Jordan Journal of Business Administration, Volume **1**, No. **1**, 2005

The Effect of Contextual Factors on the Information Content of Cash Flows in Explaining Stock Prices -The Case of Amman Stock Exchange-

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ABSTRACT

This article aims to determine which is better earnings or cash flows as a performance measure. We follow the more direct approach used in several recent US studies, in which earnings and cash flows are considered as competing variables. Specifically, our methodology is a development of the study of Dechow (1994). We provide a replication of her main analysis, and then extend this to deal with the effect of earnings permanence, earnings growth and firm size on the value relevance of cash flow and earnings. Our study provides an evidence on the relevance of cash flow figures for investors in their investment decision in an emerging stock market. The study covers the case of Amman Stock Exchange (ASE) and employs data on a sample of industrial firms. The time horizon of this study includes the period of 1993-2001. The results of the current study indicate that earnings and cash flows have information content regarding the prediction of future cash flows. Cash flows and earnings separately have a significant association with stock return. The results show that there is no significant difference between the ability of earnings and cash flows in explaining the variation in stock return. Furthermore, as the earnings growth is low and the firm's size is small, the operating cash flow is considered better than earnings as a performance measure.

Keywords: Cash Flow, Earnings, Value Relevance.

INTRODUCTION

In accounting, we have accruals and cash basis to summarize the firm's performance. The result of accruals is called earnings where the result of cash basis is called cash flow. The question raised is which of the two measures is working better in summarizing a firm's performance. Many studies have addressed this issue. However, most of the previous studies have examined the incremental information content for the two measures beyond each other (e.g. Bowen et al., 1987; Wilson, 1987; Livant and Zarowin, 1990; Ali, 1994; Ali and Pope, 1995; Arnold et al., 1991; Clubb, 1995, Charitou et al., 2001) rather than the relative information content. The general conclusion in these studies is that both earnings and cash flows of incremental information content beyond each other. Biddle et al. (1995) distinguished between the two concepts. They argued that, the incremental information content meant to evaluate the information content of one accounting measure beyond the information provided by another accounting measure. On the other hand, relative information content meant to determine whether one measure provides greater information than another. In other words, incremental information content studies address the question of whether cash flows provide information that is not already contained in earnings whereas relative information content studies address the question of which measure (earnings or cash flow) is a relatively superior summary measure of a firm's performance given the choice of one.

The first study that examined directly the relative information content of earnings and cash flows is the study of Dechow (1994). She considers cash flow and earnings as competing performance measures. She argued that determining which measure, earnings or cash flow, is a more useful summary measure of firm performance is of interest since it is not common to use both measures in

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assessing either managers or firm's performance. Dechow also argued that the relative information content of earnings and cash flows is affected by contextual factors such as the magnitude of aggregate accruals.

Locally, there is no study that compares between the two measures as a competing performance measure. However, the local studies are less numerous than the foreign ones, some researchers (eg. Al-Khalayleh, 1998; Al-Deb'i and Abunasar, 1999; Al-Hadad, 2001 and Al-Ra'i, 2001) described and analyzed the relationship between accounting data and stock market returns in the Amman Stock Exchange (ASE). All of these studies came to the conclusion that the relationship does not exist or it is weak. None of these studies tested the effect of contextual factors such as earnings permanence or firm size on the value relevance of cash flows and earnings, though these factors moderate the relationship between earnings (cash flows) and stock return. In this line, Bernard and Stober (1989) argued that the lack of conclusive evidence on the value relevance of cash flows, might be caused by the possibility that the relationship between cash flows and share price is too conditional to draw any general conclusion.

This study extends previous research on the relative information content of earnings and cash flows, respectively that provides an evidence from a Jordanian case on the impact of earnings permanence, growth and firm size on the relative information content of cash flows in relation to stock returns. This study might provide useful information for foreign investors considering investment in the ASE. More value-relevant earnings of cash flow information reduces the information asymmetry between Jordanian listed firms and international investors. This might be important especially if we know that earnings, cash flows, and dividends were all found value-relevant, to varying degrees, in developed stock markets (Vefease et al., 1998). So the question is what is the case of ASE?

