Capital Market and Earnings Management: Evidence from companies listed on the Tehran Stock Exchange (TSE)

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Abstract

When capital market participants have more information about the firm and its financial circumstances, they must be more capable of detecting earnings management .Therefore, managers will have less motivation to manage earnings. This paper empirically tests the impact of capital market knowledge on the level of earnings management. The results show that the firms are less likely to manage earnings when investors know more about two selected accounting-based indexes that show the financial situation of firms. But there is no evidence to support this negative and significant influence in the case of two other examined fundamentals.

Keywords: capital market, market information, firm's fundamentals, earnings management

Introduction

Growing empirical and systematic evidence supports the argument that earnings management is a common practice in firms (Healy 1985, Perry and Williams 1994 and Defond and Jiambalvo 1994). Firm managers manage earnings for several goals and motivations. A primary motive of earnings management by managers is to influence stock prices. The information available to the stock market affects how investors interpret and react to the financial information announced by firms, influencing the extent to which managers can impact the stock market with managed financial reporting. This paper examines how financial market information about firms' fundamentals influences the ability to detect earnings management. By firms' fundamentals, we mean the cumulative accounting performance for subsequent years. We use the cumulative CFO (operating cash flow), EQ (earnings quality measure), ROE

(stockholders' equity return), and ΔS (sales variation) over the future three years as a proxy for firm fundamentals. As reflected in stock price, the accuracy of market information about the fundamentals captures how much information investors know about the fundamentals. As You (2007) suggests, there are several reasons to expect that market knowledge about a firm's fundamentals affects managers' earnings management decisions. First, more information about the firm may help investors distinguish the managed component of reported earnings from the pre-managed numbers, making earnings management more transparent. In such a situation, the potential benefits of earnings management will diminish. Concerning the expected costs of earnings management (especially opportunistic earnings management), there will be no rational reason for engaging in earnings management for firm managers.

On the contrary, when information asymmetry is high, investors may not have the necessary information to undo the managed earnings. This situation may be evidence of shareholders without sufficient resources, incentives, or access to relevant information to monitor managers' actions, which may give rise to the practice of earnings management (Richardson 2000). In this way, firms may smooth or otherwise manage earnings informationally when information asymmetry is high to signal the expected level of a firm's permanent earnings. Second, the market may rely less on reported earnings when investors already have a lot of information about the firm, which reduces the potential benefit of earnings management and mitigates earnings management incentives. Third, more information about the firm may facilitate better corporate governance mechanisms. For example, the board of directors may be more likely to step in if they have more information that reflects the adverse consequences of managers' costly earnings management. Finally, the information uncertainty associated with firms with low information availability may serve as an additional incentive for managers to manipulate earnings because information uncertainty may exacerbate investors' overconfidence, and it is associated with greater potential benefits for managers or their companies like higher equity pricing (Jiang, Lee and Zhang 2005; Zhang 2006; Juma'h, 2004, 2019b; Juma'h and Alnsour, 2021).

The test results for this research are generally consistent, with firms less likely to manage earnings when investors have better information about the accounting fundamentals.

Literature Review and hypothesis development

The primary role of financial statements is to report a company's financial information to internal and external financial statement users in a timely and reliable manner. A major

component of these annual reports is accounting earnings, which are used to develop corporate policies. Some major decisions that are shaped by available information in annual reports are executive compensation, debt covenants, capital raising, and, perhaps most importantly, for external investors to make investment decisions. Ideally, the reported earnings should reflect a firm's underlying operating economics and facilitate efficient resource allocation. However, due to the control advantages that managers have over external information users in collecting and reporting firm-specific information, managers can present earnings in the most suitable manner. Commonly referred to as earnings management (EM), this topic is of considerable interest to academics and practitioners.

In a perfect market, there is no role for financial disclosures and thus no demand for accounting discretion (Watts & Zimmerman 1978, 1986; Holthausen & Leftwich 1983). However, financial reporting is necessary for efficient contracting with market imperfections such as information asymmetry. However, due to the inherent advantage of asymmetric information and flexibility in reporting, wealth can be transferred from stakeholders to managers.

