

Checking the relationship between the quality of financial reporting, debt maturity and investment performance of listed companies in Tehran Stock Exchange

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Abstract: This study investigates the impact on the quality of financial reporting and short-term debt on investment efficiency and also the impact of short-term debt on rate of the quality of financial reporting and on investment performance. To this end, 79 companies was selected during the years 1386 to 1391 by the systematic elimination of the companies listed on the Stock Exchange. Data analysis was carried out by the combined data and by generalized least squares method. The results showed that the quality of financial reporting did not affect the performance of investment and short-term debt on investment efficiency. It was also found the level of short-term debt has no effect on the quality of financial reporting and on investment efficiency.

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Introduction

One of the factors affecting economic growth and sustainable development, is effective investment. For this purpose, an economic entity to invest in various projects, should consider the amount of investment due to resource constraints, thus increasing the efficiency of such investments are significant issues (Modares and Hesarzadeh, 1387). So to check the factors affecting the performance of investment is important. Investment efficiency requires that on the one hand, the consumption of resources in activities that investing in them done higher than optimal level prevents, and on the other hand, a resources guides toward greater need to invest. To achieve this, financial reports are one of informative sources in the capital markets, that expects to play effective role in encouraging investment and increased efficiency. High quality of financial reporting, investment efficiency is improved by reducing the information asymmetry, the cost of financing and ultimately the cost of monitoring and controlling shareholders attribute to managers and optimizing their decision to allocate resources of companies. Extension of contracts of short-term debt, by creating frequency of renegotiations between creditors and the company led to increasing monitoring of management activity, and thus reducing the risks of informative asymmetry and therefore the efficiency of investment decision. If the information spread by close communication and negotiations made this short maturity debt, complements of released information of high-quality financial reporting, if the impact plays alternative role, the effect will be negative.

Research literature

In recent years, empirical research has been considered by financial researchers in the field of investment performance. In particular, researchers such as Verdi (2006), Biddle and Hilary (2006), Garcia et al. (2009) and Chen et al (2010) the quality impact of financial reporting, accounting quality and conservatism on the efficiency of investment in quality companies have been discussed.

Kotitylas-Gmaryz and Snychz- Balsta (2014) with the addition of other factors in previous studies, such as short-term debt, tangible assets, fluctuations in cash flows from operations and sales, ability to pay debt, the possibility of loss, cash flow operational measured the impact of these factors on investment performance. Among these factors, short-term debt are as one of means of financing for profitable projects in the company's growth. Creditors due to short-term debt can exercise their supervisory role over the management in order to reduce problems over investment. And on the other hand it helps managers so that in low situations of investment, do positive investment. But if the positive role of public information and private information on investment efficiency are complementary mechanisms, affecting the quality of financial reporting on the performance of investments in companies that have more short-term debts may not exceed (Kotilas-Gmaryz and Sanchez-Balsta, 2014).

Debt maturity, the quality of financial reporting and the efficiency of investment:

Overall, investment efficiency, means accepting projects with positive net present value. In determining the efficiency of investment, there are two minimum criteria: The first criterion states that

due to finance investment opportunities, there is a need to collect resources. The second criterion states that if the company decide to obtain property, there is no guarantee that the investment is done correctly (Saghafy and Motamedi Fazel, 1390). In this study, the first criteria (resources) is considered. Flannery (1986), about the debtor argues, companies that have relatively profitable investment projects, prefer the use of short-term debt. As these give positive marks-to-market and reduce informative asymmetry. The lender due to information asymmetry tends to give more loans with a shorter maturity. Because it can better oversee the company. Childs et al. (2005) predicted that with the increase in short-term debt to total debt thus the reduce of informative asymmetry, creditors will be able to contract debt in terms of deviations from strategy to maximize the value of their pricing.