The rest of the paper is organized as follows. In the next section, a background of the ASE is presented. The relevant literature and the methodology of the study which include the model specifications are also presented. Finally, the results and the conclusion arrived at, are also presented.

Amman Stock Exchange

ASE was established in 1976 under the provision of the ASE Law 1976, No. 31. The trading activities started on January 1, 1978. The ASE is one of the most developed and sophisticated stock exchange in the Arab world. In fact, Jordan is the only Arab country to be included in the International Financial Corporation's (IFC) index of emerging markets (Al-Khadash, 2003). The creation of the ASE in 1976 led to an increase in the need for useful financial information, which would help investors in making informed investment decisions.

Jordan represents a small, open economy, with natural resources sensitive to the world market prices. The industry structure is characterized by processing intermediate products rather than final goods, and such a factor increases this price risk sensitivity. In First, Jordan securities have been considered an attractive investment due to this commodity price risk sensitivity[1]. Second, since the financial market is smaller and obviously less mature than the world's largest stock markets, both the lack of full disclosure of accounting information, as well as lagged price adjustment to value changes may be present.

As the sole financial market in Jordan, the ASE has a major objective, which is to mobilize savings by encouraging investments in securities, thereby channeling savings to serve the interests of the national economy. On the other hand, Jordan Securities Commission (JSC) became responsible for regulating and controlling the issuance of securities and dealings. The ASE began with 57 listed companies in 1978 increasing to 188 companies by 2001. The listed companies are officially grouped into four sectors: Banking and Finance 17 companies; Insurance 26 companies; Services 58 companies; and Industrial (manufacturing) 87 companies. This study put emphasis on the industrial sector. The biggest and leading sector in the ASE.

Consequently, the ASE is an emerging sophisticated market and some previous studies that are conducted in ASE concluded that much is still needed to find out those factors expected to affect the level of stock market prices. This study aims toward such direction.

Literature Review

Since 1968, extensive research has addressed the

1The price risk sensitivity comes as a result of depending on other markets' circumstances which are providing raw and intermediate products, and sometimes such products are mainly from outside the country. Consequently, such case is affecting the market share prices, and that leads to price risk sensitivity, which is attracting some short-term investors who are looking for abnormal returns on share prices.

information content and the incremental information content of earnings and cash flow. These studies based on the relationship between earnings and cash flows with share prices have provided mixed evidence on the incremental information content of cash flows. For instance, Bowen et al.(1987), Ali (1994), Ali and Pope (1995) among others, found that cash flows have information content beyond the information that already exists in earnings. On the other hand, Board et al. (1989), Board and Day (1989), Bernard and Stober (1989) Clubb (1995), among others, found that cash flow had no information content beyond that existing in earnings. Because the main concern for the above studies was to examine the incremental information content, it did not directly assess whether reported earning is a superior measure to cash flow (Dechow, 1994).

The influential research in the cash-earnings literature is the study of Dechow (1994). Contrary to the previous studies, Dechow considered cash flow and earnings as competing performance measures. She argued that her method enables her to determine which of them is better, earnings or cash flow in summarizing firms' performance. Dechow employed Vuong's (1989) test for selecting the better model based on the value of R-squared derived from the separate regression of stock returns on earnings and cash flows. Eventually, she concluded that earnings are better indicators for a firm performance than cash flows.

The general conclusion which can be made here is that there is an inconclusive evidence on the incremental information content of cash flows and on its value relevance. The mixed results may be because of the nature of the relation between cash flows and earning or as a result of the methodology used to test the relationship. Furthermore, a number of studies assumed that the relation between earnings and cash flows with stock return is not affected by the firm's characteristics. However, as it has been mentioned before, Bernard and Stober (1989) stated that the relation between stock return and accounting number might be too conditional to draw any general conclusion. Prior studies reported evidence on the effect of different firms' characteristics on the value relevance of cash flows and accruals. Earnings permanence and quality both affect the value relevance of cash flows (Dechow, (1994); Cheng et al., (1996); Ali, (1994); Ali and Pope, (1995); Green (1999); Charitou et al., (2001)). The level of cash flows also influences the value relevance of earnings (Wilson, (1986, 1987); Ali, (1994); Ali and Pope, (1995)), as does the length of operating cash cycl. (Dechow, (1994), Barth et al., (2001)).

