Management Science Letters 3 (2013) 705–714

Contents lists available at GrowingScience

Management Science Letters

homepage: www.GrowingScience.com/msl

A study on relationship between tail risk on earning management in Iranian banking industry

Mohammad Khodaei Valahzaghard[a*] and Aazam Samadi[b]

[a]*Assist. Prof. & Faculty Member, Department of Accounting, School of Management and Human Sciences, Tehran North Branch, Islamic Azad University (IAU), Tehran, Iran*
[b]*M.Sc. Student, Department of Management, School of Management and Human Sciences, Tehran North Branch, Islamic Azad University (IAU), Tehran, Iran*

C H R O N I C L E

Article history:
Received July 18, 2012
Received in revised format
10 November 2012
Accepted 15 November 2012
Available online
November 19 2012

Keywords:
Revenue management
Tail risk
Tehran Stock Exchange

A B S T R A C T

Risk management plays an important role in banking industry and there are literally many investigations to reduce any risk components in this industry. In this paper, we present a study on relationship between tail risk on earning management in Iranian banking industry. In this survey, we use two series of data. The first set is associated with yearly information of 19 different banks over the period 2005-2011 and it contains 114 observations. The second set of data includes weekly historical data of eight banks over the same period 2005-2011. In this survey, there are four objectives to be investigated. The first hypothesis considers the effects of seven independent variables on loan loss allowance as a fraction of total loans. The second model is associated with the effects of two independent variables on realized gains and losses on securities. The third objective is to study the effects of different independent variables with various interruptions on return of banking sectors. Finally, the last model investigates the effects of revenue management on tail risk. The result of this survey indicates that there is no relationship between tail risk and earning management.

1. Introduction

There have been growing concerns among banks' managers as well as investors on tail risk associated with the shares of banking industry (Dimson, 1979; Dechow et al., 1995; Dechow et al., 1996; Demski, 1998; Amihud, 2002; Cornett et al. 2009; Hutton et al., 2009). Ahmed et al. (1999), for instance, reexamined capital management, earnings management, and signaling effects for bank loan-loss provisions. Arya et al. (1998) investigated the relationship between earnings management and the revelation principle. Beatty et al. (1995) investigated the impact of taxes, regulatory capital, and earnings on managing financial reports of commercial banks. Beatty et al. (2002) investigated the impact of earnings management to avoid earnings declines across publicly and privately held banks.

*Corresponding author. Tel: +98-912-3443139
E-mail addresses: m_khodaei@iau-tnb.ac.ir (M. Khodaei Valahzaghard)

doi: 10.5267/j.msl.2012.11.025

Beaver and Engel (1996) studied discretionary behavior with respect to allowances for loan losses and the behavior of security prices. Cohen et al. (2004) studied trends in earnings management and informativeness of earnings announcements in the pre- and post-Sarbanes Oxley periods. Cohen et al. (2004), in an assignment, investigated trends in earnings management and informativeness of earnings announcements in the pre-and post-Sarbanes Oxley periods. Gunther and Moore (2003) investigated loss underreporting and the auditing role of bank exams. Healy (1985) studied the effect of bonus schemes on the selection on accounting decisions.

Sloan (1996) investigated whether stock prices fully reflect information in accruals and cash flows about future earnings. Scholes et al. (1990) studied tax planning, regulatory capital planning, and financial reporting strategy for commercial banks. Wahlen (1994) performed an empirical investigation on the nature of information in commercial bank loan loss disclosures.

Houshmand Neghabi and Morshedian Rafiee (2013) investigated the relationship between capital structure as dependent variable and seven independent variables including tax rate, firms' growth rate, fixed assets, firms' size, operating risk, profitability and industry type. They used the financial information of 107 selected companies from 18 different industries listed on Tehran Stock Exchange over the period of 2004-2011 covering 40% of total number of companies listed in this stock exchange. They used ordinary least square technique to study the relationships. The results of the survey indicate that the there was a positive relationship between tax rate and firm's growth rate, and capital structure. The result of the survey also indicated there was a negative relationship between firm's profitability and capital structure. However, there was no evidence to believe that there was any relationship between fixed assets and capital structure.

