CHAPTER I

INTRODUCTION
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1 Introduction

1.1 Introduction

Recent researches suggested that enhanced financial reporting quality may have important economic implications, like increased investment efficiency (Bushman and Smith, 2001; Lambert, Leuz, and Verrecchia, 2005). Another recent study (Rodrigo S. Verdi, 2006) hypothesized that higher financial reporting quality can improve investment efficiency by reducing information asymmetry in two ways:

- First, it reduces the information asymmetry between the firm and investors.
- Second, it reduces information asymmetry between investors and the managers.

This could be achieved if better financial reporting facilitates achieving better contracts that prevent inefficient investment and/or increases investors’ ability to monitor managerial investment decisions.

A firm has investing efficiency if it undertakes all or only projects with positive NPV under the scenario of no market frictions, like adverse selection or agency costs. Therefore, inefficient underinvestment includes passing up investment opportunities that would have positive NPV in the absence of adverse selection. Likewise, inefficient overinvestment includes undertaking projects with negative NPV (Verdi, 2006).

In other studies researchers found evidence of a positive association between investors' demands for firm-specific information and financial reporting quality (Daniel A. Cohen, 2003). For the economic consequences, the evidence suggests that firms with high quality financial reporting policies have reduced information asymmetries.
Biddle and Hilary (2006) found that firms with higher quality financial reporting exhibit higher investment efficiency proxied by lower investment cash flow sensitivity. However, investment cash flow sensitivity can reflect either financing constraints or an excess of cash (e.g., Kaplan and Zingales, 1997, 2000; Fazzari, et al., 2000).

These findings raise the next question of whether higher quality financial reporting is associated with a reduction of over investment or with a reduction of under investment. Wang (2003) predicted and found a positive relation between capital allocation efficiency and three earning attributes – value relevance, persistence, and precision – without making the distinction between under and over investment.

The two key constructs in the analysis are financial reporting quality and investment efficiency. It may be conceptually defined that a firm has investing efficiency if it undertakes projects with positive Net Present Value (NPV) under the scenario of no market frictions such as adverse selection or agency costs. Thus, underinvestment includes passing up investment opportunities that would have positive Net Present Value (NPV) in the absence of adverse selection. Correspondingly over investment is defined as investing in projects with negative Net Present Value. This study also defines financial reporting quality as the precision with which financial reporting conveys information about the firm’s operations, in particular, its expected cash flow, in order to inform equity investors. This definition is consistent with the Financial Accounting Standards Board, Statement of Financial Accounting Concepts No. 1 (1978), which states that one of the objectives of financial reporting is to inform present and potential investors in making rational investment decisions and in assessing the expected firm cash flow.

A firm needs to raise capital in order to finance its investment opportunities. In a perfect market, all projects with positive net present value should be funded (Verdi, 2006); however, a large literature in finance has
shown that firms face financing constraints that limit managers’ ability to finance potential projects (Hubbard, 1998). One conclusion of this literature is that a firm facing financing constraints will pass up positive NPV projects due to large costs of raising capital, resulting in underinvestment (Figure 1). Information asymmetry can affect the cost of raising funds and project selection (Verdi, 2006). For instance, information asymmetry between the firm and investors (commonly referred to as an adverse selection problem) is an important driver of a firm’s cost of raising the capital required to finance its investment opportunities (Figure 1).

Myers and Majluf (1984) shows that when managers act in favour of existing shareholders and the firm needs to raise funds to finance an existing positive NPV project, managers may refuse to raise funds at a discounted price even if that means passing up good investment opportunities.

Financial reporting mitigates adverse selection costs (Figure 1) by reducing the information asymmetry between the firm and investors, and among investors (Verrecchia, 2001). On the other hand, the existence of information asymmetry between the firm and investors could lead suppliers of capital to discount the stock price and to increase the cost of raising capital because investors would infer that firms raising money is of a bad type (Myers and Majluf, 1984). Thus if financial reporting quality reduce adverse selection costs, it can improve investment efficiency by reducing the costs of external financing.
If the firm decides to raise capital, there is no guarantee that the correct investment is implemented. For instance, managers could choose to invest inefficiency by making bad project selections, consuming perquisites, or expropriating existing resources. Most of the literature in this area predicts that poor project selection leads the firm to overinvest (Stein, 2003), but there are also papers which predict the firm could under invest (Bertrand and
Mullainathan, 2003). These links are presented respectively by Figure 2 and 3.