The other main point is whether to test the relationship between cash flows and stock prices or stock returns. This study relates stock return rather than stock prices, so it focuses on the return models more than on price models. Cho and Jung (1991) compared different model specifications in their critical review of the empirical evidence and the theoretical aspects of earnings price studies from 1980-1991. They suggest that price models are less biased than return models; however, price models have fewer econometric problems. Similarly, Christie (1987) concludes that, while return and price models are economically equivalent, return models are econometrically less problematic.

Based on the prior studies and following Dechow (1994), this study by employing the ASE data, aims to test which of the two variables better summarizes the performance of industrial Jordanian companies, earnings or cash flows. Since the value relevance of cash flows may vary across companies, we extended Dechow's study by examining the effect of earnings' permanence, firm size, and earnings' growth on the ability of earnings and cash flow as a performance measure. The discussions about these three factors are as follows:

Earning Permanence

It is expected that earnings permanence (as measured by the magnitude of $|\Delta E|$, following Cheng et al., 1996) has an impact on the information content of cash flows in relation to stock returns. We expect here that when earnings are permanent (transitory), earnings (cash flow) will be better than cash flow (earnings) as a performance measure for a firm. Cheng et al. (1996) have previously examined the effect of the earnings permanence on the information content of cash flows and earnings. They argued that disclosing cash flow from operation will play a more significant role as an additional value signal when the earnings have more transitory items. Their empirical evidences were consistent with their argument. The coefficients of earnings (cash flow) decreased (increased) significantly when earnings were transitory. A later study of Charitou et al. (2001), provided a UK evidence on the impact of earnings permanence on the incremental information content of earnings and cash flows in relation to security returns. Their results were consistent with Cheng's et al. results in that the coefficient of earnings

significantly decreased when earnings become transitory. Regarding the coefficient of cash flows, contrary to Cheng's et al. results, there was no significant evidence on the increase for the coefficient of cash flows when earnings were transitory.

Earnings Growth

Charitou et al. (2001) argued that there is strong evidence of a higher earnings coefficient for high growth firms and little evidence that the cash flow coefficient is higher for high growth firms. They argued that high earnings growth reflect information about the persistence of earnings. In other words, investors received the information about the growth as this will sustain in the long term. Thus, we can argue that earnings will be better than cash flows as a performance measure for high growth companies. This argument will be tested in case of the ASE. We follow Charitou et al. (2001) in measuring earnings growth. So we will use the market value to book value ratio as an indicator for earnings growth.

Firm Size

There are two countervailing influence in testing the potential variation in the usefulness of earnings or cash flows across size categories. Vefease et al. (1998) argued that earnings should be more informative for smaller firms for which there are fewer alternative information sources compared to large firms. On the other hand, in a small market firms face a significant credibility problem; since larger firms draw more publicity and are more closely followed, their earnings quality is likely to be known with less uncertainty compared to smaller firms. Charitou et al. (2001) hypothesized and concluded that both earnings and cash flow coefficients are lower for large firms and that partly due to information environment reasons. For the purpose of this study, we used market value as a measure for a firm size.

Above all, none of the local studies about the ASE has tested the value relevance of cash flows and earnings and none of them examined the effect of earnings permanence, growth and firm size on the value relevance of cash flows. Some of them such as Garaybeh and Dawod (1988) who tested the association between accounting information and stock market returns, are concluded that the earnings to capital, the earnings to owner's equity and dividend were the most ratios affecting the stock market prices. Also, a study of Al-Khalayleh (1998) who examined the association between cash inflows and stock returns for listed companies in the ASE concluded that there is no significant relationship between cash inflows and stock returns in both the short and long run. Al-Hadad (2001) confirmed Al-Khalayleh's conclusion by testing the association between the unexpected stock returns and the cash inflows from operating, investing and financing activities for 44 industrial and service Jordanian listed companies. Recently, a study of Siam and Al-Khadash (2003) also concluded that there was no association between cash flow measures and stock prices for the industrial companies in the ASE.

