Measuring the Impact of Financial Fragility on The Performance of Islamic Financial Institutions Listed at Pakistan Stock Exchange

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Abstract
Financial fragility is of great importance for policymakers, practitioners, and researchers due to its impact on the dynamics of Islamic financial institutions operating in an economy. It leads to sluggish growth and investment of corporations and ultimately destroys the performance. This paper attempts to explore the presence of financial fragility and its impact on the performance of manufacturing firms listed at Pakistan Stock Exchange (PSX) from 2007-2016. To meet the objectives of the study, sample data set is split on the basis of median values of fragility, age and size of the firms and then classified as fragile, non-fragile, large, small, old and younger firms. The data is analyzed by using the fixed effect, random effect and pooled OLS techniques to examine the magnitude of relationship among the variables. The Return on Assets and Tobin's Q ratios are used as performance measures which show the negative relationship with the financial fragility. Firms with the good equity ratio are observed as good performer in the market due to their financial strength. The younger firms are found as good performer than the older firms but financial fragility plays adverse role for younger and older firms. Performance of larger firms are reported better as compared to the smaller firms. Unlike the results of the interaction dummy variable of age and financial fragility, the presence of fragility doesn't hamper the performance of large size firms. Nevertheless, the small size firms are found to be more affected from the presence of financial fragility. The results of study suggest to utilize retained earnings and reduce dependence on debt financing to improve the financial performance of fragile firms.
Keywords: Firm Performance, Financial Fragility, Age, Size, Fixed Effect, Random Effect, and Pooled OLS.

1. INTRODUCTION

Success of organization stems from a number of multifaceted interactions occurring among various choices and characteristics of a firm. Numerous factors like organization structure, R&D activities, marketing strategies, investment policy, and financial management influence firm's performance. Among these dimensions financial management plays a significant role for the success of business in the capital market by articulating policies related to operating, financing, investing and distribution of dividends(Bottazi, Secchi, & Tamagni, 2007).

Beck (2012) argues that the same mechanism that supports financial growth may also makes it vulnerable to financial shocks and leads to financial fragility. It is further argued that, if the maturity of short-term liquidity, deposit savings and long-term investments are

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on the basis of the positive effects of the financial system in the real economy, it makes the system vulnerable to crises and short of liquidity. Carletti (2008) identified important causes of financial fragility i.e., Information asymmetries and agency problems between savers and entrepreneurs due to conflicts among depositor's / creditors agencies and banks. This leads to uncertainty in the financial positions of banks and a large number of creditors may undermine market discipline and encourage banks to take excessive risks, leading to financial fragility.

At the micro level, the number of researchers has examined the relationship between real and financial decisions of firms since the pioneering contribution of Modigliani and Miller (1958) which showed that financing was irrelevant to real decisions with the assumptions of perfect capital markets in the world. However, imperfections in capital markets exist due to agency problems among managers and shareholders, distortion of tax, and problem of asymmetric information. Therefore, the firm's financial performance and decisions about financing as well as their feedback to financial pressure are significant to both a state's condition of economy at macro level and its financial system.Hubbard (1998) challenged the theoretical model of Modigliani and Miller (1958) and empirically proved that there is strong relationship between the financial soundness and investment of firms. Later on, many of the researchers identified the financing fragility due to sensitivity of investment to internal funds (Hericourt & Poncet, 2009) and the reasons of capital market imperfection identified such as asymmetric information and incentive problems, leading to differences between the costs of internal and external financing.

Literature provides significant evidences that financial fragility is an impediment for enhancing the firm performance and investment (Stein, 2003). In developing economies access to funds is a critical process and firms encounter variety of sources for financial fragility. Prior literature explored to impact of financial fragility at the macro level but the focus of this study is to test the financial fragility of the manufacturing firms working in Pakistan and then the impact of financial fragility on the performance and growth of the firms.

Pakistan is among one of the developing countries and improvements in the manufacturing sector is inevitable for the progress of the economy. Presently, most of the firms in the manufacturing sector are not performing up to the mark and their performance is declining (Government of Pakistan; Ministry of Finance, 2013). Some important areas like financial fragility and credit constraints could be the cause of weak financial performance. Therefore, the present study aims to address some important questions; does financial fragility deteriorate the firm performance?How financial fragility effect different size firms, and how performance of younger/older firms is affected by financial fragility? Moreover, the findings of the study are important for the policy makers of credit market to understand the impact of credit market frictions on the performance of the firms. It will also guide them to design policies which positively effect the growth of the small, large, young, as well as old firms in the non financial sector of the country.

2. REVIEW OF RELATED LITERATURE

Financial resources are utmost important for the growth and performance of firms operating in the economy. Firm financial performance is counterfeit by the micro and macro

level environment. The notion thatpositive association exist between firm growth and economic development is supported by Schumpeter (1935). The idea was endorsed by King & Levine (1993) and Levine & Zervos (1998). Financial constraint imparts significant effect on the performance of firm and researcher provided empirical evidence that financially constrained firms suffer 3 percent growth as compared to firms having easy access to financial resources (Beck et al., 2005; Ayyagari, Demirguc-Kunt, & Maksimovic, 2008). Prior literature highlights different aspects of low growth rate among financially constraint firms like age of the firm, collateral requirements, contractual obligation between firms and financing institutions, ownership structure, and asymmetric information (Tabbasum, 2008). Financial markets are assumed to be perfect in theory; however, in reality imperfections prevail in the credit markets that create volatility(Coricelli & Mastern, 2004).Literature highlights the distortion effects financial fragility on the dynamics of firms which leads to sluggish growth and investment ofcorporations Clementi and Hopenhyan (2006). Hence due to fragility firms are unable to expand their business operations at national and international level. Minetti and Zhu (2011) explained that financial fragility hinders the firms to enter in international markets.

Gonzlez (2013) examined the impact of financing on performance of the firms by using the panel data of 10,375 firms of different countries. He found that highly leveraged firms experienced a decrease in their performance due to financial fragility. The firms had to bear more costs of debts than the benefits obtained. He further examined that debt played a different role in different countries. In case of developed banking and economic system the costs of debts does not exceed to the costs of financial distress. If the financial structure of the economy is poor then the firms with high leverage ratios become fragile.Majumdar (1997) empirically tested the influence of size and age of firms on the performance. The significant results were identified regarding the impact of size and age on the performance of the firms. Larger firms were found less profitable and more productive whereas the smaller firms showed more profit and less production. In the same way, it is discovered that older firms were more profitable but less productive and vice a versa.