Hypothesis

- 1) the quality of financial reporting has a positive impact on the efficiency of investment.
- 2) short-term debt has a positive impact on capital efficiency.
- 3) the level of short-term debt has impact on the quality of financial reporting on investment performance.

research method

In this study, the Tehran Stock Exchange member firms that were active from 1386 to 1391 in exchange was chosen as a population. Systematic removed sampling was used to select samples and the sample includes companies that meet the following conditions:

- 1- it is not The investment companies and financial intermediaries (banks and leasing).
- 2 –it hasn’t trading interval more than 4 months.
3. The Company's fiscal year ended 29 March, and financial information is available.

Data analysis

Since the first and second hypothesis of this study predicted the quality of financial reporting () and debt maturity (STDebt), and improved investment efficiency and, it was expected that there is a positive and significant 1β and 2β . After the effect of the quality of financial reporting and short-term debt on investment efficiency, the third hypothesis previous

analysis was expanded to examine whether the effect of the quality of financial reporting on the effectiveness of investment in reducing debt maturity (greater use of short-term debt) was strengthen or weaken. In the first phase, endogenous explanatory variables used instrumental variables were fitted in the second stage instead of the estimated explanatory variables used in the considered equation

First stage: in the first stage, the regression model number (9), short-term debt on instrumental were fitted by OLS.

$$STDebt_{i,t} = \beta_0 + \beta_1 FRQ_{i,t} + \beta_2 Z_{i,t} + \beta_3 Z_{i,t}^2 + \beta_4 Qtobin_{i,t} + \beta_5 Size_{i,t} + \beta_6 Age_{i,t} + \beta_7 StdSales_{i,t} + \epsilon_{i,t} +$$

(Correlation 9)

$Z_{i,t}$ = square Altman coefficient of company i in year t.

Second Phase: Tn the second phase III to test the third hypothesis in the combined regression model number (10) in place of short-term debt, the estimated amounts put in number(10) and a new equation was estimated (Table 1):

Table 1. The estimated amounts put in number(10) and a new equation was estimated

$STDebt^{i,t}$ = estimated index of short-term debt of Model No. (10) for firm i in the year t.

$$InvEffi_{i,t} = \beta_0 + \beta_1 FRQ_{i,t} + \beta_2 STDebt^{i,t} + \beta_3 (FRQ_{i,t} * DumSTDebt_{i,t}) + \beta_4 Size_{i,t} + \beta_5 Age_{i,t} + \beta_6 Tangi_{i,t} + \beta_7 StdCFO_{i,t} + \beta_8 StdSales_{i,t} + \beta_9 Qtobini_{i,t} + \beta_{10} Zi_{i,t} + \beta_{11} lossi_{i,t} + \beta_{12} CFO-ATA_{i,t} + \epsilon_{i,t}$$

رابطه 10)

$DumSTDebt_{i,t}$ = short-term debt level i in year t.

At that level of short-term debt is higher than 75 percentile, respectively.For the final model estimation and testing hypothesis it was used software package Stata12 and Eviews8.

Hypotheses

The first hypothesis test:

First, due to choose between using panel data and panel data, is used the F-Limmer test. Table (2) shows results of F-Limmer test by using standard investment efficiency and both criteria show quality of financial reporting.

Table (2) Results of F-Limmer test by using standard investment efficiency and both criteria show quality of financial reporting.

The first hypothesis	F-Leaner Test			Hausman Test		
	statistic	possibility	result	statistic	possibility	Result
The used criterion for quality financial reporting		statistic			statistic	
The first standard of quality of financial reporting	11/3 F =	000/0	Panel data	93/53=2 _γ	000/0	Fixed effects
The second standard of quality of financial reporting	14/3 F =	000/0	Panel data	99/35=2 _γ	000/0	Fixed effects

Since the P-Value obtained from F-Limmer test using both criteria, it is less than 5%, according to the

results of this test due to estimate the model using both standards is used data model panel. The results

of the test Volatility using investment efficiency and by using of both standard of quality of financial

reporting in Table 3 are shown.