The main argument here is that apart from the incentive of earnings management (good or bad, dark or white and opportunistic or informative), there must be some extent of information distance between managers and the market for practicing earnings management by managers. More information about the firm (less information asymmetry) may help investors distinguish the managed component of reported earnings from the pre-managed numbers, making earnings management more transparent. There are two consequences associated with the greater ability of the market to detect earnings management. The first consequence is that it diminishes the potential benefit of earnings management because the managed components are less likely to impact financial statement users. The second consequence may increase the expected costs of managed earnings (such as legal liability, disputes with the auditor, reputation loss, and even pecuniary punishment).

Prior researchers have examined different aspects of market effects on earnings management. These aspects include financial reporting transparency, disclosure quality and quantity, analysts' coverage, product market competition, cross-listing situations, information asymmetry, and firms' information environment. Hunton, Libby, and Mazza (2004) show that a more transparent format for reporting comprehensive income dramatically reduces both income-increasing and income-decreasing earnings management. Kim (2001) uses a sample of seasoned equity offerings (SEOs) between 1990 and 1997 to examine the systematic relation between earnings management and disclosure activity of offering firms. The results show that firms maintaining a high disclosure activity manage earnings less. Li-jun and Xiao-Nan Xiao

(2005), using the data of companies listed on the Shanghai Stock Exchange before 2001, examine the relationship between the degree of EM and the quality of information disclosure. The result shows that they have a significant negative relationship, which implies that listed companies may lower information disclosure quality to conceal their EM. Jo and Kim (2007) examine the relationship between disclosure frequency and earnings management. Their results confirm that disclosure frequency is inversely related to earnings management and positively associated with post-issue performance. They also find that transparency-reducing disclosure is concentrated in firms that substantially but temporarily increase disclosure prior to the offering. On average, such firms exhibit more earnings management and poorer post-SEO stock performance. Lobo and Zhou (2001) examine the relationship between disclosure quality and earnings management. Consistent with theoretical predictions, their empirical analysis indicates a statistically significant negative relationship between corporate disclosure and earnings management. Firms that disclose less tend to engage more in earnings management and vice versa. This result holds even after controlling for the effects of potentially confounding variables and all three components of corporate disclosure: annual disclosure, quarterly disclosure, and investor relations disclosure.

Degeorge et al. (2005) find that the more transparent the country, the stronger the reduction in earnings management activity associated with analyst following. Furthermore, their findings suggest that analyst following acts as a curb on the most visible forms of earnings management in transparent countries. Marciukaityte and Park (2009) show that product market competition reduces agency problems by curtailing misleading earnings management and improving earnings informativeness. Using the Herfindahl-Hirschman Index from the Census of Manufacturers to proxy for product market competition, they find that firms in more competitive industries are less likely to engage in earnings management as measured by the absolute value of discretionary accruals. Moreover, they find that firms in competitive industries have lower analysts' earnings forecast errors and lower dispersion of earnings forecasts, suggesting lower information asymmetry between managers and the market. Stock-price informativeness is also higher in more competitive markets. Furthermore, forced earnings restatements and security fraud lawsuits are less common in such markets.

Wang (2010) examines the changing impact of cross-listing on corporate earnings management and stock price informativeness. He finds that Chinese firms with foreign listings manage their earnings less than comparable purely domestic-listed firms. However, the divergence in earnings quality has been less evident since the regulatory reforms of the Chinese stock market liberalization in 2001 and 2002. Consistent with these findings on earnings management, he

finds that firms with foreign listings generally have more informative stock pricing (as measured by price synchronicity).

