The Study of Financial Crisis Effect on Profit Qualitative Features in Firms of Tehran Stock Exchange

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ABSTRACT

Profit as the significant product of accounting information system must be of acceptable quality. The purpose of this study was the impact of financial crisis on earnings quality features, for this purpose the indexes of conservatism, smoothing the earnings, forecasting the profit and unexpected profit was used as a qualitative features of profit. Altman model is also used to measure the financial crisis in this model, if z is calculated between 1/81 and 2/675, the company is located in the financial crisis. This study is functional objectively, in the process of implementation is quantitatively and in the research method is analytical-descriptive, in the research model is post-event and the relationships between the variables of cause and effect research. In this context, using the sampling method of the systematic elimination, 89 companies listed in Tehran Stock Exchange since 2008-2013 were reviewed and four hypotheses have been proposed to test the software was used econometric Eviews8.The results show that during the study, the financial crisis has had a negative impact on the quality characteristics of profit. As a result, investors and analysts recommended for short-term and long-term investment decisions, in addition to the figures presented in the financial statements to evaluate the company's accounting methods, including adopting the conservative accounting practices in the financial statements.

KEYWORDS: financial crisis, the quality of profit, conservatism, profit smoothing, forecasting profit, unexpected profit, the Tehran Stock Exchange

INTRODUCTION

The aim of present study is to examine financial crisis effect on profit quality features of firms in Tehran Stock Exchange. In Iran, loss continuity procedures of firms in Tehran Stock Exchange are increasing. In 1387, more than 30 number of firms went out of Tehran Stock Exchange because of two factors; loss continuity and bankruptcy (Banimahd&Baghbani, 2009).Some accounting researches has shown that firms managers intend to release desired data and good news into capital market to prevent decreasing firm value.(Pour heydari& Hemati,2004).It is clear that there is always an increasing motivation to manage earnings during inappropriate financial crisis period of firm. Therefore, there some doubts about earning value as one of the most important goals of reporting performance and also a factor of determining firm value (Zariffard, 1999). As a result, earnings analysis has an especial importance in firms with financial crisis since awareness is considered as an undeniable necessity to make decision.

The Problem Expression

Currently, economic enterprises are working in a changeable and competitive environment. The financial crisis and ultimately "bankruptcy of units can create huge losses at both micro and macro levels. At macro levels, the financial crisis can cause decreased GDP and creating some losses for stakeholders at micro level (PourHeydari& Koopayee Haji, 2010).

According to Iran's auditing standards, the auditor's responsibility is to determine the appropriateness of using continuity assumptions by management to prepare financial statements and examining the probability of existing some important ambiguous about continuing activities in economic units as held unit which requires the publication of financial statements(Ahdian Pour Parvin&Setayesh,2008).Early warning of potential bankruptcy enables management and investors to take hedging actions and distinguish appropriate opportunities from inappropriate ones (Mehraniet al., 2005). According to Iran's theoretical bases of financial reporting, Information provided by the accounting system can be useful if it has needed standards during the process of making economic

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decisions by users. These standards are named "qualitative features "of accounting information that can increase data usefulness (Accounting Standards Committee, 2007).According to Ball and Shivakumar2006), conditional conservatism (bad news recognition faster than good news) as considered as an indicator of financial reporting quality. Bar and landsman (2010)found that low quality of financial reporting of financial assets makes it difficult for investors to assess the bank investments risks properly. The other important subject is that many firms cannot recognize their bankruptcy in its real time; therefore there is not enough time to solve this financial problem which resulted from inappropriate control system and this lead to earnings management by companies or decreasing conservatism level, especially conditional conservatism to hide weak performances in firm since this kind of conservatism is an ex post conditional conservatism and related to the news .That is determining bad news than good news in their real time .It should be stated that managers tend to not release bad news when there is financial crisis in firm .In addition, earnings management is effective on earnings quality factors. Earnings smoothing affairs by managers may decrease content of earnings information and create some problems in optimal usage of decision making and prediction patterns. During the financial crisisperiod, managers often focus on earnings. For example, luxandLuz (2010) reports that: During a financial crisis period, managers may be tempted to sell their assets to maintain their fundamental value in Earning Profit. Therefore, Capital market consequences resulting from earnings quality changes May play an important role in determining the quality of financial reporting. As a result, has financial crisis meaningful effecton considering the importance of the quality of financial reporting. For investors and firms with financial crisis earnings qualitative features.

