



## Mitigating effect of foreign ownership in the relationship between Default Risk and Earning Response Coefficient (ERC)

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**Abstract-** This research shows whether foreign ownership mitigate the relationship between default risk and earning response coefficient (ERC) while controlling the determinants of ERC (beta, size, growth and earning persistence). The study selected 250 non-financial firms of different sectors on the basis of purposive sampling technique which are enlisted in Pakistan stock exchange (PSX) for the time periods of eight years ranging from 2008 to 2015.

Using reverse regression, it has been observed through statistical analysis that Beta is negatively related to ERC while others determinants (Growth, Size and Earning Persistence) are positively related to ERC. As for as foreign ownership and its effects on the relationship between default risk and ERC is concerned, the statistical result confirmed the hypothesis that there exist negative and significant association which means that foreign ownership does not mitigates or decreases the effect of default risk on the ERC. These results are consistent with Gurbuz & Aybrs (2010) who argued that foreign investors have negligible stake apart from good returns to affect the default risk and ERC relationship. So large foreign ownership companies may unlikely to positively affect the relationship between default risk and ERC in emerging economy of Pakistan. However, other researchers like Blomstrom & Kokko (1998) and Chhiber & Majumdar (1999) conducted studies in developed countries have documented that foreign ownership positively effect the relationship between default risk and ERC. This study contributes to the literature and has great importance as no prior study exists in emerging economy of (Pakistan) on the association of foreign ownership, default risk and earning response coefficient (ERC).

**Keywords:** Ownership structure, foreign Ownership, ERC Determinants and Default Risk.

### I. INTRODUCTION

Foreign ownership is the complete, major or partial ownership in a country's company by individuals or companies of other country or by those companies who have headquarters in other countries. In foreign ownership, the multinational companies invest in other counties either through foreign direct investment or portfolio investment. The foreign owners through the effective control may outperform those firms which do not have such control (Chhibber & Majumdar, 1999). Blomstrom & kokko (1998) documented that foreign ownership is also regarded an important source of capital and brings with itself the managerial skills and advanced technologies which in turn has positive effect on the firm's market access, besides it results in technology spillover effect for the local firms to improve their performance.

Information plays a vital role for investment decision. The published information can attracts the investors to make right decision if the announced or published information has great values for investors. It has been noticed that market will react accordingly as per the announced information. These all needed information are available on company own sites. Moreover, Investors can get thorough and accurate information through annual reports which describe financial position and performance of the firm. One other option is financial statement through which Investors make investment decision for the sake of earning profit is earning response coefficient (Saleem & khurshid, 2014; Hartono, 2003).

It has been introduced by the capital market researchers that ERC has four significant determinants including beta, firm growth, earning persistence and firm size (Bernard and Rulands, 1987; Easton and Zmejweski, 1989; Collins and Kothari, 1990; Biddle and Seaowe, 1991; Cho and Jungs, 1992; Dhaliwal and Reynolds, 1995; Kai, 2003; Kim, 2004; Cheng and Nasir, 2011, Zakaria et al; 2014). Stobars (1990) stated that ERC determinants are considered an important tool to predict the returns of securities.

It has been investigated through equally weighted index model and found that beta is considered as measure of systematic risk (Collins and Kothari, 1990). They used reverse regression analysis and found that the relationship between beta and ERC is negative and significant. The same work of Collin and Kothari were further extended by other studies (Huson, Scot and Wiere, 1999) and found that reverse relation exist

between beta and ERC which means that as beta increase ERC will decrease and vice versa. Moreover, Collins and Kothari, (1990) also investigated and found that companies whose profit margin is high, will positively affect the growth opportunities which will ultimately increase the ERC. The earning persistence shows that how long time the earning remain or persist in the future as well. Kormendi and Lip (1987) argued that high returns are associated with earning persistence, which means that there a positive relationship between ERC and earning persistence. Brigham and Houston (2012) argued that firm size can be categorized through different scales like total income, total assets or capital. Its common perception that big companies share information on their sites which can decrease the uncertainty of the future cash flow of the company.