Richardson (2000) conducted an empirical investigation of the relationship between information asymmetry and earnings management predicted by Dye (1988) and Trueman and Titman (1988). His empirical results suggest a systematic relationship between the magnitude of information asymmetry and the level of earnings management in a broad sample setting around seasoned equity offerings. He shows the significant effect of information asymmetry on both types of earnings management: accounting earnings management (accruals manipulation) and real earnings management (cutting R&D expenditures). Following the work of Richardson, Cheng (2006) examined if earnings management is positively related to information asymmetry in a different environment. Moreover, he tried to understand the differences in cultural and business factors between the east and the west. The major insight is that the human-beings nature of holding information may have "value" since information asymmetry can benefit those firms that manage earnings. After doing such an empirical investigation, he concludes that information asymmetry has a statistically significant impact on the level of earnings management practiced by Taiwanese companies. He believes that information asymmetry in Taiwan is higher than in the west, so that Taiwanese managers may have a greater effect on their firms' stock prices. Kang et al. (2009) examine the effect of business news coverage on earnings management in the USA. They empirically investigate whether a firm's information environment, such as the degree of information asymmetry, business news coverage, and analyst coverage, affects earnings management. Using 35,352 firm-years and 105,604 news items from the Wall Street Journal for firms traded in NYSE/AMEX/NASDAQ over 11 years from 1994 to 2004, they find empirical evidence that the magnitude of earnings management is positively associated with the level of information asymmetry and negatively associated with analyst coverage. News coverage, interestingly, has a positive relationship with the magnitude of earnings management, indicating that a greater number of news releases generates more motivation for managers to engage in earnings management. Their results also suggest that the effects of a firm's information environment on earnings management are stronger for firms engaging income-increasing manipulation than firms engaging income-decreasing manipulation.

Closely related to our study, Fischer and Stocken (2004) analytically show that speculators' information affects how managers manipulate reported earnings. Using Kyle's (1985) framework, they show that the presence of the speculator reduces earnings management when he is relatively more informed about a firm's fundamentals. Following this outstanding

analytical research, You (2007) shows that managers manipulate earnings to a lesser extent, holding other things equal. Although he uses the phrase "firm's fundamentals" in his paper, he only has done his statistical tests using operating cash flows (i.e., only one accounting fundamental). He believes that CFO is a conclusion of the firm's fundamentals and the effects of all other accounting fundamentals are shown in the CFO. His results are consistent with the availability of information about the fundamentals helping investors detect earnings management, reducing managers' incentives to engage in costly behavior.

Furthermore, he focuses only on a sample of firms with slight decreases in their pre-managed earnings relative to their reported profitability for prior years. More significantly, he concentrates on opportunistic and increasing earnings management. We investigate the effect of capital market information about four important firms' fundamentals (which are relevant with respect to the socio-economic condition of TSE) on the level of earnings management practiced by managers of TSE-listed companies. In this regard, we focus on the absolute value (magnitude) of earnings management which may be opportunistic or informative. So the main hypothesis of the paper is as follows:

- *Investors' information about operating cash flows has a statistically significant effect on the level of earnings management.*
- *Investors' information about earnings quality has a statistically significant effect on the level of earnings management.*
- *Investors' information about the return on stockholders' equity has a statistically significant effect on earnings management.*
- *Investors' information about sales variation has a statistically significant effect on the level of earnings management.*

Measuring investor knowledge about firm fundamentals

Fundamentals are factors that are fundamental to the working of a company's business, its profitability, operating costs, product prices, technical innovations, etc. company analysis taking into account these fundamental factors facilitates share valuation. Fundamental analysis is a method used to evaluate a security's worth by studying the issuer's financial data. Performing fundamental analysis will reveal a lot about a company. By firms' fundamentals, we mean the cumulative accounting performance for subsequent years. We have chosen four relevant and important accounting fundamentals: operating cash flows, earnings quality, stockholders' equity return, and sales variation. Operating cash flow is the most important

