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The effects of book value, net earnings and cash flow on stock price

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C H R O N I C L E	A B S T R A C T
	During the past few years, there have been tremendous studies on measuring the effects of various factors on stock prices. This paper presents an empirical investigation to study the effects of book value, net earnings and cash flow on stock prices of 129 selected firms listed on Tehran Stock Exchange over the period 2007-2012. Using some regression techniques, the study has determined that the effects of book value, net earnings as well as cash flow decreases over the time although the effects of book value is bigger than net earnings and cash flow. However, as time passes on, there is no change on trend of the effects of these components on stock price.

1. Introduction

During the past few years, there have been tremendous studies on measuring the effects of various factors on stock prices (Karunarathne et al., 2011). Ohlson (1995) developed and analyzed a model of a firm's market value as it associated with contemporaneous and future earnings, book values, and dividends. Two owners' equity accounting constructs provided the underpinnings of the model. Their model satisfied many appealing properties, and incorporated a useful benchmark when one conceptualized how market value was associated with accounting data and other information. Ohlson (2001), in other study, revisited his previous study to make a number of points not generally appreciated in the literature. He reported that the residual income valuation (RIV) model did not serve as a crucial centerpiece in the analysis. Instead, RIV played the role of condensing without any impact on the substantive empirical conclusions. Collins et al. (1999) provided an explanation for the anomalous substantially negative price-earnings relation using the simple earnings capitalization model for firms that report losses. They hypothesized and reported that including book value of equity in the valuation specification eliminated the negative relation. Watson and Wells (2005) investigated the association of different earnings and cash flow based measures of firm performance with stock returns to determine the measure(s) that best capture contemporaneous firm performance.

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For profit making firms, earnings based performance measures were detected to be more closely related to stock returns than cash flow based measures. Dumontier and Raffournier (2002) investigated the corresponding evidence in Europe relationship between accounting information and capital markets. Sorros and Belesis (2012) investigated the value relevance of accounting information for the Greek listed firms over the period 1995-2009. They examined the way that two accounting variables, earnings and book value, could influence on share price and reported that the book value and the earnings were value relevant and could explain the share price in the same degree. Livnat and Santicchia (2006) reported that firms with extremely high (low) current quarterly accruals had substantial and negative (positive) abnormal returns through the subsequent four quarters. Halonen et al. (2013) investigated the value relevance of financial reporting and its effect on stock prices in Sweden after the introduction of the new IFRS standards 2005. They reported that value relevance from the balance sheet, measured by BVPS, was increased. They also reported that accounting data explained a high proportion of the stock price. Kwon (2009) investigated the value relevance of book values, earnings and cash flows in firmed from South Korea.

2. The proposed study

This paper presents an empirical investigation to study the effects of book value, net earnings and cash flow on stock prices of selected firms listed on Tehran Stock Exchange over the period 2007-2012. There are three hypotheses associated with the proposed study of this paper as follows,

1. Book value has more effects on stock price than net earnings and cash flow.

2. The effect of book value, net earnings and cash flow increases over the time.

3. There is no change on pattern of the effects of book value, net earnings and cash flow on stock price.

The proposed study excludes insurance and financial firms, considers only firms whose ticker symbols were listed prior to the period of study, concentrates on the shares of the firms whose information were fully available and their fiscal year ends March. Therefore, 129 firms were qualified for the proposed study of this paper. The study uses the models proposed by Myers (1999), Feltham and Ohlson (1995) and Ohlson (1995) to verify the hypotheses of the paper. Let BV_{t-1} be the net earnings of the firm in $t-1$ period, E_t be the net earnings for the current period, t, and S_t be the total number of outstanding shares, respectively. Finally, let P_t and ϵ be the price of firm at time t and residual of the regression function, respectively. The study considers the following five models to examine the hypotheses of the survey,

$$P_t = b_1 + b_2 BV_{t-1}/S_t + \varepsilon_t \tag{1}$$

$$P_t = b_1 + b_2 E_t/S_t + \varepsilon_t \tag{2}$$

$$P_t = b_1 + b_2 CF_t/S_t + \varepsilon_t \tag{3}$$

$$P_t = b_1 + b_2 E_t/S_t + b_3 BV_{t-1}/S_t + \varepsilon_t \tag{4}$$

$$P_t = b_1 + b_2 CF_t/S_t + b_3 BV_{t-1}/S_t + \varepsilon_t \tag{5}$$

Table 1 demonstrates some basic statistics associated with the gathered data. As we can observe from the results of Table 1, the last variable, E/S_t, maintains the minimum standard deviation while P maintains the highest standard deviation.