The Importance and Necessity of Research

The factors that lead to firm's bankruptcy are not created suddenly .Signs of financial crisis of a firm is observed much earlier than the final bankruptcy of the firm. Financial crisis is a status that the firm is not able to earn sufficient resources therefor it is in trouble to do its affairs. Firms' executive managers intend to announce desired data and good news to prevent decreasing firm value in financial crisis conditions. Lee (2011) studied Canadian firms and concluded that financial crisis and bankruptcy riskis predictable using accrual-based variables through a desirable way. He also suggested that bankruptcy probability in firms with low accruals is more than those with more accruals. Hence, according to what mentioned above, profit analysis in firms with financial crisis has a specific importance and it seems that they have a lot of motivation to hide poor performance of the firm. Therefore, the main necessity of present study is to promote awareness levels of investors in this field. On the other hand, according to the financial scandals, financial crisis and its effect on profit quality features and financial reporting features has attracted much attention during recent years

During recent years, many researches have been done after determining the associationbetween financial variables and financial or non-financial crisis effect on them while no research has been done about financial crisis effect on profit qualitative features in Iran. Therefore; the aim of present study is to examine financial crisis effect on profit quality features of firms in Tehran Stock Exchange. We hope that the results of the research to be useful.

Research hypotheses

The research hypotheses are as follows:

The main hypothesis:

Financial crisis has a meaningful effect on profit qualitative features of firms in Tehran Stock Exchange.

Sub-hypothesis:

1) Financial crisis has a meaningful effect on conservatism feature of firms in Tehran Stock Exchange.

2) Financial crisis has a meaningful effect on smoothing feature of firms in Tehran Stock Exchange.

3) Financial crisis has a meaningful effect on profit predictability feature of firms in Tehran Stock Exchange.

4) Financial crisis has a meaningful effect on unexpected benefit feature of firms in Tehran Stock Exchange.

Research History

Row	Researcher/Researchers Name	Years of Research	Research Title	Summary of Research Results
A Literature Review of Foreign Researches				
1	Altman	1967	A multivariable model according to accounting data for predicting firm financial health	This model include five variables and working capital ratio to total assets, retained earnings to total assets, earning before interest and tax to total assets, firm market value to price-to-book of total assets and finally, sales ratio to total assets ratio.
2	Dimitrios	2013	The Study of financial crisis impact on profit quality	Results showed that firms report profit which is more appropriate , more conservatism with more valuable relationship , less payment , less control with more continuity and more profit predictability
A Literature Review of Internal Researches				
1	Saghafi&Kordestani	1383	The Study of relationship between profit quality and market reaction to cash profit	They evaluated profit quality based on three criteria: the relationship betweenoperational cash flows
2	EslamiBidgoli et al	1390	The Study of conservative accounting on financial crisis of accepted firms in Tehran Stock Exchange	They concluded that there is a meaningful relationship between conservative accounting indexwith financial crisis. Results of this research suggest that accounting conservatism is an effective contractual mechanism to restrict manager's biased behavior to show unreal amount of profit in firms with financial crisis.
3	Dastgir et al	1391	The Study of profit quality	Profit quality of firms accepted in Tehran Stock Exchange was analyzed during 1380-1388 years through the study of profit management status in firms with financial crisis and their conditional conservative status. Results of this study show that firms with financial crisis manage their profitsincreasingly during 3 years before insolvency. This management will be done by changing accruals and real activities of tests and It was observed that firms with financial crisis manage their profits using profit real activities more than healthy firms.

General Research Method

The aim of this study, in terms of objective, isapplication and it is quantitative in terms of the process of implementation whileitis an Ex post facto research kind based -on relationships between variables. In this study the field method has been used to collecting data.

How to measure the financial crisis

The independent variable in this study is the effects of financial crisis and The Altman method is used in order to calculate it:

$$Z = 1.1X1 + 1.4X2 + 3.3X3 + 0.6X4 + 0.99X5 \quad (1\text{ -}1)$$

X1:Working capital ratio to total assetsX2: Accumulated profit ratio to total assetsX3: earnings before interest and taxes to total assetsX4: The market value of equity to book value of debtX5: Total sales ratio to total assets

In this model , if calculated Z for the firm is less than 1.81 ,then the firm is bankrupted, and if Z has a amount between 1.81 and 2.675 , then the firm is located in the area of bankruptcy, when Z is greater than 2.675 ,the probability of bankruptcy of the firm is very low (Rahnama et.al ,1385:514).