Default risk arises when firm become unable to pay its obligation. Various models have been adopted to predict risk like Altman Z score (1966) and debt to equity ratio. According to Wang & Lin (2010) who stated that debts and default risk has strong link to one another, because low default risk firms can easily approach to debts while high default risk firms has low access to debts (Grenadier ,1997). They also noticed that the firms with high foreign ownership stake will have high probability to increase ERC. Contrary to this, Gurbuz & Aybrs (2010) who argued that foreign investors have negligible stake apart from good returns to induce the corporate governance facets to affect the default risk and ERC relationship. In this study, percentage of shares held by the foreigners in the companies is taken proxy of foreign ownership.

Foreign ownership is the complete, major or partial ownership in a country's company by individuals or companies of other country or by those companies who have headquarters in other countries. In foreign ownership, the multinational companies invest in other countries either through foreign direct investment or portfolio investment. The foreign owners through the effective control may outperform those firms which do not have such control (Chhibber & Majumdar, 1999). Blomstrom & kokko (1998) documented that foreign ownership is also regarded an important source of capital and brings with itself the managerial skills and advanced technologies which in turn has positive effect on the firm's market access, besides it results in technology spillover effect for the local firms to improve their performance. They also noticed that the firms with high foreign ownership stake will have less probability of default risk and high probability of increased ERC. In this study, percentage of shares held by the foreigners in the companies is taken proxy of foreign ownership. Contrary to this , Gurbuz & Aybrs (2010) who argued that foreign investors have negligible stake apart from good returns to induce the corporate governance facets to affect the default risk and ERC relationship.

## II. LITERATURE REVIEW

### **Foreign ownership**

Ownership structure is also considered a corporate governance facet affecting the firm performance and ERC (Kung et al., 2010). Different studies have been conducted to explore the effects of various types of ownership structure variables (family owned, state owned and foreign owned) on firm performance both in developing and developed countries. Douma et al. (2003) conducted a research to test the effect of foreign ownership on firm performance. They collected data of 1005 Indian firms in 1999 and 2000. Their results showed that foreign ownership positively effect on firm performance. Moreover, Yudaeva, Kozlov, Melentie & Ponomarva (2003) found that foreign ownership adds value to the firms. They also argued that knowledge and technology spillover process are associated with foreign ownership to ensure introduction of sophisticated technology, transfer of technology, better use of available pool of information and resources which also increase competition for innovation. During the knowledge and technology spillover process, some other factors are also increasing which are 'introduction of sophisticated technology, available pool of information and resources, increase in competition for innovation, and transfer of technology. Similarly, Blomstrom & kokko (1998) also documented that foreign ownership is an important source of capital, advance technologies and managerial skills which in turn has positive effect on the firm's market access.

### **Earning Response Coefficient**

The most important element of firm performance is earning profit which is considered the entity as a whole. Ball and Brown (1969) conducted research and found that investors make investment decision on the basis of profit information. It has been observed that company share price and return are closely associated with one another, which shows that stock return and share prices are directly proportion. ERC shows the investment decisions that depend on account profit and investors try their best to invest such securities which has better chances of return in future.

Collins and Kothari (1989) define ERC as a measure of magnitude of securities abnormal gains in response to the unexpected profit components. The declaration of low ERC indicates that the information regarding profit is not sufficient and it's hard for investors to make right economic decision. The response of investors is high when earning information and profit announcement is marked or publicized well in time. ERC is

influenced by several factors which describe the characteristic or qualities of the companies, these factors are classified as beta, growth, size and earning persistence (Susilawati, 2008).

### **Beta**

A study conducted by Collins and Kothari (1990) and found that beta is an important variable and considered as measure of a systematic risk, moreover, they also found that relation between beta and ERC is negative and significant while applying the reverse regression model of unexpected earnings on returns. Additionally, Huson, Scot and Wiere (2000) expended the work of Collins and Kothari (1990) and argued that there exist negative relation between beta and ERC, means when beta increases ERC will decreases and vice versa.

### **Growth**

Collins and Khotari, (1999) stated that profit is directly linked with growth opportunities and ERC, because profit information is most attractive factors for investor which will ultimately increase the growth opportunities and ERC. This shows that earning announcement and ERC are directly linked to one another. On the other hand, one perception is that profit and growth opportunities have no linked with one another and consequently no effect to enhance ERC (Palupi, 2006).

