Dividend Changes and Future Profitability: Evidence from the Turkish Stock Market

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Abstract

Most of the previous studies on dividends in Turkey have focused on the effects of dividend announcements. There has been no study investigating the relation between dividend changes and the future profitability of firms. This study investigates this relation by using both ordinary and panel data regression on a data set consisting of 1,239 dividend payouts from 123 companies listed in Borsa Istanbul during the period 2004-2014. This study is unable to demonstrate that dividend changes are related to changes in future earnings. No evidence is found to support the dividend signaling theory, which claims that dividends serve as indicators of the future profitability of firms. On the other hand, future profitability is found to be strongly correlated with profitability in the previous year.

Keywords: dividend changes, future profitability, information content of dividend, dividend signaling theory

1. Introduction

The question as to whether or not dividends or dividend changes convey information about future profitability has been the subject of studies for over 50 years. The *dividend signaling theory* has been proposed as an answer to this question. Although numerous empirical studies have tested this theory, the issue as to whether or not dividends or dividend changes contain information on the future profitability still needs clarification.

The information content of dividends was first proposed by Lintner (1956) and Miller and Modigliani (1961) and was formulized as the signaling theory by Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985). According to this theory, dividend changes contain information on future profitability.

Examples of studies that test the relation between dividends and future profitability include Watts (1973); Gonedes (1978); Penman (1984), Healy and Palepu (1988); Aharony and Dotan (1994), DeAngelo, DeAngelo and Skinner (1996); Bernartzi, Michaely and Thaler (1997); Nissim and Ziv (2001); Grullon, Michaely, Benartzi and Thaler (2005); Zhau and Ruland (2006); Hussainey (2009); Choi, Ju and Park (2011); Lee, Isa and Lim (2012); and Demontis (2013). While some of these studies conclude with results supporting the dividend signaling theory, some have reached contrary findings.

In Turkey, the following studies have reached conclusions regarding the information content of dividends by analyzing whether dividend announcements cause abnormal returns or changes in price: Aydoğan and Muradoğlu (1998); Muradoğlu and Aydoğan (2003); Batchelor and Orakcıoğlu (2003); Kadıoğlu (2008); Yılmaz and Selçuk (2010); Günalp, Kadıoğlu and Kılıç (2010); Gullajov (2014); and Kadıoğlu, Telçeken and Öcal (2015). On the other hand, the relation between dividends and future profitability has not been tested. Therefore, this study is the first to test the information content of dividends and the relation between dividends or dividend changes and future profitability in Turkey.

In order the test the relationship in question, this study utilizes the data of all companies distributing dividends in cash during the period 2004-2014. In this study, 1,239 dividend payouts of 123 companies listed in Borsa Istanbul are analyzed with regard to profit after tax, earnings per share and return on equity using ordinary and panel regression.

In conjunction with improvements in capital markets, previous studies on Turkish Stock Market found that the market gives reaction to dividend announcement, it is expected that changes in dividends will have likelihood of conveying information regarding the future profitability.

The data concerning 1,239 dividends of 123 companies listed in Borsa Istanbul are analyzed using five different models introduced by Bernartzi, Michaely and Thaler (1997); improved by Nissim and Ziv (2001); and later used by Grullon, Michaely; Benartzi and Thaler (2005); Lukose and Rao (2010); Choi, Ju and Park (2011); and Lee, Isa and Lim (2012). No statistically significant relation is found between dividend changes and changes in earnings over the following two years. Therefore, it is concluded that dividend changes do not convey information on future profitability, and the dividend signaling theory is not supported. On the other hand, the future profitability or future earnings changes are found to correlate strongly with profitability in the previous year.

The second section of the study consists of a literature review, theories on the subject in question and the results of empirical studies conducted thus far. The third section presents the data set and method of empirical analysis used within the study. The fourth section discusses the results obtained. The final section summarizes the conclusions.

2. Literature Review

Information content of dividends was first suggested by Lintner (1956) and Miller and Modigliani (1961) and later formulized by Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985) as the *signaling theory*. The theory of signaling theory argues that dividend changes convey information regarding future profitability of the firms.

