RESEARCH PAPER

Investigating the Motives of earnings Smoothing in Companies Listed on the Tehran Stock Exchange

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Received: 11th Feb, 2026; Revised: 28th Feb 2026; Accepted: 22th Mar, 2026; Available Online: 16th June, 2026

ABSTRACT

The purpose of this study is to investigate the firm-specific factors that lead to incentives for management to smooth earnings using discretionary accruals. Firm size, debt-to-total assets ratio (debt contracts), and deviation in operating activities are among the firm-specific factors that have been considered in this study. The statistical population of this study is companies listed on the Tehran Stock Exchange. Regression analysis was used using three-year cumulative data to test the model related to the relationship between smoothing and the three factors affecting earnings smoothing. The results of this study indicate that debt-to-asset ratio and deviation in operating activities are the main drivers for earnings smoothing using discretionary accruals. Contrary to findings in developed environments, the firm size variable was not significant in this study as a driver of earnings smoothing.

Keywords: Earnings smoothing, discretionary accruals, debt contracts, firm size, deviation in operating activities.

How to cite this article: Doustian S. Investigating the Motives of earnings Smoothing in Companies Listed on the Tehran Stock Exchange. Int J Drug Deliv Technol. 2026;16(87s): 286-291; DOI: 10.25258/ijddt.16.87s.28

Source of support: Nil.

Conflict of interest: None

INTRODUCTION

Among the information provided through financial statements, accounting earnings is always subject to manipulation by management due to its importance in decision-making, performance evaluation, and debt contracts. Reported earnings is one of the important financial information that is considered by individuals when making decisions. Financial analysts generally consider reported earnings as a prominent factor in their reviews and judgments; and one of the important topics in earnings management is earnings smoothing. Some researchers have defined earnings smoothing as the effort of a business entity's management to reduce abnormal earnings fluctuations to the extent that accounting principles and management discretion allow (Fotooh. et.al 2021).

Earnings smoothing is defined as the deliberate reduction of fluctuations in the level of earnings so that the company's earnings appear normal. Managers smooth earnings for various reasons. One of the main goals in earnings smoothing is to create a more stable stream to support a higher level of dividend payout. A more stable stream of earnings can be perceived as lower risk, which leads to higher stock prices and lower borrowing costs. Another goal of earnings smoothing is the desire of the business entity's management to increase the predictability of investors and reduce the company's risk (Pourheidary et al. 2006).

In examining investment opportunities, attention is paid to two categories: risk and return, and it is assumed that investors avoid risk without return and, if they are given the possibility of a certain risk, they adjust their expected rate of return accordingly. Investors often want to invest in companies that have less risk and can obtain a suitable return accordingly. Since the market risk of a company is measured by the fluctuations in its stock returns and the stock price is somehow related to the earnings per share of the company, companies tend to reduce the fluctuations in returns by reducing fluctuations in earnings and ultimately affect the perception of investors and creditors of the company's risk. Therefore, managers smooth earnings with this goal in order to create a steady stream of reported earnings growth (Merani. et.al 2013). Due to the increase in earnings stability and the reduction of its fluctuations, investors can have a more accurate forecast of future earnings. Other objectives of earnings smoothing that are derived from economic literature include considerations of political costs, taxes, and debt contracts (Pourheidary et al. 2006). By smoothing earnings, the manager provides the opportunity for prediction for the company's main claimants, and this is a valuable task because it reduces the company's borrowing costs and has a positive effect on business relationships between the company and its customers, vendors, and employees (Torabi et al. 2016).

In the literature, the motives for earnings smoothing have been examined from different dimensions. The motives for earnings smoothing examined in this study include economic consequences and operational conditions, including: company size, debt-to-asset ratio (debt contracts), and deviations in operating activities. Given that this study was conducted in the Tehran Stock Exchange, whose information environment is different from research conducted in developed countries, its results are important.

