

Effect of Bank Financing and Tax Purposes on Relation Between Financial Reporting Quality and Investment Efficiency in Tehran Stock Exchange (TSE) Listed Companies

Gholamreza Soleimany and Zahra Farshi

Faculty of Social Sciences and Economics Al-Zahra University, Tehran, Iran

Abstract: The goal of this study is to test the impact of bank financing and tax purposes in relation between financial reporting quality (FRQ) and investment efficiency. Last studies have demonstrated that high quality financial reporting could have important economical impacts such as increasing investment efficiency. In this study discretionary accruals, discretionary revenues, accruals quality and average of these criterions are used for financial reporting quality measurement. Also under-and-over investment is considered as a criterion for investment efficiency. The statistical population of the study is 134 listed companies in Tehran Stock Exchange (TSE) for the period of 2003-2009. Results show that there is a negative relationship between financial reporting quality and under-over investment. Also there is a negative relationship between FRQ-bank financing and under-over investment. In the situation of tax pressure, there is a positive relationship between FRQ and under-over investment. Thus in this situation, financial reporting quality does not result in investment efficiency increase.

Key words: Financial Reporting Quality • Overinvestment • Underinvestment • Bank Financing • Tax purposes

INTRODUCTION

Economic experts have consensus on the valuable role of information in investment and economical development. Financial reports are one of available information sources in capital market which is expected to play an effective role in promoting investment and increasing its efficiency. In this regards, researchers and accounting professionals are looking for increasing financial reporting quality as a tool for accountability towards society needs. For example, base on theoretical concepts of financial reporting theory, the goal of financial statements is to provide classified and summarized information about financial status, financial performance and financial flexibility of entity which is useful for a wide range of financial statement users to make economic decisions. To achieve this goal, at first, information should be relevant and reliable and secondly would be understandable and comparable.

Quality of financial reporting and disclosure affect the success of capital market. More qualitative financial reporting and information disclosure will increase

investors and other market participants' beliefs regard to reliability of financial information [1]. The Financial Reporting Quality is measured by the ability of financial statements to transfer business operational information and in particular, to forecast of expected cash flows to investors [8]. Also financial reporting quality means how useful is the financial statements to investors, creditors, managers and other associated individuals with companies [24].

Financial reporting quality reduces information asymmetry, capital costs and insider trading and improve the efficiency of capital allocation, corporate governance and turnover [16, 18, 19, 28, 20].

Investment is a decision-making process that managers use to identify projects that increase firm value, in other words, the main task of financial managers is preparing a capital budget [34]. There are at least two theoretical criterion to determine the investment efficiency. First, companies need to gather resources to finance investment opportunities. In an efficient market, all projects with positive net present value should be funded but many studies confirmed that financial

constraints reduces manager's ability to finance. As a result, companies that face financing constraints may refuse projects with positive net present value due to the high cost of financing, which leads to underinvestment [8]. Second, if the company decides to finance, there is no guarantee that the investment is done properly. For example, managers may select projects inappropriately, leading to inefficient investment and as a result, poor selection of projects will cause overinvestment [40].

Financing for profitable projects plays an important role in business growth. Company's ability to identify potential financial resources (inside or outside the organization) to finance investments can be considered as major factors in development of company.

Methods of firm financing are divided into two categories based on term: short term financing and long term financing [30, 35]. Also according to the sources of financing, these methods are divided into two categories: internal financing and external financing. Internal financing includes current assets decreasing, sales of additional fixed assets, depreciation reserves and retain profits. External financing includes borrowing from banks and credit institutions, credit and installment purchases, deferring (increasing) debt, issuing bonds, ordinary and privileged shares.

Bank lending is the most common source of external financing for firms [4, 9]. Banks may have access to additional information beyond the financial statements, that potentially reduce the importance of accounting information. However previous research indicates that accounting information for lending decisions in the U.S. and other developed countries have an extensive role and there is also extensive evidence that banks rely on borrower's financial reports in credit decisions [5, 6, 13, 25]. Examining a client's financial statements helps banks to determine the firm's assets that can serve as collateral, to evaluate its future cash flow generating capability, to gauge the firm's debt capacity and to analyze the riskiness of the firm in determining a lending rate. In other words, the importance of financial reporting quality will increase with the extent of bank financing more than other sources of financing [12].

Income from investment and investment costs are some of affecting factors on the level of investment. Investment increase may lead to income only when the company sells more products or produce them cheaper. So the overall level of production is one of the factors of investment. The second factor that determines the level of investment is investment costs. The investment cost is more complex than the cost of goods and services. This complexity is due to the life of investment goods [21].

In terms of costs, tax is another important factor which influence on investment decisions. Companies deposit a significant portion of the investment incomes into government treasury account which reduces the incentive to invest. There is a high alignment between financial and tax accounting. In developing countries, high alignment means that financial statement serves as a basis for taxation or tax laws explicitly require same accounting procedures for calculating certain items in financial reporting [10]. In such an environment, companies are focused on minimizing taxes. In other words, firms that face high income tax rates and strong enforcement by tax authorities (i.e. high "Tax pressure"), the primary objective of financial reporting may be to minimize income taxes and the role of financial reporting to provide information to suppliers of capital is decreases. So tax factors can directly affect financial reporting quality [12].