### **Earning Persistence**

The most important factor of ERC is earning persistence which indicates that how long the earning will remain consistent and persistence in the coming future. Previous researchers (Kormendi and Lipe, 1987; Collins and Kothari, 1990; Lip, 1991 investigated and concluded that stock return and earning persistence are associated with one another, if stock return remain constant for long time so earning persistence will also persist in future. This shows that ERC and earning persistence are positively related to one another.

### **Firm size**

Brigham and Houston (2012) argued that size of a firm indicates that how much one firm is larger than the other and for this purpose size of the firm is classified on the basis of total income, total capital and total assets of the firms. Its general perception that big companies share information on company site and investors can easily interpret this shared information and decrease the uncertainty of future cash flow of the companies. This indicates that those companies who are big in size will have higher ERC (Naimah and Siddhartha, 2006).

### **Default Risk and ERC**

When the company becomes unable to pay its debts/liabilities to the creditors is termed as default risk. Vassalou and Xing (2008) argued that those firms whose assets become less than its liabilities/debts obligation, such firms are considered in default risk. The Dhaliwal, Lee and Farghar (1999) conducted a study to find the effect of financial leverage on ERC. They concluded from their results that there exist negative relationship between ERC and debt ratio. Dhaliwal and Reynolds (1996) also investigated the relationship between ERC and default risk of debts while taking accounting earning and stock return as proxies of ERC. Their results suggested that negative and significant relation exist between ERC and default risk of debts.. Similarly, Cho and Jang (1996) also conducted a study to show the relationship between default risk of debts and growth opportunities. They concluded from their results that low growth and high debts ratio is negatively related to ERC.

### **Mitigating role of foreign ownership in the relationship between default risk and earning response coefficient (ERC).**

Foreign ownership is the complete, major or partial ownership in a country's company by individuals or companies of other country or by those companies who have headquarters in other countries. In foreign ownership, the multinational companies invest in other counties either through foreign direct investment or portfolio investment. Chhibber & Majumdar (1999) found that the companies with major foreign shareholding tend to perform better through effective internal control and monitoring system. Similarly, Bloamstrom & Kokko (1998) also have documented that the foreign ownership brings with itself the managerial skills at board and management level to reduce exposure to the default risk and in turn influence the ERC. Contrary to this, Gurbuz & Aybrs (2010) who argued that foreign investors have negligible stake apart from good returns to induce the corporate governance facets to affect the default risk and ERC relationship.

**H1:** Negative relationship exists between default risk and Earnings Response Coefficient (ERC).

**Ho:** Negative relationship does not exist between default risk and Earnings Response Coefficient (ERC).

**H2:** Foreign ownership mitigates or decreases the effect of default risk on the ERC

**H0:** Foreign ownership does not mitigate or decrease the effect of default risk on the ERC

### III. RESEARCH METHODOLOGY

#### **Study Period and Sample Selection:**

All non-financial firms are the study population. The study selected 250 firms of different sectors on the basis of purposive sampling technique for the period of 2008 to 2015, which can fulfill all the required data of the research. The data gathered from balance sheet analysis, annual reports and companies own sites.

#### **Statistical Tool for Data Analysis**

The collective data has been passed away through various statistical tool and technique like Descriptive Statistics, Correlational Analysis and Multiple Regression Analysis.

#### **Model Specification:**

$$UR = ERC * (UX/P)$$

Variables n i.e  $x_1, x_2, \dots, x_n$  which actually represent ERC

Then

$$UR = (x_1, x_2, \dots, x_n) * (UX/P)$$

In the UR regressions, the mathematical expression of the Coefficient  $X_i * (UX/P)$  on  $\{X_i * (UX/P)\}$  represents the  $X_i$  effect on ERC. Moreover, a significant measurement error exist, it's clearly indicates that reverse regression will be used instead of direct regression. In this aspect, owing to the significant measurement error in UR, in this study for estimation purpose reverse regression is adopted instead of the direct regressions (Collins and Kothari, 1989). Other scholars also have applied it with the same rational making strong the argument of using this method in this study (Chao and Jung, 1992; Dhaliwal and Reynold, 1994; Cready, Hurt and Saida, 2000; and Gunny, Jacob and Jorgensan (2009). Through regressions, the  $\{X_i\}$  effect is tested which is base on the below technique.

$$UX/P = [1 / (x_1, x_2, \dots, x_n)] / UR$$

The above expression represents the regressions equation.

$$UX/P = a_0 + a_1 UR + a_2 UR * X_1 + a_3 UR * X_2 + \dots + a_{n+1} UR * X_n + \epsilon$$

By applying reverse regression, the tests of coefficient is now reverse to the ERC and therefore it becomes Returns Response Coefficient (RRC). Its mean that the regressions results will react oppositely. For example, if a positive and significant relation found amongst coefficient of  $X_i * UR$ , so it will indicates that the coefficient  $X_i$  is negatively associated to ERC and vice versa.

