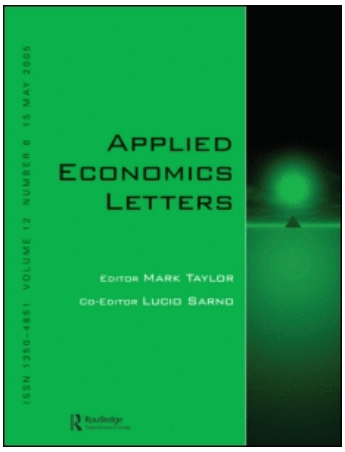

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Khaled Hussainey [a]
[a] Department of Accounting and Finance, University of Stirling, Stirling, UK

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Do dividends signal information about future earnings?

Khaled Hussainey

Department of Accounting and Finance, University of Stirling, Stirling FK9 4LA, UK
E-mail: khaled.hussainey@stir.ac.uk

This article aims to examine the extent to which dividends signal information about future earnings. It examines the effects of dividend payment status and the change in dividend payment on the relation between current stock returns and future earnings. The results show that dividends contain value relevant information about future earnings and that this information is incorporated into current stock returns. In particular, we find that firms that pay dividends at the current year exhibit higher levels of share price anticipation of earnings than nondividend-paying firms. We also find that the change in dividends is positively related to changes in the importance of future earnings news for current stock returns. Finally, we find that the relevance of dividends for forecasting future earnings is greater for loss-making firms than for profitable firms.

I. Introduction

In a recent article, Hanlon *et al.* (2008) examined the impact of dividend payment status on the stock market's ability to anticipate future earnings for a sample of US firms. They tested the association between current-year stock returns and future earnings for dividend-paying and nondividend-paying firms. They found that dividend-paying firms exhibit significantly higher levels of share price anticipation of earnings than nondividend-paying firms. The present article contributes to the literature in three crucial issues. First, it examines the association between dividends and share price anticipation of earnings for UK firms. Second, it examines the extent to which the change in dividends signals relevant information for the stock market about future earnings. Finally, it tests the extent to which the associations between dividends and share price anticipation of earnings differ between loss-making and profitable firms.

II. Methodology

We use the Collins *et al.* (1994) returns–future earnings regression model. However, we include only two future earnings growth variables in our regression ($N = 2$ and $k = 1, 2$) rather than three future years. In defining the earnings growth variable, we deflate earnings change by price and not by lagged earnings. The latter adjustment is made to preserve a maximum number of observations for our tests (Hussainey *et al.*, 2003). These adjustments yield the following modified model:

$$R_t = b_0 + b_1 X_t + \sum_{k=1}^{2} b_{k+1} X_{t+k} + \sum_{k=1}^{2} b_{k+N+1} R_{t+k} + b_{2N+2} EP_{t-1} + b_{2N+3} AG_t + u_t \quad (1)$$

Where:

b_0: intercept
$b_1 - b_8$: coefficient of slope parameters
μ: error term
R_t: stock return for period t
R_{t+1}: stock return for period $t + 1$
R_{t+2}: stock return for period $t + 2$
X_t: earnings change per share in period t deflated by the share price 4 months after the end of the financial year $t - 1$

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X_{t+1}: earnings change per share in period $t + 1$ deflated by the share price 4 months after the end of the financial year $t - 1$
X_{t+2}: earnings change per share in period $t + 2$ deflated by the share price 4 months after the end of the financial year $t - 1$
EP_{t-1}: earnings yield defined as earnings per share for period $t - 1$ divided by share price 4 months after the end of the financial year $t - 1$
AG_t: total asset growth for period t

Furthermore, we expand the above model by including a dividends dummy variable (*Div*) to examine its potential value to investors. We interact all right-hand side variables with this dummy (1 = firms that pay dividends or firms that increase dividends; 0 otherwise). Interacting these variables with dividends dummy produces the following equation (our main regression model):

$$R_t = b_0 + b_1 X_t + \sum_{k=1}^{2} b_{k+1} X_{t+k} + \sum_{k=1}^{2} b_{k+3} R_{t+k} + b_6 EP_{t-1} + b_7 AG_t + b_8 Div + b_9 [Div * X_t] + \sum_{k=1}^{2} b_{k+9} [Div * X_{t+k}] + \sum_{k=1}^{2} b_{k+11} [Div * R_{t+k}] + b_{14} [Div * EP_{t-1}] + b_{15} [Div * AG_t] + u_t \quad (2)$$

III. Data

Schleicher *et al.* (2007) examined the association between disclosure and share price anticipation of earnings. Their sample size was 4568 firms-years for the period 1996 to 2002. The present study uses the same sample used by Schleicher *et al.* (2007) to examine the effect of dividends on share price anticipation of earnings. However, the number of firms is reduced further due to missing dividends data.