How to assess conservatism

In order to measure conservatism based on accruals model of Shivakumar and ball are used as follows:

$$\text{CONS}_{it} = \alpha_0 + \alpha_1 \text{DCFO}_{it} + \alpha_2 \text{CFO}_{it} + \alpha_3 \text{DCFO}_{it} * \text{CFO}_{it} + \varepsilon \quad (1\text{-}2)$$

cons_{it} =Total items of conservatism of the firm through its financial year.

DCFO_{it} = The virtual variable which in case of negative operating cash flows is one, and otherwise it is zero.

CFO_{it} = Operating cash flow of firm in financial year(t) (Ball& Shiva Kumar ,2006).

How to measure income-smoothing

To measure the income-smoothing, the Eckelsindex is used.

Imhoff has done a researchand states that:smoothing occurs when the variability of the profi income is less than the variability of income (sales),(Jahankhahi& Badri,1381).

A firm is introduced smoother if the ratio of profits variation to the coefficient of variation of incomes (sales) be less than 1; in other words:

$$\frac{CV \Delta I}{CV \Delta S} < 1$$

$CV\Delta I$= The coefficient of variation of interest that is the standard deviation divided by the mean interest

CV∆S= The coefficient of variation of sale that is the standard deviation divided by the mean sale

How to assess the predictability of Income

To measure the income predictability, following adjusted coefficient of determination is used (Haghighat& Moytamed,1390).

$$PE_{it+1} = \alpha_0 + \alpha_1 E_{it} + \varepsilon \qquad (1\text{-}3)$$

PE_{it+1} = Annual profits in the coming yearα_0= constant factorα_1=stability factor

E_{it} : Firmannual profit in current year

How unexpected profit is measured

Johnson and Zhv (2012) model is used to measure unexpected profit. It should be mentioned that we have more unexpected profit when the value of the following expression is greater and finally there is less profit quality, too (HasasYeganeh&Karimi,1390).

$$UE_{it} = AEPS_{it} - FEPS_{it} / AEPS_{it} \qquad (1\text{-}4)$$

UE: Unexpected earnings of (i) firm in (t) date

$AEPS_{it}$: Accounting Earning per Share of (i) firm in (t) date

$FEPS_{it}$: Forecast Earning per Share of (i) firm in (t) date

Table 1. Sampling Method

Expression	Numbers	Total Sum
All accepted firms in Tehran Stock Exchange until the end of year 1392.	560	filter
Every year, financial year of firms leading up February andno changes has been occurred in financial year during the period under study.	(176)	filter
They are not categorized into non-manufacturing firms, banks, and financial institutes (including investment firms, Financial Intermediaries, Holding and leasing firms).	(98)	filter
They have been involved in stock from 1387 to 1392.	(83)	filter
All needed data about different firms should be available.	(67)	filter
There is no change in their kind of activity during the period under study.	(47)	filter
All removed firms from statistical population.	(471)	Filter
All firms as a member of statistical sample	89	

Testing for unit Roots in Panel Data

If non-viable data are used to estimate econometric equations, F and t statistics are not valid since there is no constant average variance for data during the time and estimated model would be unusable and there isalsoa spurious regression problem.

H_0 : Existing non-stationary unit root

H_1: Lack of existing a stationary unit root

If data were not in a stationary level, the study ofdata stationarycan be done by taking once or twice "differences" and data are enough valid to estimate models when their stationary is approved in these three levels.

Table 2. Results of Unit Roots Testing for Variables (status withIntercept)

Variables Tests	LLC	Prob	IPS	Prob	ADF-Fisher	Prob	pp-Fisher	Prob
				Tests of Stationary				
Conservatism	-44/7596	0/000	-7/2634	0/000	314/960	0/000	353/099	0/000
Stationary Time	On level		On level		On level		On level	
Profit redictability	-72/6767	0/000	-12/3737	0/000	379/109	0/000	450/027	0/000
Stationary Time	On level		On level		On level		On level	
Income Smoothing	-112/655	0/000	-13/7972	0/000	366/349	0/000	420/517	0/000
Stationary Time	On level		On level		On level		On level	
Unexpected Profit	-94/1839	0/000	-15/1839	0/000	411/968	0/000	473/242	0/000
Stationary Time	On level		On level		On level		On level	
Financial Crisis	-216/02	0/000	-118/349	0/000	315/802	0/000	411/770	0/000
Stationary Time	On level		On level		On level		On level	

Ref: Research Calculation

Based on obtainedresults from stationary test in table 2, all variables in Levin-Lin-Chu test, Im, Pesaran and Shin, Dickey–Fuller test and Phillips-Perron (PP) are in a stationary level.