As we discussed above that Coefficient  $\{X_i\}$  represent the effect of  $X_i$  on ERC, for this purpose this study will run regression to investigate the effect of Beta, Firm Size, Earning Persistence and Growth with these variables as the  $\{X_i\}$ . The hypothesis 1, of the study is, A negative and significant relationship exists between Default risk and ERC. The researcher has used default risk (DER) in this regression equation to set of  $\{X_i\}$ . After adding the measure of default risk in a set of  $\{X_i\}$ , the below regression equation was intended.

$$UX/P = a_0 + a_1 UR + a_2 UR * DER + a_3 UR * BETA + a_4 UR * GRTH + a_5 UR * EPRS + a_6 UR * SZ + \epsilon$$

Thus when the value of  $a^2 < 0$  and also significant will show that default risk significantly effect on Earning Response Coefficient (ERC).

The hypothesis 2 stated that, foreign ownership effect positively and significantly the relationship between default risk and Earning Response Coefficient (ERC), will be calculated by adding foreign ownership in interaction with  $UR * DER$ . So the following mathematical regression equation will be formed.

$$UX/P = a_0 + a_1 UR + a_2 UR * DER + a_3 UR * DER * FO + a_4 UR * BETA + a_5 UR * GROWTH + a_6 UR * EPERS + a_7 UR * SIZE + \epsilon$$

According to this expression, the foreign ownership will mitigate the effect of default risk on earning response coefficient (ERC), when the value of  $a^3 < 0$  and also significant.

#### **Measurement of Variables:**

##### **Control Variables:**

Beta, growth, size and earning persistence are determinants of ERC and act as control variables in this research study.

##### **Unexpected Earnings:**

Unexpected earning is calculated by taking difference between current years earning per share (EPS) minus previous year EPS. Moreover the unexpected earning is then deflated by previous years stocks prices.

### Unexpected Returns:

The CAR (Cumulative Abnormal Return) is actually proxy of unexpected return (UR) which is obtained from annual report of the firms. Abnormal return is actually measured by differences between actual return and expected return, while sharp market model (1963) is used to obtain estimated expected return.

## IV. DATA ANALYSIS

### Descriptive Statistics

The sample size of this study consists of 250 non-financial companies listed on Pakistan Stock Exchange (PSX). The secondary data of these companies have been collected from their websites and official document issued by the State Bank of Pakistan namely the "Financial Statement Analysis". Initially there were 2000 observations but outliers were found which were dropped through the statistical tests i.e. Winsorization and Cook's Distance test and finally 1697 observations were left which were used to estimate the results.

**Table 1: Descriptive Statistic of foreign ownership, default risk and Earning Response Coefficient**

Variable	Obs	Mean	Std. Dev	Min.	Max
UXP	1696	0.16853	1.42202	-4.4595	9.36208
Beta	1697	0.5916	0.47862	-0.1684	1.90629
SZ	1697	15.1934	1.56921	11.3189	19.2532
GRTH	1697	0.90628	0.94755	-1.8798	4.91669
EPRS	1697	2.69677	9.35632	-34.972	34.6436
CAR	1697	0.06011	0.87625	-1.1231	4.40488
DR	1697	0.53078	1.20198	-4.298	6.53683
FO	1697	0.03483	0.12228	0	0.78802