Hypotheses of the Study

From the above discussion, the hypotheses of this study will be as follows in a null form:

1. There is a stronger contemporaneous association between earnings and stock returns than between cash flows and stock returns.
2. The lower the absolute magnitude of change in earnings (as measurement of earnings permanence), the higher contemporaneous association of earnings with stock returns relative to the contemporaneous association of cash flows with stock return.
3. The higher market value to book value ratio (as measurement of earnings' growth) for a firm, the higher contemporaneous association of earnings with stock returns relative to the contemporaneous association of cash flows with stock return.
4. The higher market value (as measurement for firm's size) for a firm, the higher contemporaneous association of earnings with stock returns relative to the contemporaneous association of cash flows with stock return.

Methodology of the Study

The Sample and its Selection Criteria

Twenty nine Jordanian industrial companies were selected from the ASE at the end of 2001 on the following criteria: being domestic firms only; availability of stock market prices at the time of collection; availability of the annual reports for the period of the study.

The Data

The data set consists of the monthly closing prices of the firms from 1993 to 2001. It also consists of cash flow

and earnings figures obtained or calculated from annual reports and from the Jordanian Shareholding Companies Guide issued by the ASE. Earnings permanence, growth and firm size were, calculated based on the annual reports. Therefore, in the absence of database, the necessary information was collected manually from the firms' annual reports. The appendix indicates the companies included in the study and the years for which available financial information exists. The total number of observations was approximately 150. After eliminating the companies that do not have enough data for calculating the variables of the study and eliminating the observations that have absolute standard residual more than 3, the final number of the observations is 117 firm-year observations.

The Measurement of Variables

The variables used in this study are defined as follows:

R_{it}: security returns for security in í in period t that is calculated as follows

$$R_{it} = (P_{it+5} - P_{it}) / P_{it}$$

Where:

P_{it+5}= security price of the firm at the end of May after the fiscal-year end.

P_{it}= security price of the firm at the beginning of January after the fiscal year end.

The Econometric Models

$$R_{it} = \alpha + \beta E_{it} + \varepsilon \qquad \text{(Model 1)}$$

$$R_{it} = \alpha + \beta OCF_{it} + \varepsilon \qquad \text{(Model 2)}$$

E_{it} : Operating earnings for firm í in year t defined as net income before extraordinary items, discounted operations, special items for firm í in year t.

OCF_{it} : Cash flow from operation for firm í in year t. If the firm does not publish a cash flow statement in year t, it is defined as operating income adjusted for all non-current accruals not affecting working capital (e.g. depreciation) plus net changes in working capital accounts related to operations, except for changes in cash, marketable securities.

Results and Conclusions

Descriptive Statistics:

Table (1) reports the characteristics for the variables used in this study. Panel A shows the descriptive statistics for the variables used in the models. The mean value of earnings (E) is 0.10 with the standard deviation 0.16. This value ranges from a minimum -0.17 to a maximum of 1.27, with a median of 0.08. Operating Cash Flows (OCF) has a mean value of 0.10with standard deviation of 0.19. The minimum value is -1.01 and the maximum value is 0.91. Consistent with prior studies (e.g., Dechow, 1994) these numbers reveal that OCF has a larger median, with a larger standard deviation than E. This is primary because of accruals. Accruals reduce earnings' value, especially depreciation, and at the same time smooth earnings' value which as a result reduce earnings' volatility.

Panel B, in table (1), shows the correlation matrix for the set of the variables. Earnings are significantly positively correlated with stock return. Operating cash flow is also significantly positively correlated with stock return. The Pearson correlation coefficient between E (OCF) and stock return is 0.22 (0.22) which may suggest that both earnings and cash flow has the same ability in explaining the variation in stock return. However, these coefficients do not provide reliable indicators of association in a manner, which controls for additional explanatory variables.

The Empirical Results:

This study uses data pooled across firms and years in order to examine the explanatory power of earnings and cash flows with respect to stock return. The models' goodness of fit (adjusted R-squared) is considered the main criterion to distinguish between any differences in explaining the stock return. As the aim of this study is to determine which measure has more ability in summarizing a firm performance (more ability in explaining the variation in stock return), a Vuong test is used. The Vuong- test proposed by Vuong (1989) aims to test the null hypothesis that the competing models have the same explanatory power with the alternative hypothesis that one of them is closer to a true model. This test allows for the competing models to have explanatory power and provides direction concerning which of them is better compared to the other[2].

