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ORIGINAL ARTICLE

FIRM VALUE INVESTIGATION AFTER FINANCIAL CRISIS: A CASE STUDY OF NSE

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Abstract:

In this study the effect of global financial crisis of 2008 has been examined during two sub-periods, a sub-period immediately after financial crisis and next sub-period further financial crisis. First sub-period is a two-year period (2008-09 to 2009-10) and next sub-period is 3 years (2010-11 to 2012-13) after the first sub-period. Hypothesis of the study is of paired sample type. The data is analyzed using SPSS package software and the relevant statistical methods of paired sample testing of hypothesis and correlation analysis. Sample of the study involves 79 firms from 9 industries in NSE during April 2008 to March 2013. Tobin's Q ratio has been used as the measure of performance, and the best proxy for this is market to book equity ratio. Results show a significant difference between firm value during first sub-period and second sub-period. It says that firm performance in second sub-period was significantly better than the first sub-period, which is attributed to the effect of financial crisis.

KEYWORDS:

Financial crisis, Firm value,Tobin's Q, Market Value of Asset, Book Value of Asset, credit, financial constrain.

INTRODUCTION

In nowadays business the foremost objective of directors is to have as much as value they are able to achieve. An effective factor on profitability is cost of capital, the less cot a firm bear the more profit it will have leading to a higher value. So financing is challenging for managers as they should seek for least risky financial resources. During financial crisis financing is a tough work for financial managers, as there was are less number of financial resources and due to this reason there is a rough competition to obtain them. So having a low level of cost and high level of profitability leading to a convincing level of value is difficult especially in crisis. The 2007–2008 financial crisis which is known as the Global Financial Crisis or 2008 financial crisis, is the worst recession after Great Depression of the 1930s. The active stage of financial recession started from August 2007. A vast result of this crisis was dropping a lot of big financial institution, also bank bailout. An important outcome of crisis was stock exchange stagnation.It resulted suffers in housing market, and also breaking lots of key businesses. Decreasing in economic activity which itself causes many problems was an effective consequences of this crisis.

Sample of study includes 60 firms from different sectors of National Stock Exchange. The period in which data has been collected is 5 years from2008 to 2013. Used data of present study is of secondary type. Based on the objectives of the study and hypothesis formulated, the data will be collected through National Stock Exchange (NSE) databases. Other required data will be collected from reference book, journals, available databases and published papers. The data obtained will be analyzed by using SPSS

package software and the relevant statistical and econometrics methods of analysis like descriptive statistics (Mean, Median, and Standard Deviation), regression analysis, and correlation analysis.

Enterprise value is calculated as market cap plus debt, minority interest and preferred shares, minus total cash and cash equivalents. Enterprise value (Firm Value) = Common equity at market value (this line item is also known as "market cap") + preferred equity at market value + minority interest at market value, if any + debt at market value + unfunded pension liabilities and other debt-deemed provisions - associate company at market value, if any - cash and cash-equivalents. Concerning the optimal capital structure there several models and theories namely, M&M theory (Modigliani–Miller Theorem) which is based on two propositions, CAPM model that is based on compensation for risk, Binomial model that is based on the probability of up and down jump of the future value and Black-Scholes which is for evaluation for European options.Data analysis is done by using SPSS software and other statistical methods of analysis of paired sample testing of hypothesis and correlation analysis.The data is analyzed by using SPSS package software and the relevant statistical methods of paired sample testing of hypothesis and correlation analysis.Results show a significant difference between firm value during first sub-period and second sub-period. It says that firm performance in second sub-period was significantly more than the first sub-period which is due to the effect of financial crisis on economy and financial confines. The performance of firms was significantly better in the second sup-period that the first one.

REVIEW OF LITERATURE

DavinChor and KalinaManova in 2012 studied the downfall of international trade flows during the global financial crisis using detailed data on monthly US imports. They represented that credit conditions were a prominent channel through which the crisis affected trade volumes, by using the variation of cost of capital across countries and over time, as well as the variation of financial vulnerability across sectors. Countries having higher interbank rates and thus tighter credit markets exported less to the US during the peak of the crisis. This effect was especially pronounced in sectors that require vast external financing, have restricted access to trade credit, or have few collateralizable assets. Exports of financially vulnerable industries were thus more susceptible to the cost of external capital than exports of less vulnerable industries, and this sensitivity went up during the financial crisis. The quantitative implications of this study estimates for trade volumes highlight the extensive real effects of financial crises and the potential avails from policy intervention.

Ming-Chang Cheng and Zuwei-ChingTzengin a study in 2011 studied the effect of leverage on firm values and contextual variables influencing on this relationship. The methodology of the study is Generalized Method of Moment (GMM). They found that the values of leveraged firm are greater than that of an unleveraged firm if they don't consider bankruptcy probability. With considering the benefit and cost of debt simultaneously, the leverage is positively related to the firm value before reaching firm's optimal capital structure. Based on quality of the firm the positive influence of leverage to the firm value tends to be stronger when the firm financial quality is better.

