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The Role of Firm Characteristics in Predicting Cash Flows from Operating Activities

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Abstract

Cash flow forecasting has significantly increased since 2000 due to more attention paid by investors and financial analysts than before. If cash flows can be predicted appropriately, a significant part of the informational needs associated with cash flows will be provided. In this regard, this study aims to examine the impact of firm characteristics on predictable future cash flows from operating activities by employing present operating cash flow and profitability. Eight hypotheses were developed, and the information was analyzed for 127 firms listed on the Tehran Stock Exchange between 2011 and 2020. The regression model was tested with a fixed effect model using panel data. The study's findings showed that firm characteristics like size, level of competition, and level of supervision positively impact the predicting power of

present operating cash flow and profitability in anticipating future operating cash flow. By contrast, the outcomes disclose that characteristics such as the company's life will not significantly affect the predicted strength of present operating cash flow and present profitability to forecast future cash flow from operating activities.

Keywords: Firm Characteristics, Cash Flow from Operating Activities, Profitability.

Introduction

In addition to earnings forecasting, cash flow forecasting was done simultaneously (after the 1980s) with assemblies of codifying standards emphasizing cash flows and future cash flows from operating activities. Cash flow forecasting has significantly increased since 2000 due to more attention paid by investors and financial analysts than before. Since the story of Enron and Worldcom, investors have considered potential manipulation and distortion occurring in accounting earnings and are interested in having information on cash flows. Cash flow forecast uniquely covers lousy news, such as decreased earnings and losses incurred by investors and other stakeholders through information disclosure (Wasley & Wu, 2005). Forecasting is an integral part of decision-making because thought is made for decision-making. Financial forecasts are the basics and preliminary issues for economic decision-making (Al-Attar & Hussain, 2004). Special attention has been paid to cash flows and forecasting in the theoretical framework of financial accounting of various countries.

To some extent, the emphasis was that this issue was defined as one of the aims of accounting and financial reporting in most countries. In Iran's accounting standards, The importance and necessity of cash flow statements in the section of the theoretical concepts of financial reporting were emphasized as follows: "Regarding the goals of financial statements, the users need the information on cash inflows and cash outflows in order to help them to assess liquidity, the capacity of the business unit for repay debt and producing future cash flows, and examining the previous assessments" (Iran's Accounting Standards. 2018). Datta et al. (2013) believe that cash flow forecast is increasingly important because it is essential in many economic decisions, as cash flows have a vital role in the decisions of groups such as securities analysts, creditors, and managers. These groups assess a company's cash flows and obtain a precise index of future cash flows. Specifically, a general goal for fundamental analysis is forecasting firms' future cash flows since cash flows are the basis of paying dividends, earnings, and redeeming liabilities (Kwok,

2002). According to the above descriptions, providing new documents for relative capacity interests and cash indices in forecasting future cash flows is very important regarding various characteristics. It is the primary duty of investors and analysts. In previous studies, the main emphasis was on examining the forecasting power of future cash flows concerning present operating cash flows and interest and comparing the forecasting ability, and less emphasis on the impact of the moderating impact of different characteristics of firms. In this regard, the current investigation examines the impact of characteristics such as firm size, competitiveness level, monitoring level, and firm age on the predictability of future operating cash flows employing present operating cash flows and profitability. The research structure includes theoretical and empirical background, hypotheses development, and research methodology, and finally includes the research's findings along with conclusion and recommendations.

Literature Review

Theoretical background

The FASB[1] (1978) stated that the primary goal of financial reporting is to provide information that helps users forecast the amount, timing, and uncertainty of a firm's future cash flows. IFRS (2007) and the theoretical basics of Iran's financial reporting also stated that information about the cash flows of business units provides a basis for users to assess its capacity to create cash and its need to use it. The users' economic decisions also required capacity assessment of business units in creating cash, timing, and reliability. Therefore, determining a criterion for forecasting a firm's capability in creating shareholders' expected cash flows is very important. Chang et al. (2023) found that after the early 2000 scandal, the market rewarded companies with higher profitability than the CFO's forecasts. Forecasting future cash flows is essential in investment analysis and financial assessment. However, the most helpful information in estimating cash flows is discussed. For example, Copeland et al. (1990) believe that though the traditional accounting criteria can be a valuable tool for understanding and recognizing cash flows, the traditional criteria cannot be substituted with direct indices such as cash flows. Besides, conceptual statement 1 in FASB says that the information related to earnings is better than cash flows' information on protecting the benefits of investors. Recent studies have used operating cash flows as the optimized index. The

[1] Financial Accounting Standard Board

results of these studies showed the preeminence of cash flows from operating activities rather than earnings in forecasting future operating cash flows (Stice et al., 2017).

