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The Information Content of Stock Splits: In the Context of Stock Splits Concurrently Announced with Earnings

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Abstract: This paper examines the market responses to concurrent earnings and stock split announcements for evidence on the information content of stock splits. The majority of stock split research excludes splits announced with other information events due to confounding issues. However, it is difficult to extract the information content of splits by merely focusing on the standalone split announcement because stock splits are devoid of any information regarding firms' future cash flows. This study explicitly considers how a stock split is evaluated in conjunction with current earnings. This study shows that the market reacts more positively to earnings news concurrently announced with stock splits, consistent with the idea that splits are favorable news. Furthermore, this study finds that stock returns of concurrent split–earnings announcers exhibit a greater association with future cash flows, suggesting that investors should value stock splits favorably for more persistent earnings ahead.

Keywords: stock split; earnings response coefficient; stock price informativeness; event study; capital markets

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1. Introduction

This paper examines the stock market responses to concurrent earnings and stock split announcements for evidence on the information content of stock splits. Splits have long been considered a puzzling phenomenon since what appears to be a mere change in share prices, and the number of shares outstanding has triggered positive market reactions. Most prior research has found positive market reactions to stock split announcements, which are interpreted as positive news conveyed by stock splits. The reasoning behind a signaling explanation for stock splits is that managers split to achieve lower prices only when they have good information about the prospects for the firm since trading lower-priced shares may increase transaction costs because many brokers charge fixed per-share commissions (Brennan and Copeland 1988; McNichols and Dravid 1990; Ikenberry et al. 1996). However, when firms can use alternative devices such as increasing dividends, what motivates firms to split shares despite increased transaction costs remains unclear.[1] In addition to this problem, Crawford et al. (2005) found evidence that the costs of false signaling for stock splits are very small, undermining the validity of the signal in stock splits. In short, most researchers agree that stock splits convey information to outside investors, but there is little consensus regarding the nature of the information conveyed. The goal of my paper is to fill this gap and to test the information-based hypothesis of stock splits by explicitly considering how a stock split is evaluated in conjunction with the current earnings news.

Most studies examining stock splits exclude stock splits announced with other information events such as earnings or dividend announcements due to the concern that these information events may contaminate the information content associated with stock splits. However, it is difficult to extract the information content of stock splits by merely focusing on the market reaction captured around standalone split announcements. This is because a stock split announcement itself is devoid of any information regarding a firm's future cash flows, so we cannot rule out the possibility that the observed positive market reaction may

represent a mere trading opportunity. Investors need additional information regarding a firm's financial prospects to interpret the signal conveyed by stock splits in a meaningful way. This lack of readily available financial data when examining standalone stock split announcements makes interpreting the positive market reactions to split announcements challenging.

Furthermore, although the fact that the market reacts to split announcements positively both in the short term and long term gives credence to the signaling explanation for the split, this approach fails to provide a convincing measure of managerial intent or the driver of investor reaction at the time of the announcement. A positive market reaction must reflect the market's expectations for the future earnings or cash flows, but by examining standalone stock splits, the market's expectations of earnings are not directly observable. Examining what follows split announcements, such as improved operating performance, is also not direct evidence in terms of what drives investors' reactions at the time of the split announcement.[2] In terms of the informational role of splits, the overall empirical evidence fails to provide robust evidence due to the limitations in statistical methodology and constructs.[3] For example, Titman (2002) pointed out that the existing research lacks an explicit evaluation of the market reaction or investor perception toward split announcements. This paper assumes that when splits are announced without any other information event, investors are uncertain about whether or how much to revise their expectations of the future performance of the firm.

Unlike most studies on stock splits, I examined stock splits concurrently announced with earnings. This unique setting provides more powerful means of detecting information effects in splits for several reasons. First, using concurrent splitting firms (stock split accompanied by quarterly earnings announcements) can better isolate the information content associated with stock splits because earnings information would provide investors an ability to interpret the stock splits. At the time of standalone stock split announcements, earnings information is not available and inaccurate, if available in most cases. Earnings announcements will help resolve informational uncertainty associated with the stock split signal and influence investors to react more confidently to the combined information signals associated with the split and earnings. Second, given that an earnings announcement is a major corporate information event and attracts the most attention from investors, the subsample examined in this study is less likely to use a split as a false signal. Given the extent that managers' decisions to split concurrently with quarterly earnings factors in the amount of future attention obtained from investors, split announcements made concurrently with earnings announcements are more likely to contain truthful information. For the same reason, investors are likely to expect managers to be more careful to use a split as a signaling device when the split is announced with the earnings announcement. Thus, the examination of concurrent split and earnings announcements, a sample of largely unstudied subsets, allows for an evaluation of the robustness of earlier findings stating that splits convey the managerial optimism of a firm's prospects.

I analyzed a sample of stock split announcements bundled with earnings announcements (hereafter, concurrent announcers) between 1989 and 2019 and examined if a stock split is evaluated in conjunction with the current earnings news. A matched control sample was constructed based on the size, past stock returns, and earnings growth. In focusing on the role of earnings announcements as updating the beliefs about the timing, amount, and uncertainty about future cash flows, theory suggests that the magnitude of the market reaction to earnings information decreases with the noise or uncertainty in the information (e.g., Holthausen and Verrecchia 1990; Teoh and Wong 1993; Collins and Salatka 1993; Ecker et al. 2006). I predicted that investors react more strongly to a unit of unexpected earnings accompanying the stock split announcements than to those accompanying none if stock splits signal managers' confidence about their firms' prospects. I tested this by comparing the means and medians of a three-day buy-and-hold return from day -1 to $+1$ around the earnings announcement adjusted for a market return over the same period between concurrent earnings–split announcers across unexpected earnings deciles. The

findings indicate consistently positive mean and median announcement returns for companies announcing earnings and splits concurrently, irrespective of the direction of the earnings surprise determined from analysts' forecasts. In contrast, standalone earnings announcers exhibit negative returns for negative earnings surprises and less pronounced positive returns for positive surprises. This differential market reaction to the earnings announcements for firms with splits from those without splits is direct confirmation of favorable information being linked to splits.

