

**Research Article**

## **EXAMINING THE RELATION BETWEEN FINANCIAL REPORTING QUALITY, SHORT-TERM DEBT AND INVESTMENT INEFFICIENCY OF THE LISTED COMPANIES IN TEHRAN STOCK EXCHANGE**

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### **ABSTRACT**

This research deals with the role of financial reporting quality and debt maturity in investment efficiency. The sample includes 100 listed companies in Tehran stock exchange during 2008 to 2012 which Ordinary Least Squares is used to calculate the hypotheses. The results indicate that financial reporting quality increased investment efficiency. Furthermore, there is no significant relation among debt maturity and investment efficiency.

**Keywords:** *Financial Reporting Quality; Debt Maturity; Investment Efficiency; Over-investment; Under-investment*

### **INTRODUCTION**

#### **Introduction**

It is expected that higher financial reporting quality improves investment efficiency along with the decreased information asymmetry among business unit and foreign capital providers. In other words, financial reporting quality can improve investment efficiency in two ways (Wordi, 2007). The first one is through decreased information asymmetry among a firm and investors which leads to decreased financing cost, and the second one is decreased information asymmetry among investors and managers which ultimately leads to decreased monitoring cost and enhanced project selection. A business unit is efficient in investment when it selects all projects which have positive net present value (Elin *et al.*, 2013). Therefore, regardless of investment opportunities, inefficient investment has positive net present value (under investment) in a situation in which no friction is present like adverse selection or agency costs. In addition, inefficient investment also includes selecting projects with negative net present value (over-investment) (Cortin, 2012).

One thing that can be understood is that the firms which faced with financing may ignore the acceptance or implementing the projects with positive net present value that finally leads to under-investment (Chen *et al.*, 2014). The second case is that if a firm decides to finance, there is no guarantee to make a suitable investment. For example, managers may invest inefficiently due to selecting wrong projects for their own interests or even misuse from available resources. Most of related literatures predict that over-investment is caused by selecting poor projects (Stein, 2013).

A few studies predict that selecting poor projects may cause under-investment (Bertrand and Mullainathan, 2003). Mayers and Majelov (1984) provided a model which indicated information asymmetry among a firm and investors may cause under-investment. They demonstrated that when managers act along with shareholders' interests and the firm need to financing for projects with positive net present value, managers may avoid financing through bonds issue with lower price, even at the cost of ignoring the investment opportunities.

Furthermore, information asymmetry between managers and shareholders (often called "conflict between owner-agent") may prevent from efficient investment. Since managers tend to maximize their own interest, they can select between investment opportunities which may not provide the best interests for shareholders (Modarres and Hesarzadeh, 2008). The purpose of the current study is to examine the relation between financial reporting quality, short-term debt and investment inefficiency of the listed companies in Tehran stock exchange.

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### Research Background

In their research "examining the relation between financial constraints, cash value and net investment", Badavar and Darkhor (2013) used financial information of 86 listed companies in Tehran stock exchange during 2006 to 2010. The results indicated that cash will enhance firm value in financially constrained firms than firms without this problem. As well, there is a direct relation between cash and investment amount.

In their research "financial reporting quality, debt maturity and investment efficiency", Gomariz and Balsta (2013) examined the role of financial reporting quality and debt maturity in investment efficiency using information of Spanish firms during 1998 to 2008. Their research showed that financial reporting quality would lessen over- investment problem. As well, debt maturity can improve investment efficiency through decreased over-investment.

Keefe and Tate (2013) in a research "Is relation between investment and Conditional cash flows volatility ambiguous, asymmetric or both?" examined the impact of cash flow volatilities on investment. Their empirical evidences suggested that financially constrained firms decrease investment (1) when experiencing persistently high volatility; (2) when experiencing both high volatility and negative cash flow growth realizations; and (3) when holding low cash levels and experiencing both high volatility and a negative cash flow growth realization.

Chen *et al.*, (2014) examined the impact of financial reporting quality on over-investment and under-investment using information about firms of emerging markets and concluded that higher financial reporting quality helps to financially constraint firms to invest and assists the firms (faced with over-investment) to lower their investment level.