Kallan, Erdil, and Cetinkaya, (2011) investigated the impact of firm size, prospector strategy and technological architecture on the firm performance. With respect to the impact of size on firm level performance they found insignificant relationship between firm size and the performance. The reason of the insignificant results was the selection of sample, because the sample contained 90% small size firms and the comparison could not be made between the performance of small and large size firms. Mao and Gu (2008) used the fixed effects model to find the impact of leverage, size, activity and some other financial variables on the performance of the firms. They found negative impact of the leverage on the performance of the firms, due to high cost of debt than its benefits resulting in the financial fragility. Impact of the size and activity ratio was found significant in this study.

Hong, Shuting and Meng (2012) studied the relationship of firm performance with cash flow and showed the negative relationship of cash flow with the firm performance. Their study described that the excessive cash flows lead to decrease in performance of the firms. Delen, Kuzey, and Uyar (2013) analyzed the impact on the performance of the firms by using the Explanatory factor analysis (EFA). Return on assets (ROA) and return on equity (ROE) were used as a performance measures and it was found that the leverage ratio, sales growth ratio

had the highest impact on the Return on Equity, whereas the equity ratio, activity ratio and net profit ratio were found to be the good predictor of Return on Assets.

Loderer and Waelchli (2009) examined the impact of the age on the performance of the firm and found that the younger firms are good performers than the older firms. They stated that age destroyed the performance of the firm due to the organizational rigidities and inertia problem. These problems made the firms unable to accept the innovations in the business.

Agliari et al., (2006) model the financial fragility to observe the impact on the performance of firms with respect to investment behavior and production. They found each of the firm suffered by the financial fragility and left the question to test this phenomenon by using the financial data of the firms.Mao and Gu (2008) analyzed the financial data of the firm to explore the link of firm performance with different financial variables, like the profitability, growth, dividend payout ratio and the business diversification. The limitation of their research described the use of other variables like the leverage or fragility to seek the impact on the firm performance.Bruneau et al., (2012) explored the link between firm's fragility and the macroeconomic variables by using the firm level financial data and economic data of France. They found the impact of macroeconomic variables on the financial fragility and the impact of financial fragility on the business cycle reported also. They also left the room of research to test the impact of fragility directly on the firm performance.

2.1 Hypothesis Development

In developing economies, survival and growth of the firms is critical because financial markets are not easily accessible. Financial fragility is an impediment for the better performance of firm and investment (Stein, 2003). Some important sources of financial fragility for firms could be agency problem and asymmetrical information is identified in literature as important factors which may influence the process of allocation of financial resources to a company.

Financial fragility has negative impact on firm performance and constitutes a key factor of capital structure of firm(Gonzalez, 2013). Fragile firms incur the direct costs for financial advisers, lawyers and accountants. Vitali, et al., (2011) stated that with the increase in the debt of the firm, the default risk increase, and bank lend the money to fragile firm at higher interest. This higher financial cost decreases the firm profitability and overall performance. They further argued that the probability of the financial fragility of that firm is more in future than the probability of being healthier.

Based upon the above discussions, the following hypothesis is developed to test the phenomenon regarding the impact of financial fragility on the firm's performance.

H_1*: Presence of financial fragility is harmful for the accounting as well as the market performance of the firms.*

Age of the firms have been studied and discussed by a number of researchers in finance literature as a control variable. Some of the authors used age to measure the financial constraints (Kaplan & Zingales, 1997) and others used for diversification (Villalonga, 2004). Baker et al. (2003) utilized age to measure the financing constraints and found that the younger firms are more constrained as compared to the older firms. Many of the other researchers empirically tested the impact of age on the firm's performance. Older firms performed better than the younger firms due to more experience, reported by some of the

researchers(Agarwal, Rajshree, & Gort, 2002). Some other researchers reported the negative relation between the firm performance and the age of the firm. Loderer & Waelchli (2009) used the variable age as independent variable and reported that the older firms perform worse due to organizational rigidities, seniority rules and inertia problem.

On the basis of above arguments, the following hypothesis is developed to test the phenomenon regarding the impact of firm size on the firm's performance in the presence of financial fragility.

H_2: *Performance of younger firms is better than the performance of older firms and is negatively affected in the presence of financial fragility.*

The size of the firm conveys a very strong and clear message concerning its riskiness, performance, returns and the security of funds to the capital providers. Smaller firms have to rely heavily upon their internal funds because of the higher information cost and higher cost of external capital as well. Mixed results have been found in literature regarding the impact of size on performance. Some authors reported the positive impact of size on the performance of the firm and proved that the larger firms perform better as compared to smaller firms (Wu, 2006). The results of other authors are in the line to Fama and French (1993) who reported the negative impact of size on the firm.

The third hypothesis is developed on the basis of the above discussion as follows:

H_3*: Performance of the large size firms is better than the performance of the small size firms, in the presence of financial fragility.*

3. DATA AND METHODOLOGY

The aim of the study is to investigate the hypothesized relationships through correlation analysis and regression techniques. Data for analysis is collected from the balance sheet statements analysis published by the State Bank of Pakistan. The sample contains 250 PSX listed firms across the different non-financial sectors for the period 2007 to 2016. The non-financial sectors include Textile, Food, Chemicals, Non Metallic Minerals, Motor vehicle parts, Fuel and energy, paper board etc.

3.1 Variable Construction

The study is an attempt to find the possible effect of financial fragility on the performance of small, large, young, and old firms in the non financial sectors of Pakistan. Performance of the firms is explained in two ways in this study. First one is the accounting performance which is measured by the profitability ratio that is Return on Assets (ROA), also known as the Return on Investment (ROI). Net profit is taken as the earning after interest and taxes (EAT), and the book value of the total assets is taken as denominator. Ratio of Tobin's Q is taken as the second measure of the performance, which depicts the market expectation of the firm. the fragility of the firm; Equity is measured by taking book value of the total common stockholder's equity; and the Assets are the book value of the total assets of the firm. Age of the firm is calculated with respect to the data of listing in the Karachi stock exchange. Once the age is calculated on the basis of listing data, then the natural log is taken of the age to construct age variable. Some of the researchers take the date of incorporation of firm whereas some others used the date of listing to calculate the age of firm. In this study, age of the firm is calculated on the basis of the date of listing of the firm at PSX.

