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The Role of Accruals and Cash Flows in Explaining Stock Returns: Evidence from Iranian Companies

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This study examines the role of earnings, cash flows, and firm specific factors (growth opportunities, financial leverage, firm size and transitory of earnings) in explaining stock returns. In this research, we study a sample of 708 firm-years for listed Iranian firms during 1998 to 2008. The Results show that earnings and cash flows have not incremental information content for stock returns. Further analysis shows that both earnings per share and cash flows are not affected by the moderating effects of firm-specific contextual factors.

Field of Research: Market Based Accounting Research

1. Introduction

This paper examines the relative and incremental explanatory power of earnings and cash flows in explaining stock returns in Iran. This paper builds on the work of Habib (2008), who indicates that earnings have higher explanatory power than cash flows and both earnings and cash flows have incremental information content for stock returns. The relationship of earnings and stock prices has been at the most important part of accounting research. Starting with Ball and Brown (1968) and Beaver (1968), a substantial volume of research work in accounting literature explores the relation between accounting information and stock returns. The general conclusion emerging from research in this area is that accounting information explains a surprisingly low proportion of the variation in stock returns (Lehavy and Sloan, 2008).

Lev (1989) states that accounting earnings consist of both accruals and cash flow components and are considered to be the premier information item provided in financial statements (Habib, 2008). The Financial Accounting Standards Board (FASB) asserts that earnings rather than cash flows provide a better indication of a business entity's present and continuing ability to generate favorable cash flows (FASB, 1978). Stock return is one of the most important factors that affect investment decision making. The investors desire to invest in the companies that yield high returns and the prediction of stock returns is important for the investors. Hence, the accounting researchers are about to find the most affecting factors on the companies stock returns, and then develop a model for stock returns forecasting. Previous research studying the relative and incremental information content of earnings and cash flows in the United States and some of other countries (such as UK and New Zealand) generally finds support for the hypotheses that (1) both cash flows and accruals have incremental information content

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for stock returns, and (2) earnings is superior to that of cash flows for the explanation of stock returns (for example, Rayburn (1986), Wilson (1986), Wilson (1987), Bowen, Burgstahler, and Daley (1987), Bernard and Stobber (1989), and Biddle, Seow, and Siegel (1995), Habib (2008)). However, the generalization of such a finding to Iran is an empirical question. This question relates to the contextual differences between Iran and those countries.

Therefore, the purpose of this research is evaluation of the relative and incremental information content of earnings versus cash flows in Iran. Based on the prior research in the US that suggest the incremental information content of earnings and cash flows is significantly affected by contextual firm-specific factors and following Habib (2008), we assess the effect of four factors on the incremental information of earnings and cash flows: (1) transitory earnings; (2) firm size; (3) firm leverage; and (4) growth opportunities.

The results indicate that explanatory power of both earnings and cash flows are not statistically significant. Also, earnings and cash flows do not have incremental information content for stock returns.

The remainder of the paper is organized as follows. Section 2 reviews the literature on the relevant and incremental information content of earnings and cash flows. Section 3 describes the Iran reporting framework. Section 4 is related to hypotheses development. Section 5 explains method of sample selection and estimation of research models. Section 6 provides the research results and finally, section 7 concludes.

2. Literature Review

Previous studies that study the mature markets, such as US, investigate the superiority of accruals to cash flows for explaining stock returns (Rayburn, 1986; Wilson, 1986; Wilson, 1987; Bowen et al., 1987). Bartov, Goldberg, and Kim (2001) investigate the superiority of earnings over cash flows for equity valuation within the US, the UK, Canada, Germany, and Japan. They generalizes the findings of prior US research by showing that earnings are more important than cash flow for equity valuation in other Anglo-Saxon countries. Also, their findings demonstrate that the superiority of earnings over cash flow depends on the national reporting regime and attendant institutional factors. Charitou, Clubb, and Andreou (2000) study the association of earnings and cash flows with security returns by using a Japanese dataset and report similar results. Haw, Qi, and Wu (2001) examine the relative and incremental information content of earnings, operating cash flows, and accruals in the emerging capital market of China. Their results imply that domestic investors in China's emerging capital market rely on earnings information more than operating cash flow information in the valuation process. Hodgson and Stevenson-Clarke (2000) re-evaluate the incremental information content debate using Australian data. They find that a nonlinear functional relation provides greater explanatory power for both earnings and cash flow, and also contrary to received theory, cash flows add greater incremental explanatory power for large firms. Martinez (2003) considers the French context and analyze if earnings and/or cash flows are relevant to explain stock returns. The results show that cash flows

do not reveal additional information beyond that contained in earnings. Plenborg (1998) applying Danish data investigates whether the length of the operating cycle is a useful explanation for the superiority of earnings over cash flows in explaining the contemporaneous stock return. He finds that the explanatory power of earnings is stable, but the explanatory power of cash flows declines as the length of the operating cycle increases.