Hannan and Freeman (1984) argued that firms' future strategies and financial position have been affected by the initial situation of firms. Although financial resources are the basis of firms' activities, the firm age and size can be vital factors in describing its financial issues. However, the informational content of young and small firms is expected to differ entirely from that of big and old firms (Serrasqueiro et al., 2016). However, Kubick et al. (2015) stated that competition affects motivation and managers' tendency toward earnings management. Significantly, firms in high-rivalry industries rather than firms in low-level rivalry industries have more detailed monitoring of the executive managers' performance (Karuna, 2007). Hence, competition in the market can be variable, which affects the ability to operate cash flow and profitability to predict cash flows from operating activities.

Contrastingly, the board of directors is among the most critical monitoring mechanisms of corporate governance structure (Benjemâa et al., 2016). Agency theories argue that external managers provide a monitoring tool for management performance due to raised concentration on firms' financial outcomes, leading to minimizing agency costs (Fama & Jensen, 1983). Additionally, Rutherford and Buchholtz (2007) argued that the increased ratio of non-executive members of the board of directors is directly related to the board of directors' monitoring, leading to decreased information asymmetry and, finally, increased information quality of the board of directors. Others also argued that external managers are an excellent way to create an emphatic environment and decrease uncertainty in creating and implementing strategies (Pearce & Zahra, 1992).

Rediker and Seth (1995) reported that external managers are critical in efficient corporate governance by decision-making and controlling duties. Elloumi and Gueyle (2001) found that board independence significantly improves the firm's financial condition. Regarding the significant role of corporate governance criteria on the monitoring level and the amount of manipulating financial information, the monitoring level is expected to affect the relationship between earnings and current cash flows with future cash flows (Khansalar & Namazi, 2018).

Empirical background

Nguyen & Nguyen (2020) conducted a study evaluating the prognostic capability of operating cash flows by using accounting earnings and past

information latent in cash flows, including 242 non-financial firms listed on the Ho Chi Minh Stock Exchange (HOSE) from 2009 to 2018. Their results showed that accounting profits and cash flows and totaled accruals had the momentous capacity to figure future cash flows, and the demonstration of operating cash flows combined with amassed collections had the foremost successful forecast capacity for companies listed on the Ho Chi Minh Stock Exchange.

Nallareddy et al. (2019) examined the association between profits and cash flow criteria to determine the more suitable index for future cash flows. Their research was conducted in the United States from 1989 to 2015. They did the research based on two goals: first, incorporating documents in past literature; second, examining time-varying accrual accounting for forecasting the cash flow process. The results showed that earnings ability for future cash flow forecasts increased from 1989 to 2015. Finally, the results indicate that increased forecast ability of cash flows relates to shortened operational cycle, decreased working capital accruals, and increased intensity of intangible assets.

In their study, Atqa et al. (2019) investigated whether the appropriation of IFRS in Malaysia since 2006 makes strides in the certainty of future cash flows of Malaysian publicly listed firms. 4,068 firm-year information of Malaysian publicly listed companies from 2004 to 2012 has been analyzed in their study. The outcomes appear that current cash flows beneath IFRS administration foresee future operating cash flows despite the non-significance of net profit and current accruals beneath the IFRS implementation.

Khansalar Namazi (2018) investigated and analyzed cash flows and signaled future cash flows. Using data from firms from the U.S. and U.K. and analyzing multiple regression, they found that about 60% of current-year cash flows continue to the next period cash flows, similar to earnings reports and balance sheets.

Pourfakhrian et al. (2018) examined the forecasting power of operating cash flows, net profit, and earnings constituents. The findings indicated that the explanatory competence of earnings in future cash forecasts would be increased with cash components and accruals, but dividing accruals by discretionary accruals and non-discretionary accruals cannot increase earnings' explanatory power.

The Bozorg (2017) results indicated a positive and significant relationship between accruals and cash components of current operating profit and future operating cash flow. To illustrate, accruals and cash flows can forecast future operating cash flows. Also, accruals were evaluated based on their predictive

ability and profit and loss perspective. The results confirm a positive (negative) relationship between the variables related to the assets (liabilities) and future operating cash flow.

Stice et al. (2017) examined the problems of cash flows and firms' profitability. The results showed that the related problems in cash flows may increase disagreement between managers and owners and affect corporate ways and the firm's future operations. Therefore, these firms need more performance and efficiency over a long period.

Benjemâa et al. (2016) showed that profit segregation to accruals and cash flows increases earnings forecasting ability of earnings to one digit. Additionally, segregating all accruals to their origin components may significantly increase earnings forecast ability. Accruals components indicate the significant power for forecasting future cash flows.