To delve deeper into the source of positive news, I examined the predictability of earnings for a stock return to test the hypothesis if a split confirms negative news to be less persistent, while positive news will be more persistent in the future. Given that stock prices often reflect anticipated future company performance, stocks experiencing concurrent earnings–split announcements are expected to show a stronger positive correlation between current stock prices and future earnings compared to those with standalone earnings announcements. The findings affirm the hypothesis that current stock returns (during the announcement year) are more strongly linked to future earnings, indicating that a stock split conveys a message of enhanced earnings persistence—suggesting a greater proportion of permanent earnings components over transitory ones. This aids investors in predicting stock prices, indicating that stock splits contain valuable information regarding earnings predictability.

This study contributes to the literature on the information content of stock splits. Existing studies have not yielded compelling results to support the signaling hypothesis due to their empirical design, particularly in the omission of stock splits concurrently announced with other information events. Focusing on splits announced with quarterly earnings announcements allowed me to extract the meaningful information linked to the stock split that is evaluated in conjunction with earnings information. Therefore, this paper advances our understanding of the positive market reactions to stock split announcements by providing empirical evidence that is consistent with the signaling explanation and is unlikely to be explained through other explanations.

The subsequent sections of this paper are structured as follows: Section 2 provides a review of the related literature, Section 3 formulates the hypothesis, Section 4 outlines the methodology, Section 5 presents the data, Section 6 presents the empirical results, and Section 7 concludes the paper.

2. Literature Review

2.1. Literature on Stock Splits

The empirical literature shows that stock prices typically increase upon the announcement of a stock split. Several hypotheses attempt to explain the sources of the positive announcement returns and management's motivation for stock splits. One explanation offered for stock splits is the signaling hypothesis, where the split signals positive information by reducing the stock price range in expectation of improved prospects. Empirical evidence of signaling effects was provided by Grinblatt et al. (1984) and Lamoureux and Poon (1987) who documented that stock splits produce positive abnormal announcement returns. Researchers have also focused on the appearance of long-term abnormal returns following split announcements (e.g., Fama 1998; Titman 2002; Ikenberry et al. 1996; Desai and Jain 1997).

The attempt to link this positive market reaction to post-split earnings performance has provided mixed results at best. For example, Lakonishok and Lev (1987) documented that splitting firms experience higher short-term earnings growth than non-splitters. Asquith et al. (1989) argued that the abnormal earnings growth enjoyed by splitters do not reverse in the post-split period, which is interpreted as good news by investors who originally believe that the earnings growth would be only transitory. Ikenberry et al. (1996) found that splits are associated with excess returns in the three years following the announcement. Later, Ikenberry and Ramnath (2002) found that post-split performance improves, but this superior post-split profitability growth rate is short-lived and declines in the long term. On

the other hand, Chen et al. (2011) directly examined the post-split earnings performance by comparing splitters and matched sample firms, and they found splitters to experience superior earnings growth over matched firms in the post-split period. So, the issue of whether stock splits contain information in terms of future earnings performance is far from settled.

Another widely discussed theory is the liquidity hypothesis, which suggests that by lowering share prices to the preferred price range, firms improve the liquidity and marketability of their shares. Although supporting evidence has been found in some studies, evidence to the contrary also abounds. Survey evidence by Baker et al. (2002) supports the liquidity hypothesis; however, subsequent research founds mixed evidence depending on the liquidity proxy used. For example, some studies have found that bid–ask spreads increase after splits, indicating deterioration in liquidity (Conroy and Harris 1999; Desai and Jain 1997). Using other measures such as the number of trades per day and trading volume has shown increased liquidity after splits (Desai and Jain 1997; Lamoureux and Poon 1987; Muscarella and Vetsuypens 1996). Recently, Chen and Ausloos (2023) found that stock splits enhance the trading volume and shareholder base for the firm, which is consistent with the liquidity hypothesis. In summary, the overall empirical evidence on the liquidity-based hypothesis is varied at best.

2.2. Literature on Concurrent Announcements

How investors respond to simultaneous information sources is directly related to the setting of this study. Some studies have considered simultaneous information signals and examined how investors interpret these multiple signals interactively. For example, Kane et al. (1984) examined concurrent dividend and earnings announcements. They proposed two hypotheses regarding how these two sources of information interactively affect analysts' responses to the news. The first type of interaction, corroboration, hypothesizes that investors not only look at the magnitude of earnings news and dividends but also look at their consistency. Another hypothesis, called substitution, expects analysts to de-emphasize the noisy source and emphasize other sources. Their results supported the corroboration hypothesis in that investors are interested in the consistency of the news conveyed by the two signals. Leftwich and Zmijewski (1994) used analysts' forecasts of earnings as a proxy for market expectations and concluded that dividends and earnings convey information beyond that contained in the other signal. Similarly, Ely and Mande (1996) extended the analysis by focusing on how analysts combine earnings and dividend information to predict future earnings. They found that analysts use earnings and dividend information interdependently, with some interdependency determined by the noisiness of earnings announcements (when earnings are more variable).