Farzinfar (2013) investigated the relationship between auditor’s opinion and stock return in the companies listed at Tehran stock exchange market. In this study, all required data were collected from aware shareholders and provided a sampling of 130 questionnaires, the data collected over the period 2010-2011 using test methods such as computer software, data analysis and statistical methods to answer research questions. According to research result through questionnaires and tests, there was a significant relationship between stock returns and the auditor's opinion, in fact, for aware shareholders of the company the auditor’s opinion had a special message.

Sohrabi Araghi and Attari (2013) investigated the effect of accruals and operating cash flows in decisions of financial statement users in listed companies on Tehran stock exchange, information content of operating cash flows and accruals in the connection with decision-making criteria used by various groups using financial statement has been examined. They reported that there was a significant different between accruals and operating cash flows information content in relation to various decision-making criteria but utilizing accruals and operating cash flows supplementary and simultaneously in profit frame depending on the selection criteria may or may not be include information value-added.

2. The proposed study

The proposed study of this paper considers three models to investigate 12 hypotheses. The first model is as follows,

$$LOSS_{it} = \alpha_{tr} + \beta_1 LNASSET_{it} + \beta_2 NPL_{it} + \beta_3 LLR_{it} + \beta_4 LOANR_{it} + \beta_5 LOANC_{it} + \beta_6 LOANA_{it} + \beta_7 LOANI_{it} + \varepsilon_{it} \quad (1)$$

where

LOSS: loan loss provisions as a fraction of total loans

LNASSET: the natural log of total assets

NPL: nonperforming loans (includes loans past due 90 days or more and still accruing interest and loans in nonaccrual status) as a percentage of total loans

LLR: loan loss allowance as a fraction of total loans

LOANR: real estate loans as a fraction of total loans

LOANC: commercial and industrial loans as a fraction of total loans

LOANA: agriculture loans as a fraction of total loans

LOANI= consumer loans as a fraction of total loans

$$GAINS_{it} = LNASSET_{it} + UGAINS_{it} + \varepsilon_{it}, \quad (2)$$

where GAINS is realized gains and losses on securities as a fraction of total assets, LNASSET is the natural log of total assets and UGAINS is the unrealized gains and losses on securities as a fraction of total assets.

$$r_{j,t} = \alpha_j + \beta_{1,j} rm_{t-2} + \beta_{2,j} ri_{t-2} + \beta_{3,j} rm_{t-1} + \beta_{4,j} ri_{t-1} + \beta_{5,j} rm_t + \beta_{6,j} ri_t + \beta_{3,j} rm_{t+1} + \beta_{4,j} ri_{t+1} + \beta_{3,j} rm_{t+2} + \beta_{4,j} ri_{t+2} + \varepsilon_{jt}, \quad (3)$$

where r_{jt} is the return of bank j in week t, r_{mt} is the CRSP value-weighted market return and r_{jt} the stock market return of bank j in week t. In this survey, we use two series of data. The first set is associated with yearly information of 19 different banks over the period 2005-2011 and it contains 114 observations. The second set of data includes weekly historical data of eight banks over the same period of 2005-2011. Table 1 shows details of different statistics associated with various variables of our study.