Research History: Biddle and Hillary (2006) examined the relationship between accounting quality and firm-level capital investment efficiency. They found that higher quality accounting enhances investment efficiency by reducing information asymmetry between managers and outside capital suppliers. Further, the relation between accounting information quality and efficiency of investment is stronger in economies where financing is largely provided in normal market conditions (capital market) in comparison with countries which supply more capital through credit institutions (like governmental banks) [7]. Verdi (2006) investigated the relationship between financial reporting quality and investment efficiency. He found that criterion for financial reporting quality is negatively associated with both firm under - over investment. The relation between financial reporting quality and underinvestment (overinvestment) is mainly driven by the innate (innate and discretionary) component of reporting quality. Further, financial reporting quality is more strongly associated with underinvestment for firms facing finance limitations. However financial reporting quality is more strongly associated with overinvestment for firms with large cash balances and dispersed ownership, which suggests that financial reporting quality mitigates information asymmetries arising from agency conflicts. Thus the relation between financial reporting quality and investment efficiency is stronger for firms with low quality information environment [40]. Hivakimian (2008) investigated the relationship between investment efficiency and financial constraints. The result show that during recessions, when external financing costs are higher, companies improve the efficiency of internal

capital by increasing the allocation of funds to high q projects relative to low q projects. This improvement is significantly higher for companies that are likely to face more binding financial constraints. The evidence suggested that although financial constraints impair manager's ability to undertake positive net present value projects, they improve the quality of projects selection by reducing free cash flow [22]. Modares and Hesarzadeh (2008) examined the relationship between financial reporting quality and investment efficiency in Iran. The results show that there is a positive significant relationship between financial reporting quality and investment efficiency and better quality of financial reporting improves investment efficiency. Also they indicated that criterion for financial reporting quality is negatively associated with both firm under - over investment. And financial reporting quality could lead to improve investment efficiency through over - under investment [32]. Sajadi *et al.* (2009) investigated non-financial characteristics that affect financial reporting quality in Tehran Stock Exchange listed companies. Results show that there is a positive relationship between financial reporting quality and size of company, type of industry and corporate life and ownership structure is negatively associated with financial reporting quality but there is no significant relationship between the type of audit institution and quality of financial reporting [36]. Arrab Mazare Yazdi (2009) examined the relationship between financial reporting quality and investment efficiency. The results indicate that although there is a very small negative relationship between financial reporting quality and over-under investment as investment deficiency, there is no significant correlation between them [2]. Tehrani and Hesarzadeh (2009) examined some aspects of over - under investment. They used data from fiscal years 2000 to 2006 for Tehran Stock Exchange listed companies. Results indicate that there were significant positive relationship between free cash flows and overinvestment. But findings suggest that there is no meaningful relationship between constraints in financing and underinvestment in Tehran Stock Exchange listed companies [39]. Li *et al.* (2010), investigated the relationship between financial reporting quality and investment efficiency in China. By using complex criterion for financial reporting quality, they found that there is a negative relation between financial reporting quality and over - under investment, so that the effects of accruals quality and earning smoothness on under - over investment are most significant [29].

Hypotheses: According to the literature and history of research, hypotheses were formulated as follows:

First Hypothesis

Financial Reporting Quality Has a Negative Relationship with Both under - over Investment: Second Hypothesis: Financial reporting quality for firms that are mainly funded through bank financing, has a negative relationship with both under - over investment

Third Hypothesis: Financial reporting quality for firms that have strong incentives to manage their earning for tax purpose has a negative relationship with both under - over investment.

Method of Research: Present research is an applied study with a focus on correlative relationships. This study examines the effect of bank financing and tax purposes on the relationship between financial reporting quality and investment efficiency. In order to test the relationship between financial reporting quality and investment efficiency we should define a model which could determines the optimal level of investment. Conceptually, investment efficiency refers to undertaking all projects with positive net present value. According to research by Biddle *et al.* (2009), investment efficiency is calculated as deviations from expected investment which is predicted by the function of firm's growth opportunities. Thus, both under investment (negative deviation from expected investment) and overinvestment (positive deviation from expected investment) are considered inefficient investments. Further, we used a parsimonious model for expected investment as a function of revenue growth [23, 33]. As the relation between investment and revenue growth could differ when revenue decreases or revenue increases [17, 31], we allow differential predictability for revenue increases and revenue decreases by employing a piecewise linear regression model:

$$INVEST_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t-1} + \alpha_2 \% Rev Growth_{i,t-1} + \alpha_3 NEG \times \% Rev Growth_{i,t-1} + \epsilon_{i,t}$$

Following Biddle *et al.* (2009), we define $INVEST_{i,t}$ as the sum of new investment in machinery, equipment, vehicles, land, building and research and development expenditures less the sale of fixed assets, which scaled by lagged total assets for firm i in year t .

$\% Rev Growth_{i,t}$: The annual revenue growth rate for firm i in year $t-1$.

$NEG_{i,t-1}$: An indicator variable that takes the value of one for negative revenue growth and zero otherwise.

$\varepsilon_{i,t}$: Indicate the residuals of model which may be positive or negative. Positive residuals are overinvestment and negative residuals are underinvestment. Symmetry of these numbers could be an indicator for investment efficiency measurement. So more (less) residuals means more (less) investment efficiency. In this research, in order to ease of data analysis, we multiply the underinvestment variables by -1 so that higher value suggests a more severe underinvestment.