Table 3. Volatility using investment efficiency and by using of both standard of quality of financial reporting

First hypothesis	Xttest3		
The used standard of quality of financial reporting	statistic	possibility	result
The first standard of quality of financial reporting of Fransis model	83/62457= $\frac{2}{\chi}$	000/0	Volatility
The second standard of quality of financial reporting of Fama and Farnj model	15/69290= $\frac{2}{\chi}$	000/0	Volatility

Table No. (4) and (5) The results of estimation by the adjusted model of investment efficiency Biddle et al. (2009), by first and second criteria, the

quality of financial reporting, using the software shows stata12.

Table No. (4) and (5). The results of estimation by the adjusted model of investment efficiency Biddle et al. (2009), by first and second criteria, the quality of financial reporting, using the software shows stata12

$$InvEffi_t = \beta_0 + \beta_1FRQ_{i,t} + \beta_2STDebt_{i,t} + \beta_3Size_{i,t} + \beta_4Age_{i,t} + \beta_5Tang_{i,t} + \beta_6StdCFO_{i,t} + \beta_7StdSales_{i,t} + \beta_8Qtobini_{i,t} + \beta_9Z_{i,t} + \beta_{10}loss_{i,t} + \beta_{11}CFO-ATA_{i,t} + \epsilon_{i,t}$$

variables		Estimated coefficence	Error standard	statisticZ	P-Value
title	Symbol				
START	B	1503734/0	030985/0	85/4	000/0
the quality of financial reporting	FRQ	202389/0	0097708/0	07/2	038/0
debt	STDEBT	0185281/0-	0124189/0	49/1-	136/0
size	Size	0231898/0-	0050351/0	61/4-	000/0
Life length	Age	0229992/0-	0030449/0	55/7-	000/0
The famous asset	Tang	1777592/0-	0089437/0	88/19-	000/0
Fluctuation of cash flow	StdCFO	08-e74/1	08-e17/2	80/0	421/0
Fluctuation of income	StdSales	10-e60/7	09-e66/1	46/0	648/0
Q	Qtobin	0051975/0	004085/0	27/1	203/0
Z	Z	0258879/0	0342244/0	76/0	449/0
possibility	loss	0378509/0	0120508/0	14/3	002/0
Cash flow of operation	CFO-ATA _i	0137627/0	0031607/0	35/4	000/0
chi2	04/541	chi2			

As the results shown in table No. (4) and (5), P-Value calculations for the variable quality of financial reporting in both models is less than or equal to 5% error level. Therefore it can be concluded that the quality of financial reporting has effective impact on investment performance. The estimated coefficients for the variable quality of financial reporting at the level of 5% is positive, the

quality of financial reporting has a positive impact on investment performance.

The second hypothesis test:

Table (6) shows the results obtained by the adjusted model of investment efficiency Biddle et al. (2009) and the index of short-term debt at both levels of standards financial reporting quality, by the software shows Stata12.

Table (6) The results obtained by the adjusted model of investment efficiency Biddle et al. (2009) and the index of short-term debt at both levels of standards financial reporting quality, by the software shows Stata12.

$$InvEffi_t = \beta_0 + \beta_1FRQ_{i,t} + \beta_2STDebt_{i,t} + \beta_3Size_{i,t} + \beta_4Age_{i,t} + \beta_5Tang_{i,t} + \beta_6StdCFO_{i,t} + \beta_7StdSales_{i,t} + \beta_8Qtobini_{i,t} + \beta_9Z_{i,t} + \beta_{10}loss_{i,t} + \beta_{11}CFO-ATA_{i,t} + \epsilon_{i,t}$$

variables			Estimated coefficient	Standard error	Statistic Z	P-Value
title	symbol	Criteria of quality of financial reporting				
		the first criterion of financial reporting quality- Fransis (2005)	0185281/0-	0124189/0	49/1-	136/0
Indexes of short term debt	STDebt _{i,t}	The second criterion of financial reporting quality-Fama and Faranj	0140624/0-	0118497/0	19/1-	235/0

As the results in Table 6 shown, P-Value calculated in the variable quality of financial reporting in both models, is higher than the level of 5%. Therefore it can be concluded that short-term

debt has no effect on investment efficiency. According to the results shown in Table 6 and a confidence level of 95%, the second hypothesis of this study will be rejected.

