Dividends: the declined information content and policy implications

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Abstract

This paper analyses empirical distributions of analysts' dividend prediction errors using the I/B/E/S database. It documents that managers do not beat analysts' dividend expectations, but rather tend to match them precisely. I further provide an explanation for this evidence. Using analysts' forecasts as a novel proxy for market expectations in the literature on the information content of dividends, I find no significant wealth effects of dividend unexpected changes. This result is obtained after controlling for earnings, which are mainly announced together with dividends and may be responsible for different results in some other earlier tests of the dividend information hypothesis.

JEL Classification: G 14; G24; G35

Keywords: Analysts' dividend forecasts; Analysts' earnings forecasts; Payout policy; Earnings management; Information content of dividends; Event study

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1 Introduction

Financial analysts are influential market participants. Thousand of managers guidance reports are issued around the globe, millions of hours spent in phone calls and meetings with analysts undermine an importance of business analysts' opinions to the corporate management. Managers have learned to listen to the voice of business analysts and align their policies with analysts' expectations. At least, this is what we are used to think when it comes to earnings summaries. Does the same hold for dividends? Most of the novelty of this research comes from documenting consistencies in the firm dividend payout policies with regards to the analysts' forecasts. My paper also revisits a question of an information content of dividends, using an underexploited identification strategy.

I draw an intuition for this paper from the two strands in the accounting literature. Firstly, earnings literature has demonstrated that managers try to achieve certain thresholds, namely, non-negative earnings, earnings increases, and analysts' expectations.[1] Secondly, it has been established that there is a clear association between stock returns and earnings per share, earnings changes, and a practice of meeting analysts' earnings expectations.[2] Provided that dividends have direct cash flow implications for investors and their announcements constitute an attention grabbing event, as in the case with earnings it is reasonable to expect stock price responses to dividends and corresponding corporate payout policies. My paper thus combines these two research areas in application to dividends, namely, firm value effects of dividend payouts and managers practices in payout policy. Below I identify research gaps in the dividends literature and explain how this paper fills them in.

Similar to the studies on the earnings thresholds, it has been documented that firms also avoid omitting dividends or reducing them[3]. Still, relatively little is known about

[1]For research on these topics refer to Degeorge, Patel, and Zeckhauser (1999); Burgstahler and Dichev (1997); Daniel, Denis, and Naveen (2008) correspondingly.

[2]See, for instance, Dechow (1994); Bowen, Burgstahler, and Daley (1987); Bartov, Givoly, and Hayn (2002); Kasznik and McNichols (2002).

[3]See Brav, Graham, Harvey, and Michaely (2005), Michaely, Thaler, and Womack (1995) and refer-

the role of analysts' consensus on the firm payout decisions. To my best knowledge, this paper is the first to investigate whether managers set dividends such as to meet analysts' dividend forecasts.

Value effects of dividend payouts are not new to the corporate finance literature. Dividends are known to be a disadvantageous method of a corporate wealth distribution due to double taxation, but they still remain prominent. This controversy made scholars search for explanations in the share price valuations. A theoretical premise for the plausible firm value effects of dividends is derived from "the information content of dividends", the term first coined in Modigliani and Miller (1959). In my paper I contribute to filling the void in the dividend literature by studying whether there is an abnormal stock market reaction to meeting analysts' expectations in corporate America.[4] Simultaneously, my results may be interpreted as an empirical test of the dividends information content hypothesis due to the methodology that I use.

My paper is closely related to the strand of literature, which explains the stock price reactions to dividends with the information content of dividends. Modigliani and Miller (1959) explain a mechanism behind the earlier found empirical correlations between dividends and stock market reactions, such as to keep their fundamental statement of dividends irrelevance for the firm value intact. They distinguish between the current published earnings and unobservable noise-free, or real current earnings. Importantly, these are the noise-free earnings that are priced. Information on the true current earnings comes from many sources, including dividends and current published earnings. Authors also hypothesize that in a real world of smoothing dividends the former may even contain more information about the real earnings than the published ones. They conclude that one should observe abnormal stock market returns, also after controlling for current

ences therein, Pettit (1972); Aharony and Swary (1980); Brook, Charlton Jr, and Hendershott (1998).

[4]To my best knowledge, the only paper that uses analysts' expectations from the I/B/E/S database in the dividends context is the paper by Andres, Betzer, Bongard, Haesner, and Theissen (2013). The authors arrive at different results using the German data. Most of the earlier research that approximates market expectations by analysts' ones obtains data from the Value Line database, as in Woolridge (1983). Still, their sample is limited to 367 observations and they do not control for the earnings surprise.

earnings, even if dividends alone do not independently affect the prices and provided that noise-free current earnings are capitalized. This conclusion rests on the assumption that dividends do have a potential to signal to the market about the real noise-free earnings potential. Later this underlying idea was extended and formalized in cash flow signaling models (see Bhattacharya, 1979; John and Williams, 1985; Miller and Rock, 1985).

Despite a long tradition of estimating the wealth effects of dividends, test results of empirical predictions of the information content hypothesis are still inconclusive. Most of earlier efforts in empirical research are of favor of the hypothesis (Fama, Fisher, Jensen, and Roll, 1969; Pettit, 1972, 1976). Watts (1973) refutes this premise. Gonedes (1978) and Amihud and Li (2006) also fail to support the hypothesis. The latter two papers provide an extensive discussion on the factors that may preclude signaling, which alone is not the topic of investigation for the present paper, but relevant for an interpretation of my results. In light of these conflicting findings, I revisit the topic of the information content of dividends.

The major problem in empirical tests of the dividends information content hypothesis is that unexpected changes in dividends are unobservable.[5] This has been recognized as early as in the 80s in Easterbrook (1984), where the author claims, "These [consequences of dividends] are hard to evaluate, for it is hard to obtain a measure of unanticipated changes in the level of dividends, and only unanticipated changes could change the prices of shares". Thus, distinct dividend expectations' models applied are accountable for the mixed results on the validity of the information hypothesis. Existing literature including references listed above estimates stock market effects using dividend decreases and increases as a measure of the unexpected dividend change.[6] Significant market reaction to

[5]Another empirical issue with a test of the dividend information hypothesis is that dividend announcements are often accompanied by earnings announcements, therefore, an identification strategy, which omits this factor using either dividend changes or dividend unexpected changed measured by means of analysts' forecasts risks to falsely attribute an earnings information effect to the dividend one.

[6]Another widely used proxy for unexpected dividends is derived from the partial adjustment model

dividend changes is considered as a manifestation of a dividend signaling power, whereas insignificant results are taken as a sign of a failure of dividends to convey information on real earnings. This approach implicitly assumes constant dividends as a model of market expectations. A serious drawback of the naive model is that an absolute dividend change contains some anticipated component in it. The model does not allow for updates in market beliefs in a period between subsequent dividend announcements, which clearly contradicts to observable adjustments in analysts' estimates and recommendations. The naive model was found to perform worse than the Lintner model in describing dividends behavior (Fama and Babiak, 1968). An even superior measure of market expectations is an estimate of an analysts' dividend consensus, which I employ in this study.

In my test of the informational content of dividends I employ analysts' point estimates of dividends and earnings for the US firms obtained with the I/B/E/S database. Analysts' estimates portray market expectations of dividends more appropriately than other measures known from the literature. Business analysts' estimates and recommendations to a great extent form sentiments of other market participants. It is largely their recommendations that are used by less sophisticated analysts to assess companies' future earnings and dividend streams and price stocks accordingly, it is their estimates that support trading by institutional investors (Malmendier and Shanthikumar, 2014). Thus, using a reliable proxy for unexpected dividend changes, which became recently available, and controlling for earnings capacity to convey information allows me to contribute to the debate on the informational hypothesis of dividends.