Ali (1994) following Freeman and Tse (1992), uses a model that allows nonlinear relation between returns and each of three performance variables: earnings, working capital from operations, and cash flows. The results support nonlinear relations between returns and all three performance variables. Ali and Pope (1995) incorporate time-varying parameters and a nonlinear specification in the UK data. He finds that earnings and cash flow have incremental information content. Mensah (1990) tests an economy-based analysis that anticipates intertemporal differences in the sign of the association between unexpected cash from operations and unexpected security returns. The results provide some evidence of inter-year differences in the cash flow coefficient. The coefficient is positive in some years and negative in others. Clubb (1995) examines the relative information content of accounting earnings, funds flow, and cash flow data for UK companies. The findings suggest that earnings data and cash and funds flow data contain value-relevant information. Cheng, Liu, and Schaffer (1996) investigate if the incremental information content of cash flows from operations increases when earnings are transitory. The results indicate that the incremental information content of accounting earnings decreases, and the incremental information content of cash flows from operations increases, with a decrease in the permanence of earnings. Cheng and Yang (2003) study the issue and find that cash flows provide incremental information when the cash flow observations come from persistent deciles (Habib, 2008). Charitou, Clubb, and Andreou (2001) examine the relative information content of earnings and cash flows for security returns in UK using a methodology incorporating contextual factors which may affect earnings and cash flow response coefficients. The results show that earnings is value relevant, they also suggest that both contemporaneous and prior period cash flow are positively related to security returns.

Dechow (1994) investigates the circumstances under which accruals are predicted to improve earnings' ability to measure firm performance as reflected in stock returns. She finds that earnings, relative to cash flows, are more strongly associated with stock returns during short intervals. Also, have a high association with stock returns in firms experiencing large changes in their working capital requirements and their investment and financing activities. Charitou (1997) studies the association of earnings and cash flows with security returns using a dataset consists of UK firms. The results indicate that the role of cash flows is more important in the marketplace when the operating cycle, magnitude of accruals and the measurement interval are considered. In addition, the results show that cash flows have more information content than earnings in explaining security returns. Charitou and Clubb (1999) examines the relationship of security returns and accounting data in the UK by focusing on the effect of long return intervals on the association between security returns and earnings and cash flow variables. Their results provide strong evidence of the valuation relevance of cash flow information. Board and Day (1989) investigate the link between earnings and share prices for a

sample of UK companies using three measures of earnings: the traditional historical cost accounting return and two which were closest to cash flow measures. The results show that while there is substantial information content in the traditional historical cost rate of return, there is very little information conveyed by the measure closest to pure cash flow.

A substantial volume of research work in accounting literature has investigated the relevant and information content of earnings and cash flows for stock returns. Previous research studying the relative and incremental information content of earnings and cash flows in the United States and some of other countries (such as UK and New Zealand) generally finds support for the issue. However, the generalization of those findings to Iran is an empirical question. This question relates to the contextual differences between Iran and those countries. This paper aims to extend the literature by examining the information content of earnings and cash flows in Iran.

3. Iranian Reporting Context

The capital market in Iran is a very new one and somewhat inefficient. Pension funds, mutual funds, and insurance companies now own more than half of the publicly held stock on the TSE. The major shareholder's supervision depends on certain activities such as buying controlling stock and the role of institutional investors. Minor shareholders have no supervisory role. Prior to 1979, financial reporting in Iran was influenced heavily by Anglo-American practices (Mirshekari and Saudagaran, 2005). There were no national accounting standards and disclosure requirements were based on tax law, corporate law, and stock exchange regulations. However, during the last two decades, Iran's Audit Organization has taken various measures to harmonize the Iranian Accounting profession with global practices. Although, Iran has employed International Accounting Standards as the basis for developing its National Accounting Standards, there are still some differences between Iranian and international standards, and there are some certain International Accounting Standards that are not applicable in Iran. In Iran, six important issues - financial markets, privatization, tax laws, joining the World Trade Organization, foreign investments, and the legal system are important keys to improving the quality of financial reporting (Mashayekhi, and Mashayekh (2008).

4. Hypotheses Development

Prior research on the incremental information content of earnings and cash flows has provided inconclusive evidence about which variable explains better the contemporaneous stock price movement (Neil, Schaefer, Bahnson, and Bradbury, 1991). Since January 1997, providing cash flows statement has been required by Accounting Standards Setting Committee in Iran. An empirical research (Tehrani and Fanni Asl, 2007) in Iran investigates the incremental information content of earnings and cash flows for stock returns.