Literature review

Motivations for earnings smoothing have been discussed in the literature from different perspectives. According to some researchers, managers pursue four goals for earnings smoothing measures: 1- The criterion for managers to choose from among various accounting methods is to maximize management's desirability or welfare. 2- Managers' desirability or welfare is a function of job security, the level and growth rate of management's bonuses

and salaries, and the level and growth rate of the company's size. 3- Managers' desirability or welfare depends on shareholders' satisfaction with the company's performance, so that, assuming other factors remain constant, the more satisfied the shareholders are, the greater the job security, earnings status, and managers' rewards will be. 4- The satisfaction of the company's shareholders depends on the stability of the earnings growth rate. Some researchers also believe that management has two motives for smoothing reported earnings. First, the emergence of a stable flow has a positive effect on the company's stock value, reduces the company's risk, and provides greater power to support dividends compared to unstable processes. To the extent that reported earnings fluctuations affect investors' subjective expectations regarding possible future earnings and dividend outcomes, management may be able to have a positive effect on the company's stock value by smoothing earnings. In their opinion, the second motivation for smoothing is the ability to deal with the cyclical nature of earnings and the possible reduction in the correlation of the company's expected return with the market's overall return. They state that to the extent that normalization is successful and to the extent that investors recognize the reduction in the covariance of stock returns and market returns and involve them in their evaluation process, smoothing will have beneficial effects on stock value (Taghizadeh et al. 2018).

Political costs are another motive for earnings smoothing that has been examined in studies. This means that in order to face political pressures, business entities try to formulate their financial reporting in a way that the interpretation of financial statements by users does not result in a transfer of wealth outside the company. Paying attention to the economic consequences of financial reporting causes financial statements to no longer be an honest presentation of the results of the company's activities. Failure to honestly present operating results generally manifests itself in the form of under or overstatement of earnings (Fotooh. et.al 2021). Given the importance of the quality of reported earnings for users of financial statements, this research focuses on motives for earnings smoothing as one of the dimensions of earnings quality. The motives examined in this study include company size and debt-to-asset ratio as an economic motive and deviation in operating activities as a proxy of operating conditions, which are examined below.

- Company size

Large companies are more politically sensitive than small companies. Positive fluctuations in the importance of earnings in large companies may increase doubts about monopoly earnings. In other words, a significant increase in the earnings of large companies may create the impression that these companies have increased earnings by using their monopoly power. On the other hand, negative fluctuations in the importance of earnings in large companies may cause concerns about possible bankruptcy and damage the image of the company in the business environment in which the business unit operates. Also, significant fluctuations in the earnings of large companies increase the likelihood of creating unwanted political costs, such as demands for wage increases by company employees, restraining restrictions by the government. Therefore, large companies have a greater incentive to smooth earnings (Pourheidary et.al 2006). Therefore, considering the importance of company size as a motive for earnings smoothing, the first hypothesis of the research can be stated as follows:

Hypothesis 1: There is a positive relationship between company size and earnings smoothing.

- Debt contracts

Some researchers have argued that companies smooth out earnings in order to reduce risk. Companies with high debt-to-total assets ratios smooth out earnings to assure creditors that they will be able to pay the principal and interest on loans and credits received. The absence of significant fluctuations in earnings provides confidence to creditors that the business unit will be able to pay their debts in the future. Since risk is reduced by smoothing earnings and reducing the debt-to-total assets ratio, the second hypothesis can be put forward as follows (Pourheidary. et.al 2006):

Hypothesis 2: There is a positive relationship between the debt-to-total assets ratio and earnings smoothing.

- Deviation in operational activities

When actual operating activities deviate from expected operating activities, the incentive to smooth earnings increases. The more actual operating activities deviate from users' expectations, the greater the incentive to smooth reported earnings (Pourheidary. et.al 2006). Therefore, the third hypothesis can be formulated as follows, considering the above:

Hypothesis 3: There is a positive relationship between deviation in operating activities and earnings smoothing.

Previous research

Research on earnings smoothing has examined the motives for earnings smoothing from various perspectives. Some researchers have considered political motives in their research. For example, Pappas et al. (2024) examined the motive of government subsidies on earnings smoothing. Their results showed that subsidized firms smooth their earnings more intensely than non-subsidized firms. Their findings are consistent with the argument that subsidized firms incur higher political costs and have greater incentives to smooth earnings to avoid public scrutiny. Some researchers, such as Cahan et al. (2008), have evaluated the motive of investor protection as a factor in earnings smoothing. Their results showed that useful earnings information is more positively related to earnings smoothing in countries with strong investor protection than in countries with weak investor protection. Researchers such as Duru et al. (2013) examined the institutional role of IFRS and national GAAP in driving earnings smoothing in the banking environment. Overall, their results indicated a degree of earnings smoothing activities through loan loss reserves by bank managers under both national GAAP and IFRS. Some researchers such as Chauhan et al. (2023) analyzed the impact of economic policy uncertainty on managers' discretionary accounting choices to achieve smoother earnings streams. They found that managers use discretionary accruals to offset the small risk of policy uncertainty on reported earnings and observed that firms reported more negative discretionary accruals when managers were less confident about their outlook.