Hoskin et al. (1986) examined the incremental information content of dividends and other financial disclosures released concurrently with the annual earnings announcements. Motivated by the literature linking price responses to earnings persistence, Freeman and Tse (1989) examined the multiperiod earnings news and found that price reactions to the current earnings announcement depend on the current earnings news as well as on whether the current earnings news confirms or contradicts a previous earnings innovation, determined based on the seasonal random walk model.

3. Background and Hypothesis

3.1. Does the Market React to a Split Incrementally in Response to Earnings News?

Although stock splits accompany positive market reactions in general, there is limited evidence of what drives investors to favorably react to a stock split. Since a stock split announcement is devoid of any information regarding future cash flows or earnings, researcher's attention can be restricted to the domain of investors' expectations for the prospective future performance (Ikenberry and Ramnath 2002). Although this simplicity can be a benefit of using stock splits as an information event to examine the market reaction in various contexts, it may pose a challenge when interpreting the market responses since

the only way to gain the meaning of the split is by inferring from the positive market reaction without specific attributable sources of information upon which to depend.[4] Furthermore, some investors may have to trade in anticipation of future earnings increases without solid prior belief or hold off on investing on the split news, preferring to wait until more information becomes available. In other words, it is less clear and harder to infer what causes the positive market reaction to a split announcement in the absence of additional information at the time of the stock split announcement. However, when both stock split news and earnings news are publicly available simultaneously, the market would react more fully and precisely to the split news because of increased information regarding a firm's current performance, which can explain the future earnings and in turn increases the precision of the split signal.

I examined whether the information content of earnings announcements varies according to whether the firm concurrently announces a stock split. Assuming that stock splits can only be a one-directional indication, namely, positive future prospects, two predictions can be made regarding the interaction between earnings news and stock splits depending on the sign of the concurrent earnings signals. For positive earnings surprises, the managers' intentions to announce stock splits concurrently may be more related to their desire to send a stronger signal to the market that the good prospects of the firm are likely to persist into the future. In other words, stock splits released with positive earnings news thus reinforce the positive information content of the earnings and increase the earnings precision and reduce information uncertainty for future returns. This will generate an incremental market reaction for a given level of positive earnings surprise to concurrent announcers compared to standalone splitters. This incremental market reaction highlights the specific information content of stock splits.[5]

3.2. Does the Split Enhance Earnings Persistence?

In order to provide further insight into what specific favorable information is conveyed by stock splits, I focused on the effect of stock splits on earnings persistence. According to Asquith et al. (1989), a stock split signals that the current earnings will be permanent rather than transitory, which shows greater earnings persistence. This indicates that stock split news permits investors to update their beliefs regarding the permanent and temporary nature of earnings. The earnings persistence literature also considers earnings persistence a critical determinant of earnings response coefficients (ERCs), in that investors react more strongly to permanent earnings changes than to temporary ones, resulting in a greater ERC for permanent earnings than for temporary earnings.[6] For example, Tucker and Zarowin (2006) demonstrated that firms employing higher income smoothing exhibit greater future earnings response coefficients (FERCs hereafter), which measures the relationship between cumulative future earnings and the current stock return, than those with lower income smoothing practices. They interpreted the results as suggesting that the smoothness of earnings serves as a mechanism for disclosing managers' private information, thereby enhancing price informativeness as a consequence. Their results confirm that the extent to which stock prices impound current earnings news depends on investors' ability to decipher the persistence of an earnings signal.

The ability of investors to identify differences in earnings persistence is critical in valuation. If earnings are permanent, investors do not need to make cashflow predictions to value equity; they can simply divide permanent earnings by the risk-free rate (Beaver and Morse 1978). As a result, Frankel and Litov (2009) pointed out that investors have sought to identify the determinants of earnings persistence in order to better understand the relationship between current earnings and permanent earnings. Hanlon (2005) demonstrated that large book-tax differences are an important signal about earnings persistence, and I extended her analysis by investigating whether the underlying likely source of book-tax differences should also be considered when evaluating the implication of large, positive book-tax differences for earnings persistence. In summary, my hypothesis is stated as follows:

H1. *Stock splits contain positive news about increased earnings persistence.*

4. Methodology

I employed two sampling approaches to compare return responses to the earnings announcements of firms that concurrently announced splits (hereafter, concurrent announcers) to those firms that announce only earnings (hereafter, standalone announcers).

The first is a time-series approach that compares the concurrent announcers' ERCs surrounding the quarter of concurrent earnings and split announcements. This approach has the advantage over the second approach in that each test company serves as its own control.

The second is a cross-sectional approach that compares the ERCs of two samples: concurrent announcers and standalone announcers. I generated a matched sample for concurrent announcers to create a balanced panel dataset. The matched sample was selected from the same quarter and created based on industry, size, book-to-market ratio, and unexpected earnings at the time of earnings announcement.

To test the hypotheses, two approaches were employed. Firstly, the traditional event study was utilized, analyzing stock returns during three-day earnings announcement windows. The event study enables a finer examination of the impact of concurrent split–earnings announcements on stock returns. By concentrating on a narrow window around the event, the event study facilitates the isolation of the incremental information contained in the split announcement, separate from the earnings announcement.

Secondly, in following the method of Tucker and Zarowin (2006), stock returns over a longer duration were examined to measure the FERC. Information about future earnings is reflected in the change in the current stock price, which integrates information from various public signals through the market's price discovery mechanism. Therefore, the change in current stock price captures investors' expectations for future earnings. This implies that comparing the FERCs of concurrent split–earnings announcers to their past FERCs, as well as comparing the FERCs of concurrent split–earnings announcers to those of matched sample firms, can help isolate the information contained in a stock split. If a stock split enhances the informativeness of current earnings regarding future earnings, an incremental increase in FERC for concurrent split–earnings announcements will be observed. The second approach, grounded in longer-term (spanning multiple years) windows of earnings information, offers a means to quantify the degree to which changes in current stock price encapsulate information about future earnings. This approach is particularly useful for testing the underlying source of positive signaling values associated with a split. Specifically, it allowed for the examination of my hypothesis positing that a split communicates the message of sustained earnings persistence into the future.