Moreover, my paper relates to the literature on valuation models used by business analysts. Conditional on the presence of the informational content of dividends, some investors trade on this information directly, some others will correct their valuation models and trade correspondingly. Barker (1999) conduct a survey of the UK fund managers and analysts and find that a price to earnings and a dividend yield multiples are the most

of Lintner in which a dividend change is a function of current earnings and lagged dividends (see Lintner (1956) and its modifications as in Fama and Babiak (1968)).

used valuation models in practice, whereas dividend discount models are disregarded by finance professionals. Still, most of existing studies in this area show that dividends play a minor role in pricing stock assets. Thus, complementary to the signaling is an idea, that market participants will adjust their pricing models by either changing actual dividends figures or required rates of return. Obtaining insignificant results for the informational hypothesis is therefore a strong indicator that none of those identified channels are triggered by unexpected dividend changes and that dividend based estimation techniques are not prevalent in stock valuation.

A quick glance at the data reveals that unlike the earnings management to exceed analysts' expectations thresholds, firms tend to match them precisely when it comes to dividends and there are no other consistencies in the dividend payouts with respect to the analysts' forecasts. However, this leaves room for interpretation and further investigation: How does this evidence correspond to the earlier found evidence of the information content of dividends? Is the information content result robust to using a divergence of actual dividends from predicted ones by analysts as a novel proxy for unexpected dividend changes? How do the information content of dividends and earnings relate to each other?

The paper is structured as follows. In Section 2 I describe my sample selection and a construction of key variables. Section 3 provides relevant descriptive statistics. Section 4 includes tests of the marginal informational content of dividends and earnings. Section 5 documents management dividend practices with regards to analysts' expectations. Section 6 concludes.

2 Variables description and data selection

For the purpose of this analysis, I define two measures of dividend and earnings news - forecast error and surprise. To group observations, I first compute dividend forecast errors (DFERR), that is, a signed difference between an actual value of dividend per share (DPS) and its mean analyst estimate. I identify positive (negative) dividend news, for the positive (negative) domain of analysts' forecast errors when dividend forecast errors (DFERR) are greater (smaller) than or equal to the median of positive (negative) analysts' dividend forecast errors (median DFERR). Analysts' dividend forecast errors equal zero or below (above) the median values of positive (negative) forecast errors are classified as no dividend news observations. Analogously, I compute earnings forecast errors (EFERR) and identify negative, positive, and no earnings news (ENEWS negative, ENEWS positive, ENEWS zero).

The announcement surprise is the second measure used to partition the sample into negative news, no news, and positive news subsamples. To group observations I first compute dividend forecast errors (DFERR) and earnings forecast errors (EFERR). This calculation is similar to that of the forecast error definition described above except that I scale prediction errors by price. In order to avoid picking up the effect of leaking information, I choose the stock price ten business days before an announcement date.[7] I identify positive (negative) dividend news, DNEWS positive (DNEWS negative), for the positive (negative) domain of analysts' prediction errors when the scaled dividend forecast errors (SDFERR) are greater (smaller) than or equal to the median of scaled positive (negative) analysts' dividend forecast errors (median SDFERR). Scaled analysts' dividend prediction errors equal zero or below (above) the median values of scaled positive (negative) forecast errors are classified as no dividend surprise observations (DNEWS zero). Analogously, I compute earnings forecast errors (EFERR), scaled earnings forecast errors (SEFERR) and identify negative, positive, or no earnings surprises (ENEWS negative, ENEWS positive, ENEWS zero).[8] This measure accounts for the economic significance

[7]In the earnings management literature forecast errors are deflated by the beginning of quarter t stock price (Brown and Caylor (2005), Bartov et al. (2002)), scaled by the stock price ten days before the announcement (Berkman and Truong (2009)), or by actual quarterly earnings.

[8]Another way to define earnings surprises used in the earnings literature is to compare the forecast error to some reference point, for example, 10 percent bandwidth. Unlike in the earnings literature,

of news, unlike the forecast error one. Still, it proves useful for the analysis to keep the forecast error definition, in that it serves as a robustness check to show that results are not an artifact of some resampling procedures.

To construct my main variables I use data coming from several sources. Data on analysts' expectations of quarterly dividends and earnings and their actual values is obtained from the I/B/E/S Summary US forecasts file; stock price data from the quarterly files of the CRSP-Compustat Merged. I source firm financial data from Compustat.

A universe of I/B/E/S analysts' estimates contains 1,369,078 observations of earnings and dividend forecasts made for the next quarter from October 1983 till December 2012. I require announcement dates of the actuals and historical CUSIPs to be available. After these screens, I eliminate 77,356 analysts' forecasts. I further lose 32,499 observations due to missing data on realised dividend per share (DPS) and earnings per share (EPS). Up to the forecast period end, I/B/E/S tracks whether analysts update their estimates and enters this data into the database. Among these updates I select the last month ones outstanding prior to the announcement date. This reduces my sample by another 825,796 data points, and I am left with 433,427 firm-quarter-measure observations where "measure" stands for dividend or earnings announcements. Among them, there are 382,725 earnings announcements spanning from 1984 until the end of the sampling period in 2012 and 50,702 dividend announcements with their first appearance in the sample in the year 2002 until 2012.

For the main analysis I use an I/B/E/S subsample with those firm-quarters where dividends and earnings disclosures are bundled simultaneously in a single announcement. This leaves me with 37,722 same day dividend and earnings announcements for 3,308 individual firms. To obtain dividend surprises from this sample I further need to scale prediction errors by stock prices on the tenth business day before an announcement. The latter is obtained from the CRSP-Compustat Merged database. Scaling reduces

I consider both dividend and earnings surprises and applying the same bandwidth to dividends would leave me with an insufficient number of observations. I therefore use a median threshold.

the sample to 37,395 observations for 3,247 individual firms due to missing stock price information in Compustat records. Some firms have a stock price information around a disclosure, but not precisely on the tenth business day before an announcement. In these cases I take a share price from the most recent day previous to the tenth day before an announcement when the security had a valid price. Four iterations are sufficient to find stock prices for all 114 observations for which no data is found on the tenth business day preceding an announcement. Subsequently, I obtain cumulative abnormal returns (CARs). Abnormal stock returns are computed based on a one-factor market model residuals estimated by ordinary least squares from day -252 to day -2 with CRSP equally-weighted index returns. I use three parametric and two non-parametric tests to test significance of CARs. I perform the Patell test, the cross-sectional and the standardized cross-sectional tests. Among the non-parametric the generalized sign test (Cowan test) and the rank tests (Corrado test) are done. Event windows are selected to account for leaking information. I require a minimum of 250 days of return data. For that reason, as shown in Table 1, an actual number of observations available for further analysis ($CARs$) is smaller than an initial number of dividend and earnings news (*Obs.*).

I further use the sample of contemporaneous dividend and earnings announcements in a regression analysis. To obtain firm financial information I use Compustat database and the linking table from CRSP-Compustat Merged to ensure that historical CUSIPs from I/B/E/S are correctly merged with actual CUSIPs from Compustat.

Table 1: Samples formation with contemporaneous dividend and earnings announcements

This table describes main procedures in a construction of the subsamples with dividends and earnings announcements occurring on the same day. *SURP* and *FERR* stand for the surprise and forecast error definitions, which are used to partition dividend and earnings announcements into negative, positive, or no news subsamples. Minus and plus signes indicate a news sentiment.