Natural log of the book value of the total assets is taken as the proxy of the firm size in this study. The study also used growth of the firm (GR) in the model as the control variable, which is the rate of change in the firms' sales in the observing year as compared to the preceding year, it also captures the business cycle effects calculated of the basis of Sales of the firm. Furthermore, activity of the firms in this study utilized assets turnover ratio (ATO) to measure the activity of the firms. The present research also implied cash flow as a control variable and is measured as Net Profit after taxes plus depreciation. Table 3.1 explains the measures of the variables with literature support:

Table 3.1: Variables Measurements

Name of Variable	Measurement	Literature Support
Firm Performance (PR)	$ROA = \frac{\text{Net Profit}}{\text{Total Assets}}$ $TQ = \frac{(MVE + BVD)}{BVA}$	Kallkan, Erdil, & Cetinkaya (2011) Majumdar (1997) Loderer & Waelchli (2009) Gitman (2010) Chathoth & Olsen (2007)Mao & Gu (2008)
Financial Fragility (FR)	$FR = \frac{\text{Equity}}{\text{Assets}}$	Agliari., et al (2006) Vitali, Battiston and Galligati (2011) Chan, Dang, & Yan (2012) Fazzari et al., (1988) Hericourt & Poncet (2009)
Age (AG)	Ln of date of listing	Ericson & Pakes (1995) Agarwal, Rajshree, & Gort (2002) Loderer & Waelchli (2009) Shumway (2001)
Size (SZ)	Ln of book value of total assets	Mao & Gu (2008) Wu (2006) Kallkan et al., (2011)
Growth (GR)	$GR = \frac{Sales_t}{Sales_{t-1}} - 1$	Majumdar (1997) Mao & Gu (2008)
Activity (AC)	$AC = \frac{\text{Sales}}{\text{Assets}}$	Moyer, McGuigan, & Kretlow (2001) Gitman (2010) Roenfeldt & Cooley (1978)

Cash Flow (CF)	Net Profit after taxes plus depreciation	Kiymaz (2006) Fazzari et al., (1988) Chen et al., (2007) Hong et al., (2012)

3.2 Empirical Specifications

The magnitude of the relationship of dependent and explanatory variables is tested by applying the inferential statistical analysis. The basic regression model is developed as follows:

$$PR_{it} = \alpha_i + \beta_1 FR_{it} + \beta_2 AG_{it} + \beta_3 SZ_{it} + \beta_4 GR_{it} + \beta_5 AC_{it} + \beta_6 CF_{it} + \varepsilon_{it}$$

The Subscript ***"i"*** is used for the each cross section unit or firm in the sample data set. Another subscript ***"t"*** denotes the time period for the variables. $\alpha_i$is the constant of the regression equation, which explains the change in the dependent variable, even if there is no change in the explanatory variables. $\beta_1, \beta_2, and\ \beta_3$are the regression coefficients of fragility(FR), age (AG), and size (SZ) of the firm, respectively. Similarly, $\beta_4, \beta_5, and\ \beta_6$are the regression coefficients of growth (GR), activity (AC), and cash flow (CF). ε_{it}indicate the unexplained portion of the regression model, which is also known as the error terms.

To meet the objectives of the study, sample data set is split on the basis of first three independent variables; fragility, age and size of the firms. The data is segregated on the basis of median value. If the value of the firm is less than the median value that is classified as fragile firm whereas firm's with higher value than the median is classified as non-fragile firms (Arslan-Ayaydin, Ozkan, & Florackis, 2006). However, if the Firm's age is greater than the median value of the age, then the firm is grouped as the older firm, whereas if the age of firm is less than the median value, that firm is classified as the younger firm (George, Kabir, & Qian, 2011). Similarly, firm's having larger value than the median, are classified as larger firms whereas those firms whose value of size is less than the median value, are grouped in small sized firms. Each group consists of 125 cross section units.

3.3 Data Analysis Technique

For the data analysis purpose, different techniques are used in this study including the Descriptive statistics, Correlation analysis and Regression Analysis etc. Panel data is used for the analysis purposes in this study which contains *n* units (firms) each of them includes *T* observations at 1 through *t* time period. So the total numbers of observations in panel data are calculated as *nT*. That panel data which contains many units (firms) and small time period is known as *short panel data*. But if there are less firms and large time periods, it is known as *long panel data* (Cameron & Trivedi, 2005).Several type of models may be used to analyze the panel or longitudinal data, which include the; Pooled OLS, Fixed Effect Model and Random Effect Model.

4. RESULTS AND DISCUSSION

This section depicts the descriptive statistics, the second one shows the correlation table and the last one, the most important, explains the regression results of different models.

4.1 Descriptive Statistics

Descriptive statistics show the behavior of the data, which can be observed from the mean, median, minimum and maximum value of the each individual variable. The total count of each variable is 2250. The sample period was of 10 years, but when it is transformed into variables for the purpose of this study, it comes to 9 years and the total sample of cross sectional is 250, so in this way total observations are 2250. The following Table 1 shows the summary of the descriptive statistics.

Table 4.1 Descriptive Statistics

Variable	Mean	Median	Std. Dev.	Minimum	Maximum	J.B	
						Value	Sig.
RA	0.0416	0.0272	0.1513	-1.9614	0.8752	3.502	0.174
TQ	1.3644	1.0246	1.7088	0.0595	43.6216	1.733	0.42
FR	0.2869	0.3518	0.5296	-8.1177	1	1.945	0.378
GR	0.1521	0.0652	0.3523	-0.8536	3.4901	1.661	0.436
SZ	5754.5	1035.7	17977.4	1.1	208070		
SZ(LN)	7.0962	6.9428	1.6873	0.0953	12.2456	6.294	0.043
AG	23.3121	18.911	12.4893	2	61.7918	0.391	0.822
AC	1.1839	0.9755	1.341	0.0024	24.8491	1.262	0.532
CF	554.245	56.473	3263.34	-31972.6	57600.3	0.851	0.654

The purpose of the descriptive statistics is to know the nature of all data which comprise of various variables. Normality of all variables is checked through Jarque -Bera test. The values of J.B test and the P-values are shown in the last columns of the table.