4.1. Event Study Approach

To capture the information content of a split signal, the ERC is estimated by regressing abnormal returns on earnings surprise, measured using analyst forecast errors and scaled by stock price (e.g., Easton and Zmijewski 1989; DeFond and Park 2001; Bartov et al. 2002; Brown and Caylor 2005). Unexpected earnings news will serve as a main signal reflecting the prior beliefs of investors, and concurrent split announcements will serve as a confirming signal reflecting the precision of the main earnings signal.

To investigate if concurrent announcers witness increased ERCs during the concurrent announcement quarter compared to preceding quarters, I extended the traditional ERC model by including a dummy variable, *CONCURRENT_Q*, denoting the concurrent announcement quarter, and assigned a value of 0 for the quarter three years prior to the concurrent split–earnings announcing quarter:

$$CAR = \alpha + \beta_1\ UE + \beta_2\ CONCURRENT\_Q + \beta_3\ UE * CONCURRENT\_Q + \beta_4 Controls + \beta_5 Control*UE + \varepsilon, \quad (1a)$$

where *CONCURRENT_Q* is a dummy variable that equals 1 if the quarter t includes the concurrent split and earnings announcement date, and 0 otherwise. *CAR* is abnormal returns cumulated over days [−1, +1] around the earnings announcement, and *UE* is earnings surprise, calculated as the actual earnings per share minus analyst expectations, deflated by share price. The coefficient β_1 is the ERC. CAR is the 3-day, size, and book-to-market-adjusted cumulative abnormal returns (CARs) for the period [−1, +1], where 0 is the earnings announcement day. Specifically, to calculate abnormal returns, I subtract the contemporaneous returns on size and book-to-market matched portfolios. The portfolios are constructed using the method of Fama and French (1992). For June of the current year, all firms were classified into 25 portfolios by size at the end of June of the current year and by book-to-market at the end of December of the previous year. UE is defined as the quarterly standardized earnings surprises using analysts' forecasts and actual earnings from I/B/E/S and calculated following Livnat and Mendenhall (2006). More specifically, UE is calculated from I/B/E/S as the actual I/B/E/S EPS minus the mean analyst forecast during the 90-day period before the disclosure of earnings, scaled by the dispersion of analyst forecasts. UE is calculated only if at least two analysts provide earnings forecasts for the firm. Short window returns can mitigate concerns that the results could be explained through differences in systematic risk. Also, the effects from errors in the measurement of risk premia should be small.

To capture the differences in the ERC between the concurrent announcers and their counterparts, I replaced the dummy variable *CONCURRENT_Q* with *CONCURRENT*, coded as one for a concurrent announcing firm, and as zero otherwise. The expanded model is

$$\text{CAR} = \alpha + \beta_1\ \text{UE} + \beta_2\ \text{CONCURRENT} + \beta_3\ \text{UE} * \text{CONCURRENT} + \beta_4\text{Controls} + \beta_5\text{Control*UE} + \varepsilon, \quad (1b)$$

where *CONCURRENT* is the dummy variable that takes the value of 1 for the concurrent split–earnings announcers and 0 for the matched standalone earnings announcers. This model was initially applied to the entire Compustat universe[7] and subsequently tested on a matched set of concurrent announcers and standalone announcers.

The primary variable of interest is the coefficient on *UE*CONCURRENT_Q* (*or UE*CONCURRENT*), β_3, which captures the incremental sensitivity of ERCs to concurrent announcers relative to others. If the concurrent stock split provides incremental information in addition to the unexpected earnings news, then β_3 is expected to be positive.

Prior research suggests that various earnings properties are systematically related to the magnitude of the ERC. For example, market reactions to earnings news are affected by size-related pre-disclosure information asymmetry (Atiase et al. 2005) and by growth prospects (Collins and Kothari 1989; Easton and Zmijewski 1989), so *SIZE* and the book-to-market ratio (*BM*) are included as control variables. *SIZE* is measured by taking the logarithm of the market value at the end of the fiscal quarter. No predictions are made since size is likely to be highly correlated with other firm-level characteristics. Since ERCs are positively related to the growth opportunities, a negative coefficient on *UE*BM* is expected. Consistent with prior research showing that ERCs are essentially zero for firms reporting negative earnings (Hayn 1995; Lipe et al. 1998), *LOSS* dummy was created, where observations with negative earnings obtain the value of 1, and 0 otherwise. The coefficient on *LOSS*UE* is expected to be negative. *EARNVOL* is earnings volatility measured over the 3 years prior to the earnings announcement and is included to measure the systematic firm risk. The coefficient on *EARNVOL*UE* is expected to be negative because prior studies suggest that there is a negative relationship between the ERC and systematic risk associated with each stock (Collins and Kothari 1989; Easton and Zmijewski 1989).

4.2. Cross-Sectional Approach

Information about future earnings is revealed through a firm's reporting behavior well before the earnings are recognized. The information is reflected in the change in current

stock price, which reflects the information with other sources of public signals in the market's collective discovery mechanism. Hence, the change in current stock price captures the change in investors' expectations for future earnings. I used the Tucker and Zarowin (2006) framework to apply FERCs. Their model is based on Collins et al.'s (1994) (hereafter, CKSS's) framework with some modifications suggested by Lundholm and Myers (2002), who combined the three future year's earnings into variable X_{t3} and the three future years' returns into R_{t3} to increase the power of the original FERC test.