In other studies, Bayat et al. (2016) investigated the influence of intangible asset investments on the future operating cash flows of the listed companies in the Tehran Stock Exchange. The results indicated that investment in R&D expenditure significantly and adversely impacts future operating cash flows. Nevertheless, investment in advertisement, education, and computer software is relatively low on future operating cash flows.

Jamaa et al. (2015) showed that when using one-year and two-year delayed values, the ability to operate cash flow to predict future operating cash flow was more remarkable than profitability while using the values of one and two years later, the profitability in predicting future operating cash flow was more significant than in operating cash flow.

The findings indicated a significant positive relationship between accruals components and current operational profit and future operating cash flows. In other words, accruals and cash flow can forecast future operating cash flow. Accruals were also examined and separated based on profit and loss perspective. The results showed a positive (negative) relationship between assets (debts)-related variables with future operating cash flows.

Garkaz et al. (2015) believe that the net profit to operating cash flow ratio and its traditional indices in small business units and all business units have more ability to estimate future operating cash flows, while in large business units, the operating cash flow is the better predictor than the other criteria. Besides, the ability to forecast all models significantly increased with increased firm size.

Research hypotheses

Regarding the stated theoretical background and conducted research, the hypotheses are articulated as follows:

H1: Firm size is adequate on the power of operating cash flows for forecasting cash flows from operating activities in the future.

H2: Firm size is adequate on the power of profitability for forecasting cash flows from operating activities in the future.

H3: Firm age is effective on the power of operating cash flows for forecasting cash flows from operating activities in the future.

H4: Firm age is effective on the power of profitability for cash flows from operating activities in the future.

H5: The competition level in the industry is effective on the ability of operating cash flow for estimating future operating cash flow.

H6: The competition level in the industry is effective on the power of profitability for cash flows from operating activities in the future.

H7: The monitoring level is adequate for operating cash flow's ability to estimate future operating cash flow.

H8: The monitoring level is adequate on the power of profitability for forecasting future cash flows from operating activities.

Research Methodology

Research Method

This research must be more empirical due to the need to control all the related variables. However, regarding the previous information analysis, this research is semi-empirical.

To analyze data, the central indices such as mean, median, and dispersion indices of standard deviation, and to test the hypotheses, a panel data model was used. The f-Limer test was used to select between pooled regression and panel data patterns. It means that if the pooled data method is used in the F-Limer test, it is finished, but if panel data is selected, the Hausman test is required. The Hausman test determines the fixed vs. random effects model (Aflatouni, 2013).

Population and statistical sample

The statistical population of the research includes all listed companies in the Tehran Stock Exchange from 2011 to 2020. In this study, the sampling method was used through the systematic elimination method. In this regard, the firms that did not meet the following conditions during the research period were eliminated, and the rest of the companies were selected as the sample:

1. The firms must have been listed on the Tehran Stock Exchange since 2011 and hold their membership until 2020.
2. They should not be a bank, an investment company, or a financial intermediary.
3. Their fiscal year should end in the final March to increase their comparability.

Applying these conditions, 127 firms were selected as the research sample to test the hypotheses.

Research Models and Variables

To test the first and second hypotheses, the following model is used:

$$CFO_{i.t+1} = \beta_0 + \beta_1 E_{i.t} + \beta_2 CFO_{i.t} + \beta_3 Size_{i.t} + \beta_4 (E \times Size)_{i.t} + \beta_5 (CFO \times Size)_{i.t} + \beta_6 Lev_{i.t} + \beta_7 Cash_{i.t} + \beta_8 mbv_{i.t} + \varepsilon_{i.t}$$

To test the third and fourth hypotheses, the following model is used:

$$CFO_{i.t+1} = \beta_0 + \beta_1 E_{i.t} + \beta_2 CFO_{i.t} + \beta_3 Age_{i.t} + \beta_4 (E \times Age)_{i.t} + \beta_5 (CFO \times Age)_{i.t} + \beta_6 Lev_{i.t} + \beta_7 Cash_{i.t} + \beta_8 mbv_{i.t} + \varepsilon_{i.t}$$

To test the fifth and sixth hypotheses, the following model is used:

$$CFO_{i.t+1} = \beta_0 + \beta_1 E_{i.t} + \beta_2 CFO_{i.t} + \beta_3 Comp_{i.t} + \beta_4 (E \times Comp)_{i.t} + \beta_5 (CFO \times Comp)_{i.t} + \beta_6 Lev_{i.t} + \beta_7 Cash_{i.t} + \beta_8 mbv_{i.t} + \varepsilon_{i.t}$$

To test the seventh and the eighth hypotheses, the following model is used:

$$CFO_{i.t+1} = \beta_0 + \beta_1 E_{i.t} + \beta_2 CFO_{i.t} + \beta_3 GIndex_{i.t} + \beta_4 (E \times GIndex)_{i.t} + \beta_5 (CFO \times GIndex)_{i.t} + \beta_6 Lev_{i.t} + \beta_7 Cash_{i.t} + \beta_8 mbv_{i.t} + \varepsilon_{i.t}$$

The research variables

The dependent variable

CFOi,t+1 equals the following year's operating cash flow to total assets ratio (Nallarddey et al., 2019).