Third hypothesis:

First stage:

In the first step to estimate the index of short-term debt, is used ordinary least squares regression (OLS) and the combined approach. First, due to

choose between using panel data and panel data, is used the F-Limmer test. Table (7) F-Limmer test results by indicator of short-term debt and both criteria indicates the quality of financial reporting.

Table (7) F-Limmer test results by indicator of short-term debt and both criteria indicates the quality of financial reporting.

The third- hypothesis- the first step	F-Leamer Test			Hausman Test		
The used criterion for financial reporting quality-	Statistic	possibility	result	statistic	possibility	Result
The first criterion of financial reporting quality-Faransis model	49/10 F =	000/0	Panel data	23/26= ² _χ	000/0	Fixed effect
The second criterion of financial reporting quality-Fama and Faranj model	51/10F =	000/0	Panel data	93/25= ² _χ	000/0	Fixed effect

This test is used to determine pattern in the first step of third hypothesis test, it is done which form of fixed effects or random effects, Hausman test is done, the test results set forth in Table 8, shown by methods

of fixed effects for model used in the first step of third hypothesis testing based indexes of short-term debt by both criteria of the quality of financial reporting.

Table 8. This test is used to determine pattern in the first step of third hypothesis test, it is done which form of fixed effects or random effects, Hausman test is done, the test results set forth

The third- hypothesis- the first step			
The used criterion for financial reporting quality-	statistic	Possibility	result
The first criterion of financial reporting quality-Faransis model	05+ e6/2 = ² _χ	000/0	Non equal variance
The second criterion of financial reporting quality-Fama and Faranj model	05+ e6/1 = ² _χ	000/0	Non equal variance

Table (9) The results of indexes of short-term debt by both standard levels, quality of financial reporting, by the software shows Stata12.

Table (9) The results of indexes of short-term debt by both standard levels, quality of financial reporting, by the software shows Stata12.

STDebti,t = β0 + β1FRQi,t + β2Zi,t + β3Z2i,t + β4Qtobini,t + β5Sizei,t + β6Agei,t + β7StdSalesi,t + Ei,t					
Variable		Standard error	Estimated coefficient	StatisticZ	P-value
title	Symbol				
The first criterion of financial reporting quality-Faransis model	FRQ1	0181634/0	0414409/0	28/2	023/0
The second criterion of financial reporting quality-Fama and Faranj model	FRQ2	0090168/0	0222725/0-	47/2-	014/0

As the results shown in Table 9, P-Value statistic Wald chi2, in the third hypothesis test using both standards in first stage, is less than 5%, it can be said that the level of confidence the model was significant (95%) and has high reliability.

Second, in the second stage to estimate using the modified criteria of investment efficiency, is used

ordinary least squares regression (OLS) and the combined approach. First, due to choose between using panel data and panel data it is used the F-Limmer test. Table No. (10) F-Limmer test results by using both standards shows the quality of financial reporting.

Table (10) F-Limmer test results by using both standards shows the quality of financial reporting

The thirtieth hypothesis- the second step	F-Leamer Test	Hausman Test				
The used criterion of financial reporting quality-	statistic	Possibility	result	statistic	Possibility	result
The first criterion of financial reporting quality-Faransis model	60/3 F =	000/0	Panel data	29/79 = ² _χ	000/0	Fixed effect
The second criterion of financial reporting quality-Fama and Faranj model	000/0	Penal data	90/66 = ² _χ	000/0	Fixed effect	

The results indicated in Table 10 by using fixed effects for model used in the second stage for the third hypothesis testing by both criteria of the quality

of financial reporting. Volatility continues to look at test analysis detailed in Table 11.