In CKSS's model, R_t, the ex-dividend annual stock return for Year t, is regressed on UE_t, the difference between the realized earnings for Year t and what was expected at the beginning of the year, and on $\Delta E_t(X_{t+k})$, the change in expectations between the end and beginning of Year t for Year t + k earnings.

The model used by Tucker and Zarowin (2006) is

$$R_t = \beta_0 + \beta_1 X_{t1} + \beta_2 X_t + \beta_3 X_{t3} + \beta_4 R_{t3} + \varepsilon_t$$

where R_t is the ex-dividend annual stock return for Year t, X_{t1} and X_t are the earnings per share (EPSs) for Years t1 and t, respectively, and X_{t3} is the sum of EPSs for Year t + 1 to t + 3, deflated by the stock price at the beginning of Year t. All the EPS variables are the quarterly basic EPSs excluding extraordinary items, adjusted for stock splits and dividends. R_{t3} is the aggregate stock return in Year t + 1 to t + 3 with annual compounding. The coefficient β_1 is expected to be negative, the ERC (β_2) is expected to be positive, and the FERC (β_3) is expected to be negative.

I expanded the above regression model by adding a *CONCURRENT_Q* dummy variable and its interactions with the existing explanatory variables. This model uses concurrent split–earnings announcers only and uses data from 12 quarters before (3 years) and the quarter of the split announcement. This is to ensure that the presplit data only contains earnings information from before the split announcement. This is necessary because I need 12 quarters' or 3 years' worth of data to calculate the cumulative annual earnings, X_{t3} as follows:

$$\begin{aligned} R_t = {} & \beta_0 + \beta_1 X_{t1} + \beta_2 X_t + \beta_3 X_{t3} + \beta_4 R_{t3} + \beta_5 \text{CONCURRENT\_Q} + \beta_6 \text{ CONCURRENT\_Q } * X_{t1} \\ & + \text{CONCURRENT\_Q } * X_t + \beta_8 \text{ CONCURRENT\_Q } * X_{t3} + \beta_9 \text{ CONCURRENT\_Q } * R_{t3}. + \varepsilon_t \end{aligned} \tag{2a}$$

While the above model can be advantageous because a firm acts as its own control, the results might not be generalizable. So, I also performed a pooled cross-sectional model for concurrent announcers with matched firms using a similar model as follows:

$$\begin{aligned} R_t = {} & \beta_0 + \beta_1 Xt_1 + \beta_2 Xt + \beta_3 Xt_3 + \beta_4 Rt_3 + \beta_5 \text{ CONCURRENT} + \beta_6 \text{ CONCURRENT } * Xt_1 + \\ & \beta_7 \text{ CONCURRENT } * Xt + \beta_8 \text{ CONCURRENT } * Xt_3 + \beta_9 \text{ CONCURRENT } * Rt_3 + \varepsilon t \end{aligned} \tag{2b}$$

5. Data

The sample period of individual firms' earnings announcements extended from 1989 to 2019. I collect firm-level data and earnings report dates from Compustat, price and stock return data from CRSP, and realized earnings and earnings forecasts from IBES. At a minimum, I required that firms have sufficient data to calculate regression variables to facilitate comparisons between the test sample and matched sample. The earnings announcement date is that reported by Compustat. If the date is unavailable in Compustat, the announcement date reported by IBES was used instead. Return is the three-day size-adjusted return beginning one day prior to and ending one day after the earnings announcement date. The inclusion of concurrent dividend announcements would cloud the inference of whether the different market reactions to the concurrent split announcement (compared to the matched sample firms) are attributed to the dividend or to the stock split signal.[8] In order to avoid the confounding effects of contemporaneous dividend announcements, all observations for which an earnings announcement made within 10 days of the dividend announcement were eliminated.

The initial search of CRSP identified 15,496 split announcements with the distribution code of 5523. Imposing the same announcement dates for stock split and quarterly earnings announcement dates reduced the sample size to 2094. In requiring quarterly earnings information from COMPUSTAT, stock price data from CRSP was used to calculate announcement windows' abnormal returns, analyst forecasts were used to calculate earnings surprises from IBES, and eliminating observations with dividend change announcements made within 10 days of the earnings announcements reduced the final sample size to 1811 firm quarter observations. To address outliers in the data, I employed winsorization at the 1% and 99% thresholds, thereby limiting extreme values from influencing the results.[9]

When creating a matching sample, all CRSP listed firms that did not concurrently announce splits and earnings were used as a pool of potential matching firms. The matching firm's market value and stock price must have been within 70% to 130% of those of the concurrent firm at the end of the month prior to the split announcement. In using NYSE breakpoints based on the market capitalization at the end of the month prior to the split announcement, firms were divided into size quintiles. Then, within each size quintile, the prior 36-month returns were sorted into quintiles each year. Prior 36-month period returns were used as a proxy for the value/growth factor because the major source of change in the book-to-market ratio is the variation in prior returns given that book value changes slowly. Within each prior 36-month return quintile (within each size quintile), firms were assigned to return quintiles based on their prior 12-month returns. Prior 12-month buy-and-hold returns were used as a proxy for the momentum factor. Since split firms typically have high presplit price runup, controlling for return momentum in the preceding 12 months ensured that the announcement returns were not simply caused by the momentum effect. As a result, there were 125 portfolios for each year. Then, each split stock was assigned to one of the 125 portfolios. All firms in the same portfolio as the concurrent announcers were potential matches. Within each portfolio, firms from the same two-digit Standard Industrial Classification (SIC) industry code, with the same unexpected earnings decile (UE) with a market capitalization as close as possible to concurrent announcers were selected as matched firms. Once the industry code was matched, I selected the firm with the "most similar" earnings growth path over the five years prior to the split declaration date by minimizing the sum of squared differences in annual earnings growth between concurrent announcers and matched firms. In following this matching procedure, 1811 matching firms were identified.