SURP	**DNEWS(-) ENEWS(-)**	**DNEWS(-) No ENEWS**	**DNEWS(-) ENEWS(+)**	**Total DNEWS(-)**
Obs.	633	1536	835	3004
CARs	595	1489	807	2891
FERR	**DNEWS(-) ENEWS(-)**	**DNEWS(-) No ENEWS**	**DNEWS(-) ENEWS(+)**	**Total DNEWS(-)**
Obs.	461	858	594	1913
CARs	421	808	561	1790
SURP	**No DNEWS ENEWS(-)**	**No DNEWS No ENEWS**	**No DNEWS ENEWS(+)**	**Total No DNEWS**
Obs.	4622	17276	9266	31164
CARs	4493	17008	9039	30540
FERR	**No DNEWS ENEWS(-)**	**No DNEWS No ENEWS**	**No DNEWS ENEWS(+)**	**Total No DNEWS**
Obs.	5715	16710	10645	33070
CARs	5523	16245	10363	32131
SURP	**DNEWS(+) ENEWS(-)**	**DNEWS(+) No ENEWS**	**DNEWS(+) ENEWS(+)**	**Total DNEWS(+)**
Obs.	463	1784	977	3224
CARs	445	1753	935	3133
FERR	**DNEWS(+) ENEWS(-)**	**DNEWS(+) No ENEWS**	**DNEWS(+) ENEWS(+)**	**Total DNEWS(+)**
Obs.	430	1311	998	2379
CARs	409	1281	956	2646
SURP	**Total ENEWS(-)**	**Total No ENEWS**	**Total ENEWS(+)**	
Obs.	5718	20596	11078	
CARs	5497	20250	10781	
FERR	**Total ENEWS(-)**	**Total No ENEWS**	**Total ENEWS(+)**	
Obs.	6606	18879	12237	
CARs	6353	18334	11880	

Analysts' dividend expectations is a more precise proxy for the market expectations than commonly employed naive model which does not account for updates in the market beliefs with regards to previous quarter dividend distributions. However, this might not be a perfect measure as an extensive research on analysts' biases suggests. From the forecasting literature we know that analysts are generally overoptimistic which is generally explained by cognitive biases or by their incentives to generate trading volume to support affiliated investment banking or mutual fund activities (Firth, Lin, Liu, and Xuan, 2013). It follows that true market expectations might by margin deviate from analysts' ones. However, it is shown in the earnings literature that the market is able to factor in this stylized fact when pricing the stocks. For example, Jegadeesh and Kim (2010) show that the market reaction is stronger for stock downgrades than upgrades in a sample of analysts' recommendation revisions from 1993 till 2006. Moreover, in their recent study Hilary and Hsu (2013) demonstrate that analysts are consistent in their forecast errors, such that investors may reliably adjust their forecasts by a certain number of cents.

If analysts exhibit biases with dividend estimates as with the earnings ones, then analysts' dividend projections are a biased estimate of market expectations in two directions predicted from the earnings literature. On the one hand, analysts may issue downward biased forecasts that are easy to meet or beat. Then the true negative forecast error (an absolute difference between a realized and a forecasted dividend value) is larger than the empirically observed one. This way a size of the empirically observed negative analysts' forecast error will on average underestimate the true stock market forecast error (that is, the true negative forecast error is more negative than the observed one). On the other hand, one may follow the trade generation logic and conjecture that analysts publish DPS estimates larger than their true expectations. In this case the true positive forecast error is greater than the empirically observed one. It follows that the empirically observed positive analysts' forecast error will on average underestimate the true stock market forecast error.

Thus, conditional on the fact that analysts are biased in one of the two possible directions, with probability one may conclude that either positive or negative computed forecast errors underestimate the true mean parameters. In other words, the true negative mean forecast error is lower than an empirically observed mean and the true positive mean forecast error is greater than an empirically observed one. My main measures of the forecast errors are constructed such as to account for the potential analysts' biases. By selecting observations more positive than medians in the positive domain of forecast error distributions and more negative in the negative one, I arrive at the mean negative forecast error closer to the true one.

3 Descriptive statistics

In what follows I describe statistical properties of the four subsamples used in the main analysis and tabulated. Table 2 and Table 3 provide relevant statistics. A mean difference of actual and expected dividends ranges from -0.34 USD in the portfolio with both negative dividend and earnings surprises to 0.30 USD in the portfolio with negative earnings and positive dividend surprises, as shown in Table 2. The median dividend forecast errors are more moderate being equal to only -0.02 USD and 0.03 USD for the negative and positive dividend surprise subsamples, respectively. Mean absolute dividend forecast errors are smaller than those for earnings in all four portfolios.

To understand how economically significant these prediction errors are, I scale the forecast errors by the stock price on the tenth day before an announcement. Table 2 shows that median values of both dividend and earnings forecast errors (SDFERR and SEFERR) are of low magnitudes being in absolute terms smaller than 1% in all four subsamples. Scaled earnings forecast errors are greater in mean values having a wider range than dividends: scaled dividend forecast errors range in absolute terms from 0.78% to 3.74%, whereas earnings from 1.20% to 10.51%.

In Table 3 I resample earnings and dividend announcements using the forecast error definition. Its key characteristics are not different from those of the surprise sample. Also there one finds absolute median scaled dividend forecast errors being uniformly smaller than an equivalent measure for earnings unexpected changes. Mean SDFERR among the four subsamples range in absolute terms from 0.74% to 4.08%, whereas SEFERR from 0.85% to 11.97%. DFERR range from 0.17 USD to 0.49 USD in mean values and from 0.03 USD to 0.04 USD in median values in absolute terms.

Table 2: Descriptive statistics for dividend and earnings prediction errors partitioned by signs of dividend and earnings surprises

This table provides descriptive statistics relevant for an event study with four portfolios using an announcement day surprise definition. It reports magnitudes of forecast errors and the number of observations in four portfolios for which scaling prices are available.

		ESURP negative				**ESURP positive**			
		DFERR	EFERR	SDFERR	SEFERR	DFERR	EFERR	SDFERR	SEFERR
DSURP negative	Number of observations	633				835			
	Mean	-0.34	-0.52	-2.07%	-10.51%	-0.17	0.18	-1.09%	1.75%
	Median	-0.02	-0.11	-0.13%	-0.62%	-0.02	0.08	-0.08%	0.36%
	Std.deviation	3.83	4.82	0.14	0.88	1.94	0.48	0.08	0.11
	Min, %	-74.000	-119.680	-2.453	-19.057	-54.000	0.010	-1.716	0.001
	Max, %	-0.002	-0.010	0.000	-0.002	-0.002	7.860	0.000	2.623
DSURP positive	Number of observations	463				977			
	Mean	0.30	-0.31	3.74%	-2.42%	0.16	0.20	0.78%	1.20%
	Median	0.03	-0.11	0.13%	-0.52%	0.03	0.09	0.10%	0.32%
	Std.deviation	3.28	0.98	0.55	0.10	1.00	0.76	0.06	0.07
	Min, %	-0.02	-14.11	0.00	-1.58	-0.080	-0.120	0.000	0.001
	Max, %	68.700	0.260	11.684	-0.002	26.420	20.330	1.702	1.438

Table 3: Descriptive statistics for dividend and earnings forecast errors partitioned by signs of forecast errors

This table reports magnitudes of forecast errors and the number of observations in four portfolios for which scaling prices are available.

		EFERR negative				**EFERR positive**			
		DFERR	EFERR	SDFERR	SEFERR	DFERR	EFERR	SDFERR	SEFERR
DFERR negative	Number of observations	449				581			
	Mean	-0.49	-0.64	-2.84%	-11.97%	-0.26	0.23	-1.42%	2.17%
	Median	-0.04	-0.11	-0.24%	-0.53%	-0.03	0.1	-0.13%	0.29%
	Std.deviation	4.54	5.72	0.17	1.00	2.32	0.57	0.09	0.13
	Min	-74.000	-119.680	-2.453	-19.057	-54	0.04	-1.72	-0.009
	Max	-0.01	-0.04	0.010	0.015	-0.0107	7.860	0.001	2.623
DFERR positive	Number of observations	426				990			
	Mean	0.37	-0.32	4.08%	-2.24%	0.17	0.21	0.74%	0.85%
	Median	0.04	-0.1	0.14%	-0.36%	0.04	0.1	0.09%	0.25%
	Std.deviation	3.44	1.02	0.57	0.1	1.00	0.75	0.06	0.05
	Min	0.01	-14.110	0.000	-1.577	0.011	0.04	0.0001	0.0003
	Max	68.700	-0.04	11.684	-0.0002	26.420	20.330	1.702	0.863

4 Marginal information content of dividends and earnings

4.1 Univariate Analysis of Price Reaction to Dividend Announcements

I first approach the question of an information content of dividends in that I measure cumulative abnormal returns around dividend announcements (CARs). For that purpose I consider solely dividend declarations. I obtain samples with negative and positive dividend news from the I/B/E/S database using the dividend forecast error and dividend surprise definitions (Panels A and B from Table 4 correspondingly). If dividends were to drive stock market returns, then in a panel of dividend news one should find significant CARs for both positive and negative announcements. Moreover, given that negative dividend surprises should make rational market participants adjust prices downwards, one expects to find negative CARs.