The mean value of the ROA, the accounting performance measure, is 4.16% which shows the overall average performance of the listed firms. The median value is 2.72%, which depicts the central point of the listed firms' performance. The standard deviation of this variable is 15.13%, which shows the deviation of the data from its mean. The minimum value is in negative, which is due to the loss of the firm, the highest value is 87.52%.

Tobin's Q ratio, denoted as the TQ, shows the 1.364 value. If the value of TQ is more than 1, it means that the market value of the firm is more than the book value of the firm and is considered as the good symptom in predicting the future trend of the companies as well as the market. The median is near the mean value, which is 1.025. if the mean, median and mode is equal, it means that the variable series is normal. Data of the TQ deviate from its mean by 1.71 point, which shows that there are a number of such firms, whose market value is less than the book value of the firm. Minimum and maximum values also show the great deviation in the data, because the minimum value is 0.059 and the maximum value is 43.621. Fragility of the Firms is determined on the basis of median value, that the firms less than the median value are considered as the fragile firms. The value of mean 0.29 is less than the value of median 0.35, which means that the fragile firms are more in numbers than the non-fragile firms in the sample data. Data of fragility deviate from its mean by 0.529.

The minimum value of the variable is very critical that is -8.12. It means that there are such firms in the sample data set which have been suffering losses continuously. These losses bring the equity of the firm negative gradually, and lead to the insolvency of the firms. The maximum value of the firm is 1 which indicates that the assets of the firms are aproximately100% backed by the shareholders equity.

Growth is denoted in decimal points. The average value of the growth is 0.15 which describes that the average growth of all firms in sample data is 15%. The median value is 0.065 which is less than the mean and shows that the growth of majority firms is not only low but also the negative growth. The deviation in the data is 0.352 reported. Minimum value of the growth is -0.854 which shows the negative growth of the firms, that firms are declining gradually instead of growing. The maximum value is 3.49, which shows that there are some firms which grow drastically by more than three times. Size of the firms is proxied by taking the log of total assets of the firms. Two variables are shown in the descriptive statistics, named as size and size(Ln). Size is the value of total assets and the size(Ln) is value of total assets with natural log. The purpose of showing two variables of size is to understand the nature of the variable in better manner, as the value of size is in million rupees. The average value of the size is 5754.5 million and the value of median is 1035.7. Minimum and maximum values shows that in the sample data set there are variety of firms, whose size is very large such as 208070 million rupees and whose size is very small such as 1.1 million rupees.

Age of the firms is calculated on the basis of the listed date in the Karachi Stock Exchange. The mean value of the age of the firm is 23 years, and the median is 18.9 years. The minimum value shows the age of the firms is 2 but it is actually 12 years if it is seen at the closing of the last sample period which is 2012. The highest age of the firm is 61.79 years, which is the oldest firm in the data set and that firm is Karachi Electric Supply Corporation.

Activity is measured by the Assets Turnover. The Average value of the variable is 1.184 which shows that the firms are generating revenues more than the assets employed in the business. The median value 0.976 is below the average value, which shows that the half of the firms are generating revenues less than the net capital employed in to the business. Deviation of the data from its mean is 1.34. The minimum value is very critical that is 0.0024. It means that, firms included in the sample of the study are not able to utilize their assets properly. The highest value of the series is 24.85 which show the very good performance in respect of the activity.

Cash flow is denominated in the million rupees. The average value of the cash flows are the 554.25 million rupees, and the median value is the 56.47 million rupees. The value of the standard deviation is 3263.34 million rupees. The minimum value is -31972.6 million rupees, which shows the negative cash flows and the maximum value of this variable is 57600.3 million rupees. Both the minimum and the maximum values indicate the variation in the data.

4.2 CORRELATION ANALYSIS

The purpose of correlation analysis is to determine the relationship among all dependent and independent variables used in the study. The value of correlation lies between -1 to +1, negatives values, describe the negative correlation between the two variables. Positive

value means the positive correlation between the two variables.
Correlation table serves another purpose, which is the test of multicollinearity. It tells that where the collinearity is found or is not present among the variables. If the value of coefficient correlation is nearly to 1, it leads to multicollinearity between the variables. The following table 2 describes the coefficient correlation between the variables, used in the study.

Table 4.2 Correlation Analysis

	RA	***TQ***	***FR***	***GR***	***SZ***	***AG***	***AC***	***CF***
RA	1							
TQ	0.138**	1						
FR	-0.216**	0.208**	1					
GR	0.123**	0.074**	-0.097**	1				
SZ	0.143**	-0.116**	-0.235**	0.166**	1			
AG	-0.008	0.003	0.021	0.055**	0.218**	1		
AC	0.291**	0.171**	-0.039	-0.020	-0.045*	0.079**	1	
CF	0.246**	0.039	-0.090**	0.019	0.293**	-0.070**	0.050**	1

***,*. Show the significance of correlation coefficient at 1% and 5% level respectively, (Two-Tailed)*

The coefficients correlations are obtained with the help of econometric software named as gretl. Gretl software performed the Pearson Coefficient correlation analysis to check the variables relationships and test 2 tailed at 1 % and 5% level of significance.
As Table 4.2 shows, there is no high correlation between any two variables which leads to the problem of multicollinearity. The highest value of the positive correlation is 0.293 and the negative highest value is -0.235. Keeping in view the values of coefficient correlation, it may be ensured that there is no multicollinearity in the data. Return on Assets has the positive significant correlation with all the variables, except the fragility. The correlation of performance with age is also negative but is insignificant. Positive correlation means that the increase in the variables would cause the increase in performance, whereas the negative correlation shows that the increase in fragility would cause the performance decline.
Another measure of the performance, named as Tobin's Q is significantly correlated with all the variables except the age, which is insignificant. However, the TQ is negatively associated with the size of the firm, means the increase in the size would cause the decline in the market performance of the firm. The rest of all independent variables have also the small correlation with each other, some have negative and some other variables have the positive correlation. The weak correlation between the independent variables means that there is no problem of multicollinearity.

4.3 RESULTS OF REGRESSION ANALYSIS

The magnitude of the relationship of the dependent and explanatory variables is tested by applying the regression analysis. Different regression analyses are performed to meet the objectives of the study.