Accounting and return data are collected from *Datastream*. Earnings measure is operating income before all exceptional items (*Worldscope* item 01250). Earnings per share is calculated by dividing item 01250 by the outstanding number of shares. Returns are calculated as buy-and-hold returns (inclusive of dividends) over a 12-month period from 8 months before the financial year end to 4 months after the financial year end. Earnings yield, EP_{t-1}, is defined as period $(t - 1)$'s earnings over share price 4 months after the financial year end of period $t - 1$. AG_t is the growth rate of book value of total assets (*Worldscope* item 02999) for period t. Dividends measure is dividends per share (*Worldscope* item 05101).

IV. Empirical Results

We examine the effect of dividend payment status/the change in dividends on share price anticipation of earnings. Tables 1 and 2 present the results. Column 2 (3) presents the results of loss-making (profitable) firms. Column 4 presents the results for the whole sample.

For the whole sample, consistent with prior studies, Table 1 shows that the coefficient on X_t is positive and significant at the 1% level. Additionally, there is evidence of share price anticipation of earnings 1 year ahead for firms that did not pay dividends at the current year. The coefficient on X_{t+1} is positive with a p-value of 0.030. The incremental predictive value of dividends for anticipating future earnings is

Table 1. Dividend payers versus nondividend payers

Independent variable	Loss-making firms	Profitable firms	Full sample
Intercept	–0.12***	–0.02	–0.03
	(0.002)	(0.666)	(0.184)
X_t	–0.30	1.95***	1.44***
	(0.273)	(0.001)	(0.000)
X_{t+1}	–0.57*	1.32***	0.48**
	(0.070)	(0.003)	(0.030)
X_{t+2}	–0.90**	0.30	0.12
	(0.011)	(0.319)	(0.620)
R_{t+1}	0.01	–0.05	0.03
	(0.895)	(0.445)	(0.413)
R_{t+2}	–0.15***	–0.15***	–0.16
	(0.001)	(0.009)	(0.001)
AG_t	0.07**	0.15*	0.10***
	(0.045)	(0.092)	(0.005)
EP_{t-1}	–0.69***	0.99**	0.86***
	(0.005)	(0.018)	(0.001)
Div	–0.03	–0.03	0.00
	(0.573)	(0.652)	(0.968)
$Div * X_t$	0.23	1.03**	1.10***
	(0.589)	(0.024)	(0.001)
$Div * X_{t+1}$	1.03**	0.37	1.08***
	(0.024)	(0.418)	(0.001)
$Div * X_{t+2}$	0.70	0.39	0.45*
	(0.120)	(0.224)	(0.084)
$Div * R_{t+1}$	–0.01	–0.02	–0.08*
	(0.848)	(0.798)	(0.066)
$Div * R_{t+2}$	0.21***	0.05	0.07**
	(0.000)	(0.407)	(0.018)
$Div * AG_t$	0.07	0.02	0.03
	(0.297)	(0.835)	(0.408)
$Div * EP_{t-1}$	–0.16	0.13	0.17
	(0.703)	(0.756)	(0.431)
Observations	761	3766	4550
Full model adj. R^2	0.0698	0.1971	0.1799

*, ** and *** indicate significance at 10, 5 and 1% levels, respectively.

Table 2. Dividend increasers versus dividend nonincreasers

Independent variable	Loss-making firms	Profitable firms	Full sample
Intercept	–0.13***	–0.14***	–0.08***
	(0.001)	(0.001)	(0.001)
X_t	–0.21	2.43***	1.57***
	(0.377)	(0.001)	(0.001)
X_{t+1}	–0.38	1.49***	0.84***
	(0.146)	(0.001)	(0.001)
X_{t+2}	–0.68**	0.46***	0.34**
	(0.025)	(0.005)	(0.030)
R_{t+1}	0.02	–0.06*	0.01
	(0.694)	(0.062)	(0.836)
R_{t+2}	–0.13***	–0.13***	–0.14***
	(0.001)	(0.001)	(0.001)
AG_t	0.12***	0.18***	0.13***
	(0.008)	(0.001)	(0.001)
EP_{t-1}	–0.59***	1.31***	0.82***
	(0.006)	(0.001)	(0.001)
Div	0.03	0.14***	0.10***
	(0.749)	(0.001)	(0.001)
$Div * X_t$	–0.24	0.55*	0.97***
	(0.599)	(0.097)	(0.001)
$Div * X_{t+1}$	1.35**	0.17	0.73***
	(0.013)	(0.542)	(0.001)
$Div * X_{t+2}$	–0.10	0.27	0.17
	(0.876)	(0.219)	(0.437)
$Div * R_{t+1}$	–0.08	0.00	–0.06
	(0.760)	(0.996)	(0.136)
$Div * R_{t+2}$	0.16*	0.04	0.06**
	(0.094)	(0.234)	(0.043)
$Div * AG_t$	–0.05	–0.04	–0.02
	(0.462)	(0.500)	(0.559)
$Div * EP_{t-1}$	–0.65	–0.42*	0.08
	(0.311)	(0.081)	(0.662)
Observations	745	3728	4490
Full model adj. R^2	0.068	0.203	0.184

*, ** and *** indicate significance at 10, 5 and 1% levels, respectively.

given by the estimate coefficients on $Div * X_{t+1}$ and $Div * X_{t+2}$. These coefficients are positive and significant at the 1 and 10% levels, respectively. These results indicate that current stock returns incorporate future earnings information much more strongly for dividend-paying firms than nondividend-paying firms.