Tests do not uniformly indicate a significance of stock market abnormal returns. In Panel A CARs(-1,1) are significant for both negative and positive dividend announcements based on two out of five tests. In Panel B CARs(-1,1) are significant in four tests out of five for positive dividend news. At the same time negative dividend news are not accompanied by any statistically significant changes in stock price according to all five tests. Also contrary to predictions, across both specifications of negative dividend news and across all five event windows I obtain positive returns. Evidence from Table 4 allows to conclude that dividends are not or at least are not a single factor driving stock prices.

Table 4: Cumulative abnormal returns around positive and negative dividend announcements

This table provides cumulative abnormal returns for six event windows as well as extensive tests statistics. In Panel A the dividend forecast error is used to partition the sample into positive and negative dividend announcements. In Panel B the dividend surprise definition is applied to obtain positive and negative dividend announcements. Second columns in each window show the number of events with positive and negative compounded abnormal returns. Third columns show mean cumulative abnormal returns in the first and median cumulative abnormal returns in the second row. The following test are shown: the generalized sign test, the Patell test, the standardized cross-sectional (or Boehmer, Musumesi and Poulsen) test, the cross-sectional standard deviation and the rank tests. P-values are in parentheses. The generalized sign test significance levels are given in second columns. The symbols (,<,≪,⋘ or),>,≫,⋙ show the direction and generic one-tail significance of the generalized sign test at the 0.10, 0.05, 0.01 and 0.001 levels, respectively.

Panel A. Dividend news using the forecast error definition

	Negative dividend announcements						Positive dividend announcements					
Event window	**Obs.**	**CAR**	**Patell**	**BMP**	**CSectErr**	**Corrado**	**Obs.**	**CAR**	**Patell**	**BMP**	**CSectErr**	**Corrado**
(-1,0)	1790	0.27%	2.586	1.427	1.831	1.102	2646	0.07%	0.966	0.532	0.678	0.973
	911:879)		(0.0097)	(0.1535)	(0.0672)	(0.2716)	1325:1321		(0.3339)	(0.5944)	(0.4979)	(0.3313)
(-1,+1)	1790	0.37%	2.256	1.074	1.663	0.469	2646	0.24%	3.606	1.808	1.692	1.408
	913:877)		(0.0241)	(0.2827)	(0.0963)	(0.6394)	1356:1290>		(0.0003)	(0.0706)	(0.0906)	(0.1601)
(-1,+3)	1790	0.31%	0.847	0.469	1.332	-0.406	2646	0.26%	1.813	1.050	1.355	-0.241
	907:883		(0.3971)	(0.6392)	(0.1827)	(0.6848)	1311:1335		(0.0699)	(0.2938)	(0.1755)	(0.8097)
(-1,+5)	1790	0.30%	1.065	0.675	1.257	-0.176	2646	0.23%	1.092	0.713	1.235	-1.093
	914:876)		(0.2870)	(0.5000)	(0.2098)	(0.8607)	1309:1337		(0.2749)	(0.4760)	(0.2168)	(0.2755)
(-1,+14)	1790	0.17%	0.134	0.111	0.615	-0.047	2646	0.22%	1.659	1.374	0.907	-0.256
	893:897		(0.8935)	(0.9119)	(0.5386)	(0.9629)	1301:1345		(0.0971)	(0.1694)	(0.3645)	(0.7984)
(+5,+28)	1789	-0.27%	-1.721	-1.801	-0.933	-1.711	2646	-0.44%	-0.958	-1.087	-2.908	-1.625
	815:974≪		(0.0853)	(0.0716)	(0.3506)	(0.0882)	1248:1398		(0.3382)	(0.2771)	(0.0036)	(0.1052)

Panel B. Dividend news using the surprise definition

	Negative dividend announcements						Positive dividend announcements					
Event window	**Obs.**	**CAR**	**Patell**	**BMP**	**CSectErr**	**Corrado**	**Obs.**	**CAR**	**Patell**	**BMP**	**CSectErr**	**Corrado**
(-1,0)	2891	0.18%	2.273	1.322	1.715	0.510	3133	0.12%	2.398	1.345	1.315	1.918
	1442:1449		(0.0230)	(0.1860)	(0.0864)	(0.6103)	1584:1549>		(0.0165)	(0.1786)	(0.1884)	(0.0561)
(-1,+1)	2891	0.19%	1.245	0.616	1.179	-0.205	3133	0.28%	4.494	2.279	2.158	1.894
	1444:1447		(0.2131)	(0.5381)	(0.2383)	(0.8379)	1608:1525≫		(<.0001)	(0.0226)	(0.0309)	(0.0592)
(-1,+3)	2891	0.17%	0.866	0.491	0.997	-0.380	3133	0.33%	2.992	1.753	1.904	0.632
	1446:1445		(0.3864)	(0.6231)	(0.3190)	(0.7039)	1569:1564		(0.0028)	(0.0795)	(0.0569)	(0.5277)
(-1,+5)	2891	0.14%	0.851	0.542	0.756	-0.235	3133	0.26%	1.932	1.279	1.567	-0.266
	1461:1430)		(0.3950)	(0.5877)	(0.4494)	(0.8143)	1562:1571		(0.0534)	(0.2007)	(0.1171)	(0.7904)
(-1,+14)	2891	0.06%	0.652	0.528	0.257	-0.441	3133	0.24%	2.076	1.746	1.103	0.078
	1431:1460		(0.5144)	(0.5977)	(0.7975)	(0.6594)	1546:1587		(0.0379)	(0.0809)	(0.2699)	(0.9382)
(+5,+28)	2889	0.01%	0.414	0.438	0.052	-0.835	3133	-0.27%	0.072	0.081	-1.774	-1.074
	1356:1533<		(0.6786)	(0.6611)	(0.9588)	(0.4046)	1485:1648		(0.9430)	(0.9355)	(0.0760)	(0.2836)

The next set of results helps reconcile whether concurrent dividends and earnings announcements better than dividends alone explain stock price changes. Table 5 shows CARs over six event windows with 0 being the combined dividend-earnings announcement day. Portfolios are formed using the surprise definitions of unexpected dividend and earnings changes. Left-hand side portfolios and right-hand side portfolios have negative and positive earnings surprises correspondingly. Two upper portfolios and lower portfolios have negative and positive dividend surprises correspondingly.

The event study results tabulated are highly statistically significant indicating that a combined dividend-earnings announcement indeed constitutes a market value relevant event. This event study specification does not allow to prove the influence of the dividend signal on the market outcomes nonexistent. Still, the signs of the CARs in case of conflicting signals allow to speculate on their marginal power. In particular, the CARs are signed as the dividend surprise only if the dividend signal is supported with the same sign earnings signal: in case of negative dividend surprises abnormal returns are significantly negative if only earnings surprises are negative as well and positive if only earnings surprises are positive. In cases where two signals are not aligned the market moves together with the earnings surprise sign.[9] I also consider cases in which one of the announcements contains no market surprise. Tests indicate insignificant results for the cases with zero earnings surprises even when the dividend surprise is positively or negatively signed (results not tabulated). The structure of Table 6 is identical to Table 5

[9] As a robustness check I repeated an event study using market-adjusted and comparison-period abnormal returns, with CRSP equally-weighted as a market index. Obtained CARs for the portfolio with positive dividend and negative earnings news are significantly negative. Events from the portfolio with negative dividend and positive earnings surprises were accompanied by significantly positive abnormal returns which justifies earnings surprises to drive market returns, unlike dividend surprises.

except that I use the forecast error definition to partition observations into subsamples with differently signed news. Results found from this table qualitatively confirm those obtained with the surprise definition. This demonstrates again that in the absence of an earnings surprise, dividend news do not move the market.