## MATERIALS AND METHODS

### Research Methodology

#### Research's Hypothesis

- Firms with higher financial reporting quality have higher investment efficiency (less investment inefficiency).
- Firms with more short-term debts (ones that have shorter-term maturity) have higher investment efficiency (less investment inefficiency).

#### Research Population and Statistical Sample

100 companies were selected based on systematic omission method during 2008 to 2012. The firms should have the following conditions:

1. Their fiscal year should end in 19/3/- thus it can be possible to collect their data and apply them in a panel framework.
2. Their financial period should have not been changed to their financial performance can be compared.
3. They should not be part of active firms in financial activities such as investment companies, banks, insurance or financial institutions. Because these institutions have different natures and their main incomes are obtained from investment and depend on other firms, so they are naturally different from other firms and would be ignored from the research.
4. Their information should be available during 2008 to 2012 to facilitate the correct calculations.

According to the above conditions, 100 firms were selected as statistical samples. It should be noted that each firm have 5 extractable financial information series in financial statements and other related information resources during 2008 to 2012.

#### Regression Model

The following equation is used for testing the research's hypothesis:

$$\text{InvEff}_{i,t} = \alpha + \beta_1 \text{FRQ}_{i,t} + \beta_2 \text{STDebt}_{i,t} + \beta_3 \text{LnSales}_{i,t} + \beta_4 \text{Tang}_{i,t} + \beta_5 \text{QTobin}_{i,t} + \beta_6 \text{Z}_{i,t} + \beta_7 \text{CFO\_ATA}_{i,t} + \beta_8 \text{Loss}_{i,t} + \beta_9 \text{StdCFO}_{i,t} + \beta_{10} \text{StdSales}_{i,t} + \varepsilon_{i,t}$$

**InvEffi.t:** Investment efficiency. In this research, Investment efficiency is dependent variable which is calculated by Bidet *et al.*, (2009) proposed model.

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**Investment it:** Total investment of the firm i in the year t which is equal with (based on the definition by Gomariz & Balsta, 2013) net increase in tangible and intangible assets divided by previous year total assets.

**Sales Growth it:** It indicates that growth sale is equal with increased sale rate of the firm i in the year t-1 with respect to the year t-2.

**FRQ it:** Financial reporting quality. To calculate FRQ, Mc Nichols & Stoben (2008) earnings management model is used.

**Ln Sales it:** Natural logarithm of the firm's sales revenue.

**Tang it:** Assets objectivity which is equal with fixed to total assets ratio.

**QTobin it:** Q-Tobin index which is equal with Sum market value of equity and book value of firm's debt to book value of total assets.

**CFO-ATA it:** Operational cash flow to firm's mean assets ratio.

**Loss it:** Loss of a firm which is determined 1 when it has net loss, otherwise 0.

**Std CFO it:** It is cash flow volatility which is equal with standard deviation of operational cash flow during the last three years.

**Std Sales it:** Sale volatilities which is equal with standard deviation of income during the last three years.

*Data Analysis Method*

The used inferential statistics includes Pearson and Spearman correlation test and multiple regression test to discover the relation between independent and dependent variables with controlling the impact of other variables. Meanwhile, the default regression tests are used to assure about the reliability of the results. It should be noted that the results of correlation tests of the research's variables are provided before reporting of multiple regression. Then, we deal with correlation test and regression test after restatement of the study's hypotheses.

**RESULTS AND DISCUSSION**

**Results**

*The Results of Chow Test*

**Table 1-1: The results of chow test**

H <sub>0</sub>	f-statistics	Significance level	Results of Chow test
Cross-sectional and time effects are not significant	2.402	*0.000	H0 is rejected

\* 5% error level

Regarding table 1-1, the results of Chow test indicate that the obtained probability for f-statistics is less than 5%, so data are used in the form of panel data.

*The Results of Hausman test*

**Table 2-1: The results of Hausman test**

H <sub>0</sub>	Ch-square statistics	Significance level	Test's result
Using random effects model	27.647	0.001	H0 is rejected

\* 5% error level

Regarding the results of table 2-1, the significance level of Hausman test is less than 0.05, so fixed effects method should be used for calculating the model's coefficients.