Table 1 reveals a number of significant differences between loss-making and profitable firms:

First: The current earnings variable exhibits a higher earnings response coefficient for profitable firms than loss-making firms. The coefficient on X_t is 1.95 with a p-value of 0.001 for profitable firms, while it is insignificantly negative for loss-making firms. This is consistent with the results obtained by Hayn (1995), who found that the strength of the relation between annual stock returns and same-period earnings changes is lower for loss-making firms than for profitable firms.

Second: There is no evidence of share price anticipation of earnings for loss-making firms that pay no dividends. For these firms, the coefficients on X_{t+1} and X_{t+2} are negative. This indicates that the stock market is unable to anticipate future earnings changes for loss-making firms that pay no dividends at the current year. In contrast, there is strong evidence that profitable firms that do not pay dividends do exhibit share price anticipation for 1 year ahead. The coefficient on X_{t+1} is positive and significant at the 1% level.

Third: For the effect of dividend payment status on prices leading earnings, we find that the coefficient on $Div * X_{t+1}$ for loss-making firms is 1.03 with a p-value of 0.024. This coefficient indicates that paying dividends at the current year improves the stock market's ability to anticipate future earnings 1 year ahead for loss-making firms. In contrast, there is no significant effect of dividend payment status on share price anticipation of earnings for profitable firms. The coefficient on $Div * X_{t+1}$ for profitable firms is positive, but insignificant.

Overall, our evidence for profitable firms suggests that the market is able to anticipate future earnings changes 1 year ahead, but this ability is neither related to nor enhanced by paying dividends at the current year. The evidence for loss-making firms supports the view that the market has particular difficulties in predicting such firms' future earnings changes, but that this difficulty is partially overcome by paying dividends at the current year.

We also statistically test the extent to which the association between share price anticipation of earnings and dividend payment status is significantly stronger for loss-making firms than for profitable firms. We undertake this test by including all firms in one data set and creating a dummy variable that is equal to 1 for loss-making firms and 0 otherwise. We interact the loss dummy variable throughout the model. This analysis shows that the coefficient estimate on $Loss * Div * X_{t+1}$ is positive and significant at the 1% level (not reported in the table). This suggests that the strength of the degree of association between share price anticipation of earnings and dividend payment status is stronger for loss-making firms than for profitable firms.

Similarly, we test the effect of the change in dividends on share price anticipation of earnings. We also examine the extent to which the association between the change in dividends and share price anticipation of earnings varies between loss-making firms and profitable firms. Table 2 presents the results.

The results in Table 2 are quite similar to those presented in Table 1. In particular, we find evidence of share price anticipation of earnings 2 years ahead for the whole sample. We also find that increasing dividend levels over time is positively associated with high levels of share price anticipation of earnings.

For loss-making firms, we find that the stock market has difficulties in predicting such firms' future earnings changes, but that this difficulty is overcome by the increasing dividends levels over time. The coefficient on $Div * X_{t+1}$ for loss-making firms is 1.53 and statistically significant. For profitable firms, on the other hand, we find that the market is able to anticipate future earnings changes 2 years ahead, but this ability is neither related to nor improved by increasing dividends over time. The coefficient on $Div * X_{t+1}$ for profitable firms is positive, but insignificant. Finally, we statistically test the actual differences between profitable firms and loss-making firms. We find that the strength of the degree of association between share price anticipation of earnings and dividend payment status is statistically stronger for loss-making firms than for profitable firms at the 1% level (not reported in the table).

V. Conclusion

The article has examined two important research issues. The first of these issues is the effects of dividend payment status and the increase in dividends over time on the relation between current stock returns and future earnings. The second of these issues is the extent to which the consequences of dividend payment status and the change in dividends levels on share price anticipation of earnings varies between profitable and loss-making firms. The article adds to the literature by providing evidence that firms that pay dividends or that increase dividends levels exhibit higher levels of share price anticipation of earnings than non-dividend-paying (nonincreasers) firms. It also provides evidence that the association of dividend with share price anticipation of earnings is statistically significant for loss-making firms and insignificant for profitable firms. Our findings suggest that loss-making firms use dividends as to signal their future prospects to the stock market participants.

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