The descriptive statistics of board independence, Earnings Response Coefficient (ERC), default risk and control variables are shown in Table 1. The table shows that the mean value of Uxp (Unexpected Earnings to price) is 0.16853 and the standard deviation is 1.42202. Similarly the mean value of beta is 0.5961 which is almost half of the market beta value of 1.0. This implies that selected companies in the sample are not financially geared substantially and the same companies have on average low level of systematic risk in comparison to the entire market. The standard deviation of beta is 0.47862 which highlights low dispersion in the distribution of beta values. The mean value of firm size is 15.1934 and the standard deviation is 1.56921. Similarly, the mean value of firm growth is 0.90628 which is favorable as the market is willing to pay on average high price for the selected companies' stock due to the high growth potential. The average value of earnings persistence is 2.69677 and its standard deviation is 9.35632. The mean value of CAR (Cumulated Abnormal Return) is 0.06011 and its standard deviation is 0.87625. Similarly, mean value of DR (Default Risk) is 0.53078 which is moderate in comparison to minimum and maximum values given in the table. This suggests that comparatively, the sample companies on the average have moderate exposure to the default risk. The value of 0.53078 also depicts that Pakistani Companies on the average have almost half level of debt financing than the equity financing. The mean value of FO (Foreign Ownership) is 0.03483 which shows that on average there is 3.48% percentage of foreign ownership in the sample companies.

### Correlation analysis:

To test all the variables of the study, correlation analysis was performed. Pearson correlation coefficient is shown amongst all the variables in the table.

As pearson correlation represent the strength of linear relationship between two variables. The below table shows that foreign ownership(fo),beta,growth (grth),size(sz) ,cumulative abnormal return(car)and earning persistence(eprs) are significantly correlated with the ratio of unexpected earning to price(UX/P) .However the relation among all the variables is moderate and statistically significant.

The table of correlation indicates that there is no serious issue of multicollinearity amongst all the independent variables because none of the pearson coefficient exceeds 0.7(pallat, 1996).

Table 2: Correlation Analysis



	Uxp	FO	Beta	Grth	Sz	Car	Eprs	Der
Uxp	1							
FO	-0.033	1						
Beta	0.027	0.166**	1					
Grth	-0.04	0.203**	0.028	1				
Sz	-0.056*	0.366**	0.199**	0.199	1			
Car	0.045	-0.026	0.116**	-0.0173	0.0447	1		
Eprs	-0.33**	-0.0244	-0.160**	-0.091**	-0.311**	-0.13	1	
Der	0.021	0.004	0.058	0.203**	0.105**	-0.008	0.05	1

Correlation is significant at the 0.05 level (2-tailed)

\*\* . Correlation is significant at the 0.01 level (2-tailed)

### Ordinary Least Square (OLS) Assumptions:

Before performing the regression analysis, OLS assumptions have been tested to determine. The first assumption tested was the normality that whether data is following the normal distribution or not. In this regard, Wensorization and Cook's Distance test were used after which outliers were dropped and then the normality assumption was tested through the Shapiro-Wilk test. Another problem was multicollinearity which was also needed to be addressed. To check the multicollinearity, Variance Inflation Factor (VIF) test has been used which showed that there is no serious issue of multicollinearity amongst the explanatory variables as all the test values are less than critical the value of 10 (Gujrati, 2005). The VIF values are provided in the respective tables given below. In panel data analysis one of the main problems is heteroskedasticity which was tested through the Breusch-Pagan / Cook Weisberg test for heteroskedasticity. The test results show that the pertinent p-values are 0.05 which showed existence of heteroskedasticity in the data. To tackle this issue the robust standard error was used. To check the autocorrelation, Durbin Watson test was used. As a rule of thumb, the values between 1.5 and 2.5 are relatively acceptable (Koksai & Kettaneh, 2011). There is no serious autocorrelation as test values are in the range (1.5-2.5) given in table of the econometric models. Moreover, Hausman Test was used to select random or fixed effects model, the test results indicated that the appropriate model is fixed effects model (FEM) which was used to run the econometric models / equations.

Now to find out the effect of foreign pwnership on default risk and ERC Determinants, the following three econometric models are used to show the effect of these variables.

