal of Empirical Finance*, 13, 495-518.
13. Nance, D.R., C.W. Smith Jr. and C.W. Smithson, (1993). On the determinants of corporate hedging, *Journal of Finance*, 48, 267-284.
14. Pramborg, B. (2004). Derivatives hedging, geographical diversification, and firm market value. *J. of Multi. Fin. Manag.* 14, 117-133.
15. Tufano, P. (2012). Who manages risk? An empirical examination of risk management practices in the gold mining industry. *The Journal of Finance*, 51(4), 1097-1137.
16. Ushijima, T. (2003). *Evolution of multinationality and the value of the firm*. USA: University of California.
17. Ward M. & Price A. (2006). *Turning vision into value-Corporate finance for non-financial executives*. Pretoria: Van Schaik Publishers.
18. Zhao, H. (2010). Dynamic relationship between exchange rate and stock price: Evidence from China. *Research in International Business and Finance*, 24, 103-112.