fundamental with respect to a market view. This variable is the main variable for firm valuation in many related models. Earnings quality is one of the most considered accounting measures in fundamental analysis, which shows the distance between accounting earnings and cash flows. Earnings quality, in accounting, refers to the overall reasonableness of reported earnings. It is an assessment criterion for "repeatable, controllable, and bankable." We define this fundamental by dividing the operating cash flow by operating earnings. Return on equity (ROE) measures the rate of return on the ownership interest shareholders equity) of the common stock owners. It measures a firm's efficiency in generating profits from every unit of shareholders' equity (also known as net assets or assets minus liabilities). ROE shows how well a company uses investment funds to generate earnings growth. Based on the DuPont formula, also known as the strategic profit model, this variable is a comprehensive measure that includes a wide range of fundamental signals. Sales revenue is one of the most used accounting fundamentals, and sales variation is one of the most important risk measures. When sales experience more fluctuation, the company shows less persistence and more risk. This accounting fundamental captures that aspect of a firm financial situation (i.e., risk), whereas the other three fundamentals do not consider it. ΔS, the used proxy for sale variation, is the difference between the current and last year's sales revenue.

To investigate the effect of investors' information about accounting fundamentals on earnings management, we, similar to You (2007), extend the model of Fischer and Verrecchia (2000), in which the representative investor has an additional piece of information about firms. The simple noisy rational expectation model shows that market information about fundamentals is negatively associated with the extent to which managers manage earnings. The model also suggests that the earnings response coefficient (ERC) decreases with the precision of market information about firms' fundamentals. A smaller ERC implies that reported earnings have a milder impact on stock prices, which reduces the marginal benefits of costly earnings management. Indeed, Abarbanell and Lehavy (2003) suggest that the firm rated a buy by analysts has high stock price sensitivity to earnings news and is more likely to engage in earnings management to meet or beat analysts' forecasts. While those studies focus on the impact of stock price sensitivity to earnings news on firms' earnings management incentives, similar to You (2007), we model investors' information about fundamentals as the ultimate driver of that relation.

In this paper, we use the slope coefficient from a regression of stock returns against future fundamentals to gauge how much investors know about a firm's fundamentals. A similar

measure called stock price informativeness (SPI) has been widely used in prior research (Gelb and Zarowin 2002, tucker and Zarowin 2006, Durnev et al. 2003)

We estimate the following models cross-sectionally for each industry-year group and assign the industry-level measure to all the firm-year within that industry-year group. We use this measure as our main proxy of stock price informativeness for four selected accounting fundamentals.

$$r_t = b_0 + b_1 X_{t-1} + b_2 X_t + b_3 X_{t+1,t+3} + b_4 r_{t+1,t+3} + u_t$$

Where r_t is the current annual stock return at year *t*, X_{t-1} and X_t are the used accounting fundamentals for years *t-1* and *t*, respectively. $X_{t+1,t+3}$ is the sum of the used fundamental for years *t+1* to *t+3*. *Is the aggregate stock return in years t+1 to t+3 with annual compounding. ROE, EQ, and* ΔS *are size-free measures, but the stock price deflates all CFO numbers at the beginning of the year.* Collins et al. (1994) find that price usually leads earnings for up to three years, so the three future years of fundamentals are included in the above regression. Future stock returns $r_{t+1,t+3}$ are included as a control variable.

Therefore, the estimated coefficient β_3 in the regressions below can be used as a proxy to gauge investors' information about the four accounting fundamentals of a firm. A higher coefficient suggests that investors know the fundamentals of the firm better.

$$r_t = \beta_0 + \beta_1 CFO_{t-1} + \beta_2 CFO_t + \beta_3 CFO_{t+1,t+3} + \beta_4 r_{t+1,t+3} + \varepsilon_t$$

$$r_t = \beta_0 + \beta_1 EQ_{t-1} + \beta_2 EQ_t + \beta_3 EQ_{t+1,t+3} + \beta_4 r_{t+1,t+3} + \varepsilon_t$$

$$r_t = \beta_0 + \beta_1 ROE_{t-1} + \beta_2 ROE_t + \beta_3 ROE_{t+1,t+3} + \beta_4 r_{t+1,t+3} + \varepsilon_t$$

$$r_t = \beta_0 + \beta_1 \Delta S_{t-1} + \beta_2 \Delta S_t + \beta_3 \Delta S_{t+1,t+3} + \beta_4 r_{t+1,t+3} + \varepsilon_t$$