Since managers maximize their personal welfare, they may choose investment opportunities that are not in the best interest of shareholders (Berle, and Means, 1932; Jensen, and Meckling, 1976). There are many reasons why managers’ inefficiency in investing shareholders’ capital varies across different models. These reasons include perquisite consumption (Jensen, 1986, 1993), career concerns (Holmstrom, 1999), and reference for a "quiet life" (Bertrand and Mullainathan, 2003), among others. More importantly, the predicted relation is that agency problems can affect investment efficiency due to poor project selection (Figure 2) and can increase the cost of raising funds if investors anticipate that managers could expropriate funded resources (Lambert, Leuz, and Verrecchia, 2005), (Figure 3).

A large literature in accounting suggests that financial reporting plays a critical role in mitigating agency problems. For instance, financial accounting information is commonly used as a direct input into compensation contracts (Lambert, 2001) and is an important source of information used by shareholders to monitor managers (Bushman, and Smith, 2001). Thus if financial reporting quality reduces agency problems (Figure 2), it can then improve investment efficiency by increasing shareholder ability to monitor managers and thus improve project selection and reduce financing costs.
Figure 1.2: The relationship between investment efficiency and financial reporting quality – with particular reference to over-investment
1.2 Statement of the Problem

Prior research has identified two primary imperfections – moral hazards and adverse selections – both caused by the existence of information asymmetry between managers and outside suppliers of capital, which can affect the efficiency of capital investment. Many studies such as Berle and Means (1932); Jensen and Meckling (1976); Jensen (1986) and
Blanchard, Silanez, and Shleifer (1994) have shown that managers sometimes aiming of their welfare, make investments that are not in the best interest of shareholders. Models of moral hazard use this intuition and suggest that managers will invest in negative Net Present Value projects when there is divergence in principal-agent incentives.

Moral hazards can lead to both under or over investment depending on the availability of capital. On one hand, the natural tendency to over-invest will produce excess investment ex post, if firms have resources to invest. On the other hand, suppliers of capital are likely to recognize this problem and to ration capital ex ante, which may lead to under investment ex-post (Stiglitz and Weiss, 1981; Lambert, et al., 2007). However, the present study is going to consider these problems.

Jensen (1986) predicted that managers have incentives to consume perquisites and grow their firms beyond the optimal size. These predictions receive empirical support from Blanchard, Silanez, and Shleifer (1994). The problem arises from the fact that managers use financial resources invested by investors for maximizing their own personal welfare. Therefore, financial reporting quality may help better monitoring of managers’ performance to prevent this problem.

Models of adverse selection suggest that if managers are better informed than investors about a firm’s prospects, they will try to time capital issuances to sell overpriced securities. If they are successful, they may over invest these proceeds (Baker, Stein, and Wurgler, 2003). However, investors may respond rationally by rationing capital, which may lead to ex post under investment. Myers and Majluf (1984) shown that when managers act in favor of existing shareholders and the firm needs to raise funds to finance an existing positive Net Present Value project, managers may refuse to raise funds at a discounted price even if that means passing up good investment opportunities (Gary Biddle, et al., 2009). The above problems and discussions suggest that information asymmetries between firms and
suppliers of capital can reduce capital investment efficiency by giving rise to frictions such as moral hazard and adverse selection, which lead to over and under investment, and these information asymmetries are caused when financial reporting quality is low.

Prior studies suggest that higher quality of financial reporting increases investment efficiency (Healy, and Palepu, 2001; Bushman and Smith, 2001; Lambert, et al., 2007). Consistent with this argument, Biddle and Hillary (2006) found that higher quality of financial reporting lowers investment cash flow sensitivity - a proxy for investment inefficiency - both across countries and within countries. However, cash flow sensitivities can reflect either financing constraints or an excess of cash (Kaplon and Zingales, 1997, 2000; Fazzari, et al., 2000). The findings in Biddle and Hilary (2006) raise the further question of whether higher quality financial reporting is associated with higher investment efficiency due to the reduction in overinvestment and underinvestment. More critical, is this true in developing countries? These problems are the main focal point of the present study.

1.3 Need for the Study

Despite the importance of financial reporting quality in determining investment efficiency, limited empirical evidence has been compiled (Verdi, 2006: 43, and Gregory Waller, Mira Straska, 2007: 3) particularly in bank-centered financial systems.