4.3.1 Regression Results of Fragile and Non Fragile Firms.

Performance of the firm could be distorted by the fragility of the firm. Cleary (2002) differentiated the constrained and unconstrained firms on the basis of traditional financial ratios and concluded that the performance of constrained firms is lower in contrast to unconstrained firms. The debt covenants bound the highly debt company not to pay dividend, which badly impact the market performance of the firm (Kaplan & Zingales, 1997). The following models are applied to test the magnitude of relationship between fragility and performance of firms, which are based on the return on assets and Tobin's Q Ratio:

$$RA_{it} = \alpha + \beta_1 FR_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \varepsilon_i + \mu_{it}$$
$$TQ_{it} = \alpha + \beta_1 FR_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \varepsilon_i + \mu_{it}$$
$$RA_{it} = \alpha + \beta_1 NFR_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \varepsilon_i + \mu_{it}$$
$$TQ_{it} = \alpha + \beta_1 NFR_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \varepsilon_i + \mu_{it}$$

Table 4.1: ***Results of Random Effect Model of Fragile & Non-Fragile Firms***

	DV: RA Model 1	*DV: TQ Model 2*	*DV:RA Model 3*	*DV: TQ Model 4*
Variables	***Fragile Firms***		***Non-Fragile Firms***	
C	0.9942*** (0.0317)	0.9707*** (0.0320)	-0.0135 (0.0146)	-0.16515** (0.08050)
FR	-1.0047*** (0.0296)	-1.0087*** (0.0299)		
NFR			0.1000*** (0.0234)	0.23700* (0.13051)
GR	0.0212* (0.0109)	0.0224** (0.0110)	0.0332*** (0.0096)	0.04621 (0.05364)
AC	0.2882*** (0.0240)	0.3098*** (0.0242)	0.0230*** (0.0023)	0.04408*** (0.01280)
CF	0.0028*** (0.0008)	0.0032*** (0.0007)	0.0008*** (0.0001)	0.00001** (0.00001)
F- Statistic	1.2126***	1.2171***	1.2724**	4.554***
H-Test	6.7495	6.5479	2.098	1.290

****, **, * show the significance of results at 1%, 5% and 10% level of significance respectively.*

The results reported in table 4.1are interpreted as follows: The value of the F-Test in these models describes the acceptance or rejection of the hypotheses of common constant. Significance of F value rejects the null hypotheses that the constants are common and the insignificance of H-Test Value confirms the validity of Random Effect Method for panel data analysis.

Beta coefficient of fragility is -1.007, which describes that one unit change in the fragility will lower down the performance of firm by more than 100%. The significance of the variable rejects the null hypothesis and ensures the acceptance of alternative one that there is negative impact of firm's fragility on their performance. Rests of the three variables are the control variables in the model, which are all significant except the growth variable, whose significance level is low. Beta coefficient of Cash flow is 0.000028 which seems very low apparently. The reason of low beta coefficient is that it is in million rupees. It means that 1 unit change in cash flows will lead the change in 0.0028 percent.

Beta coefficient of fragility is -1.008, which describes that one unit change in the fragility will lower down the performance of firm by more than 100%. The significance of the variable rejects the null hypothesis and ensures the acceptance of alternative one that there is negative impact of firm's fragility on their market performance as well. Beta coefficient of Cash flow is 0.000032 which seems very low apparently. The reason of low beta coefficient is that it is in million rupees. It means that 1 unit change cash flows will lead the change in 0.0032 percent.

The results imply that the firm should reduce the leverage and retained earnings should be utilized for the further financing as described in the pecking order theory (Myers, 1984). If there is no retained earnings to be utilized for financing even then the firm should be careful to use the debt as external financing.

The intercept of the model 03 shows the negative coefficient but is insignificant. Beta coefficient of healthy firms is .1, which captures the change in performance measure by 10% if 1% change occurs in equity ratio. Standard error term shows the variation of beta coefficient results which is very low, 0.0146. The significance of the variable rejects the null hypothesis and ensures the acceptance of alternative one that there is positive relationship between the healthy or non-fragile firms and the performance. Rests of the three variables are the control variables in the model, which are all significant. Another key point in this model is that the beta coefficient of growth variable is highly significant and has more explanatory power than the beta coefficient of fragile firms. Beta coefficient of Cash flow is 0.000008, which confirms the less dependence of performance on internal cash flows in case of financially sound firms.

The intercept of the model04 shows the negative coefficient which described the 0.167 negative changes if there is no impact of independent variable. The reason of the negativity of intercept is that data is based on the financially sound firms. The variable of NFR is very important in this regard, which is constructed on the basis of equity ratio. The reason of negative intercept is that if there is no impact of good equity ratio on performance it leads to the negative performance. This justification may be confirmed from the independent variable NFR, as it has significant positive impact on the performance.

Beta coefficient of NFR is 0.237, which has greater impact on market performance as compared to the accounting performance of the firm. Growth is insignificant in this case, which describes the no effect on the market performance of the firm. Rests of the two control variables are positively significant. AC explains the 0.44 change in the performance due to change in 1 percent change in activity of firm. Beta coefficient of Cash flow is 0.000001, which confirms the less dependence of performance on internal cash flows in case of financially sound firms.

4.3.2 Regression Results of Younger and Older Firms.

Many of the researchers reported the impact of age on the performance of the firms. There are two schools of thoughts regarding the impact of age on the performance of firm. Older firms performed better than the younger firms due to more experience, reported by one school of thought, (Ericson & Pakes, 1995 and Jovanovic, 1982). Second group of the researchers reported the negative relation between the firm performance and the age of the firm. Loderer & Waelchli (2009) reported that the older firms perform worse due to organizational rigidities, seniority rules and inertia problem.

The following models are applied to test the magnitude of relationship between age and performance of older firms, which are based on the return on assets and Tobin's Q Ratio.

$$RA_{it} = \alpha_i + \beta_1 AG_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \mu_{it}$$
$$TQ_{it} = \alpha_i + \beta_1 AG_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \mu_{it}$$
$$RA_{it} = \alpha_i + \beta_1 AG_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \mu_{it}$$
$$TQ_{it} = \alpha_i + \beta_1 AG_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \mu_{it}$$