A potential problem with our regression models is heteroscedasticity. To reduce this problem, all variables are deflated by the market value at the end of fiscal year: this procedure is used in other studies. In addition, White (1980) heteroscedasticity-corrected standard errors are

2 For more details see Vuong (1989), and Dechow (1994, appendix 2).

used to conduct t-tests for regression parameters. Other potential problems include autocorrelation. The Durbin-Watson test is used. The d values indicate that significant first-order autocorrelation, either positive or negative, is not generally a problem here. These diagnostics are untabulated for the sake of brevity.

The Results of the Main Models:

Table (2) summarizes the results of the two models. For model (1), in which earnings is the independent variable, it can be seen that earnings are able to explain 3.9 percent of variation in stock return. The slope coefficient for earnings is significantly positive at the 0.01 level. These together, confirm prior UK and US studies conclusions that earnings have information content regarding the prediction of future cash flows or future returns. Table (2) also reveals that model (2), which contains operating cash flows as the independent variable explains 4 percent of the variation in stock return. The operating cash flow coefficient is significantly positive at the 0.01 level. This leads us to conclude that operating cash flows has a significant association with stock return. This result is consistent with prior price-based UK studies like Ali and Pope (1994), Clubb (1995), (1997) and Charitou and Clubb (1999). However, here in Jordan, no previous studies provide such evidence.

A simple comparison between the adjusted R squared for model (1) and model (2) indicates that the ability of cash flows and earnings in predicting future cash flows is different. In fact, operating cash flows are better than earnings in explaining the variation in stock return. However, this simple comparison is naïve, therefore A Z-vuong test is used to determine if the difference between the adjusted R-squared is significant or not. The result of Z-Vuong test reveals that Z-Vuong= 0.1 which is not significant at any reasonable level. In other words, there is no significant difference between the ability of earnings and cash flows in explaining the variation in stock return.

To sum up, the results at the whole sample level, indicate that when we look at earnings and cash flows as competing variables, both have the same association with stock return. In the next sections we will examine if this conclusion is affected by firm characteristics.

The Effect of Contextual Variables

To examine the effect of our contextual variables on the value relevance of earnings and cash flows, partitions of the data are used. Therefore, the primary sample is divided into two groups (quintiles) according to the level of the contextual variable. The division is made based on the value of the median.

The Effect of Earnings Permanence:

The second hypothesis states that when earnings are permanent (transitory) the association between earnings with stock return is stronger (weaker) than the association between cash flows with stock return. The results as reported in table (3), Panel A, reveal that when earnings are permanent, the adjusted R-squared for model (1) is 14.6 percent where it is 10.8 for model (2). The results also reveal that the coefficients for both earnings and cash flows are significantly positive at 0.01. The difference in the adjusted R-squared for models (1) and (2) is 3.8 percent. The Z-Vuong's test reveals that this difference is statistically significant at 0.05 level. These results support our hypothesis.

When earnings are transitory, the results as can be seen in table (3-Panel B) reveal that the adjusted Rs-squared for models (1) and (2) are very low and close to zero. These results may indicate that when the magnitude of change in earnings (in absolute value) is great, other variables than earnings or cash flows determine the stock price in the ASE. These results may also suggest that the investors in ASE utilize the information about change earnings in the same manner as in developed countries. The conclusion that the ability of earnings in explaining the variation in stock return diminishes when earnings become transitory is consistent with prior UK evidence by Charitou et al. (2001) and prior US evidence by Cheng et al. (1996).

The Effect of Earnings Growth

The third hypothesis states that when the growth in earnings as measured by market-to-book ratio is low (high) the association between earnings with stock return is stronger (weaker) than between cash flow with stock return. Table (3-panel A) summarizes the results when earnings' growth is low (less than the median). It can be seen that the adjusted R-squared for model (1) is 4 percent where it is 8 percent for model (2). The coefficients (t-value) for earnings and cash flows are 0.19 (1.77) and 0.21 (2.81), respectively. These coefficients are significantly positive at 0.10 level. It can be noticed that operating cash flows has more ability in explaining

the variation in stock return than earnings. However, the Vuong's Z-statistics indicate that this difference is not significant at any reasonable level.