There is no universally agreement upon FRQ criterion [15]. In this study we use four criterions to measure financial reporting quality. First three criterions have been used in prior researches [14, 26, 31] and fourth criterion is calculated base on other three criterion.

The first criterion is performance-adjusted discretionary accruals as developed by Kothari *et al.* (2005). We use the following model:

$$TAccr_{i,t} = \alpha_0 + \alpha_1 \left(\frac{1}{Assets_{i,t-1}} \right) + \alpha_2 \Delta Rev_{i,t} + \alpha_3 PPE_{i,t} + \alpha_4 ROA_{i,t} + \varepsilon_{i,t}$$

$TAccr_{i,t}$: Total accruals, measured as the change in non-cash current assets minus the change in current non-interest bearing liabilities, minus depreciation and amortization expense for firm i in year t , scaled by lagged total assets (Assets).

$\Delta Rev_{i,t}$: The annual change in revenues scaled by lagged total assets.

$PPE_{i,t}$: Property, plant and equipment for firm i in year t , scaled by lagged total assets.

$ROA_{i,t}$: Return on assets for firm i in year t .

The residuals from the regression model are discretionary accruals. In this study we multiply the absolute values of discretionary accruals by -1 ($DisAccr$). Thus, higher values of $DisAccr$ represent higher FRQ.

In this model $\frac{1}{Assets_{i,t-1}}$, is dependent variable and

$\Delta Rev_{i,t}$, $PPE_{i,t}$, $ROA_{i,t}$ are model's independent variables.

Second criterion is discretionary revenues that presented by McNichols and Stubben (2008) and Stubben (2010). We use the following regression:

$$\Delta AR_{i,t} = \alpha_0 + \alpha_1 \Delta Rev_{i,t} + \varepsilon_{i,t}$$

$\Delta AR_{i,t}$: The annual change in accounts receivable.

$\Delta Rev_{i,t}$: The annual change in revenues, each scaled by lagged total assets. Discretionary revenues are the residuals from this equation. In this research we multiply the absolute values of discretionary revenues by -1 ($DisRev$). Thus, higher values of $DisRev$ represent higher FRQ.

Third criterion is accruals quality based on Dechow-Dichev (2002) model, as modified by McNichols (2002) and Francis *et al.* (2005). We use the following model:

$$TCAccr_{i,t} = \alpha_0 + \alpha_1 OCF_{i,t-1} + \alpha_2 OCF_{i,t} + \alpha_3 QCF_{i,t} + \alpha_4 Rev_{i,t} + \alpha_5 PPE_{i,t} + \varepsilon_{i,t}$$

$TCAccr$: Total current accrual, measured as the change in non-cash current assets minus the change in current non-interest bearing liabilities, scaled by lagged total assets.

OCF : Cash flow from operations, measured as sum of net income, depreciation and amortization and changes in current liabilities, minus changes in current assets, scaled by lagged total assets.

$\Delta Rev_{i,t}$: The annual change in revenues scaled by lagged total assets.

$PPE_{i,t}$: property, plant and equipment, scaled by lagged total assets.

Residuals from equation represent estimation errors in current accruals that are not associated with operating cash flows and couldn't explained by change in revenue and the level of PPE. Following Srinidhi and Gul (2007) the absolute value from this residual is used as an alternative for FRQ. We multiply the absolute values of the Dechow-Dichev by -1 (DD). Thus, higher values of DD represent higher FRQ.

In this model $TCAccr$ is the dependent variable and OCF , $\Delta Rev_{i,t}$ and $PPE_{i,t}$ are independent variables.

Fourth Criterion: Lastly, to mitigate calculation errors in individual FRQ components and to provide evidence based on an overall FRQ criterion, we aggregate three criterions into one aggregate criterion.

To examining first hypothesis we use the following model:

$$InvEff_{i,t+1} = \beta_0 + \beta_1 FRQ_{i,t} + \beta_n Control Variables_{i,t} + \varepsilon_{i,t}$$

$InvEff$: Excess investment (under - over investment) is the residual of the investment model as describes above.

FRQ : Financial reporting quality measured in the four ways.

Our main control variables are *Log Assets* (the log of total assets), *Log Age* (the log of firm age), *Tang* (asset tangibility, measured as property, plant and equipment divided by total assets), *Slack* (financial slack, measured as cash divided by total assets) and *Audit* (an indicator variable referring to whether a firm's financial statements are reviewed by an independent auditor or not).

The above model is fitted with consideration of overinvestment as dependent variable and financial reporting quality and financial control criterion as independent variables and then the model is fitted by consideration of under investment as dependent variable. To examining second hypothesis (the effect of bank financing on the relationship between financial reporting quality and investment efficiency) we use an indicator variable (*BANK*) as a major source of external financing for firms. So to examining this hypothesis the following model is used:

$$InvEff_{i,t+1} = \beta_0 + \beta_1 FRQ_{i,t} + \beta_n Bank_{i,t} + \beta_3 FRQ \times Bank_{i,t} + \beta_n Control\ Variables_{i,t} + \epsilon_{i,t}$$

Bank : To ensure that bank financing is economically important, it requires that amount of bank financing were more than 5% of all needed sources for investment, in which cases it takes the value of one and zero otherwise.