Measuring earnings management

As Ronen and Yaari (2008) stated, earnings management is a collection of managerial decisions that result in not reporting the true short-term, value-maximizing earnings as known to management. Earnings management can be beneficial: it signals long-term value; pernicious: it conceals short- or long-term value; neutral: it reveals the true short-term performance. The managed earnings result from taking production/investment actions before earnings are realized or making accounting choices that affect the earnings numbers, and their interpretation after the true earnings are realized.

Most research has measured earnings management using "discretionary accruals" (accounting-based earnings management). Hence, this paper focuses on accounting-based earnings management, which considers accruals behavior. Accruals arise when there is a difference between the timing of cash flows and the timing of the earnings recognition of the transaction. Discretionary accruals arise from transactions made or accounting treatments chosen to manage earnings (Ronen and Yaari, 2008). Non-discretionary accruals arise from transactions made in the current period that are normal for the firm, given its performance level and business strategy, industry conventions, macroeconomic events, and other economic factors.

Jones (1991) offers a model to help identify firms that manage earnings. The object of this model is to segregate expected (normal or non-discretionary) accruals, and the difference (residual) is described as managed (or discretionary) accruals. The measure of the managed accounting accrual used in this research is estimated using the Jones model as modified by Kothari, Leone, and Wasley (2004), i.e., it is residual in the following model:

$$TACC_t = a_0\left(\frac{1}{Assets_{t-1}}\right) + a_1\Delta Sales_t + a_2 PPE_t + a_3 ROA_t + \varepsilon_t \qquad (1)$$

Total Accruals are net income minus operating cash flow. In regression (1), the total accruals (TACC); change in sales (ΔSales); and gross property, plant, and equipment (PPE) are each deflated by the beginning-of-year total assets. Return on assets (ROA) is added as a control variable because previous research finds that the Jones model is misspecified for well-performing or poorly-performing firms (Dechow, Hutton, and Sloan 1996; Kothari, Leone, and Wasley 2004).

To employ a large number of observations, we run the regression on all firms in the same industry each year (cross-section approach). The non-discretionary accruals (NDACC) are the fitted values of regression (1) and the discretionary accruals (DACC), which is the measure of the level of earnings management, are the deviations of total accruals from non-discretionary accruals (DACC = TACC – NDACC).

Statistical model for hypothesis testing

To test the impact of market information on managers' accrual management, we use a multivariable model to regress earnings management level on the stock price informativeness proxy for each of the four selected fundamental variables and other control variables that affect earnings management.

$$\left|DACC_{i,t}\right| = \alpha + \beta_1 INFO_{i,t} + \gamma_2 SIZE_{i,t} + \gamma_3 BM_{i,t} + \gamma_4 PATTERN_{i,t} + \gamma_5 LTACC_{i,t} + \xi_{i,t}$$

Where:

DACC Is the discretionary (managed) accounting accruals under modified Jones model as modified by Kothari, Leons, and Wasley (2004) using the cross-section estimation approach,

INFO is the proxy for the informativeness of investors' information about each of the four fundamentals,

SIZE is the logarithm of the market value of equity. Previous studies show that the firm size may positively or negatively impact earnings management.

BM is the book-to-market ratio which is designed to capture growth opportunities. Skinner and Sloan (2002) find that the market reacts more negatively to negative earnings surprises for growth stocks than value stocks. Consequently, growth firms may find it more costly to have an earnings decrease and may be more likely to use accruals to manage earnings to avoid earnings decrease.

PATTERN indicates whether firms have developed an earnings-increasing pattern; it equals 1 if the earnings changes of the prior two years are both positive and 0 otherwise. We include this variable as a control variable because prior research shows that there appears to be a valuation premium associated with earnings increase patterns (Barth et al. 1999). Firms that have already developed a pattern may have more incentive to maintain the pattern.