Table 5: Cumulative abnormal returns around contemporaneous earnings and dividend announcements using the surprise definition

This table provides cumulative abnormal returns for six event windows as well as extensive tests statistics. An upper-left portfolio includes both negative dividend and earnings surprises. A lower-left portfolio is comprised of positive dividend and negative earnings surprises. An upper-right portfolio includes observations with negative dividend and positive earnings surprises. A lower-right portfolio includes observations with both positive dividend and earnings surprises. Second columns in each window show the number of events with positive and negative compounded abnormal returns. Third columns show mean cumulative abnormal returns in the first and median cumulative abnormal returns in the second row. The following test are shown: the generalized sign test, the Patell test, the standardized cross-sectional (or Boehmer, Musumesi and Poulsen) test, the cross-sectional standard deviation and the rank tests. P-values are in parentheses. The generalized sign test significance levels are given in second columns. The symbols (,<,≪,⋘ or),>,≫,⋙ show the direction and generic one-tail significance of the generalized sign test at the 0.10, 0.05, 0.01 and 0.001 levels, respectively.

			DNEWS(-), ENEWS(-)							DNEWS(-), ENEWS(+)			
Event window	**Obs.**	**CAR**	**Patell**	**BMP**	**CSectErr**	**Corrado**	**Event window**	**Obs.**	**CAR**	**Patell**	**BMP**	**CSectErr**	**Corrado**
(-1,0)	595	-1.27%	-9.927	-5.301	-3.704	-4.377	(-1,0)	807	1.49%	13.083	8.036	6.913	5.631
	239:356⋘		(<.0001)	(<.0001)	(0.0002)	(<.0001)		494:313⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+1)	595	-2.53%	-18.070	-6.781	-4.236	-7.436	(-1,+1)	807	2.50%	18.989	11.021	9.833	8.258
	200:395⋘		(<.0001)	(<.0001)	(<.0001)	(<.0001)		536:271⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+3)	595	-2.76%	-14.917	-6.499	-4.482	-6.102	(-1,+3)	807	2.45%	14.725	9.778	8.414	6.334
	205:390⋘		(<.0001)	(<.0001)	(<.0001)	(<.0001)		516:291⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+5)	595	-3.19%	-13.260	-6.765	-5.439	-5.927	(-1,+5)	807	2.61%	13.293	9.789	8.185	6.015
	202:393⋘		(<.0001)	(<.0001)	(<.0001)	(<.0001)		523:284⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+14)	595	-3.72%	-8.801	-6.740	-5.888	-5.023	(-1,+14)	807	2.82%	9.186	7.963	6.850	4.813
	208:387⋘		(<.0001)	(<.0001)	(<.0001)	(<.0001)		483:324⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(+5,+28)	594	-0.18%	0.472	0.420	-0.234	-1.232	(+5,+28)	807	0.51%	0.647	0.740	1.001	0.742
	278:316		(0.6368)	(0.6748)	(0.8151)	(0.2189)		384:423		(0.5174)	(0.4591)	(0.3169)	(0.4584)

			DNEWS(+), ENEWS(-)							DNEWS(+), ENEWS(+)			
Event window	**Obs.**	**CAR**	**Patell**	**BMP**	**CSectErr**	**Corrado**	**Event window**	**Obs.**	**CAR**	**Patell**	**BMP**	**CSectErr**	**Corrado**
(-1,0)	445	-1.06%	-9.224	-5.260	-2.925	-3.828	(-1,0)	935	1.23%	14.792	8.329	6.788	6.688
	172:273⋘		(<.0001)	(<.0001)	(0.0035)	(0.0002)		559:376⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+1)	445	-2.17%	-15.970	-7.566	-4.295	-7.083	(-1,+1)	935	2.23%	22.196	11.687	8.150	9.229
	157:288⋘		(<.0001)	(<.0001)	(<.0001)	(<.0001)		620:315⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+3)	445	-1.94%	-13.081	-6.900	-2.293	-6.363	(-1,+3)	935	2.41%	18.021	11.009	7.581	7.814
	146:299⋘		(<.0001)	(<.0001)	(0.0219)	(<.0001)		597:338⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+5)	445	-2.26%	-11.118	-6.932	-3.551	-6.207	(-1,+5)	935	2.39%	14.393	9.782	6.204	6.294
	155:290⋘		(<.0001)	(<.0001)	(0.0004)	(<.0001)		589:346⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+14)	445	-2.17%	-6.502	-5.292	-3.072	-4.064	(-1,+14)	935	2.47%	10.298	8.964	4.549	4.510
	166:279⋘		(<.0001)	(<.0001)	(0.0021)	(<.0001)		566:369⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(+5,+28)	445	-0.19%	-0.013	-0.015	-0.336	-0.867	(+5,+28)	935	-0.02%	1.508	1.790	-0.055	0.835
	206:239		(0.9898)	(0.9884)	(0.7366)	(0.3866)		478:457		(0.1316)	(0.0734)	(0.9558)	(0.4042)

Table 6: Cumulative abnormal returns around contemporaneous earnings and dividend announcements using the forecast error definition

This table provides cumulative abnormal returns for six event windows as well as extensive tests statistics. An upper-left portfolio includes both negative dividend and earnings forecast errors. A lower-left portfolio is comprised of positive dividend and negative earnings forecast errors. An upper-right portfolio includes observations with negative dividend and positive earnings forecast errors. A lower-right portfolio includes observations with both positive dividend and earnings forecast errors. Second columns in each window show the number of events with positive and negative compounded abnormal returns. Third columns show mean cumulative abnormal returns in the first and median cumulative abnormal returns in the second row. The following test are shown: the generalized sign test, the Patell test, the standardized cross-sectional (or Boehmer, Musumesi and Poulsen) test, the cross-sectional standard deviation and the rank tests. P-values are in parentheses. The generalized sign test significance levels are given in second columns. The symbols (,<,≪,⋘ or),>,≫,⋙ show the direction and generic one-tail significance of the generalized sign test at the 0.10, 0.05, 0.01 and 0.001 levels, respectively.

DNEWS(-), ENEWS(-)

Event window	Obs.	CAR	Patell	BMP	CSectErr	Corrado
(-1,0)	421	-1.03%	-8.073	-4.306	-2.511	-3.899
	164:257⋘		(<.0001)	(<.0001)	(0.0121)	(0.0001)
(-1,+1)	421	-1.68%	-12.817	-6.347	-2.333	-6.867
	136:285⋘		(<.0001)	(<.0001)	(0.0196)	(<.0001)
(-1,+3)	421	-1.89%	-10.473	-6.283	-2.732	-5.560
	143:278⋘		(<.0001)	(<.0001)	(0.0063)	(<.0001)
(-1,+5)	421	-2.30%	-9.192	-6.134	-3.647	-5.006
	143:278⋘		(<.0001)	(<.0001)	(0.0003)	(<.0001)
(-1,+14)	421	-2.59%	-6.515	-5.525	-3.998	-3.892
	149:272⋘		(<.0001)	(<.0001)	(<.0001)	(0.0001)
(+5,+28)	420	-0.51%	-0.473	-0.505	-0.793	-0.721
	201:219		(0.6366)	(0.6135)	(0.4278)	(0.4718)

DNEWS(-), ENEWS(+)

Event window	Obs.	CAR	Patell	BMP	CSectErr	Corrado
(-1,0)	561	1.54%	12.154	7.134	5.887	5.943
	355:206⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+1)	561	2.36%	15.835	8.869	7.959	7.583
	367:194⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+3)	561	2.27%	11.622	7.490	6.675	5.714
	358:203⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+5)	561	2.41%	10.114	7.200	6.284	5.165
	355:206⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+14)	561	2.46%	6.529	5.502	5.094	4.219
	331:230⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(+5,+28)	561	-0.13%	-2.104	-2.266	-0.201	-0.941
	247:314<		(0.0354)	(0.0235)	(0.8404)	(0.3476)