Table 1
Descriptive Statistics

	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
LOSS	114	.107	0.086	.007	0.812	3.587	-0.238	-0.529
LNASSET	114	4.855	0.600	.360	-0.280	-1.237	-0.806	-1.795
NPL	114	15225.079	19580.417	.3.8E8	1.844	8.143	3.173	7.064
LLR	114	0.088	0.084	0.007	1.835	8.102	4.892	10.888
LOANR	114	.141	0.177	0.007	2.880	12.719	9.000	20.032
LOANC	114	0.316	0.132	0.031	-0.835	-3.685	-0.109	-0.243
LOANA	114	0.083	0.192	0.017	3.289	14.524	9.924	22.089
LOANI	114	0.135	0.129	0.037	3.132	13.832	15.667	34.873
GAINS	114	999.202	1459.739	0.017	2.999	3.587	-0.238	-0.529
UGAINS	114	-150.211	325.372	2.1E6	-4.236	-1.237	-0.806	-1.795

The second set of data considers 2496 weekly observations associated with eight banks and Table 2 demonstrates details of some basic statistics.

Table 2
Descriptive Statistics for the second series of data

	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Stock price	1238	.006	0.077	.006	3.398	53.251	48.868	383.226
r_m	2366	11526.540	3065.509	9.39E6	1.715	2.337	34.082	23.233
r_{it}	2402	119.541	61.238	3750.036	1.472	1.444	29.464	14.461

In this survey, there are four objectives to be investigated. The first hypothesis considers the effects of seven independent variables on loan loss allowance as a fraction of total loans. The second model is associated with the effects of two independent variables on realized gains and losses on securities. The third objective is to study the effects of different independent variables with various interruptions on return of banking sectors. Finally, the last model investigates the effects of revenue management on tail risk. We have used Hausman Test to find out whether we should use fixed or variable method and the test examines the following hypothesis,

$$\begin{cases} H_0: & \text{Random effects} \\ H_1: & \text{Fixed effects} \end{cases}$$

Table 3
The results of Chow and Hausman tests

		Chow			Hausman		
		F-statistics	Sig,	Results	Chi-Square	Error level	
First hypothesis	Pooled	3.043838	0.0134	Unequal intercept	0.000000	1.0000	Random effect
	Panel	5.149200	0.0000	Unequal slope	26.037212	0.0005	Fixed effect
Second hypothesis	Pooled	0.968316	0.4407	Equal intercept			Pooled
	Panel	12.724009	0.0000	Unequal slope	36.084180	0.0000	Fixed effect
Third hypothesis	Pooled	1.121601	0.1203	Equal intercept			Pooled
	Panel	1.991404	0.0533	Equal slope			Pooled

Before we use regression analysis, we need to make sure that the data are normally distributed. The results of the implementation of Kolmogorev-Smirnov, Shapiro-Wilk and Jarque-bera test are summarized in Table 4 as follows,

Table 4
The results of Kolmogorev-Smirnov, Shapiro-Wilk and Jarque- bera tests

		Jarque- bera test		Shapiro-Wilk		Kolmogorov-Smirnov	
	N	Level of significance	Statistics	Level of significance	Statistics	Level of significance	Statistics
LOSS	114	0.001856	12.57845	.000	.913	.000	.132
LNASSET	114	0.096615	4.674043	.016	.972	.054	.083
NPL	114	0.000000	105.2081	.000	.750	.000	.231
LLR	114	0.000000	164.0062	.000	.840	.000	.164
LOANR	114	0.000000	501.3565	.000	.647	.000	.233
LOANC	114	0.001502	13.00211	.000	.913	.000	.137
LOANA	114	0.000000	623.6314	.000	.447	.000	.350
LOANI	114	0.000000	1241.196	.000	.741	.000	.152
GAINS	114	0.000000	614.1940	.000	.619	.000	.265
UGAINS	114	0.000000	2132.012	.000	.462	.000	.316
Rj	1180	0.000000	147444.8	.000	.633	.000	.183
Rm	1180	0.000000	1693.841	.000	.845	.000	.191
Rit	1180	0.000000	1073.063	.000	.880	.000	.164

Based on the results of three mentioned tests in Table 4, we can conclude that the data are not normally distributed. In order to use ordinary least square, we need to make sure there is no auto-correlation between residuals. Table 5 demonstrates details of our findings,