The phenomenon of information content of dividend started with Lintner (1956), who proposed that company managers believe that dividend changes correlate more strongly with permanent profit changes than with temporary ones. Furthermore, company managers possess a deeper-than-average knowledge of a company's future profitability and cash flows, and one of the most important factors that they consider when determining its dividend policy is the company's future profitability. On the other hand, managers prefer stable dividend payouts; therefore, they look unfavorably upon radical changes in dividend distribution. For this reason, current dividend ratios are changed gradually in order to reach a target dividend payout ratio.

Even though Miller and Modigliani (1961) argued that dividends do not change a company's capital structure or value in a system of perfect competition and no taxes, they accept that dividends can convey information because company managers acquire special knowledge concerning the future performance of a company. They claim that managers use dividends as a tool to signal a company's future profitability. According to Bhattacharya (1979), under imperfect market conditions, dividends are a costly signaling method used for removing asymmetrical information between company managers and shareholders regarding future cash flows of the company.

Although the information content of dividends has not been modeled perfectly, information content and the signaling theory have been tested in two ways: Firstly, the relation between dividends or dividend changes and future profitability or changes in earnings have been analyzed. Secondly, it has been investigated as to whether or not announcements regarding dividends cause abnormal returns or price changes around declaration date[1].

Watts (1973) conducted the first empirical study of the information content of dividends. His study attempted to predict the relation between dividend changes and future profitability by using future profits and current dividends. Watts concluded that a relation exists, although weak, between unexpected changes in dividends and future profits. Following Watts' study, Genodes (1978), Penman (1984), and Aharony and Dotan (1994) conducted research yielding stronger results in the American context.

A positive correlation was found between dividend changes and future profitability according to analyses made by Nissim and Ziv (2001), conducted using 100,666 dividends during the period 1963-1998, and Zhau and Ruland (2006), conducted using 40,968 dividends during the period 1950-2003. Healy and Palepu (1988), conducted a study on distributing or withholding dividends for the period 1969-1989. The results suggested that managers attempt to give signals regarding their company's future earnings.

DeAngelo and Skinner (1996) conducted a study of 145 companies during the period 1980-1987, finding no relation between dividend changes and future profitability. Grullon, Michaely, Benartzi and Thaler (2005) obtained similar results. Bernartzi, Michaely and Thaler (1997) performed a detailed study of 7,186 dividend payouts of 1,025 companies for the period 1979-1991. The results suggest that dividend policy is correlated with past profits rather than future profitability.

Using a method different from that of their previous studies, Nissim and Ziv (2001) obtained results strongly supporting a connection between dividend changes and future profitability for two successive years. The new model of Nissim and Ziv (2001) has been criticized by Grullon, Michaely, Benartzi and Thaler (2005) based on

the argument that future earnings are not linear.

Table 1. Summary of studies on the dividend signaling theory

Authors	Country	# of Company	# of Dividend	Period	Results
Hussainey (2009)	England		4.490	1996- 2002	Relation is found between dividend changes of companies in financial loss and their future losses.
Flint, Tan and Tian (2010)	Australia	682	3.689	1989-2008	Positive correlation is found between dividend ratio and increase on future profitability.
Lukose and Rao (2010)	India		9.523	1993-1998	A strong positive relation between dividend changes and current year profit. No relation is detected between dividend changes and future profits.
Vermuelen and Smit (2011)	South Africa		12.669	1973- 2009	Positive correlation is found between dividend changes and future profitability.
Agyei and Yiadom (2011)	Ghana	16 banks		1999-2003	it is apparent that banks that pay dividend increase their performance
Choi, Ju and Park (2011)	Korea		3.805	1991-2007	Positive correlation is found between dividend changes and future profitability.
Lee, Isa and Lim (2012)	Malaysia		2.396	1998-2007	Poor correlation is found between dividend changes and future profitability.
Demontis (2013)	Scandinavian Countries	812		2005-2012	No relation is found between dividend changes and future profitability.
Al-Amarneh and Yaseen (2014)	Jordan	47		2005-2011	Results are supportive for Dividend Signaling Theory

In addition to dividend changes, there are many other factors that can affect the future profitability of the firms traded in stock markets (Riasi, 2015). For instance, future profitability might be affected by a firm's degree of competitiveness (Amiri Aghdaie et al., 2012; Porter, 1990), use of new marketing strategies (Riasi and Pourmiri, 2015, 2016), access to alternative sources of funding (Burns et al., 2008; Riasi, 2015), and managerial aptitude and education (Riasi and Asadzadeh, 2015).