Many papers have examined the economic motivations for earnings smoothing. Researchers such as Moses et al. (1987) considered various firm-specific factors as incentives for management to smooth earnings and used accounting changes as a smoothing tool. The findings provided evidence that smoothing is related to firm size, the existence of bonus plans, and the difference between actual earnings and expectations. In addition, the findings showed that smoothing through accounting changes is related to the impact of accounting changes on earnings levels. Other researchers such as Defond et al. (1997) assessed job security as a motivation for managers to smooth earnings.

Their evidence showed that when current earnings are "poor" and future expected earnings are "good," managers "borrow" earnings from the future for use in the current period. Some researchers such as Demerjian et al. (2020) considered improving future operating performance as a motivation for earnings smoothing, considering management's ability. They found three important findings: (1) high-ability managers are significantly more likely to engage in intentional smoothing, (2) their intentional smoothing is associated with improved future operating performance, and (3) their intentional smoothing is more prevalent when the smoothing benefits shareholders, the manager, or both.

Researchers such as Grant et al. (2009) investigated the risk-related incentives of executive stock compensation plans in relation to smoothing. Their evidence showed that risk-taking and earnings smoothing incentives are positively related and that the results are robust to alternative specifications of earnings smoothing and risk-taking and various firm-level characteristics, including governance structures, CEO stock, and option assets. Some researchers such as Kanagaretnam et al. (2003) examined the underlying alternative incentives of bank managers in using loan loss reserves to smooth reported earnings. The results showed that bank managers save earnings through loan loss reserves in good times and borrow earnings through loan loss reserves in bad times. Researchers such as Shu et al. (2019) examined how managerial equity holdings and option assets affect CEOs' earnings smoothing incentives. Their results showed that the relationship between past smoothing and the predictability of future earnings in stock holdings (trading options) of CEOs is increasing (decreasing). Researchers such as Das et al. (2013) examined the incentive of CEO compensation as a factor of earnings smoothing. Their evidence showed that CEO compensation increases on average with earnings smoothing, and this increase is greater when the firm's cash flow volatility is greater. Researchers such as Herrmann et al. (1996) examined different operating conditions as incentives for Japanese managers to smooth earnings using depreciation changes. The results showed that under specific operating conditions, firm size, income tax, capital intensity, deviation in operating activities, and earnings variability are significant incentives for smoothing earnings using depreciation changes. Some researchers such as Monjed et al. (2022) examined risk disclosure as a factor of earnings smoothing. Their study showed that risk disclosure and earnings smoothing are negatively related. Their findings provide new empirical evidence on the relationship between risk disclosure and earnings smoothing, and support the opportunism hypothesis, especially when firms face increased risk. Researchers such as Baik et al. (2022) investigated the improvement of earnings information content as a driver of earnings smoothing through R&D management. Their evidence showed that R&D management, which is a subset of real activity management, is associated with improving earnings information content, but this relationship is weaker than smoothing through accruals. Other researchers such as Baker et al. (2003) examined whether the structure of managers' compensation, especially stock options relative to other forms of pay, is associated with the opportunistic use of discretionary accruals in reported earnings. Their evidence showed that relatively high option compensation is associated with the selection of discretionary accruals that reduce earnings in the periods leading up to the option grant date. Researchers such as Gassen et al. (2015) assessed the factor of debt contracts as a driver of earnings smoothing. Their results showed that earnings smoothing is negatively related to firms' cost of debt. Other researchers, such as Eckles et al. (2011), examine the incentives that insurance company managers have to manipulate accounting results in order to maximize their total compensation. Their evidence suggests that managers whose compensation packages are more incentive-based are associated with greater loss-retention errors. Specifically, managers who receive higher bonuses and stock awards tend to make greater loss-retention errors. Some researchers, such as Demerjian et al. (2020), examine debt covenants as an incentive for earnings smoothing. Overall, their evidence suggests that earnings smoothing improves the effectiveness of earnings-based information in monitoring borrowers.

Some papers have assessed political and economic incentives simultaneously. For example, Lafond et al. (2007) examined the relationship between earnings smoothing, corporate governance, and liquidity for a sample of non-US firms. They divided smoothing into intrinsic and discretionary components and found that discretionary smoothing was increasing in terms of incentives for smoothing (greater compliance with tax authorities, concentrated ownership, related party transactions, and poor overall governance) and decreasing in terms of monitoring (support from investors, compliance with analysts).