Table 1 Panel A provides some initial evidence of differential market reactions to earnings announced concurrently with and without stock splits. Firms announcing stock splits alongside earnings exhibit higher 3-day announcement returns (CAR) compared to standalone announcers, while earnings surprises (UE) show no statistically significant differences between the two. Notably, firm characteristics such as market capitalization, the book-to-market ratio, assets, EPS, and earnings volatility demonstrate no statistically significant differences between the two samples, indicating the effectiveness of the matching procedure.

Table 1 Panel B presents pairwise and rank correlations between the variables. Correlation coefficients displayed in bold signify statistical significance at the 5% level or lower.The *CONCURRENT* dummy is positively correlated with CAR, market capitalization, asset, earnings volatility, and current and future earnings. This provides initial evidence that concurrent announcements are more likely to elicit greater market reaction.

Table 1. Panel A: Descriptive statistics (concurrent split–earnings announcers vs. matched standalone earnings announcers); **Panel B**: correlation coefficients. Pearson (Spearman) correlations are reported below (above) the diagonal.

Panel A										
	Concurrent Announcers N = 1811				Standalone Announcers N = 1811				Differences	
	Mean	Median	Skewness	Kurtosis	Mean	Median	Skewness	Kurtosis	Mean Diff	Median Diff
CAR	3.00%	1.93%	0.24	−0.89	0.88%	0.41%	0.54	−0.76	<0.0001	<0.0001
UE	0.03%	0.03%	−0.30	−0.30	−0.02%	0.03%	−0.29	−0.22	0.275	0.927
BM	0.516	0.421	0.59	−0.87	0.137	0.428	0.41	−1.16	0.318	0.611
MCAP	3081	478	1.80	1.82	3893	537	1.45	0.59	0.204	0.066
AT	3517	435	1.58	1.04	4742	604	1.44	0.66	0.241	0.034
EARNVOL	0.339	0.143	0.97	−0.25	0.347	0.176	0.72	−0.80	0.866	0.068
EPS	1.152	1.080	0.22	−0.95	1.339	1.060	0.23	−1.12	0.363	0.753
EPS_t − 1	1.143	1.060	0.32	−0.84	1.384	1.070	0.31	−0.93	0.434	0.901
EPS_t + 3	1.206	1.170	0.20	−0.74	1.287	1.050	0.30	−0.99	0.669	0.135

Panel B										
	CONCURRENT	CAR	UE	BM	MCAP	AT	EARNVOL	EPS_t1	EPS_t	EPS_t3
CONCURRENT	**1.00**	**0.15**	0.00	0.02	**0.06**	**0.07**	**0.06**	0.01	0.00	**0.05**
CAR	**0.14**	**1.00**	**0.20**	**0.10**	**0.03**	**0.10**	**0.04**	0.01	0.01	0.02
UE	**0.03**	**0.06**	**1.00**	**0.03**	0.02	**0.08**	**0.09**	0.02	**0.03**	0.00
BM	**0.03**	0.00	0.00	**1.00**	**0.31**	**0.17**	**0.09**	0.02	**0.10**	**0.15**
MCAP	**0.04**	0.01	0.00	0.00	**1.00**	**0.79**	**0.39**	**0.35**	**0.26**	**0.23**
AT	**0.04**	0.02	0.01	0.01	**0.54**	**1.00**	**0.46**	**0.43**	**0.41**	**0.38**
EARNVOL	**0.01**	0.00	0.01	**0.10**	**0.10**	**0.07**	**1.00**	0.01	0.02	**0.07**
EPS_t1	**0.03**	**0.06**	**0.03**	**0.03**	**0.29**	**0.14**	**0.27**	**1.00**	**0.81**	**0.61**
EPS_t	**0.03**	0.02	0.01	**0.07**	**0.15**	**0.09**	**0.08**	**0.31**	**1.00**	**0.67**
EPS_t3	**0.01**	0.02	0.02	**0.12**	**0.21**	**0.11**	**0.21**	**0.54**	**0.54**	**1.00**

6. Results and Discussion

6.1. Main Results

Tables 2 and 3 provide the test results of an incremental effect of the stock split announcement outlined in Equations (1a,b) and (2a,b) for time-series regression and cross-sectional regression models, respectively. It is well known that OLS standard errors are not appropriate for drawing conclusions on the statistical significance of the estimated coefficients in a panel data setting due to cross-sectional correlation in error terms. Therefore, t-statistics were calculated using robust standard errors correcting for heteroscedasticity and within-firm serial correlation (cluster-adjusted at the firm level). The main variable of interest is β3, the incremental coefficient on concurrent splitting firms relative to their matched peers without concurrent split announcements.

Table 2. Panel A: Abnormal returns surrounding concurrent split–earnings announcements. **Panel B**: Cumulative market-adjusted returns surrounding earnings announcement. **Panel C**: Mean and median three-day announcement CARs (concurrent announcers vs. Compustat universe).