Table 4.2: ***Results of Fixed Effect Model of Older & Younger Firms***

	DV: RA Model 5	*DV: TQ Model 6*	*DV:RA Model 7*	*DV: TQ Model 8*
Variables	***Older Firms***		***Younger Firms***	
AG	-0.0036*	-0.0043**	0.0130**	0.0129***
	(0.0019)	(0.0019)	(0.0061)	(0.0016)
GR	0.0278***	0.0103	0.0018**	0.0029***
	(0.0090)	(0.0086)	(0.0007)	(0.0018)
AC	0.0474***	0.0003***	0.0228**	0.0497***
	(0.0160)	(0.0000)	(0.0094)	(0.0027)
CF	0.00001***	0.00001***	0.00001***	0.0000 ***
	(0.00000)	(0.00000)	(0.00000)	(0.0000)
AG*FR	-0.0012***	-0.0013***	-0.0030***	-0.0030***
	(0.0004)	(0.0003)	(0.0006)	(0.0002)
Adj. R^2	0.462	0.438	0.275	0.432
F- Statistic	4.978***	4.772***	1.435***	1.680***
H-Test	29.832***	36.132	24.290	20.692

****, **, * show the significance of results at 1%, 5% and 10% level of significance respectively.*

As revealed in table 4.2 the Value of F-Test statistics is highly significant, which rejects the hypothesis that the constants are common. And the value of the H-Test is also highly significant, which rejects the null hypothesis that the estimation through random effect

method is consistent. All the values of F- Test and H-Test confirm the application of Fixed Effect method of regression for this data. One of the problems with the R-square is that it increases with the increase in the explanatory variables. To control this problem adjusted R-square are calculated and showed in the models which describe the explanatory power of the independent variables.

Beta coefficient of age variable is -0.0036, which describes the negative impact on the performance of firm. The significance of the t-statistics confirms the results of beta coefficient and accept the alternative hypothesis that the performance of older firms is not better as compared to the younger firms due to organizational rigidities, seniority rules and inertia problem as described by Loderer & Waelchli (2009). The interaction dummy variable of age and fragility also describes the negative impact on the performance of firm, and is highly significant than the age variable that is -0.0012. It shows that the incorporation of fragility in old age firm increases the negative impact on performance.

The model no 06 explains the beta coefficient of age variable is -0.0043, which describes the larger negative impact on the market performance of firm as compared to impact on accounting performance. Variable of growth, activity and cash flows are highly significant and show magnitude of the impact on performance by 0.013, 0.003 and 0.00001 respectively. The interaction dummy variable of age and fragility in this case also describes the negative impact on the performance of firm, and is highly significant than the age variable that is -0.0013. It shows that the incorporation of fragility in old age firm increases the negative impact on performance.

Beta coefficient of age variable is 0.013 in model no 07, which describes the positive impact on the performance of firm. The significance value of age variables accepts the alternative hypothesis that the younger firm perform better than the older firms. The interaction dummy variable of age and fragility in this case describes the negative impact on the performance of firm. It shows that the incorporation of fragility in younger firm not only decreases but it leads to the negative impact on performance of the firm.

Furthermore, the model 8 describes that the beta coefficient of age variable is 0.0129, which is highly significant and describes the positive impact on the performance of firm. The interaction dummy variable of age and fragility in this case describes the negative impact on the performance of firm, which shows the destruction of performance due to fragility. Fragility converts the positive impact of younger age firms on performance into negative impact. Further, this model describes that fragility not only volatile the accounting performance but it leads to the decline in market performance of the firm as well.

4.3.3 Regression Results of Large and Small Firms.

Firm performance may be affected in many ways by the size of the firm as described in the literature. Larger firms have been reported as the good performer due to the large number of resources, expert's management, economies of scale, better technology and the operational synergies etc (Mao & Gu, 2008). Mixed results have been found in the literature regarding the impact of size on performance. Wu (2006) reported the positive impact of size on the performance of the firm and proved that the larger firms perform better as compared to smaller firms. The results of the other authors are in the line of Fama and French (1993), who reported the negative impact of size on the firm.

The following models are used to test the relationship between size and performance of firms, which are based on the return on assets and Tobin's Q Ratio:

$$RA_{it} = \alpha + \beta_1 SZ_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \varepsilon_{it}$$
$$TQ_{it} = \alpha + \beta_1 SZ_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \varepsilon_{it}$$
$$RA_{it} = \alpha + \beta_1 SZ_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \varepsilon_{it}$$
$$TQ_{it} = \alpha + \beta_1 SZ_{it} + \beta_2 GR_{it} + \beta_3 AC_{it} + \beta_4 CF_{it} + \varepsilon_{it}$$

Table 4.3: ***Results of Pooled OLS of Larger and Smaller Firms***

	DV: RA	*DV: TQ*	*DV:RA*	*DV: TQ*
Variables	***Larger Firms***		***Smaller Firms***	
C	0.47642***	0.4735***	1.6403***	1.6534***
	(0.12824)	(0.1323)	(0.1364)	(0.1360)
SZ	0.0372***	0.0382***	-0.0007***	-0.0008***
	(0.0136)	(0.0140)	(0.0002)	(0.0002)
GR	0.0067*	0.0079*	-0.0063	-0.0111**
	(0.0037)	(0.0041)	(0.0044)	(0.0046)
AC	0.3377***	0.3583***	0.1519***	0.1554***
	(0.0418)	(0.0433)	(0.0480)	(0.0481)
CF	0.00001***	-0.00001***	0.0015*	0.0020**
	(0.00000)	(0.00000)	(0.0009)	(0.0008)
SZ*FR	-0.0031	-0.0062	-0.5555***	-0.5564***
	(0.0053)	(0.0054)	(0.1193)	(0.1200)
Adj. R^2	0.194	0.211	0.144	0.147
F- Statistic	1.094	1.089	0.952	0.924

****, **, * show the significance of results at 1%, 5% and 10% level of significance respectively.*

Results of pooled OLS of larger firms are described in table 11 which are discussed and interpreted as follows: The Statistics of F-Test describes that whether the Pooled OLS is valid or not for the given data. In this model, the insignificance of F-Test value accepts the null hypothesis that the constants are common, so the pooled OLS is valid for this data.

As depicted in model 09 the significance of the beta coefficient of larger size firms is 0.037, which captures the change in performance measure variable and rejects the null hypothesis and ensures the acceptance of alternative one that there is positive relationship between the larger firms and the performance. Rests of the three variables are the control variables in the model, which are all significant. Unlike the case of younger firms, fragility doesn't destroy the performance of larger firms. The interaction dummy variable of large size and fragility shows the negative beta coefficient, but is insignificant. It means that there is no effect of fragility on the performance of larger firms.