The independent variables

Ei,t: equals the operating profit to total assets ratio in the current year (Nallarddey et al., 2019).

CFOi,t: equals the operating cash flow to total assets ratio in the current year (Nallarddey et al., 2019).

SIZEi,t: equals the natural logarithm of a firm's total assets (Nallarddey et al., 2019).

AGEi,t: equals the natural logarithm of the number of years past from the established date (Nallarddey et al., 2019).

COMPi,t: The competition level was calculated from the following criteria:

A) Herfindahl-Hirschman index: This index indicates the squared sales of firms to total industry sales. Notably, the mentioned index calculates the competitiveness amount in different industries levels in such a way that the calculated number is less than the median; 1 is determined, otherwise 0, and is defined as follows (Kubick et al., 2015):

$$Herfindahl - Hirschman\ \ Index(HHI) = \sum_{i=1}^{n} \left(\frac{S_i}{S}\right)^2$$

Si: sales revenue of firmi

S: total sales revenue of firms in an industry in which the firm operates.

N: the number of available firms in the corresponding industry.

B) Lerner index: This index was used through the Lerner index by Azhion et al. (2005). This ratio is equal to the sales margin ratio of a firm; as the number is less than the median, number 1 is considered; otherwise, 0 (Kubick et al., 2015).

Index of entry barriers to an industry:

The barriers index equals the sum of fixed assets with total assets; if the number is less than the median, one is considered 0 (Kubick et al., 2015).

D) Tobin's Q index: Theoretically, this index equals market value to the replacement value of a firm's assets; as the number is less than the median, the considered number is 1, otherwise 0 (Kubick, 2015).

Finally, the corporate competitive ability was calculated based on the items that received the number 1 divided by the items that received 0 or 1 after

determining a number for a firm in each year. In each case, therefore, the competitive ability index of each firm was measured (located between 0 and 1) (Kubick et al., 2015).

GIndexi.t: The following criteria calculate the monitoring level (Armstrong et al., 2014).

A) Institutional ownership: is the percentage of institutional investors' ownership in a firm; if it is more than the median, the number is 1; otherwise, 0.

B) Ownership concentration: the percentage of ownership of 5 significant shareholders. As the number is more than the median, it is 1; otherwise, it is 0.

C) Management ownership: the percentage of shares the firm's management owns. If the number is more than the median, it is 1; otherwise, it is 0.

D) Board independence: This variable is defined as non-executive board members to total board members; as the number is more than the mean, the number is 1; otherwise, it is 0.

Finally, the corporate governance ability was calculated based on the items that received the number 1 divided by the items that received 0 or 1 after determining a number for a firm in each year. In each case, therefore, the corporate governance index of each firm was measured (located between 0 and 1) (Kubick et al., 2015).

Control variables

LEVi,t: equals the total debts to total assets ratio (Nallardi et al., 2019).

CASHi,t: equals the cash to total assets ratio (Nallardi et al., 2019).

Results

Descriptive statistics

The results of the variable are shown in Table 1.

Table 1. The descriptive statistics of the variables

Variable	Mean	Median	SD	Max.	Min.	Skewness	kurtosis
Operating cash flow to next year's total assets	0.119	0.108	0.118	0.535	0.181	0.405	3.380
Operational profit to total assets	0.138	0.114	0.134	0.509	0.217	0.683	3.768
Operating cash flows to current total assets	0.117	0.101	0.122	0.512	0.181	0.540	3.189
Firm size	13.60	1.4953	1.497	1.7398	9.880	0.550	3.189
Firm age	3.480	3.583	0.401	4.143	2.197	-0.669	2.604
Competition level	0.499	0.50	0.254	1	0	-0.381	2.820
Monitoring level	0.486	0.50	0.235	1	0	-0.323	2.743
Financial leverage	0.598	0.615	0.190	0.906	0.108	-0.330	2.723
Cash to total assets	0.306	0.025	0.034	0.159	0.003	0.646	3.524
Market value to book value ratio	1.428	1.273	0.554	2.906	0.713	0.479	3.134

According to the results obtained from the descriptive statistics of the variables and proximity of mean and median in most variables, all variables have suitable distribution. Additionally, standard deviation statistics, skewness, and kurtosis coefficients are applied to examine the normality of data distribution (Keller & Warrack, 2003). The data related to the independent and dependent variables have a normal distribution because the variables have the least distance from the offered value for skewness. The mean of the corporate governance variables and a firm's competitive index are 0.499 and 0.486, respectively. There is relatively moderate monitoring and competition among Iranian companies. Regarding the mean of financial leverage (0.598), debt is bolded in the capital structure of Iranian firms. Also, regarding the mean of cash to total assets variable (0.036), it can be argued that a liquidity weakness exists in Iranian firms.