Table 5
The results of statistical tests

	Linear relationship		Durbin-Watson		Residual test	
Model	F-statistics	Sig.	Obtained	Desired	J_B	P-Value
1	6.007415	0.000007	1.523590	1.5-2.5	278.1319	0.000000
2	26.86328	0.000000	1.529782	1.5-2.5	167.8885	0.000000
3	41.56312	0.000000	1.807640	1.5-2.5	8.361318	0.000000

As we can observe from the results of Table 5, all F-statistics are meaningful when the level of significance is one percent and we can conclude that there is a linear relationship between independent variables and dependent variable. In addition, all Durbin-Watson values are within acceptable limit, which means there is no correlation among residuals. Therefore, we can use ordinary least square to estimate the model. Finally, we need to make sure there is no correlation between each pairs of independent variables and our investigation are summarized in Table 6.

Table 6
The summary of correlation test

Variable	LNASSET	NPL	LLR	LOANR	LOANC	LOANA	LOANI	UGAINS
LN ASSET	1							
NPL	.717	1						
LLR	.384	.231	1					
LOANR	.040	-.142	-.158	1				
LOANC	-.037	.002	.122	-.556	1			
LOANA	.017	.090	-.016	-.110	-.598	1		
LOANI	-.087	-.008	-.190	.014	-.370	-.121	1	
UGAINS	-.375	-.601	-.078	.095	-.081	-.014	.023	1

It is obvious from the results of Table 6 that there is no strong correlation among each pairs of statistics and we may use all data for regression model.

3. The results

In this section, we present details of our survey on different main hypotheses of the survey. The main hypothesis of this survey is associated with the relationship between tail risk on earning management in Iranian banking industry, which is as follows,

Main hypothesis: There is meaningful relationship tail risk and earning management in Iranian banking industry.

$$\begin{cases} H_0: & \beta = 0 \text{There is no relationship between tail risk and earning management.} \\ H_1: & \beta \neq 0 \text{ There is some relationship between tail risk and earning management.} \end{cases}$$

Table 7 shows details of our findings of our regression analysis.

Table 7
The relationship between tail risk and earning management

Attributes	Non-standard coefficients		Standard coefficient	t-student	P-value
	Slope	Standard error	Slop		
Intercept	-0.260	0.073		-3.559	0.012
Earning management	0.000038	0.000	0.267	0.678	0.523

R=.267, R^2=.071, F=.459, P=.523, Std. Error of the Estimate=.129304960

As we can observe from the results of Table 7, t-student is not statistically significant and we cannot reject the null hypothesis. There are also eleven sub hypotheses investigated in this survey.

3.1. The hypotheses associated with loan loss provisions as a fraction of total loans

The first seven hypotheses are associated with Eq. (1) as follows,

$$\begin{cases} H_0: \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7 = 0 \\ H_1: \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7 \neq 0 \end{cases}$$

The results of regression analysis are summarized in Table 8 where F-value and Durbin-Watson are 13.93262 and 1.559447, respectively.

3.1.1 The relationship between LNASSET and LOSS

The first sub-hypothesis is associated with the relationship of natural log of total assets with loan loss provisions as a fraction of total loans. Based on the results of Table 8, we can conclude that there is a meaningful relationship between these two variables when the level of significance is five percent. In

other words, when all other conditions are remained constant, an increase of one unit in log of total assets will yield an increase of 0.065524 in loan loss provisions as a fraction of total loans.