Prior research suggests that the valuation implications of earnings and cash flows may be significantly affected by firm-specific factors. The authors try to show the relationship

between returns and earnings using the different models and methods. The investors search for alternate performance measures and among others cash flow becomes an important variable. This paper replicating the Habib (2008) research work tests the following hypothesis:

H1: Cash flow becomes more value-relevant when earnings are transitory.

In addition to earnings permanence, another firm-specific factor that has been shown affects information content of earnings and cash flows is firm size. The incremental information content of earnings and cash flows concerning to stock returns for large versus small firms is ambiguous (Charitou et al., 2001). Because of the ambiguous nature of the relationship of earnings and cash flows with security returns for large versus small firms the following hypothesis is tested:

H2: There is no significant difference in the valuation implications of earnings and cash flows for large versus small firms.

Financial leverage is another factor of interest in this study. Earning of high leveraged firms compared to earnings of low leveraged firms may have lower valuation impact, due to the fact that the present value of future cash flows is low for high leveraged firms because of their high systematic risk (Martikainen, 1997). When financial leverage increases the bankruptcy risk increases. For firms with high level of financial leverage, managers have incentives to manipulate earnings to avoid debt covenant violations. This decrease the reliability of accounting earnings and investors may use cash flows instead of earnings. Another reason for switching from earnings to cash flows is because cash flows provide information regarding the ability of the firm for future debt paying (Habib, 2008). So the following hypothesis is tested:

H3: The stock price response to unexpected cash flows will be significantly higher for high leverage firms compared to low leverage firms.

The growth option available to a firm is the final factor of interest in this research. Ohlson (1995) argues that the value of a firm is composed of the book value of equity and the present value of abnormal future earnings. A firm with a high market-to-book ratio (high growth) is likely to have experienced positive unexpected earnings in recent periods which are expected to persist. In addition, a high market-to-book ratio may be associated with positive net present value investment opportunities and unexpected earnings may be used as a proxy to infer changes in market expectations about such opportunities. Greater valuation relevance of cash flows in high growth firms stems from the proposition that investor perceptions of the persistence of future abnormal earnings are positively related to unexpected cash earnings (Charitou et al., 2001).

H4: Stock return response to both unexpected earnings and unexpected cash flows from operation will be higher (lower) for high (low) growth firms.

5. Research Method

5.1. Research Models

This research investigates the information content of earnings and cash flows for stock returns using the following regression models:

$$R_{it} = \theta_0 + \theta_1 EPS_{it} + \theta_2 \Delta EPS_{it} + \varepsilon_{it} \quad (1)$$

$$R_{it} = \theta_0 + \theta_3 OCF_{it} + \theta_4 \Delta OCF_{it} + \varepsilon_{it} \quad (2)$$

Where R_{it} represents annual buy-and-hold raw returns for firm i, cumulated from the fifth month of fiscal year t to the fourth month of fiscal year *t* + 1. EPS (ΔEPS) and OCF (ΔOCF) are the level (change) in Earnings per share and cash flow from operations per share for firm *i* in year *t* respectively. Relative information content of earnings or cash flows is tested by applying the Vuong (1989) likelihood ratio test. A recent development in model selection techniques is Vuong (1989). Vuong has provided a likelihood ratio test for model selection to test the null hypothesis that the two models are equally close to explaining the "true data generating process" against the alternative that one model is closer. This allows a directional test indicating which of the competing hypotheses, if either, is closer to explaining the data. Note that a positive Z-statistic implies that the residuals produced by the EPS regression are larger in magnitude than those from the comprehensive income regression. Hence, a positive and significant Z-statistic indicates that EPS is the model of choice (Dechow, 1994).

For testing relative information content, we also estimate the following regression model:

$$R_{it} = \theta_0 + \theta_1 EPS_{it} + \theta_2 \Delta EPS_{it} + \theta_3 OCF_{it} + \theta_4 \Delta OCF_{it} + \varepsilon_{it} \quad (3)$$

For testing the incremental information content of cash flows in the situation of transitory earnings, the following regression model is estimated:

$$R_{it} = \theta_0 + \theta_1 EPS_{it} + \theta_2 \Delta EPS_{it} + \theta_3 OCF_{it} + \theta_4 \Delta OCF_{it} + \theta_5 EPS_{it} \times D_H + \theta_6 \Delta EPS_{it} \times D_H + \theta_7 OCF_{it} \times D_H + \theta_8 \Delta OCF_{it} \times D_H + \varepsilon_{it} \quad (4)$$

Where, D_H is a dummy variable taking the value of 1 for observations lying above (below) the median value of $|\Delta EPS/MVE_{t-1}|$. Above-median change in earnings deflated by lagged market value of equity observations are considered to be transitory in nature and hence should have low correlation with contemporaneous raw return. When earnings are transitory, the market looks for alternative source of information for valuing firms like cash flows. Hence, in the presence of transitory earnings, it is expected that the sum of coefficients on OCF and ΔOCF should be positive and statistically significant (Habib, 2008).