3. Data and Methodology

3.1 Data

Our study utilizes the cash dividends per share and earning (net income after tax) of companies listed in Borsa Istanbul for the period 2004-2014 (11 years). Data regarding dividends distributed are included in the sample; however, companies making two or fewer cash dividend payouts within the 11-year period are excluded from the data set. The analysis includes 1,239 cash dividends per share (DPS) and the earnings of 123 companies over 11 years. The DPS value is represented as 0 for years in which no payout is made. Table 2 categorizes 1,239 dividend payouts of 123 companies listed in Borsa Istanbul during the period 2004-2014 based on the increase or decrease of the DPS in a given year.

Table 2. Dividend payouts made by companies 2004-2014. In the table DPS stands for dividend per share

Year	# of remained constant DPS	# of Increased DPS	# of Decreased DPS	# of Total DPS
2004	21	57	14	92
2005	24	46	35	105
2006	20	60	27	107
2007	16	46	47	109
2008	24	23	67	114
2009	33	47	37	117
2010	27	58	34	119
2011	20	63	36	119
2012	30	53	36	119
2013	22	56	41	119
2014	27	52	40	119
Total	**264**	**561**	**414**	**1239**

Table 3 summarizes the statistics regarding cash dividends per share, net income after tax (earnings), changes in earnings, and earnings per share (*EPS*) of companies listed in Borsa Istanbul for the period 2004-2014.

Table 3. Descriptive statistics of variables

	Mean	**Median**	**Maximum**	**Minimum**	**Std.Dev.**	**Skewness**	**Kurtosis**
$(EPS_1 - EPS_0)/F_{-1}$	0.03	0.01	22.33	-21.46	1.78	2.05	94.02
$(EPS_2 - EPS_1)/F_{-1}$	0.00	0.01	12.44	-27.72	1.32	-8.52	200.56
$(E_0 - E_{-1})/B_{-1}$	0.03	0.02	11.75	-10.39	0.54	1.80	300.80
$(E_1 - E_0)/B_{-1}$	-0.04	0.02	10.54	-79.65	2.43	-30.84	1,012
$(E_2 - E_1)/B_{-1}$	0.45	0.02	436.68	-7.21	13.63	31.97	1,024
$(E_1 - E_0)/P_{-1}$	0.10	0.02	21.82	-37.30	2.24	-4.46	106.77
$(E_2 - E_1)/P_{-1}$	0.22	0.02	30.72	-33.32	2.63	1.06	65.37
$R\Delta DIV_0$	-1.76	0.00	2,615	-2,580	211.42	0.47	79.93
DPS	65.00	11.54	3,020	0.00	224.83	8.10	81.25
EPS	1.51	0.45	111.37	-25.32	6.20	12.18	190.79
ROE	0.14	0.12	7.57	-4.32	0.30	9.72	325.11

Note. In the table *EPS* stands for earning per share, *E* stands for earning (net profit after tax), *DPS* stands for dividend per share, *ROE* stands for return on equity and *R⊿DIV₀* refers to dividend changes between the previous and current year.