Model no 10 explains that the performance of the firm will be increased by 47.35 percent

constantly if there is no change in any of the independent variable. Size of the larger firms has also the positive impact on the market performance of the firms, as shown by Beta coefficient of larger size firms which describes that one unit change in size will bring 0.033 changes in the performance measure. Beta Coefficients of the Growth, Activity and the cash flows are also positively significant, that are 0.0079, 0.358, 0.0001. The interaction dummy variable of large size and fragility shows the negative beta coefficient that is -0.0062, but is insignificant. It means that the market performance of larger firms is not affected by the fragility.

In Model 11 the significance of the beta coefficient of smaller size firms is -0.0007, which rejects the null hypothesis and ensures the acceptance of alternative one that with the decrease in the size of firms, the performance also decreases. Growth variable in this model is insignificant which shows independence of the performance on the growth of firm in case of small size firms. The interaction dummy variable of small size and fragility shows the significant negative beta coefficient, that is -0.556. Fragility increases the negative relation between the firm size and performance.

Performance of the firm will be increased by 1.65 constantly if there is no change in any of the independent variable in model 12. Size of the smaller firms has negative but very small impact on the market performance of the firms, as shown by Beta coefficient of size (-0.0008). Beta Coefficients of the Growth is negative and significant. The reason of negative growth of small size firms is that the small firms are not able to cope up with the increased expenditures. The expenditures of the small firms increase more than the ratio of the sales and performance declines. Activity and the cash flows are positively significant, that are 0.155, 0.002. The interaction dummy variable of smaller size firm and fragility shows the negative beta coefficient that is -0.556. It means that the market performance of the smaller firms will decline drastically in the presence of fragility.

5. CONCLUSION AND RECOMMENDATIONS

Financial Fragility means the unavailability of finance, which leads to less investment and low productivity as well as low profitability. Kaplan and Zingales (1997) called the firm financially fragile which has no access to external finance, can't pay the dividend due to restriction imposed by the lenders and is unable to make investment which leads to low productivity and low profitability. The present study investigates phenomena regarding the destruction of firm performance resulting in the financial fragility. The analysis of the study shows that fragility has the negative impact on the accounting as well as the market performance of the firms.

Financial fragility shows the negative impact on performance of the firms during 2007-2016, describing that cost of using debt is higher than the benefits. Hence, firms should reduce debt financing to improve their performance. These results follow the optimal capital structure theory which states that debt will destroy the value of firm when it crosses the optimal level (Moyer et al., 2001). In contrast, the pecking order theory states that retained earning financing is better than debt financing and debt financing is better than equity financing from issuance of new shares (Myers, 1984).

Firms with the good equity ratio are observed good performer in the market as well, due to their financial strengths. Non-fragile firms have easy access to the external finance, which

creates the opportunities for the investment. Higher investment leads to higher productivity, huge profit, highly dividend payout ratio and creating positive impacts on the accounting as well as the market performance of the firms.

Older firms are found low performers than the younger firms due to organizational rigidities, seniority rules and inertia problems as described by the Loderer & Waelchli (2009). The destruction of the financial fragility is found in case of both type of firm, younger and older. The presence of financial fragility converts the positive impact of younger firms on the performance into the negative impact, and increase the negativity of older firms with respect to the accounting as well as market performance.

The phenomenon regarding the impact of size on the performance of firms is tested in this study also. The results of the study show the positive impact of size on the performance of firms in case of large size firms, and the negative impact of the size is reported on the firm performance for the small size firms. Positive impact of large size firms on the performance is due to the large number of resources, expert's management, economies of scale, better technology and the operational synergies etc, as argued by the Mao & Gu, (2008).

Unlike the results of the interaction dummy variable of age and financial fragility, the presence of fragility doesn't destroy the performance of the firms in case of large size firms. But the small size firms are found more affected from the presence of financial fragility. Due to owning enormous resources, larger firms keep making investment, huge production, paying dividend, which keep the accounting as well as the market performance stable. But if the financial fragility persists continuously, then the performance of large size firm will also decline.

5.2 LIMITATIONS AND RECOMMENDATIONS

This study may not be considered as final work, because this study has certain limitations which must have to be considered and taken into discussion. The limitations of the study may be seen as fruitful avenues for the following research under the same theme. Followings are some limitations of the study:

Firms appearing in default list in any of the sample period are excluded from the data set, and the sample size became short, whereas the other studies in the literature showed the analysis results on the basis of very large sample size.

Only the financial factors are considered as the potential variables which impact the performance of the firms. The results of the model showed that there are some other financial as well as the non-financial variables which may affect the accounting and market performance of the firms. So the qualitative variables may be included in the model in future studies which will decrease the role of intercept and increase the explanatory power of R-square.

The variables used in this study may be measured in many of the ways. For example, a number of studies showed the different measures for measuring the firm financial fragility. Some used the primary data, other measures the fragility from Euler Equation etc. In the same way, the activity, cash flows, growth and performance of the firms may be measured in a variety of ways. Thus, future studies may use other alternative ways or other financial ratios to perform the empirical analysis under the same idea. Further, the index may be constructed to measure the fragility of firms.

5.3 POLICY IMPLICATIONS

It is more desirable policy for a firm to use retained earnings for financing instead of debt financing. This policy follows both, optimal capital structure and pecking order, theories. The firm's manager should be careful to utilize the option of debt financing, although pecking order theory suggests using of debt financing, if retained earnings are not enough. The results of the study describe that the firms are highly leveraged and the managers of fragile firms should reduce the debt of the firm to improve the performance.