Table 8
The summary of regression analysis

Par.	Variable	Description	Coefficient	Std. error	t-student	P-value
β_0	c	Constant	-0.444697	0.211965	-2.097979	0.0388
β_1	LNASSET	Log of total assets	0.065524	0.029330	2.234045	0.0280
β_2	NPL	Nonperforming loans	-2.02E-07	4.51E-07	-0.447427	0.6557
β_3	LLR	Loan loss allowance	0.318997	0.099529	3.205052	0.0019
β_4	LOANR	Real estate loans	0.167937	0.159997	1.049625	0.2968
β_5	LOANC	Commercial and industrial loans	0.397595	0.260470	1.526451	0.1305
β_6	LOANA	Agriculture loans	0.277374	0.138477	2.003033	0.0483
B_7	LOANI	Consumer loans	0.270105	0.133505	2.023186	0.0461

3.1.2 The relationship between NLP and LOSS

The second sub-hypothesis is associated with the relationship of nonperforming loans with loan loss provisions as a fraction of total loans. Based on the results of Table 8, we cannot conclude that there is any meaningful relationship between these two variables when the level of significance is five or even ten percent.

3.1.3 The relationship between LLR and LOSS

The third sub-hypothesis is associated with the relationship of loan loss allowance with loan loss provisions as a fraction of total loans. Based on the results of Table 8, we can conclude that there is a meaningful relationship between these two variables when the level of significance is five percent. In other words, when all other conditions are remained constant, an increase of one unit in log of total assets will yield an increase of 0.318997 in loan loss provisions as a fraction of total loans.

3.1.4 The relationship between LOANR and LOSS

The fourth sub-hypothesis is associated with the relationship of real estate loans with loan loss provisions as a fraction of total loans. Based on the results of Table 8, we cannot conclude that there is any meaningful relationship between these two variables when the level of significance is five or even ten percent.

3.1.5 The relationship between LOANC and LOSS

The fifth sub-hypothesis is associated with the relationship of commercial and industrial loans with loan loss provisions as a fraction of total loans. Based on the results of Table 8, we cannot conclude that there is any meaningful relationship between these two variables when the level of significance is five or even ten percent.

3.1.6 The relationship between LOANA and LOSS

The sixth sub-hypothesis is associated with the relationship of agriculture loans with loan loss provisions as a fraction of total loans. Based on the results of Table 8, we can conclude that there is a meaningful relationship between these two variables when the level of significance is five percent. In other words, when all other conditions are remained constant, an increase of one unit in agriculture loans will yield an increase of 0.277374 in loan loss provisions as a fraction of total loans.

3.1.7 The relationship between LOANI and LOSS

The seventh sub-hypothesis is associated with the relationship of consumer loans with loan loss provisions as a fraction of total loans. Based on the results of Table 8, we can conclude that there is a

meaningful relationship between these two variables when the level of significance is five percent. In other words, when all other conditions are remained constant, an increase of one unit in consumer loans will yield an increase of 0.270105 in loan loss provisions as a fraction of total loans.

3.2. The second set of hypotheses

The second hypothesis of this survey is associated with the relationship of realized gains and losses on securities as a fraction of total assets (GAINS) as dependent variable with the natural log of total assets (LNASSET) and the unrealized gains and losses on securities as a fraction of total assets (UGAINS) as independent variables given in Eq. (2). Table 9 demonstrates the results of our survey,

Table 9
The summary of regression analysis for the second model

Par.	Variable	Description	Coefficient	Std. error	t-student	P-value
β_0	c	Constant	-4548.629	1273.382	-3.572086	0.0006
β_1	LNASSET	Log of total assets	1162.681	267.9826	4.338643	0.0000
β_2	UGAINS	Unrealized gains and losses	0.647580	0.383653	1.687933	0.0948

3.2.1 The relationship between LNASSET and GAINS

The first sub-hypothesis is associated with the relationship of realized gains and losses on securities as a fraction of total assets (GAINS), as dependent variable, with the natural log of total assets (LNASSET). Based on the results of Table 9, we can conclude that there is a meaningful relationship between these two variables when the level of significance is five percent. In other words, when all other conditions are remained constant, an increase of one unit in the natural log of total assets will yield an increase of 1162.681 unit in realized gains and losses on securities as a fraction of total assets.