LTACC represents prior period accruals deflated by total assets. Given the mean reversing properties of accruals, firms with high accruals in the prior period may find it challenging to manage earnings upward.

If investors having more information about a firm's fundamentals reduces managers' incentive to manipulate accruals to achieve their goals, it β will be significantly negative.

Sample selection

The population of this study consists of all Iranian non-financial firms listed on the Tehran Stock Exchange (TSE) over nine years (2012 to 2020). Selected firms should satisfy the following data criteria:

1. Listed at TSE from 2012 to 2020 with no delisting record.
2. The end of their fiscal year should be on 31 March of each year.

Based on the above criteria, 119 firms were selected for data collection. Following other research studies in the same area, holding, financial, and insurance firms are excluded because these industries are subject to a different regulatory regime that likely have fundamentally

different cash flow and accrual processes. Firms with incomplete financial reports throughout the study have been excluded from the database. It should be added that there is one more filter for selecting the study's final sample related to firms' earnings management level estimation. For estimating the extent of earnings management using the cross-section estimation approach of the modified Jones model, there must be at least six firms in each industry in a given year. However, some groups of industry-year in TSE do not meet this criterion. So the firm-year observations belonging to those industry-year groups were deleted from the study's final sample. Ultimately there are 1022 firm-year observations spread across ten industries available for the statistical analysis required for hypothesis testing.

It should be mentioned that market and accounting data needed to compute the research variables are obtained from existing Iranian databases, and TSE reports on DVDs.

Hypothesis testing

We have used a panel data regression model. Also, in order to select the appropriate method of estimation among OLS, the pooled model, Fixed Effects (FE), and Random Effects (RE), we applied the Chow and Hausman tests using Eviews 7 (For more details about panel data technique and the related tests, see Baltagi, 2008, Hsiao, 2005 and Gujarati, 2004).

Tables 2 and 3 present Chow and Hausman tests for the model used. The Chow test is for choosing between simple pooled OLS regression and panel data analysis. The results show that panel data analysis is a suitable model.

Also, to decide between fixed or random effects, the Hausman test can be run where the null hypothesis is that the preferred model is random effects vs. the alternative fixed effects (see Green, 2008). Based on the information in Table 3, the suitable approach is random effects. So we should run the regression model through panel data analysis with a random effect procedure.

Table 2: Chow test results

Model	Chow test statistic		P-VALUE	
	Cross-section F	Cross-section Chi-square	Cross-section F	Cross-section Chi-square
First Hypothesis	1.6902	210.6634	0.0001	0.0000

Second Hypothesis	1.6888	210.5176	0.0001	0.0000
Third Hypothesis	1.8344	225.5015	0.0000	0.0000
Forth Hypothesis	1.6900	210.6443	0.0001	0.0000

Table 3: Hausman test result

Model	Hausman statistic	P-VALUE
First Hypothesis	27.1438	0.0001
Second Hypothesis	26.5602	0.0001
Third Hypothesis	50.8591	0.0000
Forth Hypothesis	26.7216	0.0001

The results of running the main regression model of research after considering the suitable procedures are presented in Table 4.

Table 4: Hypothesis testing results

	First Hypothesis		Second Hypothesis		Third Hypothesis		Fourth Hypothesis	
	Coefficient	Sig	Coefficient	Sig	Coefficient	Sig	Coefficient	Sig
α	10.4009	0.0121	10.5484	0.0017	10.1176	0.0247	10.4443	0.0018
Info	-0.3208	0.0000	0.0089	0.4858	-0.6426	0.0269	179.6698	0.6772
Size	-0.8679	0.0168	-0.8816	0.0031	-0.8431	0.0328	-0.8729	0.0033
BM	-0.0019	0.7647	-0.0035	0.8581	-0.0035	0.5635	0.0013	0.9481
PATTERN	0.3136	0.4574	0.3569	0.3604	0.3377	0.4545	0.3313	0.3945
LTACC	0.5921	0.0043	0.5918	0.0000	0.5925	0.0411	0.5623	0.0000
statistic F	57.6575		57.3385		58.0478		57.2460	
SIG	0.0000		0.0000		0.0000		0.0000	
R^2	0.3378		0.3366		0.3393		0.3363	
R^2 adjusted	0.3319		0.3307		0.3335		0.3303	
DW	1.3427		1.3376		1.3400		1.3383	