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*Regression Model*

**Table 3-1: The results of the research's hypotheses**

Variable	Coefficients	Standard error	t-statistics	Significance level
Y-intercept	0.911	0.239	3.81	0.000*
Financial reporting quality	0.237	0.561	3/96	0.000*
Debt maturity	-0.046	0.058	-0.795	0.426
Sale income	-0.069	0.017	-0.423	0.672
Fixed assets	-0.568	0.085	-6.615	0.566
Q-Tobin index	0.007	0.013	0.573	0.566
Firm's financial ability	-0.004	0.009	-0.421	0.673
Operational cash flow	0.013	0.035	0.377	0.706
Loss firm	-0.019	0.015	-1.289	0.198
Cash flow volatilities	0.059	0.027	-1.683	0.093
Sale volatilities	0.043	0.083	0.513	0.607
f-statistics	4/69	Coefficient of determination		0.58
f-statistics probability	0.000**	Adjusted determination	of	0.456
		Durbin-Watson value		2.203

\* 5% error level, \*\* 1% error level

According to the table 3-1, since t-statistics of financial reporting quality is higher than +1.965 (equals with +3/96) and its significance level is less than 0.05, there is a direct and significant relation between financial reporting quality and investment efficiency. Hence, the research's first hypothesis is confirmed, while t-statistics of debt maturity is less than  $\pm 1.965$  and its significance is higher than 0.05, so the second hypothesis is rejected. It can be said that fixed assets variable is the only variable between control ones has significant and adverse relation with investment efficiency. It is clear that Durbin-Watson statistic is 2.203 which are located among 1.5 to 2.5. Meanwhile, significance level of f-statistic is 0.000 which is less than 0.05, indicating the model is significant. Another point in table 12-4 is its coefficient of determination. This coefficient is approximately 50%, indicating the independent variables can describe about 50% of dependent variable changes.

**Conclusion and Recommendations**

The results of the research's hypotheses test are mentioned in the form of unit along with recognizing their possible causes. In line with the research's hypotheses test, a model has been used including two independent variables of financial reporting quality and debt maturity, eight control variables, panel data model and ordinary least squares. The obtained results suggested that there is a direct and significant correlation between financial reporting quality and investment efficiency. However, debt maturity has no significant relation with investment efficiency. Meanwhile, fixed assets ratio variable has significant and adverse association with investment efficiency. The abstract of the results about independent and control variables are provided in the table 1-5: In Wordi's (2007) view, financial reporting quality can improve investment efficiency in two ways. The first one is through decreased information asymmetry among a firm and investors which leads to decreased financing cost, and the second one is decreased information asymmetry among investors and managers which ultimately leads to decreased monitoring cost and enhanced project selection.

**REFERENCES**

**Altman E (1968).** Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance* **23** 589–609.

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**Abor J (2007).** Agency theories determinants of debt levels: evidence from Ghana. *Review of Accounting and Finance* **7**(2) 183-192.

**Anderson G (1990).** An empirical note on the independence of technology and financial structure. *The Canadian Journal of Economics* **23**(2) 693–699.

**Antoniou A, Guney Y and Paudyal KN (2003).** The Determinants of Corporate Debt Maturity Structure, *EFA 2003 Annual Conference Paper No. 802; EFMA 2003 Helsinki Meetings*. Available SSRN: <http://ssrn.com>.

**Barclay MJ and Smith CW Jr (1995).** The Maturity Structure of Corporate Debt. *Journal of Finance* **50**(2) 609-631.

**Barnea A, Haugen RA and Senbet LW (1980).** A Rationale for Debt Maturity Structure and Call Provisions in the Agency Theoretic Framework. *Journal of Finance* **35**(5) 1223-1234.

**Barth M, Wayne L and Lang M (2008).** International Accounting Standards and Accounting Quality. *Journal of Accounting Research* **46**(3) 467-498.

**Beatty A, Weber J and Scott J (2007).** The role of accounting quality in reducing investment inefficiency in the presence of private information and direct monitoring. Working paper, The Ohio State University.

**Bertrand M and Mullainathan S (2003).** Enjoying the quiet life? Corporate governance and managerial preference. *Journal of Political Economy* **111** 1043–1075.