3.2 Methodology

In order to test the correlation between dividend changes and future profitability, this study makes use of the Equation (2), first proposed by Bernartzi, Michaely, and Thaler (1997); improved by Nissim and Ziv (2001); and used by Grullon, Michaely, Benartzi, and Thaler (2005), Lukose and Rao (2010), Choi, Ju, and Park (2011), and Lee, Isa and Lim (2012). Dividend changes are calculated for the all equations using Equation (1)[3]. Ordinary least square and panel regression are used to estimate equations.

$$R\Delta DIV_0 = \frac{DIV_0 - DIV_{-1}}{DIV_{-1}} \qquad (1)$$

In the formula, *R⊿DIV₀* refers to dividend changes between the previous and current year, while *DIV₀* refers to the dividend per share in the current year. Finally, *DIV₋₁* refers to the dividend per share in the previous year.

$$(E_t - E_{t-1})/P_{-1} = \alpha_0 + \alpha_1 R\Delta DIV_0 + \epsilon_t \qquad (2)$$

Equation (2) was developed by Bernartzi, Michaely and Thaler (1997) to test the correlation between dividend changes and future profitability. Nissim ve Ziv (2001) added the control variable, *ROEₜ₋₁*, arguing that a control variable was missing for changes in earnings. Nissim and Ziv (2001) also asserted that changes in earnings stated in the equation should be determined by the book value rather than by the market value of equity. As a result, Equation (3) was developed.

$$(E_t - E_{t-1})/B_{-1} = \alpha_0 + \alpha_1 R\Delta DIV_0 + \alpha_2 ROE_{t-1} + \epsilon_t \qquad (3)$$

Nissim and Ziv (2001) as well as DeAngelo and DeAngelo (1990) added a dummy variable to the equation of Bernartzi, Michaely and Thaler (1997) to produce Equation (4). This dummy variable represents dividend changes regardless of whether they increased or decreased (*DPC* represents an increase and *DNC* represents a decrease).

$$\frac{(E_t - E_{t-1})}{B_{-1}} = \alpha_0 + \alpha_{1p} DPC_0 * R\Delta DIV_0 + \alpha_{1n} DNC_0 * R\Delta DIV_0 + \alpha_2 ROE_{t-1} + \frac{(E_0 - E_{-1})}{B_{-1}} + \epsilon_t \qquad (4)$$

On the other hand, Lee, Isa and Lim (2012) used Equation (5) to test the correlation between dividend changes and future profitability.

$$(EPS_t - EPS_{t-1})/F_{t-1} = \alpha_0 + \alpha_1 R\Delta DIV_0 + \alpha_2 DIdum_0 + \epsilon_t \tag{5}$$

In equations above, t refers to next year and the year after next year, E_t refers to earning (net income after tax) of current year, E_{t-1} refers to earning of previous year, P_{-1} refers to market value of equity of company shares as of previous year-end, B_{-1} refers to book value of equity value as of previous year-end, ROE_{t-1} refers to return on equity of previous year, EPS_t refers to earning per share in current year, EPS_{t-1} refers to earning per share in previous year, F_{t-1} refers to price of company's shares as of previous year-end, and $DIdum_0$ refers to dummy variable indication whether the dividend is increased with regards to previous year or not.

This study investigates the correlation between current year dividend changes and changes in earnings over the next year ($t+1$) and the year after next ($t+2$). Therefore, Equations (2), (3), (4) and (5) are applied separately, and the results are provided in Section 4.

4. Empirical Results

Empirical studies based on time series data make an assumption of that the underlying time series are stationary. But, time series in finance usually are non-stationary or in other terms they have unit root. Some researchers argue that if the time series variables are non-stationary, using data in levels may result in non constant mean over time and residuals which are highly autocorrelated with low Durbin-Watson statistics (Kutty, 2010).

In this study, all variables tested whether they have unit root. For this purpose Levin, Lin and Chu (2002), Im, Pesaran and Shin (2003), Augmented Dickey-Fuller (1979) and the Phillips and Perron (1998) unit root tests are applied at the level for the individual intercept equation. According to test results none of variables have unit root. The selected results given in the Table 4.

Table 4. Results of unit root tests

Method	DPS		EPS		ROE		$R\Delta DIV_0$	
	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.
Levin, Lin & Chu t*	-17.2	0.00	-27.7	0.00	-10.5	0.00	-24.6	0.00
Im, Pesaran and Shin W-stat	-3.61	0.00	-7.3	0.00	-6.8	0.00	-12.7	0.00
ADF - Fisher Chi-square	362	0.00	403	0.00	425	0.00	595	0.00
PP - Fisher Chi-square	466	0.00	682	0.00	766	0.00	1296	0.00

Note. All statistics are significant at 1%.