Some prior research suggests that the positive relationship between accounting information quality and investment efficiency does not seem to exist. For example, Biddle and Hilary (2006) document no relationship between accounting information quality and investment efficiency in Japan. Therefore, there is a need to study whether there is any relationship between financial reporting quality and investment efficiency.
Biddle and Hilary (2006) assert that the bank-centered system itself substitutes for accounting information quality, as banks are able to obtain information through private channels, thus mitigating adverse selection problems. This is an interesting but puzzling finding because it suggests that financial reporting quality does not matter in bank-centered economies with respect to investment efficiency. The findings of Biddle and Hilary's (2006) study call the researchers in bank-centered economies to focus on investigating this issue in their countries. The present research is going to study this puzzling finding with attention to Iran which is also a bank-centered economy.

However, the present study will investigate the relation between accounting information quality and investment efficiency in Iran as a country of bank-centered economy. Several studies argue that higher financial reporting quality is associated with higher investment efficiency by reducing information asymmetry between firms and external suppliers of capital. For example, higher financial reporting quality could allow constrained firms to attract capital by making their positive Net Present Value (NPV) projects more visible to investors and by reducing adverse selection in the issuance of securities. Alternatively, higher financial reporting quality could curb managerial incentives to engage in value destroying activities such as empire building in firms with ample capital. Therefore, if higher financial reporting quality facilitates writing better contracts, this can also prevent inefficient investment and / or increase investors’ ability to monitor managerial investment decisions.

It is also important to note that no empirical study on the relationship between accounting information quality and investment efficiency across Iran has been undertaken so far. This research attempts to offer evidence on this issue and applies database of firms listed in TSE to analyze the financial reporting quality and investment efficiency of companies. Therefore, the quantitative and qualitative researches and studies on the relationship
between financial reporting quality and investment efficiency have become the central issues of the present research.

Further, an important issue and interesting investing group in bank-centered economies, is foreign investors. Unlike banks that know the prospects of firms from a continuing relationship, foreign investors are unable to resolve information asymmetries through private channels and are more likely to rely on accounting information to reduce information asymmetry. Thus, foreign investors are at the opposite end of the spectrum in the relationship between financial reporting quality and investment efficiency. With particular attention to the present situation of Iran as an emerging market, it is important to document whether or not there is a relationship between financial reporting quality and investment efficiency. However, there is a need to examine whether higher quality of financial reporting is more relevant to investment for firms with high foreign ownership in Iran. This is also an important research question considering the growing significance of foreign investment in Iran.

There is lack of empirical studies on financial reporting quality and its relationship with firms’ characteristics. Hence, this research also aims at the foreign and even local investors in this emerging market to have more than usual knowledge on financial reporting quality of Iranian corporations. Therefore, from the view point of investing in the TSE, findings of the present research may be very constructive and effective for investors in their investment decisions in Iranian corporations.

This research also focuses on some functions of financial reporting quality and investment efficiency which have been developed during the year 2000 and incredibly accepted and applied by many researchers across the world from developed and undeveloped countries. These issues are analysed by focusing on the firms listed in the TSE.

Financial reporting quality is positively associated with investment among firms that are cash constrained, highly levered and negatively
associated with investment among cash rich and unlevered firms (Gary Biddle, et al., 2009). Regarding this, Iran is a bank-centered economy, there is a need to study this issue because there is no empirical evidence in Iran that show the quality of financial reporting that have negative and positive relationship with cash constrained firms and cash rich firms.

China is undergoing a transition from a planned economy to a market economy where various market segments including insurance, banking, auditing markets are opening to foreign investors. Although lower economic costs of production attract significant capital inflows to the economy, the quality of financial statements are a potential impediment for foreign investments in, and transactions with, Chinese firms. In the absence of efficient legal environments and corporate governance regimes which are characteristics of many transitional and developing economies, the quality of audit services plays an important role in ensuring the proper functioning of financial reporting systems and it helps safeguard the assets of investors (Fan and Wong, 2005). It is therefore important to learn more about the quality of financial statements and evaluation of financial reporting quality and how the regulators help ensure financial reporting quality in Iran which is an emerging economy.