Multicollinearity test of the independent variables and equality of variance examination. Multicollinearity means the existence of an intense relationship between the explanatory variables, which VIF measures statistics. The amount below 10 for this statistic indicates a lack of linearity between the independent

variables. Regarding the obtained results, this amount is allowed for less than the considered number. As a consequence, linearity is not seen between the variables. The adjusted Wald test is also applied to measure the equality of variance. This test was conducted by STATA software. The results indicate an equality of variance between the residuals of the model. Furthermore, the normality of the distribution of the regression residuals was examined, and the results showed that these residuals are average.

Inferential Statistics

The main objective of this study is to examine the impact of firm characteristics in forecasting the cash from operating activities in the future utilizing current operating cash flow and profitability. Eight hypotheses regarding the theoretical basics were developed and examined in this regard. It is necessary to use the Chow test to examine employing the panel data method with a fixed effects approach (Aflatouni, 2013). The results obtained are shown in the research models in Table 2. The results say:

Table 2. The results of the F-Limer test for research models

Model	Statistic	P-Value	Accepted method
1	1.731	0.000	Panel data
2	1.781	0.000	Panel data
3	1.642	0.000	Panel data
4	1.663	0.000	Panel data

Regarding the statistic and p-value of the Chow test for all models, the results show rejection of the null hypothesis H0. Consequently, the fixed effects method is the appropriate one. The Hausman test must be applied to select between panel data with fixed effects or panel data with random effects. The results of the Hausman test can be seen in Table 3.

Table 3. The results of the Hausman test for research models

Model	Statistic	P-Value	Accepted method
1	184.28	0.000	Fixed effects method
2	189.92	0.000	Fixed effects method
3	170.35	0.000	Fixed effects method
4	174.57	0.000	Fixed effects method

As can be seen in Table 3, the results show that the panel data pattern with fixed effects for all models is an appropriate model. Therefore, the estimation of the models is examined through the appropriate method. The results of the estimation of model 1 with fixed effects for examining the first and second hypotheses are in Table 4.

Table 4. The results of estimation of model 1

Variable	Coefficient of variable	t-Statistic	P-Value
Intercept	0.241	3.369	0.000
Operating profit to total assets ratio	0.052	0.280	0.779
Operating cash flow to total current assets ratio	0.125	0.492	0.662
Firm size	0.013	2.674	0.007
Firm size * operating profit to total assets ratio	0.036	2.487	0.013
Firm size * operating cash flow to total current assets	0.042	2.227	0.026
Financial leverage	0.034	1.826	0.068
Cash to total assets ratio	-0.219	-2.706	0.006
Market-to-book value ratio	0.002	0.537	0.590
R^2	0.592		
Adjusted R^2	0.537		
Durbin-Watson statistic	1.998		
F-statistics	10.915		
F-statistic probability	0.000		

Regarding table 4 and F-statistics (10.915) and its p-value (0.000). With a 99% confidence level, the research model has high significance. Also, regarding the adjusted R2 for this model (53%), it can be stated that the independent and control variables explain more than 53% of variations in the dependent variable. Additionally, according to the Durbin-Watson statistics (1.998), it can be argued that the first-time auto-correlation does not exist between the model's residuals. The results of the firm size coefficient multiplied by operating profit and operating cash flow are 0.036 and 0.042, and their p-values are 0.013 to 0.026, respectively. Therefore, regarding the positive coefficient of this variable and its significance level, firm size has a positive and significant impact (in 95% confidence level) on the predictability of future operating cash flows using current operating cash flow and current profitability. Moreover, to examine the third and fourth hypotheses, model 2 has been used. The results of the estimation of model 2 with fixed effects have been provided in Table 5.