Panel B in the same table reveals that when earnings' growth is high (more than the median) earnings has more ability in explaining the variation in stock return. The adjusted R-squared for model (1) is 2 percent where it is around zero for model (2) where the coefficient of earnings is significantly positive at 0.05 level, the coefficient of cash flows is negative and insignificant. The Vuong's Z-statistics show that the ability of earnings in explaining the variation in stock return is significantly better than the ability of cash flows.

To sum up, we can draw two main conclusions. The first conclusion is that operating cash flows might be considered better than earnings as a performance measure when earning's growth is low since it has higher adjusted R-squared. This might be because investors in ASE might assume that the increase in earnings in low- growth - earnings firms non-persistent. However, the Vuong's test reveals that there is no significant difference between the adjusted R-squared for the two models. The second conclusion can be drawn is that when earning's growth is high, earnings are significantly better than cash flow in explaining the variation in stock return.

The Effect of Firm Size

The size hypothesis states that earnings are better than cash flows as a performance measure for both small and large firms. The results are reported in table (4). Panel A in the same table shows that when firms are small in size, the model that has cash flow as an independent variable has higher adjusted R-squared than the model that has earnings as an independent variable. For model 2 the adjusted R-squared is 1 percent where it is around zero for model 1. The coefficient (t-value) of cash flow is 0.11 (1.59) which is significant at 0.11 level. However, the Vuong's Z-statistics reveal that the difference between the adjusted R-squared for the two models is not statistically significant. In panel B, where firms are large, there is an increase in the ability of the two models in explaining the variation in stock return which indicates that in general talking for large firms accounting data more related with share price than it is for smaller firms. The result of Vuong's test shows that both earnings and operating cash flows have the same ability in explaining the variation in stock return.

Conclusions

This study has investigated the nature of the relationship between stock returns with earnings and cash flows. It aimed to identify which one is better, earnings or cash flow, as a performance measure. It was based on a data sample covering the years 1993-2001. The results of this study indicated that earnings and cash flows have information content regarding the prediction of future cash flow. The results showed that cash flows and earnings separately have a significant association with stock returns, but they are not the same. Earnings were able to explain 3.9% of variation in stock return, while operating cash flows explained 4 % of the variation in stock return.

Furthermore, some contextual variables were utilized to examine their effect on the value relevance of earnings and cash flows. Therefore, the primary sample is divided into two groups according to the level of the contextual variable. The division is made based on the value of the median. These contextual variables are earnings permanence, earnings growth and firm size. The results indicated that when the magnitude of change in earnings was great, other variables than earnings or cash flows, such as some market variables, determine the stock price in the ASE. Furthermore, as the earnings' growth is low and the firms size is small, the operating cash flow is considered better than earnings as a performance measure. Those are good indicators for some investors, researchers and financial analysts, to give more attention to cash flow figures which have a meaningful information at least like some other accounting information.

A fruitful direction for further research would include replicating similar models on a larger sample or different sectors to see whether these results continue to hold for the ASE. The conclusion of the study was directed from the results of this research that might be subject to some limitations such as dealing with the industrial sector and ignoring the other sectors in the ASE.

Table 1
Descriptive Statistics[a,b]
(Sample of 117 Firm-Year Observations, 1993-2001).

Panel A : Descriptive Statistics

	R*	E	OCF
N	117	117	117
Mean	-0.014	0.106	0.104
Median	-0.016	0.081	0.092
Std. Deviation	0.159	0.158	0.188
Minimum	-0.473	-0.172	-1.016
Maximum	0.429	1.269	0.905

Panel B: Correlation Matrix between the Set of the Variables.
Pearson Correlation Coefficient in Regular Type.
Spearman Correlation (non-parametric) Correlation Coefficient in Italic.

	R	E	OCF
R		0.217**	0.221**
P. Value	.	(0.019)	(0.016)
E	*0.180***		0.538**
P. Value	*(0.052)*		(0.000)
OCF	*0.110*	*0.514***	
P. Value	*(0.238)*	*(0.000)*	

** Indicates that the correlation coefficient is significant at the 0.10 level.
a. the variables are deflated by the market value at the beginning of the financial year.
b. the Variables are defined as follows:
E=Earnings= Operating income
OCF=Operating cash flows= Before 1996 it is operating earnings plus depreciation plus net changes in working capital items except for change in cash.
After 1996, it is the disclosed numbers in the financial statements.
R= stock return= the stock return on the first five months of the next year.