DNEWS(+), ENEWS(-)

Event window	Obs.	CAR	Patell	BMP	CSectErr	Corrado
(-1,0)	409	-1.28%	-13.227	-6.796	-3.328	-5.452
	143:266⋘		(<.0001)	(<.0001)	(0.0009)	(<.0001)
(-1,+1)	409	-1.99%	-16.964	-8.341	-3.900	-7.655
	132:277⋘		(<.0001)	(<.0001)	(0.0001)	(<.0001)
(-1,+3)	409	-1.82%	-14.044	-7.530	-2.034	-6.865
	130:279⋘		(<.0001)	(<.0001)	(0.0420)	(<.0001)
(-1,+5)	409	-2.12%	-11.930	-7.399	-3.278	-6.363
	134:275⋘		(<.0001)	(<.0001)	(0.0011)	(<.0001)
(-1,+14)	409	-1.76%	-6.429	-5.239	-2.511	-3.491
	146:263⋘		(<.0001)	(<.0001)	(0.0121)	(0.0006)
(+5,+28)	409	-0.27%	-0.049	-0.055	-0.608	-0.717
	197:212		(0.9609)	(0.9559)	(0.5429)	(0.4741)

DNEWS(+), ENEWS(+)

Event window	Obs.	CAR	Patell	BMP	CSectErr	Corrado
(-1,0)	956	1.02%	14.229	8.332	6.941	6.174
	566:390⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+1)	956	1.83%	20.914	10.940	7.668	8.624
	607:349⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+3)	956	1.98%	16.510	10.015	7.104	6.484
	591:365⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+5)	956	2.02%	13.360	9.005	5.775	4.995
	586:370⋙		(<.0001)	(<.0001)	(<.0001)	(<.0001)
(-1,+14)	956	2.04%	9.353	7.907	4.022	3.854
	575:381⋙		(<.0001)	(<.0001)	(<.0001)	(0.0001)
(+5,+28)	956	-0.54%	-0.223	-0.264	-2.210	-0.164
	479:477		(0.8233)	(0.7920)	(0.0271)	(0.8695)

With a third set of double sort results one can demonstrate whether an earnings effect survives a neutralization of a dividend factor. Table 7 contains the results of a double sort on dividend surprises followed by earnings surprises. Observations are first grouped into quintiles based on the size of a (negative or positive) dividend surprise. Next I create decile portfolios based on the earnings surprise magnitude within each of these dividend quintiles. Finally, a dividend neutral top decile earnings portfolio is constructed by combining the five top decile earnings portfolios from within each dividend quintile (and similarly for the other nine earnings decile portfolios). D1 stands for the decile with values of the smallest magnitudes. D10 stands for the decile with values of the highest magnitudes.

Panels A and B from Table 7 show an effect of positive earnings news after a neutralization of a dividend factor. CARs are significant across all three event windows. As one would expect and as also evident from Table 7, abnormal returns are higher in the top earnings decile portfolios compared to the lowest portfolios. A difference in CARs between top five portfolios and lowest five portfolios is about 8.48 basis points for the 5-days event window in Panel A and 7.38 basis points for the same event window in Panel B. Similar observations apply to Panel C too where portfolios with most negative earnings surprises generate negative returns at considerably larger magnitudes then portfolios with a moderate size of an earnings surprise. Also in Panel D top five earnings decile portfolios are different from the lowest ones. Earnings are almost uniformly significant at the 1% level after a dividend neutralization of a double sort. The only exception are the largest earnings surprises in deciles nine and ten, which produce the lowest in size and nonsignificant returns. Overall, the earnings effect turns out to be robust to the neutralization of double sorts. Hence, positive earnings news generate positive returns irrespective of the size and a sign of the dividend surprise, as well as negative earnings news cause plummeting returns independent of the dividend surprise.

Table 7: Double sorted results. Dividend neutral earnings portfolios

This table documents mean CARs obtained for dividend neutral earnings portfolios. Observations are grouped using the surprise definition. Panels A and B present CARs on positive earnings surprises after a dividend factor neutralization. Panels C and D contain same results for negative earnings surprises after a dividend factor neutralization. *D1* stands for the decile with values of the smallest magnitudes. D10 stands for the decile with values of the highest magnitudes. *High-Low* is computed as a simple difference between the sum of the five highest portfolios from D6 to D10 and a sum of the five lowest portfolios from D1 to D5. Based on the Patell test, *, **, *** indicate p-values significance at the 10%, 5%, and 1% levels, respectively.

Panel A. CARs from double sort on negative dividend surprises and positive earnings surprises

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	High-Low
(-1,0)	0.73%**	-0.02%	0.97%***	1.36%***	1.63%***	1.74%***	1.43%***	2.35%***	1.18%***	3.52%***	5.55%
(-1,+1)	1.46%***	0.26%*	1.85%***	2.30%***	2.87%***	2.97%***	2.65%***	3.63%***	2.30%***	4.70%***	7.51%
(-1,+3)	1.10%**	0.34%*	1.84%***	1.82%***	2.94%***	2.83%***	2.97%***	3.00%***	3.37%***	4.35%***	8.48%

Panel B. CARs from double sort on positive dividend surprises and positive earnings surprises

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	High-Low
(-1,0)	1.20%***	0.20%**	1.55%***	1.02%***	1.22%***	0.66%***	0.64%***	1.36%***	2.17%***	2.27%***	1.91%
(-1,+1)	2.00%***	0.34%***	2.44%***	1.97%***	1.62%***	1.22%***	2.48%***	3.02%***	3.40%***	3.82%***	5.57%
(-1,+3)	1.95%***	0.92%***	2.27%***	1.82%***	1.41%***	1.68%***	2.83%***	2.63%***	3.68%***	4.93%***	7.38%

Panel C. CARs from double sort on negative dividend surprises and negative earnings surprises

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	High-Low
(-1,0)	-1.39%***	-0.69%***	-1.21%***	-1.06%***	0.25%	-1.38%**	-0.77%	-0.07%	-2.78%	-3.35% ***	-4.25%
(-1,+1)	-2.50%***	-2.35%***	-1.89%***	-2.12%***	-1.17%***	-2.96%***	-2.18%***	0.87%***	-5.70%	-4.87% ***	-4.81%
(-1,+3)	-2.46%***	-2.29%***	-1.43%***	-2.36%***	-1.17%***	-3.70%***	-2.59%***	0.53%***	-6.41%	-5.29% ***	-7.75%

Panel D. CARs from double sort on positive dividend surprises and negative earnings surprises

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	High-Low
(-1,0)	-1.10%***	-0.91%*	-2.31%***	-1.53%***	-0.97%***	-1.86%***	-1.38%***	-1.47%**	0.72%	0.07%	2.9%
(-1,+1)	-1.26%***	-2.28%***	-4.01%***	-3.58%***	-1.90%***	-3.41%***	-2.50%***	-3.10%***	-0.30%	0.53%*	3.19%
(-1,+3)	-1.22%***	-2.00%***	-4.68%***	-3.85%***	-1.51%***	-3.79%***	-2.90% ***	-3.85%***	0.31%	3.89%	4.48%

A battery of results above is insightful on judging which firm financial information is relevant for firm valuation. The signs of abnormal returns seem to be driven by a sign of the earnings signal. Still, they are not sufficient to completely disregard the informativeness of the dividend signal. The fourth set of results presented in Table 8 serves as a clean test of whether unexpected changes in dividends are relevant for the stock market valuation.