Table 5. The results of estimation of the model 2

Variable	Coefficient of variable	t-Statistics	P-Value
Intercept	0.321	3.837	0.000
Operating profit to total assets ratio	0.025	0.139	0.889
Operating cash flow to total current assets ratio	0.209	0.939	0.347
Firm age	-0.777	-3.248	0.001
Firm age * operating profit to total assets ratio	-0.035	-0.650	0.515
Firm age * operating cash flow to total current assets	-0.023	-0.369	0.711
Financial leverage	0.033	1.757	0.079
Cash to total assets ratio	-0.222	-2.755	0.006
Market-to-book value ratio	0.009	1.794	0.073
R^2	0.607		
Adjusted R^2	0.555		
Durbin-Watson statistic	1.980		
F-statistic	11.658		
F-statistic probability	0.000		

Regarding table 5 and F-statistic (11.658) and its P-Value (0.000). The research model is significant in a 99% confidence level of t. Also, regarding the adjusted R2 for this pattern (55%), it can be stated that the independent and control variables explain more than 55% of the dependent variable variations. Additionally, according to the Durbin-Watson statistic (1.980), it can be argued that the first-time auto-correlation does not exist between the model's residuals. The obtained results of the coefficient of firm age multiplied by operating profit and operating cash flow are -0.035 and -0.023, and their P-value is 0.515 to 0.711, respectively. Therefore, regarding the negative coefficient of this variable and its significance level, firm age does not significantly impact (in 95% confidence) the predictability of future operating cash flows using current operating cash flow and current profitability. Moreover, to examine the fifth and sixth hypotheses, model 3 has been used. The results of the estimation of model 3 with fixed effects have been provided in Table 6.

Table 6. The results of the estimation of the model 3

Variable	Coefficient of variable	T- Statistics	Error level
Intercept	0.041	2.528	0.011
Operating profit to total assets ratio	0.236	5.382	0.000
Operating cash flow to total current assets ratio	0.108	2.294	0.022
Firm competition level	0.171	2.183	0.029
Competition level *operating profit to total assets ratio	0.171	2.183	0.029
Competition level* operating cash flow to total current assets	0.159	2.001	0.159
Financial leverage	0.036	1.903	0.057
Cash to total assets ratio	-0.236	-2.893	0.003
Market-to-book value ratio	0.002	0.423	0.671
R^2	0.606		
Adjusted R^2	0.554		
Durbin-Watson statistic	1.998		
F-statistic	11.595		
F-statistic probability	0.000		

Regarding table 6 and F-statistic (11.595) and its P-value (0.000). With a 99% confidence level, the research model has high significance. Also, regarding the adjusted R2 for this model (55%), the independent and control variables explain more than 55% of variations in the dependent variable. Additionally, according to the Durbin-Watson statistic (1.998), it can be argued that the first-time auto-correlation does not exist between the model's residuals. The obtained results of the coefficient of competition level multiplied by operating profit and operating cash flow are 0.171 and 0.159, and their p-values are 0.029 to 0.045, respectively. Therefore, regarding the positive coefficient of this variable and its significance level, the competition level has a positive and significant impact (in 95% confidence level) on the predictability of future operating cash flows using current operating cash flow and current profitability. Moreover, to examine the seventh and eighth hypotheses, model 4 has been used. The results of the estimation of model 4 with fixed effects have been provided in Table 7.

Table 7. The results of the estimation of the model 4

Variable	Coefficient of variable	U- Statistics	Error level
Intercept	0.044	2.711	0.006
Operating profit to total assets ratio	0.153	3.343	0.000
Operating cash flow to total current assets ratio	0.134	2.302	0.021
Firm monitoring level	0.016	0.905	0.365
Monitoring level *operating profit to total assets ratio	0.227	2.336	0.019
Monitoring level * operating cash flow to total current assets	0.305	2.747	0.006
Financial leverage	0.040	2.190	0.028
Cash to total assets ratio	-0.204	-2.523	00.011
Market-to-book value ratio	0.001	0.338	0.735
R^2	0.594		
Adjusted R^2	0.540		
Durbin-Watson statistic	1.997		
F-statistic	11.041		
F-statistic probability	0.000		

Regarding table 7 and F-statistic (11.595) and its p-value (0.000). With a 99% confidence level, the research model has high significance. Also, regarding the adjusted R2 for this model (54%), the independent and control variables explain more than 54% of the dependent variable variations. Additionally, according to the Durbin-Watson statistic (1.997), it can be argued that the first-time auto-correlation does not exist between the model's residuals. The obtained results of the coefficient of monitoring level multiplied by operating profit and operating cash flow are 0.227 and 0.305, and their p-values are 0.019 to 0.006, respectively. Therefore, regarding the positive coefficient of this variable and its significance level, the monitoring level has a positive and significant impact (in 95% confidence level) on the predictability of cash flows from operating activities employing current operating cash flow and current profitability.