For examining the impact of firm-specific factors on the stock return reflection to earnings and cash flows, Equations (5), (6), and (7) are estimated the same as equation

(3). These models are estimated to investigate the effect of firm size, firm leverage, and growth opportunities on the differential valuation implications of earnings and cash flows (Habib, 2008).

$$R_{it}=\theta_0+\theta_1 EPS_{it}+\theta_2 \Delta EPS_{it}+\theta_3 OCF_{it}+\theta_4 \Delta OCF_{it}+\theta_5 EPS_{it}\times D_{SIZE}+\theta_6 \Delta EPS_{it} \times D_{SIZE} + \theta_7 OCF_{it} \times D_{SIZE} + \theta_8 \Delta OCF_{it} \times D_{SIZE} + \varepsilon_{it} \quad (5)$$

$$R_{it}=\theta_0+\theta_1 EPS_{it}+\theta_2 \Delta EPS_{it}+\theta_3 OCF_{it}+\theta_4 \Delta OCF_{it} + \theta_5 EPS_{it} \times D_{LEVERAGE}+\theta_6 \Delta EPS_{it} \times D_{LEVERAGE} + \theta_7 OCF_{it} \times D_{LEVERAGE} + \theta_8 \Delta OCF_{it} \times D_{LEVERAGE} + \varepsilon_{it} \quad (6)$$

$$R_{it}=\theta_0+\theta_1 EPS_{it}+\theta_2 \Delta EPS_{it}+\theta_3 OCF_{it}+ \theta_4 \Delta OCF_{it} + \theta_5 EPS_{it} \times D_{GROWTH}+\theta_6 \Delta EPS_{it} \times D_{GROWTH} + \theta_7 OCF_{it} \times D_{GROWTH} + \theta_8 \Delta OCF_{it} \times D_{GROWTH} + \varepsilon_{it} \quad (7)$$

D_{SIZE} is a dummy variable taking the value of 1(0) for observations above (below) the median value of the natural log of total assets. $D_{LEVERAGE}$ is a dummy variable taking the value of 1(0) for observations above (below) the median value of the ratio of total debt to total assets and finally, D_{GROWTH} is a dummy variable taking the value of 1(0) for observations above (below) the median value of the market-to-book ratio. Other variables are the same as before models.

5.2. Research Sample

This research study the companies listed in TSE. The data needed for calculating research variables are collected manually from firm financial statements and the electronic archival data provided by Tadbirpardaz. The sample used to estimate the models consists of all 1998 to 2008 firms that have data needed for calculating research variables. Our data collection provides 708 firm-year observations. We exclude banks and financial entities from the sample. For reducing the effect of outliers, the bottom and top 10% of the dependant and independent variables are winsorized.

6. The Results

Panel A of Table 1 presents descriptive statistics of the variables used in the study. The mean of OCF and EPS are 538.64 and 567.07, respectively. The standard deviation of EPS (445.32) is higher than that of operating cash flows per share (374.36). Dechow (1994) suggests that managers use accruals to smooth out the fluctuations in earnings. However, this result is contrary to what Dechow suggests (Habib, 2008). The result could be due to the small sample used in this study. The correlation analysis shown in panel B indicates that (a) stock returns are positively related to the level and change in earnings and cash flow variables, but those are statistically low; (b) EPS level and ΔEPS are positively correlated and also OCF and ΔOCF are positively correlated but significantly lower; and (c) the correlation between EPS level and OCF is 0.42, approaching to some other studies that study earnings (e.g., Charitou et al., 2001 report a correlation of 0.50). Eventually, the sample is consisted of firms described by high growth and leverage.