The estimation of three regressions equation are as follows.

$$UX_{it}/P_{it} = \alpha_0 + a_1CAR_{it} + a_2CAR*BETA_{it} + a_3CAR*GRTH_{it} + a_4CAR*EPRS_{it} + a_5CAR*SZ_{it} + \text{Year fixed effect} + \epsilon_{it} \quad (1)$$

$$UX_{it}/P_{it} = \alpha_0 + a_1CAR_{it} + a_2CAR*DER_{it} + f(\text{control variables}) + \epsilon_{it} \quad (2)$$

$$UX_{it}/P_{it} = \alpha_0 + a_1CAR_{it} + a_2CAR*DER_{it} + a_3CAR*DER*FO_{it} + f(\text{control variables}) + \epsilon_{it} \quad (3)$$

### ERC determinants and its results

$$UX_{it}/P_{it} = \alpha_0 + a_1CAR_{it} + a_2CAR*BETA_{it} + a_3CAR*GRTH_{it} + a_4CAR*EPRS_{it} + a_5CAR*SZ_{it} + \text{Year fixed effect} + \epsilon_{it} \quad (1)$$

Pool OLS Regression DV=UX/P			Robust Pool		RE		FE		VIF
Variables	beta	P-value	beta	P-value	beta	P-value	beta	P-value	
Car	2.1594	0.0000	2.1594	0.0010	2.1594	0.0000	1.9078	0.0000	1.20
Carbeta	0.3644	0.0000	0.3644	0.0640	0.3644	0.0000	0.3155	0.0020	3.14
Cargrth	0.0959	0.0400	-0.0959	0.2070	0.0959	0.0600	0.0974	0.0500	2.57
Careprs	0.0192	0.0000	-0.0192	0.0200	0.0192	0.0000	0.0201	0.0010	1.15
Carsz	0.1410	0.0000	-0.1410	0.0010	0.1410	0.0000	0.1221	0.0000	1.34
_cons	0.1466	0.0100	0.1466	0.0000	0.1466	0.0000	0.1469	0.0000	
R2	<b>0.0342</b>		<b>0.0342</b>		<b>0.0342</b>		<b>0.0337</b>		
Adjusted R2	0.0308								
F-value	9.9700		3.2500		59.8500		7.8100		
P-value	0.0000		0.0035		0.0000		0.0000		

Lamgre	0.0000	1.000	
Hausman test			5.74 (0.04525)
Breusch - pagan			2.39 (0.53)
Swilk Durbin Watson			1.66 (0.78)
			2.175

**Table 3: Dependent Variable UX/P**

The above table shows the CAR and Beta relationship while using the Fixed Effect Model. As can be seen from the respective test values, all assumptions of multiple regressions are being fulfilled. The results present that interaction of CAR and coefficient of Beta is positively and significantly interlinked to each other which mean that the relationship between beta and ERC is negative and significant. These results are similar to the previous studies (e.g., Zakaria, 2013; Dhaliwal et al., 1992; Dhaliwal and Reynold, 1997; Billings, 1999; and Shangan, 2007). The previous researchers have investigated and suggested that Beta has negative relation with ERC. Similarly, the relation between the interaction of CAR and firm growth is negative and significant which means that according to reverse regression, the firm growth is insignificantly and positively related with ERC. These results are similar to other pertinent studies (Zakaria, 2013; Collin and Kothari, 1990; Martikainen, 1997; Billings, 2000; Park and Pincas, 2000; Kim, 2005; Ghosh et al., 2005; Shangan, 2007). The results also depict that CAR and earnings persistence are significantly and negatively related with each other which means that earnings persistence is significantly and positively related with ERC. These results are similar to other related studies (Zakaria, 2013; Kormendi and Lipe, 1987; Collins and Kothari, 1989; and Dhaliwal and Reynolds, 1994). As regards CAR and firm size, their relation is also negative and significant which means that the firm size has positive and significant relation with ERC. These results are consistent with Billings (1999) and Vafeas (2000). However, Martikainen (1997) found that the firm size and ERC has no relation which means that for large and small firms, the ERC will remain the same. Similarly, Walker (1995) also noted that the firm size is not a significant determinant of ERC. Nevertheless, Shangan (2007) found the consistent results that the firm size is positive and extremely significant determinants of ERC which shows that for large size firms, the ERC will be high.