Panel A			
Event Time	**Market-Adjusted Abnormal Return**	**t-Statistics**	***p*-Value**
−2	0.23%	3.04	0.00
−1	0.23%	3.00	0.00
0	1.33%	12.87	0.00
1	1.23%	10.33	0.00
2	0.39%	3.95	0.00

Table 2. *Cont.*

Panel B						
	All Firms in This Study		**Concurrent Split/Earnings Announcers**		**Standalone Earnings Announcers**	
Event Window	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
[−1, +1]	1.94%	1.13%	3.00%	1.93%	0.88%	0.41%
[−1, +2]	1.91%	1.14%	3.26%	2.43%	0.55%	0.13%
[−2, +2]	2.18%	1.35%	3.72%	2.70%	0.61%	0.13%
Panel C						
	Concurrent Announcers		**Standalone Announcers**		**Differences**	
Decile Rank	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
D1	0.000	0.018	0.035	0.026	0.035	0.044
D2	0.031	0.018	0.025	0.018	0.056	0.036
D3	0.010	0.008	0.018	0.013	0.028	0.021
D4	0.006	0.006	0.011	0.008	0.016	0.014
D5	0.023	0.016	0.002	0.001	0.026	0.017
D6	0.022	0.011	0.006	0.005	0.016	0.006
D7	0.050	0.037	0.014	0.011	0.036	0.026
D8	0.037	0.032	0.020	0.015	0.017	0.017
D9	0.033	0.026	0.027	0.020	0.006	0.006
D10	0.075	0.070	0.037	0.025	0.038	0.044
Differences D10–D1					<0.0001 (t-statistics: 67.56)	<0.0001 (z-statistics: 71.49)

Note: Each quarter, stocks were assigned to deciles using the UE breakpoints of the previous quarter. Decile D1 includes firms with the lowest UE rank, and D10 includes firms with the highest UE rank.

Table 3. Fama Macbeth regression (concurrent announcers vs. Compustat universe).

$CAR = \alpha + \beta_1$ UE $+ \beta_2$ CONCURRENT $+ \beta_3$ UE* CONCURRENT $+ \beta_4$Controls $+ \beta_5$Control*UE $+ \varepsilon$, (Equation (1b))		
	(1)	**(2)**
Intercept	0.001 ***	0.013 ***
	(4.45)	(4.46)
UE	0.160 ***	0.298 *
	(5.03)	(1.99)
CONCURRENT	0.025 ***	0.024 ***
	(6.01)	(5.77)
CONCURRENT*UE	2.238 **	1.434 **
	(2.63)	(2.10)
SIZE		0.001 ***
		(3.64)
SIZE*UE		0.098 ***
		(3.93)
EARNVOL		0.000
		(0.94)
EARNVOL*UE		0.075 ***
		(4.01)
LOSS		0.017 ***
		(11.68)
LOSS*UE		0.492 ***
		(3.62)
Adj. R squared	0.006 ***	0.028 ***
	(5.53)	(6.71)

Note: The model was run on the entire universe of Compustat. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level, respectively, in two-tailed tests.

Table 2 Panel A displays market-adjusted abnormal returns surrounding concurrent stock split–earnings announcements. The notable market reaction to the event is concentrated primarily on day 0 and day 1 following the announcement.

Table 2 Panel B presents the cumulative market-adjusted returns surrounding earnings announcements for three different groups of firms over three different event windows. The event windows capture a range of days before and after the earnings announcements. The results indicate that across all event windows, concurrent split/earnings announcers have higher mean and median returns than standalone earnings announcers. This suggests that the market reacts more positively when firms announce a stock split in conjunction with earnings. The differences in returns could reflect the market's perception of a stock split as a positive signal when coupled with earnings announcements. Overall, these results suggest that the market response varies depending on whether earnings are announced alone or together with a stock split.

To capture the differential ERCs in the concurrent announcement quarter, I compared the mean and median values of the ERC across quarters. Each quarter, stocks were assigned to deciles using the UE breakpoints of the previous quarter. Decile D1 includes firms with the lowest UE rank, and D10 includes firms with the highest UE rank. The results are presented in Panel C of Table 2. The analysis reveals that mean and median announcement returns for firms experiencing concurrent splits and earnings announcements significantly surpass those of standalone earnings announcements across all deciles, as determined through the UE (standardized unexpected earnings derived from analysts' earnings forecasts). This indicates that the split announcement conveys incrementally positive information in addition to the earnings news. Notably, among the decile ranks from 0 to 4, firms with standalone earnings announcements exhibit negative mean and median announcement returns, whereas firms with earnings concurrently announced with splits demonstrate positive announcement returns. This suggests that despite experiencing a negative earnings surprise, a stock split reinforces the manager's confidence in future earnings. Consequently, investors might primarily respond to the positive, permanent component of earnings, potentially regarding negative surprises as transitory. The differences between the extreme deciles (decile 10—decile 1) are highly significant, confirming that investors' reaction to the earnings surprise differs between firms with earnings concurrently announced with splits and those with standalone earnings announcements. These preliminary results suggest that splits contain favorable information, to the extent that the market reaction to the negative earnings surprise turns positive.

In Table 3, the results testing Equation (1b) using Fama Macbeth regression on the entire universe of Compustat firms are presented. Column 1 does not include any control variables, while Column 2 includes control variables. The table reports the mean and t-statistics of the coefficients in the 31 annual regressions from 1989–2019. The mean coefficient on *UE*CONCURRENT* is 2.238 significantly positive (Fama MacBeth t-statistics: 2.63) in Column 1. When control variables are included in Column 2, the mean coefficient on *UE*CONCURRENT* stays positive and significant (coefficient: 1.434; Fama MacBeth t-statistics: 2.10). This, together with the mean and median difference results presented above, suggests that a concurrent stock split conveys additional information beyond the unexpected earnings news. Given that price reactions are driven not only by the amount of unexpected information, but also by its quality, stock splits may corroborate the good earnings signal and thereby improve the quality of earnings news.