The impact of financial reporting quality on overinvestment is due to high agency costs. For instance, quality of financial reporting is strongly negatively associated with overinvestment for firms with dispersed ownership (Verdi and Schrand, 2006; 3). This result suggests that financial reporting quality improves investment efficiency for these firms by lowering shareholders’ costs of monitoring managers and reducing empire building (Jensen, 1986). Therefore it is necessary to study the role of the quality of financial reporting in firms with ownership diversity.
1.4 Objectives of the Study

The objectives of this research are:

1- To understand the conceptual framework of financial reporting quality and investment efficiency;

2- To study and evaluate the quality of financial reporting of companies listed in the Tehran Stock Exchange (TSE);

3- To study and evaluate the investment efficiency of companies listed in the Tehran Stock Exchange (TSE);

4- To estimate the relationship between quality of financial reporting and overinvestment and underinvestment;

5- To measure the effects of characteristics of firms such as: size, leverage, book value to market value, and sale volatility, on financial reporting quality;

6- To find the effects of ownership diversity on the financial reporting quality and investment efficiency;

7- To study and evaluate the financial reporting quality in a bank-centered economies.
1.5 Hypotheses for the Study

Based on the objectives of the study, following hypotheses have been developed:

**H$_1$:** Financial reporting quality is negatively associated with underinvestment;

**H$_2$:** Financial reporting quality is negatively associated with overinvestment;

**H$_3$:** Bigger the size of the firm better is the financial reporting quality;

**H$_4$:** There is a negative relationship between the sales volatility and financial reporting quality;

**H$_5$:** Higher the financial leverage better is the financial reporting quality;

**H$_6$:** There is positive relationship between the book to market value and financial reporting quality;

**H$_7$:** Higher ownership diversity is associated with lower financial reporting quality;

**H$_8$:** Higher ownership diversity is associated with higher investment inefficiency;
1.6 Research Methodology

The research methodology of the present study involves the use of secondary data. The conceptual analysis of financial reporting quality and investment efficiency is based on secondary information sources provided by the Tehran Stock Exchange (TSE) and the companies listed in the TSE. Based on the objectives of the study and hypotheses developed, the data was collected from financial statements (i.e., Balance Sheets, Income Statement, and Cash Flow Statements) of companies listed in the TSE, share prices, financial reports and financial and economic journals provided by TSE and also the financial and economic journals provided by the Ministry of Economy and Finance Affairs.

The present research investigates the relationship between quality of financial reporting and investment efficiency. For measuring financial reporting quality, the model provided by Dechow and Dechev (2002) has been used. For measuring the investment efficiency the model provided by Richardson (2006) has been applied.

For the purpose of study, Financial Reporting Quality is defined as the precision with which financial reporting conveys information about the firms operation, in particular its expected cash flows, in order to inform investors in terms of equity investment decision. This definition is consistent with the FASB – SFAC No.1 (1978), which states that one of the objectives of financial reporting is to inform present and potential investors in making rational investment decisions and in assessing the expected firm cash flows (Verdi and Schrand, 2006: 23).

This study follows a measure of accruals quality derived in Dechow and Dechev (2002) as a proxy for Financial Reporting Quality. This measure is based on the idea that accruals improve the informativeness of earnings by smoothing out transitory fluctuations in cash flows and has been used extensively in the prior literature.
The model which will be used in this study for measuring financial reporting quality is a regression of working capital accruals of the past, current, and future cash flows plus the changes in revenue and property, plant and equipment (PPE).

\[
\text{Accruals}_{i,t} = \alpha + \beta_1 \times CF_{t-1} + \beta_2 \times CF_{it} + \beta_3 \times CF_{it+1} + \beta_4 \times \Delta R_{i,t} + \beta_5 \times PPE_{i,t} + \epsilon_{i,t} (1)
\]

Where

\begin{align*}
\text{Accruals} & = (\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD) - \text{Dep}, \\
\Delta CA & = \text{Change in current assets} \\
\Delta Cash & = \text{Change in cash/cash equivalents} \\
\Delta CL & = \text{Change in current liabilities} \\
\Delta STD & = \text{Change in short-term debt} \\
\text{Dep} & = \text{Depreciation and amortization expense} \\
\text{CF} & = \text{Net income before extraordinary items minus Accruals} \\
\Delta R & = \text{Change in revenue, and} \\
PPE & = \text{Gross property, plant, and equipment}
\end{align*}

All variables are deflated by average total assets.

The underlying premise of the above model is that earning quality is primarily determined by the quality of accruals because accounting earnings can be represented as the sum of operating cash flows and accruals. The intuition is that accounting accruals either anticipate future operating cash flows, reflect current cash flows or reversal past cash flows (Shiva Rajgopal, MohanVenkatachal, 2010: 12).
This measure has been used in numerous studies including: Dechow and Dechev (2002); McNichols (2002); Aboody, Hughes and Liu (2005): 12; Francis, Lafond, Olsson and Schipper (2004, 2005); Sam Ham (2005); Yijiang Zhao (2005); Schrand and Verdi (2006); Gois (2007); Ting Luo (2007); Gary Biddle, et al. (2009); Shiva Rajgopal, et al. (2010); Feng Chen, et al. (2010).