Table 2
Summary results for regression stock return on earnings and cash flows separately
(Sample of 117 Firm-Year Observations, 1993-2001).

$R = \alpha + \beta E + \varepsilon$ (Model (1))

$R = \alpha + \beta OCF + \varepsilon$ (Model (2))

Variables are defined as for table 1.

	Model (1)		Model (2)	
	Coefficient	T.value	Coefficient	T.value
Constant	-0.04*	-2.13	-0.03	-2.16
E	0.22*	2.39		
OCF			0.19*	2.57
Adj.R^2%.	3.9		4	
F-test	5.69*		5.93*	
DW	2.11		2.18	
Difference in R^2	0.1			
Vuong's Z-statistic**	0.1			

* Significant at 0.05 level.
**Vuong's Z-statistic refers to Z-statistics from the likehold ratio test proposed by Vuong (1989). A Z-statistics of 2.58 (1.96) implies a significance level of 0.01 (0.05) using two-tailed test.

Table 3
Summary results for regression stock return on earnings and cash flows, by groups formed based on magnitude of change in earnings[a]
(Sample of 117 Firm-Year Observations, 1993-2001).

$R = \alpha + \beta E + \varepsilon$ (Model (1))

$R = \alpha + \beta OCF + \varepsilon$ (Model (2))

Variables are defined as for table 1.

Panel A: The results for the sample that contains firms with change in earnings less than the median.

	Model (1)		Model (2)	
	Coefficient	T.value	Coefficient	T.value
Constant	-0.03	-1.54	-0.02	-0.94
E	0.40*	5.48		
OCF			0.29*	3.85
Adj.R^2%.	15%		11%	
F-test	10.79*		7.93*	
DW	2.2		2.1	
Difference in R^2	-4%			
Vuong's Z-statistic**	-1.96*			

Panel B: The results for the sample that contains firms with change in earnings greater than the median.

	Model (1)		Model (2)	
	Coefficient	T.value	Coefficient	T.value
Constant	-0.03	-1.16	-0.04	-1.67
E	0.01	0.04		
OCF			0.07	0.72
Adj.R^2%.	0		0	
F-test	0.00		0.38	
DW	2.26		2.27	
Difference in R^2	0			
Vuong's Z-statistic**	0			

a. The magnitude change in earnings is used as a proxy for earnings permanence. If the absolute change in earnings is less than median this is taken as indicator that firm's earnings is permanent and vice versa.

* Significant at 0.05 level.

**Vuong's Z-statistic refers to Z-statistics from the likehold ratio test proposed by Vuong (1989). A Z-statistics of 2.58 (1.96) implies a significance level of 0.01 (0.05) using two-tailed test.

Table 4
Summary results for regression stock return on earnings and cash flows, by groups formed based on earnings' growth[a]
(Sample of 117 Firm-Year Observations, 1993-2001).

$R = \alpha + \beta E + \varepsilon$ (Model (1))

$R = \alpha + \beta OCF + \varepsilon$ (Model (2))

Variables are defined as for table 1.

Panel A: The results for the sample that contains low-growth firms.

	Model (1)		**Model (2)**	
	Coefficient	T.value	Coefficient	T.value
Constant	-0.03	-1.18	-0.03	-1.41
E	0.19	1.76		
OCF			0.21*	2.81
Adj.R^2%.	4		8	
F-test	3.37*		6.02*	
DW	2.18		2.33	
Difference in R^2	4			
Vuong's Z-statistic**	1.4			

Panel B: The results for the sample that contains high-growth firms.

	Model (1)		**Model (2)**	
	Coefficient	T.value	Coefficient	T.value
Constant	-0.05	-1.95	-0.02	-0.78
E	0.40*	1.96		
OCF			-0.04	-0.20
Adj.R^2%.	2		0	
F-test	2.13*		0.03	
DW	2.03		1.94	
Difference in R^2	-2			
Vuong's Z-statistic**	-1.94			

a. The growth in earnings is found by calculating the natural logarithm for market value to book value ratio. If the value for the firm is less than the median then the firms is considered a low-growth firm and vice versa.
* Significant at 0.05 level.
**Vuong's Z-statistic refers to Z-statistics from the likehold ratio test proposed by Vuong (1989). A Z-statistics of 2.58 (1.96) implies a significance level of 0.01 (0.05) using two-tailed test.