3.2.2 The relationship between UGAINS and GAINS

The second sub-hypothesis is associated with the relationship between realized gains and losses on securities as a fraction of total assets (GAINS), as dependent variable, with the unrealized gains and losses (UGAINS). Based on the results of Table 9, we cannot conclude that there is any meaningful relationship between these two variables when the level of significance is five percent.

3.3. The third set of hypotheses

The third hypothesis of this survey is associated with the relationship of the return of a particular bank with the return of market and other banks.

$$\begin{cases} H_0 : \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10} = 0 \\ H_1 : \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10} \neq 0 \end{cases}$$

Table 10 summarizes the results of our survey when F-value and Durbin-Watson are 41.56312 and 1.807640, respectively. The regression Eq. (3) has been fitted using the information of eight different banks with 52 intervals of data and the results of regression analysis are shown in Table 10. Based on the results of Table 10, two hypotheses are investigated.

3.3.1. The relationship between return of a bank with market return

Based on the results of Table 10 we can observe that t-student value associated with RM(-1) is 0.258440, which is not meaningful and we cannot reject the null hypothesis.

Table 10
The summary of regression analysis for the third model

Par.	Variable	Coefficient	Std. error	t-student	P-value
β_1	C	-0.0024090	0.0031550	-0.763533	0.4453
β_2	RM(-2)	0.0000039	0.0000023	1.733441	0.0833
β_3	RI(-2)	-0.0009160	0.0001480	-6.179626	0.0000
β_4	RM(-1)	0.0000003	0.0000011	**0.258440**	0.7961
β_5	RI(-1)	-0.0022250	0.0005530	-4.026343	0.0001
β_6	RM	-0.0000034	0.0000020	-1.689656	0.0914
β_7	RI	0.0013930	0.0006430	2.165021	0.0306
β_8	RM(1)	-0.0000010	0.0000009	-1.119178	0.2633
β_9	RI(1)	0.0014680	0.0002030	7.243933	0.0000
β_{10}	RM(2)	0.0000014	0.0000019	0.717227	0.4734

3.3.2. The relationship between return of a bank with banking industry

Based on the results of Table 10 we can observe that t-student is not meaningful and we cannot reject the null hypothesis when the level of significance is five percent but the hypothesis is rejected when the level of significance is ten percent.

4. Conclusion

In this paper, we have investigated the relationship between tail risk on earning management in Iranian banking industry. There were four objectives to be investigated. The first hypothesis considered the effects of seven independent variables on loan loss allowance as a fraction of total loans. The second model was associated with the effects of two independent variables on realized gains and losses on securities. The third objective was to study the effects of different independent variables with various interruptions on return of banking sectors. Finally, the last model investigated the effects of revenue management on tail risk. The result of this survey indicates that there was no relationship between tail risk and earning management. In summary, Table 11 summarizes details of our findings for different components of this survey.

Table 11
The summary of testing various hypotheses

Hypothesis	Independent variable	Dependent variable	H_0	H_1
Main	Tail Risk	Earning management	√	×
Sub 1	LN ASSET	LOSS	×	√
Sub 2	NPL	LOSS	√	×
Sub 3	LLR	LOSS	×	√
Sub 4	LOANR	LOSS	√	×
Sub 4	LOANC	LOSS	√	×
Sub 5	LOANA	LOSS	×	√
Sub 6	LOANI	LOSS	×	√
Sub 7	LNASSETS	GAINS	×	√
Sub 8	UGAINS	GAINS	√	×
Sub 9	RM	RI	√	×
Sub 10	RIT	RI	×	√

Acknowledgment

The authors would like to thank the anonymous referees for constructive comments on earlier version of this paper, which has contributed to the quality of the presentation. We are also delighted for the support of Tehran Stock Exchange on providing the necessary data. Finally, special thank goes to Islamic Azad University for their support on accomplishment of this project.

References

Ahmed, A.S., Takeda, C., & Thomas, S. (1999). Bank loan-loss provisions: A reexamination of capital management, earnings management, and signaling effects. *Journal of Accounting and Economics*, 28, 1-25.