In a study by C Borio, P Disyatat in 2011, they highlighted two conceptual problems: (i) drawing inferences about a cross-border of a country financing activity based on observations of net capital flows; and (ii) market interest rates explaining through the saving-investment framework. They tracked the shortcomings of this perspective to a failure to see the discriminating characteristics of a monetary economy. They guessed that the main participating factor to the financial crisis was not "excess saving" but the "excess elasticity" of the international monetary and financial system: the monetary and financial regimes in place failed to harness the build-up of unsustainable credit and asset price booms ("financial imbalances"). Credit creation, a denoting feature of a monetary economy, has a key role in the story.

Manuel Ammanna et al. in 2011 in their study investigated the relation between firm-level corporate governance and firm value.Based on a set of 64 individual governance attributes they constructed two alternative additive corporate governance indices with equal weights attributed to the governance attributes and one index derived from a principal component analysis. They found a strong and positive relation between firm-level corporate governance and firm valuation and between a company's social behavior and firm value. They investigated the value relevance of governance attributes that documented the companies' social behavior. Regardless of whether these attributes were considered individually or aggregated into indices, and even when “standard” corporate governance attributes are controlled for, they exhibit a positive and significant effect on firm value.

Kahle, Kathleen M. and Stulz, Rene M. in 2011 stated that though much of the story of the financial recession has focused on the effect of a bank credit supply shock, they showed that such a shock is not able to explain prominent features of the financial and investment policies of industrial firms. These properties were consistent with a prevailing role for the risk enhancement and the demand reduction for

goods that occurred during the crisis. The net equity issuance of small firms and unrated firms is uncommonly low all over the crisis, whereas a destroyed credit supply by itself would have persuaded these firms to enhance their net equity issuance. After September 2008, firms raised their cash holdings rather than utilize them to alleviate the effect of the credit supply shock. Firms that were more bank-reliant before the crisis didn'tdecrease their capital expenditures more than other firms during the crisis. Finally, results support the evidence that the importance of collateral and corporate net worth in financing and investment policies, as firms with stronger balance sheets reduce capital expenditures less after September 2008.

In 2011 Hoje Jo Maretno A. Harjoto investigated the effects of internal and external corporate governance and monitoring mechanisms on the choice of corporate social responsibility (CSR) engagement and the value of firms engaging in CSR activities. Their methodology was a two-stage estimation procedure using the inverse Mills' ratio to take account of the endogeneity bias. They found that several governance characteristics positively affect the choice of CSR engagement, they also found that CSR engagement enhances firm value. They showed evidence that the impact of external monitoring by security analysts over firms' CSR activities on firm value is more significant than other internal and external governance and monitoring mechanisms.

Murillo Campello et al. in 2010 they surveyed 1,050 Chief Financial Officers (CFOs) in the U.S., Europe, and Asia to assess whether the firms were credit constrained during the global financial crisis of 2008. They show that constrained firms planned deeper cuts in tech spending, employment, and capital spending. Constrained firms also burned through more cash, drew more heavily on lines of credit for fear banks would restrict access in the future, and sold more assets to fund their operations. They also found that the incapability to finance externally caused many firms to blow over attractive investment opportunities, with 86% of constrained U.S. CFOs saying their investment in attractive projects was restricted during the credit crisis of 2008. More than half of the responders said they terminated or delayed their planned investments. Their results in many cases were stronger in Asia and Europe economies.

In 2010 Victoria Ivashina and David Scharfsteinb in a study entitled Bank lending during the financial crisis of 2008, showed that new loans to large borrowers fell by 47% during the financial crisis peak period (fourth quarter of 2008) compare to the previoes quarter and by 79% relative to the credit boom peak (second quarter of 2007). they found that there was a concurrent run by borrowers who reduced their credit lines, causing a sudden increase in commercial and industrial loans reported on bank balance sheets. They examined whether these two stresses on bank liquidity led them to rupture lending. In particular, they indicated that banks disconnect their lending less if they had better attain to deposit financing and thus, they were not as dependent on short-term debt. Theyindicated that banks were sensitive to credit-line drawdowns because they co-syndicated more of their credit lines with Lehman Brothers attenuated their lending to a greater extent.

PrechaThavikulwatin 2004 studied measuring the value of firm which could be determined through five different measures: book value, market value, capitalized value, deductive judgment, and adjusted net worth. The firm's book value may be an unreasonable measure of its true value because of the idiosyncrasies of accounting. True market value may be unavailable or unreliable. The capitalized value measure requires an arbitrary parameter, the deductive judgment measure requires subjective judgment, and the adjusted net worth measure requires detailed knowledge of the gaming simulation's model. Developers are in the best position to apply the adjusted net worth measure.