Table 11. Volatility continues to look at test analysis detailed

The third hypothesis-second step	Xttest3		
The used criterion of financial reporting quality-	statistic	possibility	result
The first criterion of financial reporting quality-Faransis model	86/51163= $\frac{2}{\gamma}$	000/0	Non equal variance
The second criterion of financial reporting quality-Fama and Faranj model	39/51236= $\frac{2}{\gamma}$	000/0	Non equal variance

Results obtained volatility testing by both criteria the quality of financial reporting are shown Table 12. Since the P-Value is less than the

significance level of 5%, using the criteria of efficiency of investment and short-term debt in both standard index has been volatility.

Table 12. Results obtained volatility testing by both criteria the quality of financial reporting

$$InvEffi_{i,t} = \beta_0 + \beta_1FRQ_{i,t} + \beta_2STDebt_{i,t} + \beta_3(FRQ_{i,t} * DumSTDebt_{i,t}) + \beta_4Size_{i,t} + \beta_5Age_{i,t} + \beta_6Tangi_{i,t} + \beta_7StdCFO_{i,t} + \beta_8StdSales_{i,t} + \beta_9Qtobini_{i,t} + \beta_{10}Zi_{i,t} + \beta_{11}Loss_{i,t} + \beta_{12}CFO-ATA_{i,t} + \epsilon_{i,t}$$

Variable		Estimated coefficient	Standard error	statistic	P-Value
title	Symbol				
start	B	6385582/0	4166172/0	53/1	125/0
financial reporting quality	FRQ	0486016/0	0232684/0	09/2	037/0
The estimated short debt	STDebt [^]	6372234/0-	5231236/0	22/1-	223/0
Intraction effect of financial reporting quality and short debt	FRQ *DumSTDebt	010716/0-	0078124/0	37/1-	170/0
size	Size	0019022/0-	0082521/0	23/0-	818/0
Life length of company	Age	0237523/0	0013806/0	20/17-	000/0
Interesting assets	Tang	1821916/0-	0041454/0	95/43-	000/0
Fluctuation of cash flow	StdCFO	08-e71/2	09-e90/7	43/3	001/0
Fluctuation of sale income	StdSales	10-e52/1	09-e10/1	14/0	890/0
q	Qtobin	0015778/0-	0080186/0	20/0-	844/0
coefficient	Z	00229588/0	0023655/0	25/1	211/0
possibility	Loss	0030349/0	001609/0	89/1	059/0
Operational Cash flow	CFO-ATA	489029/0-	0104487/0	68/4-	000/0

As the results shown in table No. (12) and (13), P-Value calculations for variables FRQ_{i,t} * DumSTDebt_{i,t} in both models, is higher than the level of 5%. Therefore it can be concluded that the level of short-term debt has no impact on investment efficiency and on the quality of financial reporting.

Conclusion:

First hypothesis:

According to this hypothesis, it is expected that high financial reporting quality, leads to reduce the problem of adverse selection and moral hazard so managers identify more investment opportunities and investment and the case leads to increase efficiency. Results have shown that the quality of financial reporting, increases investment performance.

The second hypothesis

According to this hypothesis, it is expected that shorter debt maturity with restructuring debt contracts and with increasing frequency creditors to monitor the performance of managers and related decision with investment, require managers to optimize the investment decisions and the efficiency of investment.

The second hypothesis: The results of testing this hypothesis using short-term debt index and two measures of the quality of financial reporting indicates that short-term debt has no impact on investment efficiency, statistically. So at 95%, the second hypothesis of this study is refused.

The third hypothesis:

According to this hypothesis, it is expected that debt maturity strengthen or weaken the impact of the quality of financial reporting on the performance of investment. In this study, the third hypothesis to test, is used the efficiency of investments, short-term debt level and quality of financial reporting standards. Results have shown that short-term debt statistically has no impact on the quality of financial reporting and on investment efficiency. The results of the third hypothesis is contrary to the findings Kotylas-Gmaryz and Sanchez-Balsta (2014) and Fang and Goodwin (2013) i.

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