**Results of the Earning Response Coefficient (ERC) determinants with default risk (DR)**

$$UX_{it}/P_{it} = \alpha_0 + \alpha_1 CAR_{it} + \alpha_2 CAR_{it} * DR_{it} + f(\text{control variables}) + \epsilon_{it} \quad (2)$$

**Table 4: Dependent Variable UX/P**

Pool OLS Regression DV=UX/P			Robust Pool		RE		FE		VIF
Variables	beta	P-value	beta	P-value	beta	P-value	beta	P-value	
Car	0.069	0.110	0.069	0.342	0.069	0.109	0.076	0.098	1.36
Carder	0.151	0.004	0.135	0.163	0.135	0.004	0.112	0.032	1.34
Beta	0.211	0.003	0.211	0.028	0.211	0.003	0.148	0.013	1.11
Grth	-0.120	0.001	-0.120	0.001	-0.120	0.001	-0.023	0.057	1.08
Eprs	-0.054	0.000	-0.054	0.000	-0.054	0.000	-0.064	0.000	1.05
sz	-0.084	0.000	-0.084	0.000	-0.084	0.000	-0.577	0.000	1.16
Cons	1.565	0.000	1.565	0.000	1.565	0.000	9.212	0.000	
R2	<b>0.133</b>		<b>0.133</b>		<b>0.133</b>		<b>0.058</b>		
Adjusted R2	0.130								
F-value	43.270		28.170		259.600		49.990		
P-value	0.000		0.000		0.000		0.000		
Lamgre					0.000	1.000			
Hausman test							62.84(0.000)		
Breusch-pagan							1.24 (0.24)		
Swilk							1.54 (0.30)		

In the above table, the Fixed Effects Model has been used to show the effect of Default Risk (DR) on ERC. Again the test values highlight that assumptions of multiple regression are not violated. The statistical result present that their exist positive and significant relation between interaction term CAR and default risk which means that the default risk is negatively and significantly related with ERC. The ERC determinants (firm growth, firm size and earnings persistence) results are positive and significant except for beta for which the result is negative and significant. The previous studies (Zakaria, 2013; Cheng and

Pool OLS Regression DV=UXP			Robust Pool		RE		FE		VIF
Variables	beta	P-value	beta	P-value	beta	P-value	beta	P-value	
Car	0.067	0.124	0.067	0.356	0.067	0.124	0.065	0.167	1.41
Cardr	0.136	0.004	0.136	0.161	0.136	0.004	0.157	0.002	1.35
Cardrfo	0.479	0.083	0.479	0.083	0.479	0.083	3.488	0.019	1.08
Beta	0.211	0.003	0.211	0.028	0.211	0.003	0.160	0.027	1.11
					-		-		1.08
Grth	-0.121	0.001	-0.121	0.001	0.121	0.001	0.027	0.058	
					-		-		1.05
Eprs	-0.054	0.000	-0.054	0.000	0.054	0.000	0.064	0.000	
					-		-		1.16
Sz	-0.083	0.000	-0.083	0.000	0.083	0.000	0.581	0.000	
R2	<b>0.133</b>		<b>0.133</b>		<b>0.133</b>		<b>0.057</b>		
Adjusted R2	0.130								
F-value	37.070		24.400		259.500		43.100		
P-value	0.000		0.000		0.000		0.000		
Lamgre Hausman test					0.000	1.000		65.85	
Breusch-pagan								(0.000)	
Swilk Durbin Watson								2.61 (0.89)	
								1.09 (0.76)	
								2.223	

Nasir, 2010; Shangan, 2007; Dhaliwal and Reynold, 1994) also found the similar results pertaining to Default Risk (DR), ERC and ERC determinants. The significant and negative sign between default risk and ERC indicates that as the default risk increases the ERC will decline. Thus, the results strongly support hypothesis 1: A negative and significant relationship exists between Default risk and ERC.

**Results of mitigating effect of Foreign Ownership on the relationship between Default Risk and ERC**  
 $UX_{it}/P_{it} = \alpha_0 + a_1CAR_{it} + a_2CAR_{it} * DR_{it} + a_3CAR_{it} * DR_{it} * FO_{it} + f(\text{control variables}) + \epsilon_i$  (3)

**Table 5: Dependent Variable UX/P**

Table 5 shows the regression results of default risk and foreign ownership. We can see that the interaction of CAR, DER and FO (Foreign ownership) is positive and significant which means that the interaction of Default risk with Foreign Ownership has negative and significant relationship with ERC. Therefore, we cannot accept Hypothesis H2: Foreign ownership mitigates or decreases the effect of default risk on the ERC. These results are similar to those found by Gurbuz & Aybers (2010) who also highlighted the negligible role of foreign ownership in mitigating the default risk and ERC relationship. Hence, increase the foreign ownership in the companies is not associated with the ability to mitigate the relationship between default risk and ERC. So large foreign ownership may unlikely protect the firms from being at risk of high debt obligations to positively affect the ERC. However, other studies like Bloomstrom & Kokko (1998) and Chhiber & Majumdar (1999) have documented the significant role of foreign ownership in mitigating the effect of default risk on ERC.