Equations (2), (3), (4) and (5) are applied individually to test whether or not current year dividend changes correlate with earnings in the next year and the year after next. Tables 5 to 9 present the results.

Table 5 summarizes the results of Equation (2), developed by Bernartzi, Michaely and Thaler (1997).

Table 5. Results of equation (2)

		$(E_t - E_{t-1})/P_{-1} = \alpha_0 + \alpha_1 R\Delta DIV_0 + \epsilon_t$			
		Ordinary Least Square Regression		**Two-way Fixed Effect Panel Regression**	
	Variable	**Coefficient**	**Probability**	**Coefficient**	**Probability**
	C	0.05546	0.37	0.05552	0.37
Next Year	$R\Delta DIV_0$	-0.00042	0.15	-0.00046	0.12
	F-statistics	2.07	0.15	0.77469	0.97
	R^2	0,002		0.091	
	Variable	**Coefficient**	**Probability**	**Coefficient**	**Probability**
	C	0.16978**	0.03	0.17009**	0.03
In Two Years	$R\Delta DIV_0$	0.00057	0.10	0.00047	0.20
	F-statistics	2.68*	0.10	0.62345	0.99
	R^2	0.003		0.084	

Note. * shows 10%, ** shows 5% and *** shows 1% significance level. As the data is unbalanced, the two-way random effects model could not be applied due to missing data. In the one-way random-effects model, model Hausman test favored the fixed effects model.

Given the probability of the coefficient of $R\Delta DIV_0$ shown in Table 5, no significant relation is found between

dividend changes and changes in earnings in the next year or the year after next.

Nissim and Ziv (2001) argued that changes in earnings in Equation (2) should be adjusted based on book value rather than market value of equity. Table 6 gives the results of Equation (2) when it is recalculated based on this assumption.

Table 6. Results of equation (2) with readjusted values for future earning changes

		Ordinary Least Square Regression		Two-way Fixed Effect Panel Regression	
		$(E_t - E_{t-1})/B_{-1} = \alpha_0 + \alpha_1 R\Delta DIV_0 + \epsilon_t$			
	Variable	Coefficient	Probability	Coefficient	Probability
Next Year	C	-0.03993	0.58	-0.04004	0.57
	$R\Delta DIV_0$	-0.00005	0.88	-0.00003	0.93
	F-statistics	0.05	0.88	1.26^{**}	0.03
	R^2	0.00002		0.14	
	Variable	Coefficient	Probability	Coefficient	Probability
In Two Years	C	0.45002	0.29	0.451166	0.28
	$R\Delta DIV_0$	-0.00003	0.99	-0.000449	0.82
	F-statistics	0.0003	0.99	1.22^*	0.05
	R^2	0.000		0.15	

Note. * shows 10%, ** shows 5% and *** shows 1% significance level. As the data is unbalanced, the two-way random effects model could not be applied due to missing data. In the one-way random-effects model, model Hausman test favored the fixed effects model.

Given the probability of the coefficient of $R\Delta DIV_0$ shown in Table 6, no statistically significant relation is found between dividend changes and changes in earnings in the next year or the year after next. Table 7 displays the results of Equations (3) and (4) suggested by Nissim and Ziv (2001).

Table 7. Results of equation (3)

		Ordinary Least Square Regression		Two-way Fixed Effect Panel Regression	
		$(E_t - E_{t-1})/B_{-1} = \alpha_0 + \alpha_1 R\Delta DIV_0 + \alpha_2 ROE_{t-1} + \epsilon_t$			
	Variable	Coefficient	Probability	Coefficient	Probability
Next Year	C	0.21051^{**}	0.01	0.26671^{***}	0.00
	$R\Delta DIV_0$	-0.00013	0.69	-0.00003	0.92
	ROE_{t-1}	-1.91264^{***}	0.00	-2.34304^{***}	0.00
	F-statistics	15.81^{***}	0.00	1.54^{***}	0.00
	R^2	0.03		0.17	
	Variable	Coefficient	Probability	Coefficient	Probability
In Two Years	C	-0.60534	0.22	-0.69434	0.18
	$R\Delta DIV_0$	0.00040	0.83	-0.00018	0.93
	ROE_{t-1}	8.04007^{***}	0.00	8.72936^{***}	0.00
	F-statistics	8.43^{***}	0.00	1.34^{**}	0.01
	R^2	0.02		0.17	

Note. * shows 10%, ** shows 5% and *** shows 1% significance level. As the data is unbalanced, the two-way random effects model could not be applied due to missing data. In the one-way random-effects model, model Hausman test favored the fixed effects model.