To examining third hypothesis and considering tax purpose, we use indicator variable of Tax. Tax purpose refers to managers' perception of whether tax rates and tax lows impose a major or severe obstacle in the operation and growth of their business. Therefore to examine this hypothesis we use the following model:

$$InvEff_{i,t+1} = \beta_0 + \beta_1 FRQ_{i,t} + \beta_n Tax_{i,t} + \beta_3 FRQ \times Tax_{i,t} + \beta_n Control\ Variables_{i,t} + \epsilon_{i,t}$$

Tax : The indicator takes the value of one when corporate tax rate is more than the average corporate tax rate and zero otherwise.

Statistical Population and Sample: The statistical population of this research involves Tehran Stock Exchange (TSE) listed companies with consideration of the following factors:

- Availability of company information between 2003 and 2009.
- Their fiscal year ended by 20th March.
- The company should not have undergone any changes in operation or its fiscal year between 2003 and 2009
- The company isn't an investment, financial intermediary, holding, leasing company and/or bank.

In this study we consider all members of statistical population as statistical sample. After applying the above properties, finally 134 companies (938 year-firm) were selected.

Methods of Data Analysis: Necessary data for testing the study's hypotheses were prepared using documents such as audited financial statement items (balance sheet, income statement and cash flow statements), explanatory notes to financial statements of companies available from TSE's library, the comprehensive database of companies within TSE's website and also from softwares such as "Tadbirpardaz" and "Rahavarede-Novine". Data collected were transformed into information files using Excel software and variables calculated using equations explained as before. In the final stage upon validating the model, statistical calculations and estimates were made using SPSS software version 15.

Results from Testing the Hypothesis: According to Table 1, the first criterion (DisAccr), the second criterion (DisRev) and the third criterion (DD) of financial reporting quality have the highest (zero) and the forth criterion of FRQ (Aggreg) has the lowest average (-7275.7854). The third criterion of FRQ (DD) has the highest (135.857) and the fourth criterion of FRQ (Aggreg) has the lowest (-2657.95) median. The first of FRQ (DisAccr) has the highest (20235.36503) and over investment has the lowest (2215.17559) standard deviation. It should be noted that descriptive statistics were examined for other study variables.

Table 2 shows the results of calculating criterion of investment efficiency. The significance of parameter F is equal to 0.8 which is not less than 0.05 which means the model is not significant at the 95 percent confidence level. So it would not be appropriate for calculating the efficiency investment in Iran. Therefore the cash flow variable used to calculate investment efficiency (Table 3). also according to Table 2, Durbin Watson statistics is close to 2 so there is no correlation between error values in their model. Other assumptions of regression including

independence of errors, normal errors and the dependent variable, constant variance of errors was evaluated and all assumptions were established. These assumptions were reviewed in all modes of study.

According to Table 3, the significance of parameter F is equal to 0.000 which is less than 0.05, in other words the model is significant at the 95% confidence level.

Adjusted R^2 shows that %13 of changes in the dependent variable (investment change) is reflected by independent variable (cash flow). So the positive residuals are considered as over investment and negative residuals as underinvestment. Also according to Table 3, Durbin Watson statistics is a number close to 2 so there is no correlation between the errors of their model.

The results of calculating the criterion of FRQ expressed in Table 4 to 6.

According to Table 4, the P-value of parameter F is equal to 0.000 which is less than 0.05, in other words the model is significant at the 95 percent confidence level. We multiply the absolute values of discretionary accruals by -1 (DisAccr). Thus, higher values of DisAccr represent higher FRQ. Also according to Table 4, Durbin Watson statistic is a number close to 2 so there is no correlation between the errors of their model.

According to Table 5, the significance of parameter F is equal to 0.000 which is less than 0.05, in other words the model is significant at the 95 percent confidence level. We multiply the absolute values of discretionary revenue by -1 (DisRev). Thus, higher values of DisRev represent higher FRQ. Also according to Table 5, Durbin Watson statistics is a number close to 2 so there is no correlation between the errors of their model.

According to Table 6, the significance of parameter F is equal to 0.000 which is less than 0.05, in other words the model is significant at the 95 percent confidence level. We multiply the absolute values of accruals quality by -1 (DD). Thus, higher values of DD represent higher FRQ. Also according to table 6, Durbin Watson statistics is a number close to 2 so there is no correlation between the errors of their model. The fourth criterion is the average of the three criterion of FRQ.

After calculating investment efficiency and FRQ criterion, research hypotheses were examined with regard four criterions for FRQ that results are as follows:

First Hypothesis: Financial reporting quality has a negative relationship with both underinvestment and overinvestment.