This study conceptually defines a firm as investing efficiently if it undertakes projects with positive net present value (NPV) under the scenario of no market frictions such as adverse selection or agency costs. This study also follows prior literature and use Richardson's model as a proxy for investment efficiency. An advantage of this approach is that it considers several types of investment such as capital expenditures, acquisitions, and asset sales (Gary Biddle, et al., 2009: 15).

This model has been used in many studies such as Richardson (2006); Verdi, Schrand (2006); Biddle and Hilary (2006); Bushman et al. (2006); Xin, Q., et al. (2007); Francis and Martin (2008); Shemin Chen, et al. (2009); Gary C. Biddlea, et al. (2009); Somnath Das, Pandit, (2010); Feng Chen, et al. (2010); Tao Ma, (2010).

In this study, in order to construct investment efficiency, the Richardson model has been used that predicts firm investment levels and then will use residuals from this model as a proxy for inefficient investment. Richardson's (2006) model predicts expected investment as a function of characteristics of firm such as: firm size, leverage, investment persistency, growth opportunities, and financing costs. Richardson's model is as given below:
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\[
Investment_{t,t} = \alpha + \beta_1 \cdot G_{t,t-1} + \beta_2 \cdot l_{t,t-1} + \beta_3 \cdot C_{t,t-1} + \beta_4 \cdot S_{t,t-1} + \\
\beta_5 \cdot I_{t,t-1} + \beta_6 \cdot R_{t,t-1} + \epsilon_{it} (2)
\]

Where,

\(Investment\) = Average two year total investment during years \(t\) and \(t+1\).

\((G) Growth\) = Sales growth measured at the end of year \(t-1\)

\((L) Leverage\) = Sum of the value of short-term debt and long-term debt deflated by the book value of equity.

\((C) Cash\) = Balance of cash and short term investment deflated by total assets measured at the start of the year.

\((S) Size\) = Log of total assets measured at the start of the year.

\((R) Stock Returns\) = Stock returns for the year prior to the investment year.

Total investment in a given firm-year is the sum of research and development (R&D) expenditure, capital expenditures, and acquisition expenditure less cash receipts from sale of property, plant and equipment (PPE) multiplied by 100 and scaled by average total assets.

The model uses sales growth excluding past returns in order to avoid market based measures that could be correlated with financial reporting quality.

In the present study the “Sale Volatility” is defined as the standard deviation of sales over years \(t-4\) to \(t\), “Cash Flow Volatility” is defined as the standards deviation of cash flow from operation over years \(t-4\) to \(t\), the “Firm Size” is defined as the natural log of total assets, the “Leverage” is defined as short term and long term debt deflated by the book value of equity, the “Ratio of Book to Market” is defined as the book value of equity divided by...
the market value of equity, “Ownership Diversity” is defined as the variety of shareholders or dispersed ownership (Sum of square reverse of share number held by each investor).

The population of the study is the firms listed in the TSE excluding the financial industry because of difference in the nature of investment (Verdi, 2006; 16). This research covers a period of 15 years from 1995 to 2010. There were 270 companies listed in TSE in 2000 and the number increased to 460 in 2010. Only non-financial firms and the firms which were operating continuously from 1995 to 2010 are selected for the study. There were 242 firms which fulfilled the above two conditions which are about 53% of total companies listed in the Tehran Stock Exchange. The sample consists of, 3360 firm-year observations with available data to estimate equations of financial reporting quality and investment efficiency.

The research theme is based on secondary information sources, which are collected from reference books, journals, Internet sources, and published papers. The data obtained is analyzed by using SPSS and the relevant statistical methods of analysis like the Mean Value, Median Value, Standard Deviation, Quartile Deviation, Correlation, t-test, ANOVA test, F-test, Durbin Watson test, and simple and multiple Regressions to arrive at meaningful conclusions.
1.7 CHAPTERIZATION SCHEME

The present study is undertaken with the following chapter scheme:

**Chapter 1:** Introduction

**Chapter 2:** Tehran Stock Exchange, Financial Reporting Quality and Investment Efficiency: Theoretical Perspectives

**Chapter 3:** Review of Literature

**Chapter 4:** Research Methodology

**Chapter 5:** Analysis and interpretation

**Chapter 6:** Summary of Findings, Conclusions and Suggestions