As shown in Table 4, concerning coefficients of four fundamental variables and their SIG levels, the first and third hypotheses are accepted by a confidence level of 95%. Still, the mentioned confidence level rejects the second and fourth hypotheses. These results mean that market knowledge about two variables of operating cash flows and stockholder equity return has a negative and statistically significant effect on the level of earnings management, while investor information about two other examined variables, including earnings quality measure and sales variation, have not any significant impact on earnings management practiced by TSE listed companies. Furthermore, the results show that firm size has a negative and prior period accruals positively affect the extent of earnings management.

As is shown in Table 4, there is no statistically significant relationship between other control variables and the magnitude of earnings management. The F statistic indicates that all the model coefficients are different than zero, and the model is statistically significant. Also, R-squares show 33% of the variance of the dependent variable explained by independent variables. At the last run, concerning DW statistics, we can say there is a positive serial correlation between the error terms. Also, the problem is not serious, but to delete this problem, we rerun the main regression model for each of the four fundamental variables with an AR (1) term. This is a standard and simple procedure for confronting autocorrelation problems in regression analysis. The results are shown in Table 5.

Table 5: hypothesis testing results by inserting AR (1) term

	First Hypothesis		Second Hypothesis		Third Hypothesis		Fourth Hypothesis	
	Coefficient	Sig	Coefficient	Sig	Coefficient	Sig	Coefficient	Sig
α	-12.3627	0.3042	-11.9652	0.1757	-12.4963	0.1598	-11.8365	0.1787
Info	-0.1325	0.0049	0.0054	0.5941	-0.3563	0.0105	130.3370	0.6596
Size	0.9176	0.2991	0.8819	0.2501	0.9357	0.2467	0.8753	0.2523
BM	0.0075	0.1778	0.0072	0.6727	0.0072	0.7263	0.0079	0.6432
PATTERN	-0.7134	0.0749	-0.7055	0.0376	-0.7510	0.0315	-0.7109	0.0360
LTACC	0.0983	0.2279	0.0991	0.0031	0.0991	0.0000	0.0981	0.0033
AR(1)	1.2064	0.0000	1.2043	0.0000	1.2084	0.0000	1.2061	0.0000
statistic F	87.0967		86.9595		87.8008		86.9269	
SIG	0.0000		0.0000		0.0000		0.0000	
R^2	0.5400		0.5396		0.5420		0.5396	
R^2 adjusted	0.5338		0.5334		0.5359		0.5333	
DW	2.2711		2.2672		2.3033		2.2660	

Concerning Table 5, the magnetite of DW statistic is in the accepted range, and the other results imply the same conclusions as in table 4.

Conclusion and discussion

The two principles of financial reporting—relevance and reliability, directly reflect the role of accounting information and aim to resolve the fundamental problem of information asymmetry. The released information is relevant to the firm's prospects and is reliable information free of managerial manipulation. Where financial disclosure and judgments initially aim to reduce the information asymmetry between managers and outsiders, it has been increasingly argued that managers' ability to exercise discretion is likely to impose costs on the users of accounting information. The accountants' discretion and materiality consideration affect their reporting (Juma'h, 2014, 2019a). Dye (1988) and Trueman & Titman (1988) point out that the existence of information asymmetry between managers and shareholders is necessary for EM. Schipper (1989) also highlights the condition of EM being the persistence of asymmetric information. In this research, we investigate the effect of market knowledge about a firm's fundamental variables on the level of earnings management practiced by companies listed on the Tehran Stock Exchange. To do that, we use four fundamental variables relevant and applicable to the socio-economic environment of TSE. These measures are: operating cash flows, earnings quality, stockholders' equity return, and sales variation. The test results for this research are generally consistent, with firms less likely to manage earnings when investors have better information about the accounting fundamentals. In particular, we find that firms with investors with more information about their operating cash flows and stockholders' equity return are significantly less likely to manipulate accruals for managing earnings. Still, we cannot find such evidence in the case of two other examined fundamental variables wh: earning