Conclusion

This research examined the role of firm characteristics in predicting future operating cash flows using current operating cash flow and current profitability in the listed companies on the Tehran stock exchange. To do so, some hypotheses were provided and examined with available information. The results showed that the firm size is adequate for current operating cash flow and profitability to forecast future operating cash flow. On the other hand, some accountants believe that earnings are the primary source of information. However, profit figures and operating cash flow can forecast the future operating cash flow. Although financial resources can be the basis of a firm's performance, firm size can be vital in describing financial issues. Hence, the information content of small firms is entirely different from that of large firms. In this regard, firm size depends on the ability of current operating cash flow and current profitability to forecast future operating cash flows. The results are consistent with Hannan & Freeman (1984), Hannan (1998), Serrasqueiro et al., 2016.

Moreover, the results demonstrate that the competition level in an industry is practical on the ability of current operating cash flow and current profitability for forecasting the future operating cash flow. It is worth mentioning that firms operating in competitive industries monitor executive managers' performance more closely than those operating in low-competitive industries (Karuna, 2007). This result is consistent with the results of Laksamana & Yang (2014) and is inconsistent with Datta et al. (2013). Finally, the results showed that the monitoring level in an industry is influential in determining the ability of operating cash flow and profitability for forecasting future operating cash flow. In this regard, external managers on the board of directors are valuable for creating an emphatic environment and decreasing uncertainty about creating and implementing a strategy (Pearce & Zahra, 1992). Rediker and Seth (1995) believe that external managers play an essential role by adopting decision-making duties and controlling corporate governance inefficient corporate governance. Therefore, the monitoring level is a variable that can influence the ability of operating cash flow and profitability to forecast future operating cash flow. This result is consistent with the results of Khansalar and Namazi (2018).

Research recommendations

Regarding the obtained results, the following recommendations are made:

– According to the obtained results, i.e., firm size influences the ability of operating cash flow and profitability for forecasting future operating cash flow, it is recommended to investors in Iran’s capital market that alongside the

relationship between profitability and operating cash flow with future operating cash flow, consider that more prominent a firm, more vital this relationship would be. This issue can help make investment decisions.

– According to the obtained results, i.e., the competition level in an industry influences the ability of operating cash flow and profitability for forecasting future operating cash flow, it is recommended to the investors in Iran's capital market that regarding the relative competitive condition in each industry, the relationship between profitability and operating cash flow with future operating cash flow of the available firms in that industry should be analyzed. Moreover, regarding the competition level causing increased predictability of future cash flows, it is recommended that the regulators ordain regulations to increase competition and transparency to increase the predictability power of information.

– According to the obtained results, i.e., the monitoring level influences the operating cash flow and profitability for forecasting future operating cash flow, it is recommended to capital market activists that alongside the relationship between profitability and operating cash flow with a firm's future operating cash flow, consider that higher the level of monitoring in a firm, higher the predictability power of future operating cash flow would be. Therefore, it is better to consider this issue in their investment and finance decisions. On the other hand, it is recommended that the regulators ordain regulations to increase the monitoring mechanisms in order to improve the monitoring and transparency

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References

Aflatouni, Abbas, (2013). "Statistical analysis with EVIEWS software in accounting research and financial management? First edition, Tehran, Terme Publication.

Atqa, A. A., Lee, K. H., & Mohd-Saleh, N. (2019). HAS IFRSs IMPROVES PREDICTIONS OF FUTURE CASH FLOWS? EVIDENCE FROM MALAYSIA. *International Journal of Business & Society*, 20(2), 851-869.

Al-Attar, A. & Hussain, S. (2004). Corporate data and future cash flows. *Journal of Business, Finance & Accounting*, 31(7), 861-903.

Armstrong, C., Blouin, J., Jagonlizer, A. & Larcker, D. (2014). Corporate Governance, Incentives, and Tax Avoidance. Rock Center for Corporate Governance working paper series.

Bozorg, Mostafa (2017). The forecast ability of accruals balance sheet components and profit and loss items in forecasting future cash flow in Tehran stock exchange, M.A. thesis. Islamic Azad University of Shahroud, Science & Research branch, Faculty of Human Sciences.

Benjemâa, O., Toukabri, M., & Jilani, F. (2016). Accruals and the prediction of future operating cash-flows: evidence from Tunisian companies. *International Journal of Accounting and Economics Studi*es, 4(2), 1-6.

Chang, J. Y. J., Hernández, J. J. M., Lee, Y. G., & Shin, Y. Z. (2023). Management of operating cash flows before and after the scandals in the early 2000s: An examination of meeting or beating analyst cash flow forecasts. *Journal of Accounting and Public Policy*, 107071.

Copeland, T., Koller, T. and Murrin, J. (1990). Valuation: Measuring and Managing the Value of Companies (New York: John Wiley & Sons).