Research Method

- Population, statistical sample and research period

The statistical population of the study is all companies listed on the Tehran Stock Exchange, except for companies in the financial sector, which include insurance, investment, leasing, holding companies, and banks. Because their balance sheets have a different structure and some of the required information is not available, the elimination method was used to select the sample companies. For this purpose, members of the population who had the following characteristics were excluded from the sample:

1- The information required is not available from them.

2- They changed their fiscal year during the period under review.

3- They were not active on the stock exchange and securities during the research period.

4- The company's fiscal year-end was not March 20.

According to the above conditions, the companies that met the necessary conditions included 135 companies that formed the statistical sample of the study. Data from 2012 to 2016 were used to conduct the study.

- Independent variables

The independent variables of the study were selected according to Pourheidary et al. (2006):

Firm size: The natural logarithm of sales was used.

Size= log sales (1)

Debt contracts: The debt-to-asset ratio was chosen as the proxy of interest.

Debt= Assets/Debt (2)

Deviation in operating activities: The absolute value of the percentage change in sales was chosen as the proxy of interest.

$$Dvs=\frac{|sales_{t-sales_{t-1}}|}{sales_{t-1}} \qquad (3)$$

- Dependent variable

Measuring earnings smoothing: There are several methods for smoothing earnings. earnings fluctuations can be smoothed using accruals, discretionary expenses, changes in accounting methods, timing of events such as changing the timing of sales of fixed assets, and the like. Among the

smoothing methods that have been tested by researchers are changes in depreciation methods, extra ordinary items, cost versus equity method, retirement expenses, research and development expenses, total accruals, and discretionary accruals (Pourheidary. et.al 2006). In this study, the modified Jones model was used to measure discretionary accruals according to Doustian (2019) as follows:

$TACC_t = a + b_1\ 1/TA_{t-1} + b_2(\Delta REV_t - \Delta AR_t) + b_3 PPE_t + \varepsilon_t$ (4)

In this model, AR is accounts receivable, REV is sales revenue, PPE is gross property, plant and equipment, and TACC is total operating accruals, which are calculated as follows:

TACC = (Changes in current assets - Changes in cash) - (Changes in current liabilities - Changes in short-term financial facilities received) - Depreciation expense of tangible and intangible assets

The residuals of the model represent discretionary accruals as follows:

$DA = \varepsilon$ (5)

- Multivariate regression model:

According to Pourheidary et al. (2006), the research model is formulated as follows:

$DA_{it} = \alpha + \beta_1 SIZEit + +\beta_2\ DEBT_{it} + \beta_3\ DVS_{it} + \varepsilon_{it}$ (6)

This model was estimated using the panel data method and Eviews software was used to estimate the model.

Research findings

- Descriptive statistics

In Table (1), the descriptive statistics of the study are presented. As can be seen, the average company size is 11.97 and its minimum and maximum are 9.9 and 14.22 respectively, which indicates that the research sample consists of large and small companies. The deviation in operating activities calculated based on the absolute value of sales deviation has an average of 37 percent and a median of 29 percent. Also, the minimum and maximum deviation in operating activities are zero and 465 percent, respectively, which indicates that it has a significant deviation. The average debt-to-asset ratio is 25.9 percent and its minimum and maximum are zero and 94.9 percent, respectively. These statistics indicate that the sample companies have a suitable diversity. The minimum and maximum discretionary accruals are -0.52 and 0.78, respectively, which indicates the fluctuation in accruals, indicating the manipulation of earnings by discretionary accruals.

Table 1: Descriptive statistics

	DA	DEBT	DVS	SIZE
Mean	2.47E-10	0.259781	0.378325	11.97230
Median	-0.013085	0.232001	0.293647	11.96622
Maximum	0.781077	0.949265	4.651397	14.22390
Minimum	-0.528086	0.000000	0.003300	9.911690
Std. Dev.	0.164667	0.190134	0.403188	0.596827

- Testing research hypotheses:

Table (2) shows the results of the Limier test. The Limier test is used to determine whether the model is pooled or panel. If the significance level of the test statistic is less than 5 percent, the null hypothesis is rejected and the model under study is in the panel class, otherwise it is in the pooled class. According to Table (2), since the significance level of the test statistic is greater than 5 percent, the null hypothesis is accepted and as a result the model is placed in the pooled class.