In order to isolate the market response to dividends in an event study setting, I obtain dividend announcements separated from earnings announcements. To be included in a subsample, there must be no earnings announcements within a centered three-day window surrounding a dividend declaration.[10] The three days before a dividend announcement restriction precludes an earnings spillover effect. The three days after a dividend announcement restriction helps to assure that there is yet no leaking earnings information which can be priced. On average dividend announcements follow earnings announcements in 18 days. This statistic is very volatile with a standard deviation of 64 days and a median value being only 6 days. I use two subsamples where dividend forecast errors are smaller and greater than zero (351 and 363 observations correspondingly). I do not standardize forecast errors by price to avoid a further thinning of the sample. To obtains CARs, I estimate a one-factor market model residuals with ordinary least squares for an estimation window of 250 days starting two days before an announcement. Since I require a minimum of 250 days of return data for parameter estimation, I am not able to generate CARs for some observations. This reduces my sample to 212 negative

[10] Ofer and Siegel (1987) use a twelve-day window. Dhillon, Raman, and Ramirez (2003) use 2 days prior to and 5 days after dividend announcements.

and 238 positive forecast error observations, which makes up 450 separated dividend announcements or 10% from the initial subsample of non-zero dividend news obtained with the forecast error definition for which CARs can be computed using the same model parameters.

As Table 8 indicates, the CARs are of moderate magnitudes, ranging in mean values from -1.24% to 0.04%. For the dividend forecast errors less than zero results are consistent with expectations on the signs of CARs, namely, negative DFERRs are associated with the negative CARs. Signs on the CARs from the dividend forecast errors greater than zero are not overall in line with predictions: only events from the first event window, which accounts for the leaking information, have positively signed CARs. Moreover, tests for all event windows uniformly reveal that CARs surrounding an isolated dividend announcement are non-significant. Overall, results obtained do not support a notion that any changes in dividends unexpected by the market affect the firm value. A combined evidence from the four sets of tests shows that dividend changes do not signal a firm value to the market.

4.2 Multivariate Analysis of Price Reaction to Dividend Surprises

Regressions are modeled to directly answer the question whether market misperceptions of dividends or earnings or both have firm value consequences, controlling for firm specific characteristics. I calculate three-days CARs for 36,001 events. I use a sample where events are contemporaneous dividends and earnings declarations. In Table 9 I present results from regressing CARs centered at event date on a set of explanatory variables.

Table 8: Cumulative abnormal returns around dividend announcements

This table provides cumulative abnormal returns for dividend announcements non-confounding with earnings announcements. Dividend news are generated using the dividend forecast error definition. In the first row of the *Obs.* columns one finds the total number of events with negative (*DNEWS(-)*) and positive (*DNEWS(+)*) dividend announcements. The second row presents a number of positive and negative *CARs* in the indicated event window to the left and to the right from the semicolon correspondingly. The *CAR* columns show mean cumulative abnormal returns and *p*-values in parentheses. The latter are the one-tailed *p*-values evaluating the null against the alternative that the mean is less than zero for negative dividend announcements and greater than zero for positive dividend announcements.

DNEWS(-)			**DNEWS(+)**		
Event window	**Obs.**	**CAR**	**Event window**	**Obs.**	**CAR**
(-1,0)	212	-0.70%	(-1,0)	238	0.04%
	112:100	(0.059)		130:107	(0.446)
(-1,+1)	212	-0.63%	(-1,+1)	238	-0.08%
	115:97	(0.094)		131:106	(0.596)
(-1,+3)	212	-0.91%	(-1,+3)	238	-0.28%
	107:105	(0.058)		133:104	(0.773)
(-1,+5)	212	-0.30%	(-1,+5)	238	-0.23%
	99:113	(0.309)		127:110	(0.692)
(-1,+14)	212	-0.97%	(-1,+14)	238	-0.77%
	99:113	(0.192)		137:100	(0.848)
(+5,+28)	212	-1.03%	(+5,+28)	238	-1.24%
	119:93	(0.129)		134:103	(0.919)

The latter includes earnings and dividends analysts' forecast errors. *DFERRSIZE* and *EFERRSIZE* stand for the size of dividend and earnings prediction errors, computed as a simple difference between the actual value and its mean analysts' estimate, including perfect foresight cases when forecast errors equal zero. *DFERRSIGN* is a dummy variable equal 1 for positive and zero for negative dividend forecast errors. *EFERRSIGN* is a dummy variable equal 1 for positive and zero for negative earnings forecasts.

Table 9: Regression coefficients of cumulative abnormal returns on the forecast errors and control variables

This table provides the results of estimating OLS regressions, where the dependent variable is CARs around contemporaneous announcements of dividends and earnings from the event window (-1,1). Explanatory variables are a size and a sign of earnings and dividend forecast errors. *DFERRSIZE* and *EFERRSIZE* stand for the size of dividend and earnings forecast errors. Forecast errors are identified as a simple difference between the actual value and its mean analysts' estimate. *DFERRSIGN* is a dummy variable equal 1 for positive dividend forecast errors and zero otherwise. *EFERRSIGN* is a dummy variable equal 1 for positive earnings forecast errors and zero otherwise. A set of control variables is obtained from the Compustat database. *Firm size* is defined as the log of market value of the firm. *Inv.opportunities* is defined as the ratio of market value to book value of assets. *Leverage* is measured as total liabilities divided by the sum of total liabilities and the firm market value. The associated *p*-values are reported in parentheses.

	CARs(-1,1)			
	Model 1	**Model 2**	**Model 3**	**Model 4**
DFERRSIZE	-0.0004		-0.0004	-0.0003
	(0.205)		(0.244)	(0.322)
EFERRSIZE	0.002		0.0008	0.003
	(0.000)		(0.000)	(0.000)
DFERRSIGN		0.0001	0.0001	-0.0004
		(0.928)	(0.930)	(0.752)
EFERRSIGN		0.035	0.035	0.038
		(0.000)	(0.000)	(0.000)
Firm size				-0.003
				(0.000)
Inv.opportunities				0.001
				(0.257)
Leverage				0.005
				(0.240)
Constant	0.003	-0.02	-0.021	-0.005
	(0.000)	(0.000)	(0.000)	(0.337)
No. of obs	34,601	10,408	10,408	7,201
R-squared	0.002	0.07	0.07	0.08
F-statistic	26.88	396.27	205.17	91.30

I also control for firm size, investment opportunities, leverage, and firm age. Firm size has been used in the literature as a control for the density of the informational environment of the firm (Amihud and Li, 2006). Firm size has a positive correlation with the firm age. This means that investors accumulated more information about the older firm than the younger one by the time of an announcement. One therefore expects a less strong price reaction for a large firm and a negative sign on the *firm size* coefficient.

Firm size is the logarithm of a sum of total liabilities and total market value. *Investment opportunities* variable is approximated with a ratio of total market value to total assets. *Leverage* is obtained as a ratio of total liabilities to the sum of the total liabilities and the firm market value. I am able to merge 34,601 events with firm financial data from Compustat database. Though I/B/E/S dataset does not provide a time variable, which would allow to unmistakable relate analysts' forecasts to a specific fiscal quarter, I am able to merge forecast errors with firm financial data on a yearly basis. For that I average available yearly observations of firm fundamentals, which results in a flatter variation. I am able to create leverage and firm size variables for 27,095 observations; investment opportunities proxy for 27,096 observations.

As evident from Table 9, no statistically significant linear dependence between mean CARs and dividend news to the market is detected. At the same time earnings related variables enter all four model specifications with significant coefficients. All three models estimate that declarations of higher earnings than expected generate 0.04 percentage points greater return. Model 4 predicts that a dollar change in earnings forecast errors is associated with a change in CARs of 0.003 percentage points. Regression results allow to conclude that it is the new information on earnings rather than dividends, that causes market participants to review their price targets.

5 Payout policy implications of the dividends and earnings marginal information content

Managers of the public companies know that their policies go under close scrutiny from the investment community. Two key corporate financial figures are paid a special attention, namely, quarterly dividends and earnings per share. This observation might mean that firms will try to adjust their earnings management and dividend policies such as to keep an investment community satisfied with their returns aspirations and actual, realised returns. Should one disentangle between those two, and if so, then how? In fact, managers cannot arbitrarily decide on which policy they pursue. A manager is confronted with a thousand of effort consuming tasks. Therefore, there must be a decision making rule for him to tell whether to divert his attention to an earnings management or dividend policy, or both. Stock market reactions could serve such a decision making rule.