SIGNIFICANCE OF STUDY

In any business the most important objective is to gain more and more profit in order to increase value of a firm and consequently maximize the shareholders wealth which is the main objective of any business. To achieve these objectives appropriate decision should be taken which require an efficient mixture of capital to minimize the cost of capital, maximize the return and firm value and finally forcing down the risk. These are the foremost factors in decision making that decision makers must keep an open eye on them, otherwise the business will face remarkable problems. Due to significance of these decisions a lot of works and research have been done revealing different results that in turn is the consequence of nowadays complicated business. The mentioned objectives are important especially when the economy is in crisis where financing is difficult and managing everything not to decrease the value is rough.

PROBLEM STATEMENT

As firm value is one of the main objectives of manager which they always consider it in their decision making the problem is how they are able to reach the highest value. Leverage ratio and cost of capital are two indicators they consider them as they effect on firm value. The toughest problem is the

ambiguity of the optimum amount of leverage to minimize the cost of capital and risk and simultaneously to gain the highest possible return. In this study researcher attempts to analyze the relationship of variables to help managers to achieve their objectives.

HYPOTHESIS OF STUDY

Hypothesis of the study examines whether there is a significant difference between firm value during first two years (2008-09 to 2009-10) from next three years (2010-11 to 2012-13) of financial crisis.

RESEARCH METHODOLOGY

A methodology could be defined as a guideline system for solving a problem, with specific components such as phases, tasks, methods, techniques and tools. Research methodology is the process used to collect information and data for the purpose of making business decisions. The methodology may include publication research, interviews, surveys and other research techniques, and could include both present and historical information. It deals with the significant of research problem and its design, data collection, sampling, methods of data analysis and statistical tools for this purpose and interpretation.

The data is analyzed by using SPSS package software and the relevant statistical methods of paired sample testing of hypothesis and correlation analysis.

STATISTICS USED

Data analysis is done by using SPSS software and other statistical methods of analysis of paired sample testing of hypothesis and correlation analysis.

SAMPLING

Sample of the study involves 60 firms from 9 industries in NSE during April 2008 to March 2013. The sampling method is judgmental. Phases of sampling that include 1) selecting the stock exchange among available stock exchanges, 2) selecting the industries, and 3) selecting firm in each industry, are judgmental sampling.

Selected industries are Steel, Refinery, Chemicals, Auto, Cement, Aluminum, Computer, Pharmaceuticals, and Textile.

OPERATIONAL DEFINITION

One of the most used proxy for Tobin's Q, is that it is used as the main measure of corporate performance. Proxies for Tobin's Q (the ratio of the firm's market value to the replacement cost of its assets) have been used as a measure of firm performance in a lot of studies (see,e.g., Morck, Shleifer, and Vishny,1988; Yermack,1996; Gompers, Ishii,and Metrick,2003). Q is measured by dividing the market value of by the end year measured book value of assets. The market value of assets is defined as the book value of assets plus the market value of equity minus balance sheet deferred taxes and minus the book value of equity. The book value of assets is assumed as the replacement cost of assets.

$$Q = \frac{Market\ Value\ of\ Assets}{Book\ Value\ of\ Assets}$$

Where, the market value of assets = book value of assets + market value of common stock - sum of the book value of common stock - balance sheet deferred taxes.

In this study market to book equity ratio, the price-to-book ratio, is used as a proxy for Q, which is a comparison of market value and book value of firm. It measures the present value (Market value) of asset and the value invested on the stock (Book Value).

FINDINGS

According to the findings of testing of hypothesis there is a significant difference between firm value in two periods. Results indicate that the mean value of firm in second sub-period of study is significantly more than first sub-period. Results show that the value is different meaning that the financial crisis has exerted its effect on firm value.

Table1. Result of testing of hypothesis analysis

	N	Sig. Level	Correlation
Paired V_1-V_2	79	0.028	0.477

It indicates that as time passes from financial crisis the situation of firms is getting better. The correlation between them is moderate based on the results.

CONCLUSION

This study examined the effect of financial crisis on firm value during two sub-periods to see whether it had any effect on firm value or not. First sub-period is a two-year period (2008-09 to 2009-10) and next sub-period is 3 years (2010-11 to 2012-13) after the first sub-period. Hypothesis of the study is of paired sample type. The data has been analyzed using SPSS package software and the relevant statistical methods of paired sample testing of hypothesis and correlation analysis. Sample of the study involves 79 firms from 9 industries in NSE during April 2008 to March 2013. Among the different methods of firm value calculation Tobin's Q ratio has been used as the measure of performance, and the proxy for this is market to book equity ratio. According to the findings and having a glance on literature the effect of financial crisis on many aspects of finance and economy is obvious. Results show a significant difference between firm value during first sub-period and second sub-period. It says that firm performance in second sub-period was significantly more than the first sub-period which is due to the effect of financial crisis on economy and financial confines.

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