Given the probability value of the coefficient of $R\Delta DIV_0$ in the results shown in Table 7, no statistically significant relation is found between dividend changes and changes in earnings in the next year and the year after next. The coefficient of ROE_{t-1} in both regressions shows that the previous year's profitability has significant impact on future profitability and changes in future earnings.

Table 8. Results of equation (4)

$$(E_t - E_{t-1})/B_{-1} = \alpha_0 + \alpha_{1p}DPC_0 * R\Delta DIV_0 + \alpha_{1n}DNC_0 * R\Delta DIV_0 + \alpha_2 ROE_{t-1} + (E_0 - E_{-1})/B_{-1} + \epsilon_t$$

		Ordinary Least Square Regression		Two-way Fixed Effect Panel Regression	
	Variable	Coefficient	Probability	Coefficient	Probability
	C	0.16036[*]	0.06	0.18417[**]	0.04
	$DPC_0 * R\Delta DIV_0$	-0.00005	0.91	-0.00017	0.73
Next Year	$DNC_0 * R\Delta DIV_0$	-0.00038	0.46	-0.00004	0.94
	ROE_{t-1}	-1.71212[***]	0.00	-1.85777[***]	0.00
	$(E_0 - E_{-1})/B_{-1}$	0.66233[***]	0.00	0.95210[***]	0.00
	F-statistics	14.69[***]	0.00	1.97[***]	0.00
	R^2	0.05		0.21	
	Variable	Coefficient	Probability	Coefficient	Probability
	C	0.01256	0.99	0.27344	0.57
	$DPC_0 * R\Delta DIV_0$	0.00034	0.89	0.00094	0.72
In Two	$DPC_0 * R\Delta DIV_0$	0.00232	0.41	0.00073	0.82
Years	ROE_{t-1}	5.44172[***]	0.00	3.49991[*]	0.10
	$(E_0 - E_{-1})/B_{-1}$	-8.37155[***]	0.00	-10.6977[***]	0.00
	F-statistics	40.91[***]	0.00	3.36[***]	0.00
	R^2	0.14		0.34	

Note. * shows 10%, ** shows 5% and *** shows 1% significance level. As the data is unbalanced, the two-way random effects model could not be applied due to missing data. In the one-way random-effects model, model Hausman test favored the fixed effects model.

Given the probability values of the coefficients of $DPC_0 * R\Delta DIV_0$ and $DNC_0 * R\Delta DIV_0$, no statistically significant relation is found between dividend changes and changes in earnings in the next year or the year after next. The coefficient of ROE_{t-1} in both regressions shows that the previous year's profitability has significant impact on future profitability and changes in future earnings.

Table 9 gives the results of Equation (5) as proposed by Lee, Isa, and Lim (2012).

Table 9. Results of equation (5)

$$(EPS_t - EPS_{t-1})/F_{-1} = \alpha_0 + \alpha_1 R\Delta DIV_0 + \alpha_2 DIdum_0 + \epsilon_t$$

		Ordinary Least Square Regression		Two-way Fixed Effect Panel Regression	
	Variable	Coefficient	Probability	Coefficient	Probability
	C	-0.097141	0.14	-0.080769	0.24
Next Year	$R\Delta DIV_0$	0.000957[***]	0.00	0.000982[***]	0.00
	$DIdum_0$	0.217997[**]	0.03	0.181824[*]	0.10
	F-statistics	13.59[***]	0.00	1.14	0.14
	R^2	0.02		0.13	
	Variable	Coefficient	Probability	Coefficient	Probability
	C	0.035369	0.39	0.032821	0.47
In Two	$R\Delta DIV_0$	-0.000036	0.80	-0.000035	0.82
Years	$DIdum_0$	-0.042206	0.50	-0.036574	0.61
	F-statistics	0.32	0.72	0.23	1.00
	R^2	0.00		0.03	

Note. * shows 10%, ** shows 5% and *** shows 1% significance level. As the data is unbalanced, the two-way random effects model could not be applied due to missing data. In the one-way random-effects model, model Hausman test favored the fixed effects model.