Table 2: Limier Test

Effects Test	Statistic	d.f.	Prob.
Period F	0.273729	(2,399)	0.7607
Period Chi-square	0.555309	2	0.7576

The relationship between the independent variables of the study, including debt-to-asset ratio, company size, and deviation in operating activities, with the dependent variable of the study, namely discretionary accruals, was examined by multivariate regression, the results of which are reflected in Table (3).

Table 3: Model 6 test results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.0381	0.16060	-0.23775	0.812
DEBT	0.1506	0.04256	3.53947	0.0004
DVS	0.0848	0.01976	4.29431	0.000
SIZE	-0.0027	0.01351	-0.20440	0.838
R-squared	0.0669	Durbin-Watson stat		2.308
Adjusted R-squared	0.0600			
F-statistic	9.5961			
Prob(F-statistic)	0.0000			

According to Table (3), the significance level of the F statistic is less than 1 percent, so the model is significant at the 99 percent level. The adjusted coefficient of determination of the model is 6 percent, which is low, one of the reasons for which is that some independent variables of the model are not significant. Given that the Durbin Watson statistic is 2.3 and is in the range of 1.5 to 2.5, it indicates the absence of autocorrelation between the model errors.

According to Table (3), the first hypothesis of the study that there is a positive relationship between company size and earnings smoothing is rejected because according to Table (3), the size coefficient is -0.002 and the t value is -0.2, which is not significant at the 95% level. The results of this hypothesis are consistent with the findings of Pourheidary et al. (2006) conducted in the Iranian environment in this regard, but are not consistent with the findings of researchers in other environments such as Moses et al. (1987), Herrmann et al. (1996) in the Japanese environment. Perhaps the reason for this can be attributed to the low

number of large companies in the Tehran Stock Exchange, most of the companies listed on the exchange are small and medium-sized companies (Pourheidary. et.al 2006).

According to the results of Table (3), the second hypothesis of the study is accepted, that is, there is a positive relationship between debt ratio and earnings smoothing. As can be seen in the table, the coefficient of debt ratio (Debt) is 0.15 and the t value is 3.5, which is significant at the 99% level. The results of this hypothesis are not consistent with the findings of Pourheidary et al. (2006), which was conducted in the Iranian environment and is the same as the environment of this study. One of the reasons for this can be considered the difference in the time period of the two studies. The time period of the current study is almost a decade after the aforementioned study period, which may have changed government laws regarding borrowing between these two periods, and as a result, the laws may have affected the motivation of managers to manipulate earnings to obtain loans.

The third hypothesis examines the relationship between deviation in operating activities and earnings smoothing. According to Table (3), the coefficient of deviation in operating activities (Dvs) is 0.08 and the t value is 4.2 and is significant at the 99% level. Therefore, the third hypothesis of the study is confirmed, that is, there is a positive and significant relationship between debt ratio and earnings smoothing. Confirmation of this hypothesis indicates that managers of Iranian companies whose operating activities have significant fluctuations engage in earnings management in order to reassure shareholders and reduce risk (Pourheidary. et.al 2006). The findings of the study in this regard are consistent with the results of Pourheidary et al. (2006) in the Iranian environment (the environment of this study) and Herrmann et al. (1996) in the Japanese environment.

Conclusion

In the literature, the motives for earnings smoothing have been discussed from various economic and political dimensions. In this study, three important economic dimensions including company size, debt contracts and deviation in operating activities were examined as drivers of earnings smoothing. According to the results obtained, the second and third hypotheses of the study were confirmed, that is, debt ratio and deviation in operating activities are among the important motives for smoothing in Iranian companies. Managers with high debt ratios who need to receive facilities to receive more facilities have a high motive for earnings smoothing. On the other hand, the results indicate that managers of Iranian companies whose operating activities have significant fluctuations manage earnings in order to reassure shareholders and reduce risk. For this reason, a positive and significant relationship between deviation from operating activities and earnings smoothing in Iranian listed companies was confirmed.

Company size is also an important incentive that has been considered and influential in the literature on smoothing, but this incentive was not confirmed in relation to Iranian companies based on this study and the first hypothesis of the study was not accepted.

Considering that various aspects of earnings smoothing incentives have been discussed in the literature and only three criteria were examined in this study, it is suggested that future research should use other incentives such as capital intensity, CEO compensation, risk-related incentives for managers' stock compensation plans, managers' job security, investor protection, etc. Also, in this study, discretionary accruals have been used for earnings smoothing, while other criteria have also been considered in the literature for earnings smoothing, such as the Ickel index, the correlation between changes in accruals and changes in operating cash flow. It is suggested that these criteria should also be considered in future research and the results should be compared with the findings of the present study.

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