Table 5
Summary results for regression stock return on earnings and cash flows, by groups formed based on firm's size[a] (Sample of 117 Firm-Year Observations, 1993-2001).

$$R = \alpha + \beta E + \varepsilon \quad \text{(Model (1))}$$

$$R = \alpha + \beta OCF + \varepsilon \quad \text{(Model (2))}$$

Variables are defined as for table 1.
Panel A: The results for the sample that contains small firms.

	Model (1)		**Model (2)**	
	Coefficient	T.value	Coefficient	T.value
Constant	-0.03	-1.19	-0.03	-1.52
E	0.11	0.84		
OCF			0.11	1.60
Adj.R^2%.	0		0.01	
F-test	0.58		1.48	
DW	2.35		2.45	
Difference in R^2	0.01			
Vuong's Z-statistic**	0.85			

Panel B: The results for the sample that contains large firms.

	Model (1)		**Model (2)**	
	Coefficient	T.value	Coefficient	T.value
Constant	-0.04	-1.86	-0.05	-1.82
E	0.28*	3.29		
OCF			0.37*	3.18
Adj.R^2%.	7		9	
F-test	5.61*		6.71*	
DW	1.83		1.82	
Difference in R^2	2			
Vuong's Z-statistic**	0.71			

a. The growth in earnings is found by calculating the natural logarithm for market value. If the value for the firm is less than the median then the firms is considered a small firm and vice versa.
* Significant at 0.05 level.
**Vuong's Z-statistic refers to Z-statistics from the likehold ratio test proposed by Vuong (1989). A Z-statistics of 2.58 (1.96) implies a significance level of 0.01 (0.05) using two-tailed test.

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أيهما أفضل؛ العوائد المحاسبية أم التدفقات النقدية كمقياس للإنجاز المالي؟

– دراسة في سوق عمّان المالية –

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ملخص

يهدف هذا البحث لتحديد ايهما أكثر تفضيلا العوائد المحاسبية أو التدفقات النقدية كمقياس للإنجاز المالي. لقد استخدم في هذا البحث المنهج المستخدم في دراسات عدة مماثلة في الولايات المتحدة الأمريكية التي تناولت كلاً من العوائد والتدفقات النقدية كمتغيرات منافسة عند البحث في تأثيرها على أسعار الأسهم.إن المنهجية المستخدمة في هذه الدراسة هي تطوير لما جاء في دراسة Dechow (1994)، حيث تم استخدام طريقة التحليل الأساسية المستخدمة في تلك الدراسة وتطويرها لتشمل متغيرات رقابية مثل استمرارية واستقرار العوائد ونموها وحجم المنشأة وأثرها على إبراز القيمة التفضيلية للتدفقات النقدية أو للعوائد المحاسبية. إن الدراسة الحالية توفر دليلاً على بيان مدى ملاءمة أرقام التدفقات النقدية عند اتخاذ المستثمرين لقراراتهم الاستثمارية في الأسواق المالية الناشئة. تغطي الدراسة الحالية الشركات الصناعية في سوق عمان المالية وتغطي فترة زمنية تمتد من عام 1993 وحتى عام 2001. أظهرت نتائج الدراسة أن كلا من العوائد والتدفقات النقدية كأرقام محاسبية تتضمن محتوى معلوماتياً فيما يخص التنبؤ بالتدفقات النقدية المستقبلية. كما أظهرت أن كلا من التدفقات النقدية والعوائد المحاسبية لها علاقة مع عوائد الأسهم، وأشارت النتائج أيضا إلى عدم وجود اختلافات ذات دلالة معنوية بين قدرة العوائد المحاسبية والتدفقات النقدية على تفسير الاختلافات في عوائد الأسهم. إضافة إلى ذلك أظهرت الدراسة انه كلما كان نمو العوائد متدنياً وحجم المنشأة صغيراً فإن التدفقات النقدية التشغيلية تعتبر أفضل من العوائد كمقياس للإنجاز المالي.

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