REFERENCES

1. Agarwal, Rajshree, & Gort, M. (2002). Firm Product Life cycles and firm survival. *American Economic Review* .
2. Agliari, A., Gatti, D. D., Gallegati, M., & Lenci, S. (2006). The Complex Dynamics of Financially Constrained hetrogeneous firms. Journal of Economic Behavior & Organization , 784-803.
3. Arslan, O., Florackis, C., & Ozkan, A. (2006). The role of cash holdings in reducing investment–cashflow sensitivity: Evidence from a financial crisis period in an emerging market. Emerging Markets Review , 320-338.
4. Ayyagari, M., Demirguc-Kunt, A., & Maksimovic, V. (2008). Formal Versus Informal Finance: Evidence from China. Oxford Journals .
5. Baker, M., J. Stein, and J. Wurgler, 2003. When does the market matter? Stock prices and the investment of equity-dependent firms. Quarterly Journal of Economics 118, 969-1005.
6. Beck, T. (2012). Finance and Growth-lessons from the literature and recent crisis . Working Paper .
7. Beck, T., Demirguc-kunt, A., & Maksimovic, V. (2005). Financial and Legal Constraints to growth: Does firm size matter? The Journal of Finance , 137-177.
8. Bottazi, G., Secchi, A., & Tamagni, F. (2007). productivity, profitablity and financial fragility; emperical evidence from italin business firms.
9. Bruneau, C., Bandt, O., & Amri, W. E. (2012). Macroeconomic Flactuations and Corporate financial fragility. Journal of Financial Stability , 219-235.
10. Cameron, A. C., & Trivedi, P. K. (2005). Microeconomatrics Method and Applications. Cambridge: Cambridge University Press.
11. Carletti, E. (2008). Compitition and Regulation of Banking. Handbook of Financial Intermediation and Banking .
12. Chan, K. S., Dang, V. Q., & Yan, I. K. (2012). Financial reforms and Financing Constraints: Some evidence from listed Chinese firms. China Economic Review , 482-497.
13. Chathoth, P. C., & Olsen, M. D. (2007). Does Corporate Growth Really matter in the restaurant industry? International Journal of Hospitality Management , 26(1) 66-80.
14. Chen, Q., Goldstein, I., & Jiang, W. (2007). Price Informativeness and Sensitivity to Stock Price Investment. The Review of Financial Studies , 20 (3), 619-650.
15. Cleary, S. (2002). International Corporate Investment and the Role of Financial Constraints. York University , 1-42.
16. Clementi, G., & Hopenhayn, H. (2006). A theory of Financing Constraints and Firm

Dynamics. Quarterly Jouranl of Economics .
17. Coricelli, F., & Mastern, I. (2004). Growth and Volatility in Transition countries: The Role of Credit. Working Paper .
18. Delen, D., Kuzey, C., & Uyar, A. (2013). Measuring firm performance using financial ratios: A decision tree approach . Expert Systems with Applications .
19. Ericson, R., & Pakes, A. (1995). Markove-Perfect industry dynamics: A framework for empirical work. Review of Economic Studies , 53-82.
20. Fama, E. F., & French, K. R. (2005). Financing decisions: who issues stock? Journal of Financial Economics , 72, 549-582.
21. Fazzari, S., Hubbard, G., & Petersen, B. (1988). Financing Constraints and Corporate Investment. Brookings Paper on Economic Activity , 141-195.
22. George, R., Kabir, R., & Qian, J. (2011). Investment–cash flow sensitivity and financing constraints: New evidence from Indian business group firms. Jounal of Multinational Financial Management , 69-88.
23. Gitman, L. J. (2010). Principles of Managerial Finance. England: Pearson Education Limited.
24. Gonzalez, V. M. (2013). Leverage and corporate performance: International Evidence. International Review of Economics and Finance , 169-184.
25. González, V. M. (2013). Leverage and corporate performance: International evidence. International Review of Economics & Finance, 25, 169-184.
26. Hericourt, J., & Poncet, S. (2009). FDI and Credit Constraints: Firm-level evidence from China. Economic Systems , 1-21.
27. Hong, Z., Shuting, Y., & Meng, Z. (2012). Relationship between free cash flow and financial performance Evidence from the listed Real Estate Companies in China. International Conference on Innovation and Information Management . Hangzhou: IACSIT Press, Singapore.
28. Hubbard, R. (1998). Capital Market Imperfections and Investment. Journal of Economic Literature , 193-225.
29. Jovanovic, B. (1982). Selection and Evolution of industry. Econometrica , 649-670.
30. Kallkan, A., Erdil, O., & Cetinkaya, O. (2011). The relationship between firm size, prospector strategy, architecture of information technology and firm performance. 7th International Strategic Management Conference (pp. 854-869). Turkey: Elsevier Ltd.
31. Kaplan, S. N., & Zingales, L. (1997). Do investment-cash flow sensitivities provide useful measures of financing constraints?. The quarterly journal of economics, 112(1), 169-215.
32. King, R., & Levine, R. (1993). Finance and Growth: Schumpeter might be right. Journal of Economics , 727-737.
33. Kiymaz, H. (2006). The impact of announced motives, financial distress and industry affiliation on shareholder's wealth: Evidence from large sell-offs . Quarterly Journal of Business and Economics , 69-89.
34. Levine, R., & Zervos, S. (1998). Stock markets, banks, and economic growth. American Economic Review , 537-558.
35. Loderer, C., & Waelchli, u. (2009). Firm Age and performance. The Journal of Finance .
36. Majumdar, S. K. (1997). The impact of size and Age on Firm-level performance: Some

evidence from India. Review of Industrial Organization , 231-241.
37. Mao, Z., & Gu, Z. (2008). The relationship between financial factors and firm performanc: Emperical Evidence from U.S Restaurent Firms. Journal of Foodservice Business Research .
38. Minetti, R., & Zhu, S. C. (2011). Credit Constraints and Firm Export: Microeconomic evidence from Italy. Journal of International Economics , 109-125.
39. Modigliani, F., & Miller, H. M. (1958). The Cost of Capital, Corporation Finance and Theory of the Investment. The American Economic Review , 48 (3), 261-297.
40. Moyer, R. C., McGuigan, J. R., & Kretlow, W. J. (2001). Contemporary Financial Management. Mason: South-West Cengage Learning.
41. Myers, S. C. (1984). The capital structure puzzle. The Journal of Finance .
42. Roenfeldt, R. L., & Cooley, P. L. (1978). Predicting Corporate profitability for investment selection . Journal of Business Finance & Accounting , 57-65.
43. Schumpeter, J. A. (1935). The analysis of economic growth. Review of Economic Statistics , 2-10.
44. Stein, J. (2003). Agency, Information and Corporate Investment. Hand Book of Economics of Finance .
45. Tabbasum, A. (2008). Economic Growth and Income Inequility Relationship: Role of Credit Market Perfection. Working Paper .
46. Villalonga, B. (2004). Diversification discount or premium? New evidence from the business information tracking series. The Journal of Finance, 59(2), 479-506.
47. Vitali, S., Battiston, S., & Gallegati, M. (2011). Financial Fragility and distress propogation in a network of regions. Working Paper .
48. Wu, M. (2006). Corporate Social Performance, Corporate Financial performance, and firm size: A meta-analysis. Journal of American Academy of Business.