Table 1: Descriptive statistics

Variable	Mean	Median	S.D.
Panel A: Sample Descriptive Statistics			
Returns	0.06	0	0.29
EPS	567.07	498.37	445.32
ΔEPS	8594.41	1045	239871.80
OCF	538.64	502.89	374.36
ΔOCF	1535.08	3014	435751.80
SIZE	5.46	5.40	0.66
DEBT	0.66	0.67	0.31
GROWTH	2.16	1.70	3.93
Observations	708		

Variables	Returns	EPS	ΔEPS	OCF	ΔOCF	SIZE	DEBT	GROWTH
Panel B: Correlation Analysis								
Returns	1.000	-						
EPS	0.058	1.000	-					
ΔEPS	0.075**	0.168*	1.000	-				
OCF	0.055	0.420*	0.057	1.000	-			
ΔOCF	-0.008	-0.018	0.258*	0.090**	1.000	-		
SIZE	-0.039	0.104*	0.075**	0.009	-0.090**	1.000	-	
DEBT	0.061	-0.034	-0.025	0.049	-0.040	-0.101*	1.000	-
GROWTH	0.035	0.232*	0.003	0.130*	-0.007	0.044	-0.038	1.000

Notes. The sample is consists of 708 firm-year observations from 1999 to 2008 after eliminating outliers. Stock returns represent annual buy-and-hold raw returns for firm i, cumulated from the fifth month of fiscal year t to the fourth month of fiscal year t+1. EPS and ΔEPS are earnings per share and change in earnings per share, respectively. OCF and ΔOCF are operating cash flow and change in OCF, respectively. To remove the effects of outliers both the dependent and independent variables are winsorized at the top and bottom 15% of their respective distributions. SIZE is the natural logarithm of total assets. DEBT is total debt divided by total assets. GROWTH is market-to-book ratio calculated as market value of equity/book value of equity. *, **, *** denote statistical significance at 1%, 5% and 10% level respectively (two-tailed test).

Table 2 panel A shows the results of regression model of relative information content of EPS and cash flows. The adjusted R^2 of the model one (0.007) and the model two (0.003) are not significantly different. Voung's Z-statistic for these two models is zero that indicates no model is superior to the other. This implies that Iranian investors consider other factors in valuing stocks. In the two models only the coefficient value of ΔEPS is positive and statistically significant.

Panel B of table 2 does not shows that EPS and cash flows have incremental information content. Adjusted R^2 for the model is 0.01 which is too lower than that of prior research, for example, Cheng and Yang (2003) in US (with an Adjusted R^2 of 9%); Charitou et al. (2001) in the UK (27.59%), and Habib (2008) in New Zealand (24%). The findings imply that EPS and cash flow variables are not important in stock valuation. This result is consistent with Tehrani and Fanni Asl (2007) and contrary to Bartov et al. (2001) who finds significant incremental information content of earnings and cash flows.

Table 2: Earnings per share and cash flows incremental information content test

Variables	Signs	Model 1		Model 2	
		Coefficients	t-Statistics	Coeficients	t-Statistics
Panel A: relative information content of earnings and OCF					
$R_{it} = \theta_0 + \theta_1 EPS_{it} + \theta_2 \Delta EPS_{it} + \varepsilon_{it}$ (1)					
$R_{it} = \theta_0 + \theta_3 OCF_{it} + \theta_4 \Delta OCF_{it} + \varepsilon_{it}$ (2)					
Intercept		0.04992*	2.56	0.04528**	2.31
EPS (θ_1)	+	0.00002	1.22		
ΔEPS (θ_2)	+	9.33×10^{-8}**	2.03		
OCF (θ_3)	+			0.00004	1.50
ΔOCF (θ_4)	-			-9.46×10^{-9}	-0.37
Adjusted R^2		0.007		0.003	
Voung *Z*		0.00			
Observations		708		708	

Variables	Signs	Model 3	
		Coeficients	t-Statistics
Panel B: Incremental Information Content of Earnings and Cash Flows			
$R_{it} = \theta_0 + \theta_1 EPS_{it} + \theta_2 \Delta EPS_{it} + \theta_3 OCF_{it} + \theta_4 \Delta OCF_{it} + \varepsilon_{it}$ *(3)*			
Intercept		0.0403***	1.89
EPS (θ_1)	+	0.00001	0.64
ΔEPS (θ_2)	+	9.56×10^{-8}**	1.95
OCF (θ_3)	+	0.00003	1.02
ΔOCF (θ_4)	-	-2.18×10^{-8}	-0.82
$\theta_1 = \theta_2 = 0$		2.42 (0.0898)	
$\theta_3 = \theta_4 = 0$		0.77 (0.4655)	
Adjusted R^2		0.0101	
Observations		708	

Notes. Returns represent annual buy-and-hold raw returns for firm *i*, cumulated from the fifth month of fiscal year *t* to the fourth month of fiscal year *t* + 1. EPS and ΔEPS are earnings per share and change in earnings per share, respectively. OCF and ΔOCF are operating cash flow and change in OCF, respectively. To remove the effects of outliers both the dependent and independent variables are winsorized at the top and bottom 15% of their respective distributions. For the model 1 White's (1980) heteroscedasticity- corrected *t*-statistics are presented. *, **, *** denote statistical significance at 1%, 5% and 10% levels respectively (two-tailed test).