Table 1: descriptive statistics

Variable	Mean	Median	Std. Deviation
	1114.7481	541.1	2215.17559
	2285.7294	531.5	9731.54934
DisAccr	0.0000	0.3127	20235.36503
DisRev	0.0000	2009.985-	17691.85512
DD	0.0000	135.857	19306.609318
Aggreg	7275.7854-	2657.95-	15337.36365

Table 2: Results from analyzing the first model of efficiency investments

$INVEST_{it} = \alpha_0 + \alpha_1 NEG_{it-1} + \alpha_2 \% Rev Growth_{it-1} + \alpha_3 NEG \times \% Rev Growth_{it-1} + \epsilon_{it}$					
Model	-----				
Variable and constant	$INVEST_{it}$	α_0	NEG_{it-1}	$\% Rev Growth_{it-1}$	$NEG \times \% Rev Growth_{it-1}$
P_Value		-4.255	-0.058	0.776	0.037
t-Statistic		0.000	0.954	0.438	0.971
Model statistics	r^2	Adjusted r^2	F	P_Value	Durbin-Watson
	0.002	-0.003	0.335	0.800	1.95

Table 3: Results from analyzing the second model of investment efficiency

$INVEST_{it} = \alpha_0 + \alpha_1 NEG_{it-1} + \alpha_2 CFO_{it-1} + \alpha_3 NEG \times CFO_{it-1} + \epsilon_{it}$					
Model	-----				
Variable and constant	$INVEST_{it}$	α_0	NEG_{it-1}	CFO_{it-1}	$NEG \times CFO_{it-1}$
P_Value		-2.128	-9.988	0.727	3.194
t-Statistic		0.034	0.000	0.467	0.001
Model statistics	r^2	Adjusted r^2	F	P_Value	Durbin-Watson
	0.136	0.132	34.568	0.000	2.02

Table 4: Results from calculating the first criterion of FRQ

$$TAccr_{i,t} = \alpha_0 + \alpha_1 \left(\frac{1}{Assets_{i,t-1}} \right) + \alpha_2 \Delta Rev_{i,t} + \alpha_3 PPE_{i,t} + \alpha_4 ROA_{i,t} + \varepsilon_{i,t}$$

Model	-----					
Variable and constant	$TAccr_{i,t}$	α_0	$\frac{1}{Assets_{i,t-1}}$	$\Delta Rev_{i,t}$	$PPE_{i,t}$	$ROA_{i,t}$
P_Value		0.027	0.475	0.000	0.000	0.000
t-Statistic		2.213	0.715	4.677	-4.118	3.894
Model statistics		r^2	Adjusted r^2	F	P_Value	Durbin-Watson
		0.065	0.059	11.488	0.000	2.00

Table 5: Results from calculating the second criterion of FRQ

$$\Delta AR_{i,t} = \alpha_0 + \alpha_1 \Delta Rev_{i,t} + \varepsilon_{i,t}$$

Model	-----					
Variable and Constant	$\Delta AR_{i,t}$	α_0		$\Delta Rev_{i,t}$		
P_Value		0.001		0.000		
t-Statistic		3.201		12.815		
Model statistics		r^2	Adjusted r^2	F	P_Value	Durbin-Watson
		0.199	0.197	164.229	0.000	1.62

Table 6: Results from calculating the third criterion of FRQ

$$TCAccr_{i,t} = \alpha_0 + \alpha_1 OCF_{i,t-1} + \alpha_2 OCF_{i,t} + \alpha_3 OCF_{i,t+1} + \alpha_4 Rev_{i,t} + \alpha_5 PPE_{i,t} + \varepsilon_{i,t}$$

Model	-----						
Variable and Constant	$TCAccr_{i,t}$	α_0	$OCF_{i,t-1}$	$OCF_{i,t}$	$OCF_{i,t+1}$	$Rev_{i,t}$	$PPE_{i,t}$
P_Value		0.989	0.000	0.912	0.000	0.000	0.788
t-Statistic		-0.013	8.800	-0.110	5.878	8.559	-0.269
Model statistics		r^2	Adjusted r^2	F	P_Value	Durbin-Watson	
		0.159	0.152	24.879	0.000	2.000	

Table 7: Results from examining first hypothesis

$$InvEff_{i,t+1} = \beta_0 + \beta_1 FRQ_{i,t} + \beta_n Control\ Variables_{i,t} + \varepsilon_{i,t}$$

		Dependent variable: Over_Investment				Dependent variable: Under_Investment			
		$Dis\ Accr$	$Dis\ Rev$	DD	$Aggreg$	$Dis\ Accr$	$Dis\ Rev$	DD	$Aggreg$
FRQ	Coefficient	-0.027	-0.047	-0.028	-0.042	-0.121	-0.042	-0.044	-0.04
	P_Value	0.000	0.000	0.000	0.000	0.021	0.280	0.366	0.474
Log Assets	Coefficient	633.35	606.28	623.5	551.02	1149.9	2303.6	1513.9	1517.5
	P_Value	0.000	0.000	0.000	0.000	0.065	0.001	0.027	0.044
Log Age	Coefficient	197.69	238.46	209.1	205.54	-1119.7	-1323	-1234.7	-1231.1
	P_Value	0.0251	0.162	0.227	0.228	0.354	0.278	0.310	0.321
Tang	Coefficient	164.68	155.52	167.0	151.57	-5946.9	5332.0	6353.5	6545.7
	P_Value	0.050	0.062	0.049	0.069	0.90	0.142	0.073	0.067
Stock	Coefficient	-1233.1	-598.6	-1057	-1052.4	2931.9	4054.5	3972.5	4645.8
	P_Value	0.195	0.525	0.270	0.263	0.629	0.508	0.519	0.446
Audit	Coefficient	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-
r^2		0.285	0.299	0.272	0.298	0.101	0.084	0.082	0.081
r^2 Adjusted		0.277	0.291	0.264	0.291	0.080	0.062	0.060	0.059
F		35.146	37.694	32.95	37.528	4.774	3.864	3.787	3.721
P_Value		0.000	0.000	0.000	0.000	0.000	0.002	0.003	0.003