This is an empirical test of Dye (1988) and Trueman and Titman (1988), as well as Schipper (1989), suggesting that the presence of information asymmetry is a necessary precondition for earnings management and also following the works of You (2007) in the USA.

As You (2007) suggests, there are several reasons to expect that market knowledge about the firm's fundamentals will affect managers' earnings management decisions. First, more information about the firm may help investors distinguish the managed component of reported earnings from the pre-managed numbers, making earnings management more transparent. In such a situation, the potential benefits of earnings management will be diminished. For the expected costs of earnings management (especially opportunistic earnings management), there

will be no rational reason for engaging in earnings management for firm managers. On the contrary, when information asymmetry is high, investors may not have the necessary information to undo the managed earnings. Finally, the information uncertainty associated with firms with low information availability may serve as an additional incentive for managers to manipulate earnings because information uncertainty may exacerbate investors' overconfidence, and it is associated with greater potential benefits for managers or their companies as greater equity pricing (Jiang, Lee and Zhang 2005 and Zhang 2006). This situation may be evidence of shareholders without sufficient resources, incentives, or access to relevant information to monitor managers' actions, which may give rise to the practice of earnings management. In this way, firms may smooth or otherwise manage earnings informatively when information asymmetry is high to signal the expected level of a firm's permanent earnings. Second, the market may rely less on reported earnings when investors already have a lot of information about the firm, which reduces the potential benefit of earnings management and mitigates earnings management incentives. Third, more information about the firm may facilitate better corporate governance mechanisms. For example, the board of directors may be more likely to step in if they have more information that reflects the adverse consequences of managers' costly earnings management.

Evidence from this paper suggests that information known about the firm and firm earnings may limit the extent of earnings management performed by firm managers. There may also be outside monitors who curtail management action and management's accounting choices. Evidence of such monitoring within a particular firm may be the proportion and strength of outside members of the board of directors, the strength of the audit committee, the focused shareholders (e.g., labor unions, firm suppliers, etc.), and shareholders that hold a large proportion of the company shares. Furthermore, this study is also of value to policymakers. Earnings management has attracted more and more attention from regulators, particularly after the high-profile meltdowns of several big companies worldwide. Given the severe adverse consequences that earnings manipulations can lead to, regulators have started to take actions to curb opportunistic earnings management. Reducing managers' discretion in accounting choices by setting more standards and regulations may be one solution. But an unintended consequence of this type of policy is that it may reduce the general usefulness of accounting earnings, given that managers sometimes use their discretion to signal their private information (for example, Subramanyam 1996).

Furthermore, curbing earnings management by restricting managers' choices is very unlikely to succeed because managers can always circumvent regulations using innovative accounting

methods and transaction structuring. If transparent information flows in the capital markets can attenuate the incentives managers have for earnings management, regulatory bodies should probably focus more on promoting more efficient dissemination of firm-specific information in the market. To get more information flows in the capital markets, we should insist on the role of information intermediaries such as capital market-related Media, financial analyzers, influential brokerage firms, investment banks, financial and credit ranking companies, etc. In Iran, these factors do not work well, and the financial and investment consultancy industry is weak; therefore, related financial phenomena such as herding behavior and rumor-based stock trading are common (Keshavarz and Rezaei, 2011; Saeedi and Farahanian 2012). So there is more information asymmetry surrounding TSE-listed companies, which may give rise to earnings management as shown by the empirical research results.

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