6.1. The earnings transitory hypothesis

The studies on information content indicate that extreme earnings have less information content relative to moderate earnings due to less persistence of the extreme earnings (Freeman and Tse, 1992; Cheng et al., 1996; Ali, 1994; Charitou et al., 2001). In the presence o transitory earnings, the market searches for alternative information sources for assessing the ability of the firm for future cash generation (Habib, 2008). In this paper, equation (4) is estimated for examining the valuation implication of cash flows in the presence of transitory earnings. Consistent with prior studies (Ali, 1994; Cheng et al., 1996; Habib, 2008) earnings extremity is measured through $|\Delta EPS/MVE_{t-1}|$. The observations above (below) $|\Delta EPS/MVE_{t-1}|$ are termed as transitory (permanent) earnings and are expressed in 1(0), respectively.

The sum of coefficients of ($\theta_1 + \theta_2$) and ($\theta_3 + \theta_4$) does not show the incremental information content of earnings and cash flows, respectively, when earnings per share are moderate ($D_H = 0$). When earnings per share are extreme ($D_H = 1$), changes in the coefficients of earnings per share and cash flows are captured by the sum of coefficients of ($\theta_5 + \theta_6$) and ($\theta_7 + \theta_8$), respectively. If the additional role of cash flows exists, earnings extremity should have a positive effect on the incremental information content of cash flows. The sign therefore is predicted to be negative for ($\theta_5 + \theta_6$) and for ($\theta_7 + \theta_8$) to be positive (Habib, 2008).

Table 3 shows that the sum of coefficients of ($\theta_5 + \theta_6$) and ($\theta_7 + \theta_8$) both are negative but not statistically significant. Therefore there is no clear evidence for incremental information content in relation to unexpected earnings and operating cash flows. Habib (2008) in New Zealand and Charitou et al. (2001) in UK also fail to find any incremental role for cash flows when earnings are transitory. The ambiguity of results is maybe due to using of the other variables in decision making by Iranian investors. The improving in explanatory power of the model compared to the model 3 in table 2 is not significant.

Table 3: Test of earnings permanence and the incremental information content

Variables	Coeficients	t-Statistics
$R_{it} = \theta_0 + \theta_1 EPS_{it} + \theta_2 \Delta EPS_{it} + \theta_3 OCF_{it} + \theta_4 \Delta OCF_{it} + \varepsilon_{it}$ (3)		
$R_{it} = \theta_0 + \theta_1 EPS_{it} + \theta_2 \Delta EPS_{it} + \theta_3 OCF_{it} + \theta_4 \Delta OCF_{it} + \theta_5 EPS_{it} \times D_H + \theta_6 \Delta EPS_{it} \times D_H + \theta_7 OCF_{it} \times D_H + \theta_8 \Delta OCF_{it} \times D_H + \varepsilon_{it}$ (4)		
Intercept	0.04019	1.88
EPS (θ_1)	0.00002	0.62
ΔEPS (θ_2)	8.77×10^{-8}	0.88
OCF (θ_3)	0.00004	1.12
ΔOCF (θ_4)	-9.90×10^{-9}	-0.28
EPS×D_H (θ_5)	-0.00001	-0.29
ΔEPS ×D_H (θ_6)	1.60×10^{-8}	0.14
OCF×D_H (θ_7)	-0.00003	-0.51
ΔOCF ×D_H (θ_8)	-2.89×10^{-8}	-0.53
($\theta_1 + \theta_2$)	2.00877×10^{-5}	0.39
($\theta_3 + \theta_4$)	3.99901×10^{-5}	1.26
($\theta_5 + \theta_6$)	-9.984×10^{-6}	0.09
($\theta_7 + \theta_8$)	-3.00289×10^{-5}	0.26
Adjusted R^2	0.0128	
Observations	708	
F-test	1.13	

Note. Returns represent annual buy-and-hold raw returns for firm *i*, cumulated from the fifth month of fiscal year *t* to the fourth month of fiscal year *t* + 1. EPS and ΔEPS are earnings per share and change in earnings per share, respectively. OCF and ΔOCF are operating cash flow and change in OCF, respectively. To remove the effects of outliers both the dependent and independent variables are winsorized at the top and bottom 15% of their respective distributions. Firm-year observations are ranked on the basis of $|\Delta EPS/MVE_{t-1}|$ and the variable D_H denotes a dummy taking the value of 1(0) for observations lying above (below) the median value of $|\Delta EPS/MVE_{t-1}|$. Above-median earnings per share observations are considered to be transitory in nature and hence should have low correlation with contemporaneous raw return. *, **, *** denote statistical significance at 1%, 5% and 10% levels respectively (two-tailed test).