Table 1
The results of some basic statistics

Variable	Number	Mean	Min	Max	Standard deviation
P	774	4420.54	302	51600	5215.01
BV/S_t	774	2165.76	-12477	12731.2	1754.29
CF/S_t	774	838.135	-5686.1	11711.8	1255.37
E/S_t	774	711.797	-6795.1	8449.14	1121.05

3. The results

In this section, we present details of our findings on testing various hypotheses of the survey.

3.1. The first hypothesis

The first hypothesis of the survey investigates the effects of book value, cash flow and net earnings on stock price. Table 2 demonstrates the results of our survey.

Table 2
The summary of testing the first hypothesis

Year	$P_t = b_1+b_2 bv_{t-1}/S_t +\varepsilon_t$			$P_t = b_1+b_2 E_t/S_t+\varepsilon_t$			$P_t = b_1+b_2 CF_t/S_t+\varepsilon_t$		
	Adj R^2	b_1	b_2	Adj R^2	b_1	b_2	Adj R^2	b_1	b_2
2007	0.50	-321.86	3.74	0.17	27222.05	3.35	0.27	2941.72	2.95
2008	0.35	-677.08	1.95	0.05	4407.56	-1.22	0.34	1785.13	1.87
2009	0.58	-927.98	2.24	0.02	4512.61	-0.79	0.47	1542.48	3.02
2010	0.67	-1297.23	2.87	0.006	4789.66	-0.17	0.13	3605.31	1.59
2011	0.41	886.776	1.719	0.004	4406.52	-0.26	0.22	2875.54	2.00
2012	0.0	1899.58	1.179	0.01	4210.79	0.44	0.26	2583.98	1.94
2007-2012	0.42	242.93	1.929	0.001	4383.35	0.07	0.25	2645.46	2.11

As we can observe from the results of Table 2, the effects of book value, $b_2 = 1.929$, is much bigger than the effects of earnings, $b_2 = 0.07$, and cash flow, $b_2 = 2.11$. In addition, the adjusted R-Square for the effect of book value is higher than the other two variables. Therefore, the first hypothesis of the survey has been confirmed.

3.2. The second hypothesis: The trend of the effects of variables

The second hypotheses of the survey studies whether the trends of the effects of three variables are non-increasing or not and our survey results in Table 2 indicate that, indeed, they follow a non-increasing trends. Therefore, the second hypothesis of the survey has been confirmed.

3.3. The third hypothesis

In this section, we present the summary of the second and the third hypotheses of the survey. Table 3 demonstrates the results of our investigation. According to the results of Table 3, we do not see any change on the patterns of three influential variables including book value, cash flow and net earnings. This confirms the third hypothesis of the survey.

Table 3
The summary of testing the second and the third hypotheses

Year	$P_t=b_1+b_2E_t/S_t+b_3BV_{t-1}/S_t+\varepsilon_t$				$P_t=b_1+b_2CF_t/S_t+b_3BV_{t-1}/S_t+\varepsilon_t$			
	Adj R^2	b_1	b_2	b_3	Adj R^2	b_1	b_2	b_3
2007	0.50	-3279.81	0.28	3.86	0.53	-2805.10	1.20	3.16
2008	0.38	-35.60	-0.86	1.88	0.44	-303.91	1.16	1.25
2009	0.61	-575.01	-0.78	2.24	0.73	-1278.20	1.89	1.67
2010	0.71	-1332.63	-0.80	2.99	0.69	-1405.82	0.60	2.71
2011	0.47	882.20	-1.16	1.92	0.48	551.76	1.21	1.45
2012	0.42	1775.88	-0.85	1.44	0.46	1217.39	1.25	0.94
2007-2012	0.44	300.94	-0.80	2.07	0.49	4.40	1.21	1.57

4. Conclusion

In this paper, we have presented an empirical investigation to study the effects of book value, cash flow and net earnings on stock price on selected firms on Tehran Stock Exchange. The proposed study of this paper has gathered the necessary data over a six year period from 774 firm-year observations and using some existing regression model has examined three hypotheses of the survey. The results of our survey have confirmed that while three variables influenced on stock price, the effect of book value was stronger and the pattern did not change. The results of our survey are consistent with findings of Sorros and Belesis (2012).

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