Table 8: Results from examining second hypothesis

$$InvEff_{i,t+1} = \beta_0 + \beta_1 FRQ_{i,t} + \beta_n Bank_{i,t} + \beta_3 FRQ \times Bank_{i,t} + \beta_n Control Variables_{i,t} + \epsilon_{i,t}$$

		Dependent variable: Over_Investment				Dependent variable: Under_Investment			
		<i>Dis Accr</i>	<i>Dis Rev</i>	<i>DD</i>	<i>Aggreg</i>	<i>Dis Accr</i>	<i>Dis Rev</i>	<i>DD</i>	<i>Aggreg</i>
<i>FRQ</i>	Coefficient	-0.072 0.132	-0.011 0.874	-0.03 0.387	-0.08 0.182	-0.03 0.842	0.2 0.25	0.1 0.596	0.1 0.65
Bank	Coefficient	-149.5 0.729	-596.1 0.127	-420 0.261	-232 0.589	-1415.3 0.562	-1786 0.426	-1794 0.426	-1715 0.474
<i>FRQ</i> × Bamk	Coefficient	-0.046 0.339	-0.03 0.63	0.01- 0.86	0.04- 0.517	-0.11 0.408	-0.2 0.354	-0.1 0.292	-0.1 0.402
Log Assets	Coefficient	647.5 0.000	628.6 0.000	640.39 0.000	560.2 0.000	1179.6 0.063	2432 0.000	1572.7 0.023	1573.7 0.039
Log Age	Coefficient	231.6 0.182	265.6 0.12	243.9 0.166	243.18 0.158	-1190.1 0.328	-1439 0.244	-1308 0.287	-1287.5 0.296
Tang	Coefficient	172.7 0.041	166 0.04	176.67 0.038	159.1 0.057	6240.1 0.078	5480.9 0.13	6825.8 0.057	6935.4 0.055
Stock	Coefficient	-1538.5 0.115	-944.5 0.33	-1381 0.161	-1353.8 0.161	2514.7 0.687	3317.2 0.599	3899 0.538	4314 0.49
Audit	Coefficient	- -	- -	- -	- -	- -	- -	- -	- -
r ²		0.290	0.304	0.276	0.302	0.104	0.088	0.087	0.084
r ² Adjusted		0.278	0.293	0.264	0.291	0.074	0.057	0.057	0.054
F		25.588	27.354	23.861	27.175	3.488	2.887	2.864	2.753
<i>P_Value</i>		0.000	0.000	0.000	0.000	0.001	0.007	0.007	0.009

Table 9: Results from examining third hypothesis

$$InvEff_{i,t+1} = \beta_0 + \beta_1 FRQ_{i,t} + \beta_n Tax_{i,t} + \beta_3 FRQ \times Tax_{i,t} + \beta_n Control Variables_{i,t} + \epsilon_{i,t}$$

		Dependent variable: Over_Investment				Dependent variable: Under_Investment			
		<i>Dis Accr</i>	<i>Dis Rev</i>	<i>DD</i>	<i>Aggreg</i>	<i>Dis Accr</i>	<i>Dis Rev</i>	<i>DD</i>	<i>Aggreg</i>
<i>FRQ</i>	Coefficient	-0.03 0.000	-0.1 0.000	-0.03 0.000	-0.05 0.000	-0.25 0.001	0.04 0.310	-0.1 0.133	-0.1 0.302
Tax	Coefficient	676.2 0.032	1048.6 0.001	676.33 0.038	741.1 0.021	-231.72 0.913	-3310 0.118	-1667 0.445	-1716.5 0.453
<i>FRQ</i> × Bamk	Coefficient	0.01 0.54	0.07 0.000	0.01 0.47	0.01 0.20	0.24 0.01	0.04 0.62	0.1 0.147	0.1 0.214
Log Assets	Coefficient	555.5 0.000	443.1 0.000	546.12 0.000	470.79 0.000	1484.8 0.038	3096.4 0.000	2003.8 0.012	2174.2 0.01
Log Age	Coefficient	148.7 0.391	202.7 0.226	163.4 0.350	158.4 0.355	-929.49 0.434	-1333 0.272	-1118 0.36	-1176.4 0.332
Tang	Coefficient	168.5 0.045	136.2 0.094	171.2 0.043	154.6 0.063	6384.1 0.065	5614.5 0.120	6878.8 0.051	6985.7 0.050
Stock	Coefficient	-2175.5 0.038	-1495 0.138	-1979 0.061	-2021.9 0.051	7714.5 0.221	7652.5 0.231	9010.6 0.167	9067.6 0.158
Audit	Coefficient	- -	- -	- -	- -	- -	- -	- -	- -
r ²		0.292	0.340	0.279	0.307	0.142	0.103	0.105	0.102
r ² Adjusted		0.281	0.329	0.268	0.296	0.113	0.073	0.075	0.072
F		25.921	32.278	24.281	27.807	4.963	3.443	3.530	3.393
<i>P_Value</i>		0.000	0.000	0.000	0.000	0.000	0.002	0.001	0.002

Results obtained from regression Analysis are shown in Table 7.