Hypotheses Analysis
The First Hypothesis
MODEL1: $\text{CONS}_{it} = \beta_0 + \beta_1 Z_{it} + \varepsilon_{it}$

Table 3. F-Limer Test Results and Hausman Test   (The First Hypothesis)

Test Type	F-Limer Test	Hausman Test
Statistic Value	F= 3/1100	$x_2 = 6/6273$
P-Value	0/0000	0/0100
Model Type	Panel	fixed Effect

Ref: Research Calculation

Table 4. Model Results for Fixed Effects Model (1)

Dependent Variable				
Fixed Effects Model	Coefficients	Standard deviation	(t)Statistic	P-Value
C(Intercept)	124079/6	690/7010	179/6430	0/0000
Z_{it}	-9/7862	5/5903	-2/1083	0/0055
R^2(Correlation coefficient)	0/48			
R^2(adjusted etermination coefficient)	0/45			
D.W(Durbin–Watson statistic)	1/83			
F Fisher	3/0788 prob=0/0000			

Ref: Research Calculation

Based on presented resultsin table 4, financial crisis variable has a negative and meaningful effect on dependent variable (conservatism) with 95% confidence level and profit predictability management is decreased (e.g., 9/7862 unit) by increasing financial crisis variable for1 unit. Hence, null hypothesis [H_0]in hypothesis 1 is rejected and hypothesis [H_1]is accepted.

The other calculated statistics including correlation coefficient, adjusted determination coefficient,Durbin–Watson statistic and F Fisher test shows regression appropriateness. Obtained results reject findings of Demetrius et. al., studies (2013) and are corresponding to Islamic findings obtained by Bidgoliet. al., (2011)andDastgiret.al., (2012).

The Second Hypothesis
MODEL2: $\text{SE}_{it} = \beta_0 + \beta_1 Z_{it} + \varepsilon_{it}$

Table 5. F-Limer Test Results and Hausman Test   (The Second Hypothesis)

Test Type	F-Limer Test	Hausman Test
Statistic Value	F= 6/2845	$x_2 = 5/7990$
P-Value	0/0053	0/0013
Model Type	Panel	fixed Effect

Ref: Research Calculation

Table 6. Model Results for Fixed Effects Model (2)

Dependent Variable				
Fixed Effects Model	Coefficients	Standard deviation	(t)Statistic	P-Value
C(Intercept)	544882/8	6351/277	85/7910	0/0000
Z_{it}	-2/7387	5/2238	-1/9171	0/0784
R^2(Correlation coefficient)	0/50			
R^2(adjusted etermination coefficient)	0/49			
D.W(Durbin–Watson statistic)	2/12			
F Fisher	2/2804 (prob=0/0000)			

Ref: Research Calculation

Based on presented results intable5 and F-Limer Test Results and Hausman Test, the second model is a type of fixed effects panel. As table 6 shows;financial crisis variable has a negative and meaningful effect on dependent variable (conservatism) according to (t)statistic value and its related probability level in 95% confidence level and income smoothing variable is decreased (e.g., 2/7387 unit)by increasing financial crisis variable for 1 unit.Hence,null hypothesis [H_0] in hypothesis 2 is rejected and hypothesis [H_1] is accepted. The other calculated statistics including correlation coefficient (0/50), adjusted determination coefficient (0/49), Durbin–Watson statistic

(2/12) and F Fisherteststatistic (2/2804prob=0/0000) shows regression appropriateness. Obtained results are corresponding to findings of Jahankhani and Badristudies (2002).

The Third Hypothesis
MODEL3: $PE_{it} = \beta_0 + \beta_1 Z_{it} + \varepsilon_{it}$

Table 7. F-Limer Test Results and Hausman Test   (The Third Hypothesis)

Test Type	F-Limer Test	Hausman Test
Statistic Value	F= 3/7288	$x_2 = 4/0934$
P-Value	0/0002	0/0009
Model Type	Panel	fixed Effect

Ref: Research Calculation

Table 8. Model Results for Fixed Effects Model (3)

Dependent Variable				
Fixed Effects Model	Coefficients	Standard deviation	(t)Statistic	P-Value
C(Intercept)	618503/8	4956/254	124/792	0/0000
Z_{it}	-6/512272	19/91715	-3/3269	0/0038
R^2(Correlation coefficient)	0/55			
R^2(adjusted determination coefficient)	0/54			
D.W(Durbin–Watson statistic)	2/38			
F Fisher	2/7107(prob=0/0002)			

Ref: Research Calculation

Based on presented results in table 8, financial crisis variable has a negative and meaningful effect on dependent variable (profit predictability) in 95% confidence level and profit predictability management is decreased (e.g., 6/512272 unit)by increasing financial crisis variable for 1 unit. Hence, null hypothesis [H_0] in hypothesis 3 is rejected and hypothesis [H_1] is accepted.