Evaluating the results of Equation (5), a correlation is found with 1% significance between current dividend changes and changes in earnings in the next year when both ordinary regression and panel regression are applied. However, this relation is not found in the year after next.

To summarize, data concerning 1,239 dividends from 123 companies listed in Borsa Istanbul during the period 2004-2014 are analyzed using five different models proposed by Bernartzi, Michaely, and Thaler (1997); Nissim and Ziv (2001); Grullon, Michaely, Benartzi, and Thaler (2005); Choi, Ju, and Park (2011); Lee, Isa, and Lim (2012), respectively. It can be concluded that dividend changes and future profitability do not correlate. On the

other hand, future profitability or changes in future earnings strongly correlate with profitability in the previous year. Therefore, the dividend signaling theory is not supported in the Turkish context.

The results obtained do not adhere to expectations, since previous studies on Turkish Stock Market reached conclusions regarding the information content of dividends by analyzing whether dividend announcements cause abnormal returns or changes in price. One of the possible explanation of such contradiction could be that the information content of dividend changes with regard to future profitability is viewed as highly improbable in a structure emphasizing capital gains due to lower tax rate than dividend yield in Turkey (Kadıoğlu; 2008, 2011). Hence, it can be concluded that shareholders in Turkey aim to make capital gains from price movements rather than receive income from dividend yields.

5. Conclusions

The information content of dividends, first proposed by Lintner (1956), Miller and Modigliani (1961) and later formulized by Bhattacharya (1979), John and Williams (1985), Miller and Rock (1985) as the signaling theory, has been the subject of debate for over 50 years. Results of studies regarding this theory are inconclusive; studies have emerged both supporting and contradicting the dividend signaling theory, which argues that a correlation exists between dividend changes and future profitability.

This study is the first to test the relationship between dividend changes and future profitability in Turkey. The data set includes 1,239 dividend payouts made by 123 companies listed in Borsa Istanbul during period 2004-2014. The data are analyzed using five different models introduced by Bernartzi, Michaely, and Thaler (1997); improved by Nissim and Ziv (2001) and later used by Grullon, Michaely, Benartzi, and Thaler (2005); Lukose and Rao (2010); Choi, Ju, and Park (2011); and Lee, Isa, and Lim (2012).

No statistically significant relation is found between dividends or dividend changes and changes in earnings over the following two years. Therefore, it can be concluded that dividends or dividend changes do not convey information regarding future profitability. In other words, the dividend signaling theory is not supported. On the other hand, the future profitability strongly correlate with profitability in the previous year.

The results obtained do not adhere to expectations, since previous studies on Turkish Stock Market reached conclusions regarding the information content of dividends by analyzing whether dividend announcements cause abnormal returns or changes in price. This is most likely due to the fact that capital gains are taxed at a lower rate than dividend yields in Turkey. Therefore, structural changes including alterations in taxation policy may contribute to the development of capital markets in Turkey by giving dividend yields equal significance with capital gains.

It may also be beneficial to test the relation between dividends or dividend changes and future profitability or changes in earnings using nonlinear models.

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Notes

Note 1. See the following studies for more information: Pettit (1972); Laubn(1976); Aharony and Swary (1980); Woolridge (1982); Asquith and Mullins (1983),Travlos et al. (2001); Chen, Firth, and Gao (2002); Ali and Chowdhury (2010).

Note 2. For the purposes of this study, *earning*s refers to net income after tax.

Note 3. In our sample, *dividend payout* is the dividend per share, therefore to find RADIV last year's DPS is simply subtracted from the current year's DPS.

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