The significance of parameter F is equal to 0.000 for all models which is less than 0.05, in other words the all models are significant at the 95 percent confidence level. Also adjusted r^2 shows that independent variables explain approximately 29 percent over investment changes (dependent variable) and explain approximately 6 percent under investment changes (dependent variable). The first hypothesis suggests that there is a negative relationship between FRQ and under-over investment, so according to Table 7, the variable coefficients for all FRQ criteria are negative, thus the first hypothesis was confirmed. So there is a negative relationship between financial reporting quality and under investment and over investment. Also according Table 7, Durbin Watson statistics is a number close to 2 so there is no correlation between the errors of their model.

Second Hypotheses: Financial reporting quality for firms that are mainly funded through bank financing, has negative relationship with both underinvestment and overinvestment.

Results obtained from regression Analysis are shown in Table 8.

The significance of parameter F is equal to 0.000 for all models which is less than 0.05, in other words the all models are significant at the 95 percent confidence level. Also adjusted r^2 shows that independent variables explain approximately 29 percent over investment changes (dependent variable) and explain approximately 6 percent under investment changes (dependent variable). The second hypothesis suggests that there is a negative relationship between FRQ and under-over investment for firms that are mainly funded through bank financing, so according to Table 8, the variable coefficients for $FRQ \times Bank$ for all FRQ criteria are negative, thus the second hypothesis was confirmed. As there is a negative relationship between FRQ and under-over investment for firms that are mainly funded through bank financing. So increase FRQ reduces under-over investment and increases investment efficiency. Also according to table 8, Durbin Watson statistic is a number close to 2 so there is no correlation between the errors of their model.

Third Hypothesis: Financial reporting quality for firms that have strong incentives to manage their earning for tax purpose, has negative relationship with both underinvestment and overinvestment.

Results obtained from regression Analysis are shown in Table 9.

The significance of parameter F is equal to 0.000 for all models which is less than 0.05, in other words the all models are significant at the 95 percent confidence level. The third hypothesis suggests that there is a negative relationship between FRQ and under-over investment for firms that have strong incentives to manage their earning for tax purpose, so according to Table 9, the variable coefficients for $FRQ \times Tax$ are positive, thus the third hypothesis was not confirmed. So there is not a negative relationship between FRQ and under-over investment for firms that have strong incentives to manage their earning for tax purpose. In other words in the position of tax pressure, increase financial reporting quality, does not reduce under-over investment thus investment efficiency will not increase. Also according to Table 9, Durbin Watson statistic is a number close to 2 so there is no correlation between the errors of their model.

CONCLUSION

This research has examined the effect of bank financing and tax purpose on relationship between FRQ and investment efficiency. Results of the first hypothesis analysis indicate that higher quality of financial reporting reduces under-over investment and finally lead to investment efficiency increase. This result is consistent with research theoretical concepts and conducted studies by Biddle and Hillary (2006) [7], Biddle *et al.* (2009) [8], Chen *et al.* (2010) [12], Francis *et al.* (2005) [19], Li *et al.* (2010) [29], Verdi (2006) [40] and Modarres and Hesarzadeh (2008) [32].

The second hypothesis has examined the effect of bank financing on relationship between FRQ and under-over investment. The results indicate that FRQ for firms that are mainly funded through bank financing, negatively associate with both under-over investment.

This result is consistent with Chen *et al.* (2010) [12] study. So there is a negative relationship between financial reporting quality of the firms which funded by banks and under-over investment.

The third hypothesis tests the effect of tax purpose on relationship between FRQ and under-over investment. The result indicates that FRQ for firms that have strong incentives to manage their earning for tax purpose, positively associated with both underinvestment and overinvestment. This result is compatible to those achieved in research performed by Chen *et al.* (2010) [12].