Datta, S., Iskandar-Datta, M. and Singh, V. (2013). Product market power, industry structure, and corporate earnings management. *Journal of Banking & Finance*, Available at: http://dx.doi.org /10.1016/ j.jbankfin. 2013.03.012/.

Elloumi, F. and Gueyle, P.J. (2001). Financial distress and corporate governance: An empirical analysis. *Corporate Governance*, 1(1), 15-23.

Fama, E. and Jensen, M. (1983). The separation of ownership and control. *Journal of Law and Economics*, 26(2), 301-325.

FASB. (2007). *Element of Financial Statement of Financial Accounting Concepts*. Statement of Financial Accounting Concepts, No.6.

Financial Accounting Standards Board (2018). "Accounting Standards" Tehran: Accounting organization publication.

Garkaz, Mansour., Ghorbani, Ali Asghar., Rezaei Pitehnoei, Yaser, (2015).The relationship between net profit and cash measurement criteria in forecasting

future cash flows, *Journal of Accounting empirical investigations*. 4(4), 161-176.

Hannan, M.T. (1998). Rethinking age dependence in organizational mortality: logical formalizations. *American Journal of Sociology*, 104 (1), 126–164.

Hannan, M.T. & Freeman, J. (1984). Structural inertia and organizational change. *American Sociological Review*, 49 (2), 149–164.

Jamaa, O.B., Toukabri, M. and Jilani, F. (2015). The Examination of the Ability of Earnings and Cash Flow in Predicting Future Cash Flows: Application to the Tunisian Context. *Accounting and Finance Research,* 4 (1), 1-16.

Karuna, C. (2007). Industry product market competition and managerial incentives. *Journal of Accounting and Economics*, pp. 43, 275–297.

Keller, G., & Warrack, B. (2003). *Statistics for management and economics* (6th ed.). Pacific Grove, CA: Duxbury Press.

Khansalar, E. & Namazi, M. (2018). Cash flow disaggregation and prediction of cash flow. *Journal of Applied Accounting Research*, 18 (4), 464-479.

Kubick, T, R., L., D, P., Mayberry, M, A & Omer, T, C. (2015). Product Market Power and Tax Avoidance: Market Leaders, Mimicking Strategies, and Stock Returns, *The Accounting Review*, Vol. 90, No. 2, pp. 675–702.

Kwok, H. (2002). The effect of cash flow statement format on lender's decisions. *The International Journal of Accounting*, pp. 37, 347–362.

Laksmana, I. and Yang, Y. (2014). Product market competition and earnings management: Evidence from discretionary accruals and real activity manipulation. *Advances in Accounting*, incorporating Advances in International Accounting,http://dx.doi.org/10.1016/j.adiac.

Nallareddy, S., Sethuraman, M., & Venkatachalam, M. (2019). Earnings or Cash Flows: Which is a Better Predictor of Future Cash Flows?: https://ssrn.com/abstract=3054644 or http://dx.doi.org/10.2139/ssrn.3054644

Nguyen, H., & Nguyen, T. (2020). The prediction of future operating cash flows using accrual-based and cash-based accounting information: Empirical evidence from Vietnam. Management Science Letters, 10(3), 683-694.

Pearce, J. A. and Zahra, S. A. (1992). Board composition from a strategic contingency perspective. *Journal of Management Studies*, 29(4), 411-438.

Pourfakhrian, Parvin., Googerchian, Ahmad., Kakaei Dehkordi, Mojtaba (2018). The prediction ability of operating cash flow, net profit, and earnings components, *Accounting investigations*. 28. 87–109.

Rediker, K.J. and Seth, A. (1995). Board of directors and substitution effects of alternative governance mechanisms. *Strategic Management Journal*, 16(2), 85-99.

Roghayye, Bayat., Sha'ani, Maryam., Kalantari, Mohammad Hossein, (2016). The examination of the impact of investment in intangible assets on future operating cash flow of a firm listed in Tehran stock exchange, *Journal of Management & Accounting Studies*. 2(1), 85–97.

Rutherford, A.M. and Buchholtz, A.K. (2007). Investigating the relationship between board characteristics and board information. *Corporate Governance*, 15(4), 576-84.

Serrasqueiro, Z., Nunes, P.M. and Da Silva, J.V. (2016). The Influence of Age and Size on Family-Owned Firms' Financing Decisions: Empirical Evidence Using Panel Data. Long Range Planning,doi: 10.1016/j.lrp.2015.12.012.

Stice, D., Stice, E. & Stice, J. (2017). Cash Flow Problems Can Kill Profitable Companies. *International Journal of Business Administration*, 8(6), 46-54.

Wasley, E. C. & Wu, J. SH. (2005). Why Do Managers Voluntarily Issue Cash Flow Forecasts? Online,www.ssrn.com

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