Amihud, Y. (2002). Illiquidity and stock returns; Cross-section and time-series effects. *Journal of Financial Markets*, 5, 31-56.

Arya, A., Glover, J., & Sunder, S. (1998). Earnings management and the revelation principle. *Review of Accounting Studies*, 3, 7-34.

Beatty, A.L., Chamberlain, S.L., & Magliolo, J. (1995). Managing financial reports of commercial banks: The influence of taxes, regulatory capital, and earnings. *Journal of Accounting Research*, 333, 231-262.

Beatty, A.L., Ke, B., & Petroni, K.R. (2002). Earnings management to avoid earnings declines across publicly and privately held banks. *The Accounting Review*, 77, 547-570.

Beaver, W.H., & Engel, E.E. (1996). Discretionary behavior with respect to allowances for loan losses and the behavior of security prices. *Journal of Accounting and Economics*, 22, 177-206.

Cohen, D.A., Dey, A., & Lys, T.Z. (2004). Trends in earnings management and informativeness of earnings announcements in the pre- and post-Sarbanes Oxley periods. Working paper, Northwestern University.

Collins, J.H., Shackelford, D.A., & Wahlen, J.M. (1995). Bank differences in the coordination regulatory capital, earnings, and taxes. *Journal of Accounting Research*, 33, 263-291.

Cornett, M.M., McNutt, J.J., & Tehranian, H. (2009). Earnings management at large U.S. bank holding companies. *Journal of Corporate Finance*, 15, 412-430.

Dechow, P., Sloan, R., & Sweeney, A. (1995). Detecting earnings management. *Accounting Review*, 70, 193-225.

Dechow, P., Sloan, R., & Sweeney, A. (1996). Causes and consequences of earnings manipulation: an analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research*, 13, 1-36.

Demski, J.S. (1998). Performance measure manipulation. *Contemporary Accounting Research* 15, 261-285.

Dimson, E. (1979). Risk measurement when shares are subject to infrequent trading. *Journal of Financial Economics*, 7, 197-227.

Farzinfar, A.A. (2013). Investigating the relationship between auditor's opinion and stock return in the companies listed at Tehran stock exchange market. *Management Science Letters*, 3(1), 81-90.

Gunther, J.W., Moore, R.R., 2003. Loss underreporting and the auditing role of bank exams. *Journal of Financial Intermediation*, 12, 153-177.

Healy, P.M. (1985). The impact of bonus schemes on the selection on accounting decisions. *Journal of Accounting and Economics*, 7, 85-107.

Houshmand Neghabi, Z., & Morshedian Rafiee, S. (2013). Investigating different influential factors on capital structure of different sectors of industries listed in Tehran Stock Exchange. *Management Science Letters*, 3(1), 73-80.

Hutton, A, Marcus, A.J., & Tehranian, H. (2009). Opaque financial reports, R-square, and crash risk. *Journal of Financial Economics* 94, 67-86.

Jin, L., & Myers, S. C. (2006). R2 around the world: New theory and new tests. *Journal of Financial Economics*, 79, 257-292.

Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29, 193-228.

Kothari, S.P., Shu, S., & Wysocki, P. (2009). Do managers withhold bad news? *Journal of Accounting Research*, 47, 241-276.

Scholes, M.S., Wilson, G.P., & Wolfson, M.A. (1990). Tax planning, regulatory capital planning, and financial reporting strategy for commercial banks. *Review of Financial Studies*, 3, 625-650.

Sloan, R. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings? *Accounting Review*, 71, 289-315.

Sohrabi Araghi, M., & Attari, S. (2013).Comparing the role of accruals and operating cash flows on users' decisions on financial statements: A case study of Tehran Stock Exchange. *Management Science Letters*, 3(1), 97-106.

Wahlen, J.M. (1994). The nature of information in commercial bank loan loss disclosures. *The Accounting Review*, 69, 455-478.