REFERENCES

1. Ardestani, M., 2007. Financial Reporting Quality and Ownership Costs. Dissertation, Master Degree in Accounting, Allameh Tabatabaai University.
2. Arrab Mazar Yazdi, M., 2008. Financial Reporting quality and Investment Efficiency. Dissertation, Master Degree in Accounting, Allameh Tabatabaai University.
3. Beatty, A., S. Liao and J. Webber, 2007. The Effect of Private Information and Monitoring on the Role of Accounting Quality in Investment Decision. www.TDP.com.
4. Beck, T., A. Demirduc-Kunt and V. Maksimovic, 2008. Financing patterns around the world: Are small firms different?. *J. Financial Economics*, 89: 467-487.
5. Berry, A., S. Faulkner, M. Hughes and R. Jarvis, 1993. Financial information, the banker and the small business. *British Accounting Review*, 24: 131-50.
6. Berry, A., P. Grant and R. Jarvis, 2004. European bank lending to the UK SME sector. *International Small Business J.*, 22: 115-130.
7. Biddle, G.C. and G. Hilary, 2006. Accounting Quality and firm-level capital Investment. *The Accounting Review*, 81(5): 963-982.
8. Biddle, G., G. Hilary and R.S. Verdi, 2009. How Does Financial Reporting Quality Relate to Investment Efficiency. *J. Accounting and Economic*, 48:112-131.
9. Brown, G.W., L.W. Chavis and L.F. Klapper, 2008. A new lease on life: Institutions, external financing and business growth. Working Paper, University of North Carolina at Chapel Hill and World Bank.
10. Burgstahler, D., L. Hail and C. Leuz, 2006. The importance of reporting incentives: Earnings management in European private and public firms. *The Accounting Review*, 81: 983-1016.
11. Bushman, R. and A. Smith, 2001. Financial accounting Information and Corporate Governance. *J. Accounting Economics*, 31: 237-333.
12. Chen, F., O.K. Hope, Q. Li and X. Wang, 2010. Financial Reporting Quality and Investment Efficiency of Private Firms in Emerging Markets. www.SSRN.com.
13. Danos, P., D. Holt and E.A. Imhoff, 1989. The use of accounting information in bank lending decisions. *Accounting Organizations and Society*, 14: 235-246.
14. Dechow, P. and I. Dichev, 2002. The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, 77: 35-59.
15. Dechow, P., W. Ge and C. Schrand, 2009. Understanding earnings quality: A review of the criterion, their determinants and their consequences. Paper presented at the Journal of Accounting and Economics, 86: 1-39.
16. Diamond, D.W. and R.E. Verrecchia, 1991. Disclosure, Liquidity and the cost of capital. *J. Finance*, 46: 1325-1359.
17. Eberly, J.C., 1997. International Evidence on Investment and Fundamentals. *European Economic Review*, 41: 1055-1078.
18. Francis, J., R. Lafond, P. Olsson and K. Schipper, 2004. Cost of equity and earnings attributes. *The accounting Review*, 79: 976-1010.
19. Francis, J., R. Lafond, P. Olsson and K. Schipper, 2005. The market pricing of accruals quality. *J. Accounting and Economics*, 39(2): 295-327.
20. Frankel, R. and X. Li, 2004. Characteristics of firm's information environment and the information asymmetry between insiders and outsiders. *J. Accounting and Economics*, 37(2): 229-259.
21. Heydari, B.H., 2005. The Effect of changing corporate income tax law on Investment in manufacturing companies. Dissertation, Master Degree in Accounting, Allameh Tabatabaai University.
22. Hivakimian, G., 2008. Financial Constraints and investment Efficiency: Internal Capital Allocation across the Business Cycle. www.SSRN.com.
23. Hubbard, R.G., 1998. Capital-Market imperfections and investment. *J. Economic Literature*, 36: 193-225.
24. Karimi, A.M., 2008. The Effect of selecting Accounting Methods on Earnings Quality. Dissertation, Master Degree in Accounting, Allameh Tabatabaai University.
25. Kitindi, E.G., B.S. Magembe and A. Sethibe, 2007. Lending decision making and financial information: The Usefulness of corporate annual reports to Lenders in Botswana. *The International J. Applied Economics and Finance*, 1: 55-66.
26. Kothari, S.P., A.J. Leone and C.E. Wasley, 2005. Performance matched discretionary accrual measures. *J. Accounting and Economics*, 39: 163-197.
27. Lambert, R., C. Leuz and R.E. Verrecchia, 2006. Accounting Information, disclosure and the cost of capital. Working Paper, www.SSRN.com.
28. Leuz, C. and R. Verrecchia, 2000. The Economic Consequences of Increased disclosure. *J. Accounting Res.*, 38: 91-124.

29. Li, F. and N.O. Shroff, 2010. Financial Reporting Quality and Economic Growth. www.SSRN.com.
30. Marsh, W.H., 1994. Financial Management. South-Western College Publishing, pp: 362-390.
31. McNichols, M.F. and S.R. Stubben, 2008. Does earnings management affect firm's investment decisions?. *The Accounting Review*, 83: 1571-1603.
32. Modarres, A. and R. Hesarzadeh, 2008. Financial Reporting Quality and Investment Efficiency. *Quarterly J. Stock Exchange*, 2: 85-116.
33. Modigliani, F. and M. Miller, 1958. The cost of capital, corporation finance and the theory of investment. *American Economic Review*, 48: 261-297.
34. Neveu, P.R., 1986. Fundamentals of Financial management. 3rd edition, Cincinnati, Ohio: South-Western Publishing Co.
35. Ross, S.A., R.W. Wester Field and J.F. Jaffe, 1991. Corporate Finance. Second edition, pp: 694.
36. Sajadi, S.H., M. Zaraenazhad and A. Jafari, 2009. Effect of Non financial characteristics on financial reporting quality in TSElisted companies. *Accounting and Auditing Res.*, 16(57): 51-68.
37. Srinidhi, B.N. and F.A. Gul, 2007. The differential effects of auditors' non audit and audit fees on accrual quality. *Contemporary Accounting Res.*, 24(2): 595-629.
38. Stubben, S., 2010. Discretionary revenues as a measure of earnings management. *The Accounting Review*, 85(2): 695-717.
39. Tehrani, R. and R. Hesarzadeh, 2009. The effect of Free cash Flow and Finance constraints on overinvestment and underinvestment. *Accounting Res.*, pp: 3.
40. Verdi, R., 2006. Financial Reporting Quality and Investment Efficiency. M.I.T. Working paper.