Table 4: Contextual variables and the incremental information content of earnings versus cash flows

Variable	SIZE		LEVERAGE		GROWTH	
	Coefficients	*t*-Statistics (p-value)	Coefficients	*t*-Statistics (p-value)	Coefficients	*t*-Statistics (p-value)
$R_{it} = \theta_0 + \theta_1 EPS_{it} + \theta_2 \Delta EPS_{it} + \theta_3 OCF_{it} + \theta_4 \Delta OCF_{it} + \theta_5 EPS_{it} \times D_{SIZE} + \theta_6 \Delta EPS_{it} \times D_{SIZE} + \theta_7 OCF_{it} \times D_{SIZE} + \theta_8 \Delta OCF_{it} \times D_{SIZE} + \varepsilon_{it}$ (5)						
$R_{it} = \theta_0 + \theta_1 EPS_{it} + \theta_2 \Delta EPS_{it} + \theta_3 OCF_{it} + \theta_4 \Delta OCF_{it} + \theta_5 EPS_{it} \times D_{LEVERAGE} + \theta_6 \Delta EPS_{it} \times D_{LEVERAGE} + \theta_7 OCF_{it} \times D_{LEVERAGE} + \theta_8 \Delta OCF_{it} \times D_{LEVERAGE} + \varepsilon_{it}$ (6)						
$R_{it} = \theta_0 + \theta_1 EPS_{it} + \theta_2 \Delta EPS_{it} + \theta_3 OCF_{it} + \theta_4 \Delta OCF_{it} + \theta_5 EPS_{it} \times D_{GROWTH} + \theta_6 \Delta EPS_{it} \times D_{GROWTH} + \theta_7 OCF_{it} \times D_{GROWTH} + \theta_8 \Delta OCF_{it} \times D_{GROWTH} + \varepsilon_{it}$ (7)						
Constant	0.04128	1.93 (0.053)	0.04733	2.21 (0.027)	0.04790	2.19 (0.029)
EPS (θ_1)	-0.00001	-0.33 (0.747)	-0.00006	-1.43 (0.154)	0.00003	0.86 (0.392)
ΔEPS (θ_2)	4.42×10^{-6}	2.23 (0.026)	1.61×10^{-7}	2.08 (0.038)	1.47×10^{-7}	2.36 (0.019)
OCF (θ_3)	0.00006	1.48 (0.138)	0.00009	1.85 (0.064)	-0.00001	-0.37 (0.711)
ΔOCF (θ_4)	1.08×10^{-7}	0.35 (0.724)	-9.25×10^{-8}	-1.67 (0.095)	-4.08×10^{-8}	-1.32 (0.188)
EPS×D_H (θ_5)	0.00003	0.72 (0.474)	0.00012	2.30 (0.022)	-0.00004	-0.86 (0.389)
ΔEPS×D_H (θ_6)	-4.32×10^{-6}	-2.18 (0.030)	-3.50×10^{-8}	-0.31 (0.754)	-1.27×10^{-7}	-1.26 (0.209)
OCF×D_H (θ_7)	-0.00005	-0.91 (0.362)	-0.00009	-1.55 (0.122)	0.00008	1.51 (0.131)
ΔOCF×D_H (θ_8)	-1.29×10^{-7}	-0.42 (0.674)	9.54×10^{-8}	1.48 (0.140)	5.75×10^{-8}	0.90 (0.366)
Adjusted R^2		0.0182	0.0198		0.0173	
($\theta_1 + \theta_2$)	3.42×10^{-6}	0.05 (0.8299)	-5.9839×10^{-5}	2.48 (0.1150)	3.0147×10^{-5}	0.74 (0.3903)
($\theta_3 + \theta_4$)	6.0108×10^{-5}	2.21 (0.1374)	8.99075×10^{-5}	3.83 (0.0502)	-1.00408×10^{-5}	0.14 (0.7105)
($\theta_5 + \theta_6$)	-1.32×10^{-5}	0.41 (0.5218)	1.19965×10^{-4}	6.47 (0.110)	-4.0127×10^{-5}	0.75 (0.3871)
($\theta_7 + \theta_8$)	-5.0129×10^{-5}	0.84 (0.3602)	-8.99046×10^{-5}	2.90 (0.885)	8.00575×10^{-5}	2.29 (0.1306)
Observations	708		708		708	
F-statistics		1.62 (0.1168)		1.76 (0.0808)		1.54 (0.0141)