The other calculated statistics including correlation coefficient, adjusted determination coefficient, Durbin–Watson statistic and F Fisher test statistic shows regression appropriateness like two mentioned models. Obtained results reject findings of Demetrius et al., studies (2013) and are corresponding to findings obtained by Haghighat and Motamed (2011).

The forth Hypothesis
MODEL4: $UE_{it} = \beta_0 + \beta_1 Z_{it} + \varepsilon_{it}$

Table 9. F-Limer Test Results and Hausman Test   (The forth Hypothesis)

Test Type	F-Limer Test	Hausman Test
Statistic Value	F= 2/7045	$x_2 = 3/0129$
P-Value	0/0003	0/0042
Model Type	Panel	fixed Effect

Ref: Research Calculation

Table 10. Model Results for Fixed Effects Model (4)

Dependent Variable				
Fixed Effects Model	Coefficients	Standard deviation	(t)Statistic	P-Value
C(Intercept)	513/1678	0/184686	2778/622	0/0000
Z_{it}	-0/021953	0/001462	-2/651512	0/0050
R^2(Correlation coefficient)	0/45			
R^2(adjusted determination coefficient)	0/44			
D.W(Durbin–Watson statistic)	2/30			
F Fisher	2/6909(prob= 0/0002)			

Ref: Research Calculation

As table 10 shows, financial crisis variable has a negative and meaningful effect on dependent variable of unexpected profit according to (t)statistic value and its related probability level in 95% confidence level and unexpected profit is decreased (e.g., 0/021953 unit)by increasing financial crisis variable for 1 unit. Hence null hypothesis [H_0] in hypothesis 4 is rejected and hypothesis [H_1]is accepted.

The other calculated statistics including correlation coefficient, adjusted determination coefficient, Durbin–Watson statistic and F Fisher test statistic shows that estimated regression is meaningful and appropriate. Obtained results are corresponding to findings obtained by Saghafi and Kordestani (2004).

It should be noted that there is no multiple colinearity problem in all estimated models because impossibility of coefficients estimation and high rate of R^2 with less number of meaningful ratios of are those (t)are those factors which shows multiplecolinearity problem and as mentioned before , there is no multiplecolinearity problem in all estimated models for mentioned hypotheses. It is necessary to state that estimating models is done using estimating generalized least squares (EGLS) the model is also based on compound data(combining time series data and cross-sectional data)and it does not have any heterogeneous variance problem.

Kao's Cointegration Tests (Engle-Granger Based) :

Table 11. Kao's Cointegration Test Results

Variable'sLong-Term Relationship	Kao's Cointegration Tests	
Financial crisis and Conservativism	Test statistic (Dickey–Fuller test)	p-value
	ADF= - 2/0091	0/0223
Financial crisis and Profit smoothing	ADF= 2/6378	0/0117
Financial crisis and profit predictibilty	ADF= 3/9972	0/0093
Financial crisis and unexpected profit	ADF= 2/2051	0/0137

Ref: Research Calculation

Based on Kao's Cointegration Test Results in table 11, long-term relationships between variables of every hypothesis is accepted in 95% confidence level. According to test statistic value in four mentioned status, p-value is less than 0/05 and null hypothesis is rejected based on lack of cointegration and the other hypothesis is accepted because of existing long-term relationship and cointegration.These results show that there is a powerful long-term relationship between variables in every mentioned models.

Suggestions based-on Research Hypotheses
1-According to the results of the first hypothesis, it can be suggested to investors and analysts to take different firm accounting methods into more consideration as well as using conservative accounting methods to produce financial statements while they are using presented numbers in financial statements to make short-term or long-term investment decisions.
2- It is suggested to investors to take decision variables into more consideration to make economic decisions since some managers in firms with financial crisis try to change profit rate to maintain themselves' situation during created misdirection.
3- According to negative effect of financial crisis on profit prediction, it is suggested to investors to take fluctuations into more consideration on earnings forecasts since firm managers tries to decrease fluctuations levels on earnings forecasts by Earnings Changes.
4-According to negative effect of financial crisis on unexpected profit, it is suggested to stock company managers to take all effective factors into more consideration in capital market to form expected output. It is also stated that auditor has a responsibility to examine continuity of activities and the auditor shall report any existing ambiguity. As a result, some criteria such unexpected earnings can help auditor to examine financial statement of the institute.

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