## V. CONCLUSION



This study investigated the mitigating role of foreign ownership in the relationship between Default Risk and Earnings Response Coefficient (ERC) while controlling the established determinants of ERC (Beta, Firm Growth, Firm Size and Earning Persistence).

The result of the study explore that a negative and significant association exists between beta and ERC, while other determinants of ERC i.e growth, size and earning persistence are significantly and positively interlinked with ERC. Previous studies (Zakaria, 2014; Shangguan, 2007) also worked on the same variables and found similar results.

The results also highlighted that default risk has a significant and negative impact on ERC. These results strongly support the Hypothesis 1: A negative and significant relationship exists between Default risk and ERC. It suggests that when default risk increases, ERC will decline. Previous studies in developed markets have documented the similar results (Zakaria, 2013; Cheng and Nasir, 2010; Shangguan, 2007; Dhaliwal and Reynold, 1998). These studies have found that the firms having greater default risk will have low earnings persistence, and hence in turn unexpected earnings will decrease the abnormal return of securities which will ultimately decrease the ERC, so overall a negative relationship may exists between default risk and ERC.

Finally, results do not support the hypothesis H2: Foreign ownership mitigates or decreases the effect of default risk on the ERC. These results are consistent with Gurbuz & Aybrs (2010) who argued that foreign investors have negligible stake apart from good returns to induce the corporate governance facets to affect the default risk and ERC relationship. Contrary to this, Chhibber & Majumdar (1999) found that the companies with major foreign shareholding tend to perform better through effective internal control and monitoring system. Similarly, Bloamstrom & Kokko (1998) also have documented that the foreign ownership brings with itself the managerial skills at board and management level to reduce exposure to the default risk and in turn influence the ERC.

This research is beneficial for those researchers who conduct their research in capital market and see the mitigating role of foreign ownership on default risk and ERC determinants. It has been concluded for the statistical results that foreign ownership does not mitigates or decreases the effect of default risk on the ERC. These results are consistent with Gurbuz & Aybrs (2010) who argued that foreign investors have negligible stake apart from good returns to induce the corporate governance facets to affect the default risk and ERC relationship. So large foreign ownership companies may unlikely to positively affect the relationship between default risk and ERC in emerging economy of Pakistan.

## VI. RECOMMENDATIONS

Recommendations are provided to suggest desired course of actions in light of findings of the study whereas future directions are provided to support the study findings.

The relevant recommendations are as under:-

- Steps should be taken at board level such as better asset allocation strategy to manage the systematic risk
- The results pertaining to the firm size have the policy implications which may call measures by the regulators such as the Securities and Exchange Commission of Pakistan (SECP) to consider firm size as an important factor to be a part of listing requirements so that only large size firms may be eligible to be listed.
- Similarly, companies should also consider the role of corporate governance facets to reduce exposure to the default risk by monitoring and productively using the corporate debt to improve the ERC.
- Although effect of foreign ownership is insignificant, still it is recommended that future researches may be undertaken to explore and examine the effects of this facet in relation to respective variables of the study.

## VII. FUTURE DIRECTIONS

- The current research study provides basis for the researchers to test all the tested and remaining constructs related to the corporate governance facets and ERC.
- It is suggested that future researches may be conducted with large sample sizes covering and longer time frame.

- Similar studies may be conducted in settings of other emerging economies to validate results of this study.
- It is also suggested that further studies may be undertaken with more determinants of ERC along with considering additional variables of corporate governance. This will further refine results of this study and contribute towards the pertinent literature.
- It is also suggested that further studies may be undertaken with more determinants of ERC along with considering additional variables of corporate governance and default risk. This will further refine results of this study and contribute towards the pertinent literature.
- Comparison of emerging and developing economies may also be done considering the inter-relationship of variables used in this study to enhance overall undertaking of this relationship.

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