Note. EPS and ΔEPS are earnings per share and change in earnings per share, respectively. OCF and ΔOCF are operating cash flow and change in OCF, respectively. For removing the effects of outlier, both the dependent and independent variables are winsorized at the top and bottom 15% of their respective distributions. R_{it} represents annual buy-and-hold raw returns for firm *i*, cumulated from the fifth month of fiscal year *t* to the fourth month of year *t*+1. D_{SIZE} is a dummy variable taking the value of 1(0) for observations above (below) the median value of the natural log of total assets. $D_{LEVERAGE}$ is a dummy variable taking the value of 1(0) for observations above (below) the median value of the ratio of total debt to total assets. D_{GROWTH} is a dummy variable taking the value of 1(0) for observations above (below) the median value of the market-to-book ratio. SIZE is the natural logarithm of total assets. LEVERAGE is the ratio of total debt to total assets and GROWTH is the market to book ratio (MVE/BVE) where MVE is the market value of equity at year end and BVE is the book value of equity at the year end. For the model 6, White's (1980) heteroscedasticity-corrected *t*-statistics are presented.

6.2. The size hypothesis

Table 4 shows that the sum of the earnings per share level and change coefficients is positive and statistically insignificant ($\theta_1+\theta_2 = 3.42\times10^{-6}$). For large firms, the coefficient decreases to negative, $\theta_5 + \theta_6 = -1.32\times10^{-5}$, which is not statistically significant and consistent with Habib (2008). The results about incremental information content of the cash flow for small companies indicate that the sum of the cash flow level and change coefficients is positive but not statistically significant ($\theta_3 + \theta_4 = 6.0108\times10^{-5}$). The sum of cash flow coefficients is negative and statistically insignificant ($\theta_7 + \theta_8 = -5.0129\times10^{-5}$) for large companies.

6.3. The leverage hypothesis

Table 4 reports that the sum of the earnings per share level and change coefficients for model 6 is negative ($\theta_1 + \theta_2 = -5.9839\times10^{-5}$) and statistically insignificant. For firms with a high degree of leverage, the combined earnings per share regression coefficients increases, $\theta_5 + \theta_6 = 1.19965\times10^{-4}$, but it is statistically insignificant. With respect to the cash flow, the sum of the cash flow level and change coefficients is positive and statistically insignificant ($\theta_3 + \theta_4 = 8.99075\times10^{-5}$) for firms with moderate leverage ratios. For highly leveraged firms, the sum of coefficients is negative and statistically insignificant ($\theta_7 + \theta_8 = -8.99046\times10^{-5}$) for firms with high leverage ratios.

6.4. The growth hypothesis

Table 4 shows that the sum of earnings per share and change coefficients is positive but not statistically significant ($\theta_1 + \theta_2 = 3.0147\times10^{-5}$). The sum of level and change coefficients of cash flow is negative and statistically insignificant ($\theta_3+ \theta_4 =-1.00408\times10^{-5}$). For firms with a high growth, the combined earnings per share regression coefficients is, $\theta_5 + \theta_6 = -4.0127\times10^{-5}$, which is not statistically significant. The sum of cash flow coefficients is positive and statistically insignificant ($\theta_7 + \theta_8 = 8.00575\times10^{-5}$) for high growth firms.

The results indicate that the incremental information content of earnings and cash flows is not affected by firm-specific factors. Prior studies suggest hypotheses to explore these factors. The likely effect of firm size, firm leverage, and growth opportunities on the incremental information content of earnings and cash flows are ambiguous.

7. Conclusion

This study examines the role of earnings, cash flows, and firm specific factors (growth opportunities, financial leverage, firm size and transitory of earnings) in explaining stock returns in Iran. The results do not indicate that earnings and cash flows are value-relevant in Iran. In addition, earnings and cash flows have no incremental information content for explaining security returns. This finding could be due to, considering other factors in decision making on the stock investment by Iranian investors. Also, we find

that both earnings per share and cash flows are not affected by the moderating effects of firm-specific contextual factors.

Iranian Financial Accounting Standards are based on International Financial Reporting Standards (IFRSs). International Accounting Standards Board (IASB) adopts a decision-usefulness perspective in formulating accounting standards (IASB, 2006) and suggests that a majority of the information provided in financial statements about assets and claims and the changes in them are resulted from the application of accrual accounting, although information about cash flows during a period is also important (Habib, 2008). The results of this study do not provide supports for this view in Iranian context.

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