As discussed in the previous section, new earnings information substantially affects a stock valuation of investors, whereas unexpected dividends alone were shown to have no incremental information above the one coming from earnings. Managers are aware of past analysts expectations and have an access to historical data on market responses to their earnings and dividends announcements. Therefore, they can differentiate between how the market reacts to unforeseen changes in key earnings and dividend figures. Provided that dividends have no relevant information content for investors above that of earnings and that dividends are associated with costs[11], one may predict that managers will adjust

[11] Bhattacharya (1979) articulates that dividends create a shortfall in resources that requires raising

their policies taking into consideration market earnings expectations and neglect those of dividends. Below I provide an evidence that the market response indeed has a feedback effect on these key corporate policies.

Figure 1 sharply demonstrates two systematic patterns in the earnings management and dividend policies with regards to market expectations. Table 10 allows to quantify these effects. Figure 1 illustrates that positive dividend surprises are about as often as the negative ones (3,224 positive DSURP vs 3,004 negative DSURP). On contrary to that, positive earnings surprises are more frequent than negative ones (11, 078 positive ESURP vs 5,718 negative ESURP). In other words, firms tend to beat earnings expectations more often than dividend ones. Thus, firms beat earnings expectations in 30% of cases whereas dividend projections in 9% only, as follows from Table 10.

Another property relevant to establish a link between a marginal information content of dividends and earnings and managers' policies, is that the number of dividend matches is significantly greater than those of earnings. As seen from Figure 1, firms match dividend forecasts or deviate from them by less than a median of prediction errors in more than 80% of cases, whereas earnings are matched in about a half of the cases (83,3% of DSURP and 55% of ESURP).

These descriptive statistics considered in light of an event study results are very intuitive. The market does not reward firms beating its dividend expectations, as well as it does not punish firms for missing analysts' dividend targets with lower market valuations as shown in Section 4. This may explain why firms prefer to distribute precisely

capital.

an amount expected by the market. The event study results also justify considerable differences in the empirical distributions of the earnings and dividends forecast errors. Earnings beats are almost twice as often as misses, undermining the importance of their firm value consequences. On the contrary, a decision to beat or meet analysts' dividend expectations seems to be random, again, due to the dividend irrelevance shown in Section 4 of this analysis. Thus, taken together, our event study results and descriptive statistics indicate that firms indeed set their policies in correspondence with the marginal information content of dividends and earnings.

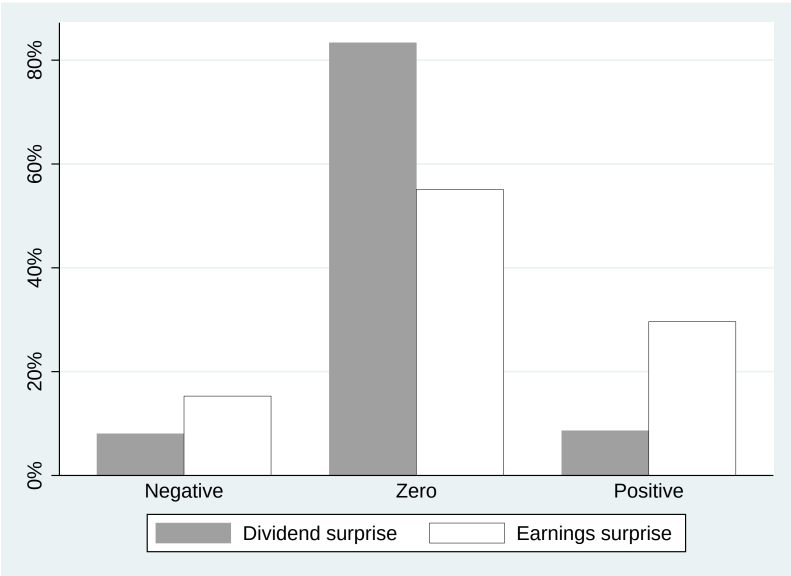

Figure 1: Distribution of dividend and earnings surprises

Table 10: Descriptive statistics partitioned by signs of dividend and earnings surprises

This table reports magnitudes of forecast errors and the number of observations in nine portfolios for which scaling prices are available. (1), (2), (3) and (4) stand for DFERR, EFERR, SDFERR and SEFERR correspondingly.

		ESURP negative				**ESURP zero**				**ESURP positive**				**Total rows**			
		(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
DSURP negative	No obs., %	633 - 1.69%				1 536 - 4.11%				835 - 2.23%				3 004 - 8.03%			
	Mean	-0.34	-0.52	-2.07%	-10.51%	-0.22	0.00	-0.73%	0.00%	-0.17	0.18	-1.09%	1.75%	-0.23	-0.06	-1.11%	-1.73%
	Median	-0.02	-0.11	-0.13%	-0.62%	-0.02	0.00	-0.06%	0.00%	-.02	0.00	-0.07%	0.00%	-0.02	0.00	-0.07%	0.00%
DSURP zero	No obs., %	4 622 - 12.36%				17 276 - 46.20%				9 266 - 24.78%				31 176 - 83.34%			
	Mean	0.00	-0.54	0.00%	-23.43%	0.00	0.00	0.00%	0.01%	0.00	0.17	0.00%	1.97%	0.00	-0.03	0.00%	-2.9%
	Median	0.00	-0.11	0.00%	-0.58%	0.00	0.01	0.00%	0.02%	0.00	0.09	0.00%	0.34%	0.00	0.01	0.00%	0.04%
DSURP positive	No obs., %	463 - 1.24%				1 784 - 4.77%				977 - 2.61%				3 224 - 8.62%			
	Mean	0.30	-0.31	3.74%	-2.42%	0.10	0.01	0.38%	0.01%	0.16	0.20	0.78%	1.20%	0.15	0.02	0.1%	0.02%
	Median	0.03	-0.11	0.13%	-0.52%	0.03	0.01	0.07%	0.02%	0.03	0.09	0.10%	0.32%	0.03	0.01	0.08%	0.04%
Total columns	No obs., %	5 718 - 15.29%				20 596 - 55.08%				11 078 - 29.63%							
	Mean	-0.01	-0.52	0.07%	-20.30%	-0.01	-0.00	-0.02%	0.01%	0.00	0.18	-0.00%	1.8%				
	Median	0.00	-0.11	0.00%	-0.58%	0.00	0.01	0.00%	0.01%	0.00	0.09	0.00%	0.34%				

6 Conclusion

In this paper I reexamine the information content of dividends. I test empirically whether dividends have incremental information over and above that conveyed by earnings. My approach differs from that of the relevant literature in that I employ I/B/E/S analysts' forecasts as a less noisy proxy for market expectations than conventionally used previous quarter dividends. By combining price-reaction and expectations data in an event study and by means of a regression analysis, I examine whether unexpected changes in dividend policy explain changes in the firm valuation. The specification of my event studies in which I use analysts' dividend projections sheds light on the discussion in research literature if analysts prominently base their stock valuation models on dividends. The firm valuation results allow me also to make predictions as to whether it is rational for managers to engage into a policy of catering to the investors' dividend expectations. This way I also add to the literature on the dividend thresholds as I investigate whether analysts' expectations serve as a benchmark for managers in setting their firm dividend payout policy.

The short answer to the last mentioned research question is 'no'. I obtain that in a panel of US companies in the period from 2002 to 2012 stock market participants have not priced a dividend information. In this paper I show that the market neither rewards nor punishes the firms that beat analysts' dividend expectations or fail to do so. I show that earnings instead had a significant firm valuation effect. Further I show that this evidence maps in a predicted way into the management dividend practice. Data reveals that managers tend to distribute dividends no greater than what the market expects from them. I document that, apart from matching predictions precisely, there is no other alignment of a distribution policy of a representative public US firm with the market expectations. An absence of significant stock price effects of dividend surprises also allows to disregard a widespread application of dividend-based asset valuation models.

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