Similarly, Table 4 Panel A presents the outcomes of a firm-level estimation using Equation (1b), while Table 4 Panel B shows the results of a cross-sectional estimation employing Equation (1a) for concurrent announcers and matched standalone announcers.[10] In Panel A, the coefficient on *Concurrent_Q*UE* exhibits only weak significance when control variables are included (Column 2). However, in Panel B, the coefficient on *Concurrent *UE* demonstrates statistical significance at less than the 1% level, affirming that concurrent announcers display a greater contemporaneous ERC, indicating a more robust market reaction relative to unexpected earnings compared to standalone announcers.

Table 4. Panel A: Firm-level estimation. **Panel B**: Cross-sectional estimation.

Panel A						
CAR = $\alpha + \beta_1$ UE + β_2 CONCURRENT_Q + β_3 UE* CONCURRENT_Q + β_4Controls + β_5Control*UE + ε, (Equation (1a))						
	Coefficient	**t-Statistics**	***p*-Value**	**Coefficient**	**t-Statistics**	***p*-Value**
Intercept	0.004	0.24		0.001	0.10	
UE	1.079	1.00		0.222	0.12	
Concurrent_Q	0.013	2.05	**	0.014	2.26	**
Concurrent_Q*UE	1.133	0.77		1.951	1.69	*
SIZE				0.001	0.28	
Size*UE				0.293	0.98	
Earnvol				0.001	1.37	
Earnvol*UE				0.194	0.44	
Loss				0.010	0.79	
Loss*UE				2.870	2.28	**
Adj. R Squared	3.37%			3.12%		
No. Obs	3.622			3.622		
Panel B						
CAR = $\alpha + \beta_1$ UE + β_2 CONCURRENT + β_3 UE* CONCURRENT + β_4Controls + β_5Control*UE + ε, (Equation (1b))						
	Coefficient	**t-Statistics**	***p*-Value**	**Coefficient**	**t-Statistics**	***p*-Value**
Intercept	0.005	2.82	***	0.004	0.44	
UE	0.114	1.89	*	0.592	0.86	
Concurrent	0.003	1.20		0.003	1.08	
Concurrent*UE	1.548	5.17	***	1.455	4.24	***
SIZE				0.001	1.09	
Size*UE				0.077	0.72	
Earnvol				0.002	1.35	
Earnvol*UE				0.092	0.25	
Loss				0.014	2.63	***
Loss*UE				0.098	0.27	
Adj. R Squared	0.84%			1.59%		
No. Obs	3.622			3.622		

Notes: In this model, I pooled only concurrent announcers' (firms that concurrently announce splits and quarterly earnings) data across three years, starting from 3 years before the concurrent announcement quarter up to the concurrent announcement quarter. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level, respectively, in two-tailed tests.

In summary, the results presented above support the idea that stock splits convey favorable information about future earnings.

6.2. Does a Split Increase Earnings Persistence and Earnings Informativeness?

Panel A of Table 5 shows the firm-level time-series regression of estimating Equation (2a) for only the concurrent split-earning announcers, comparing at the time of the concurrent announcement quarter and 12 quarters prior. For both models without control variables (in Column 1) and the model with control variables (in Column 2), the results are identical. While the coefficient on X_{t3} (FERC for the concurrent announcers in the presplit period) is negative (meaning that their current stock prices do not reflect future earnings information prior to the split announcement), the coefficient on the interaction term *CONCURRENT_Q*X_{t3} is significantly positive, confirming that the concurrent announcers' experience improved earnings informativeness. This suggests that managers employ stock splits as a means to effectively communicate that the permanent component of earnings maintains a higher level of persistence into subsequent periods, which is consistent with the previous study's results on event.

Table 5. Panel A: Firm-level estimation of future earnings response coefficient. **Panel B**: Cross-sectional estimation of future earnings response coefficient.

Panel A						
$R_t = \beta_0 + \beta_1 X_{t1} + \beta_2 X_t + \beta_3 X_{t3} + \beta_4 R_{t3} + \beta_5$CONCURRENT_Q + β_6 CONCURRENT_Q *X_{t1} + CONCURRENT_Q *X_t + β_8 CONCURRENT_Q *X_{t3} + β_9 CONCURRENT_Q * R_{t3}. + ε_t (Equation (2a))						
	(1)			**(2)**		
	Coefficient	**t-Statistics**	***p*-Value**	**Coefficient**	**t-Statistics**	***p*-Value**
Intercept	0.150	2.58	**	0.164	1.62	
X_t1	0.029	3.18	***	0.184	1.28	
X_t	0.143	1.73	*	0.172	0.77	
X_t3	0.069	1.75	*	0.166	2.05	**
R_t3	0.047	1.15		0.038	1.08	
Concurrent	0.091	1.84	*	0.085	1.67	*
X_t1*Concurrent_Q	0.030	1.04		0.027	0.36	
X_t*Concurrent_Q	0.110	1.06		0.026	0.28	
X_t3*Concurrent_Q	0.132	2.00	***	0.178	2.76	***
R_t3*Concurrent_Q	0.108	1.18		0.102	1.16	
BM				0.021	1.35	
Size				0.002	0.17	
Earnvol				0.000	0.04	
X_t1*BM				0.120	1.50	
X_t1*Size				0.019	1.22	
X_t1*Earnvol				0.001	0.17	
X_t*BM				0.322	1.93	*
X_t*Size				0.009	0.32	
X_t*Earnvol				0.013	0.52	
X_t3*BM				0.009	1.23	
X_t3*Size				0.019	1.72	*
X_t3*Earnvol				0.037	1.10	
Adj. R Squared	6.93%			7.74%		
No. Obs	3.622			3.622		
Panel B						
$R_t = \beta_0 + \beta_1 X_{t1} + \beta_2 X_t + \beta_3 X_{t3} + \beta_4 R_{t3} + \beta_5$ CONCURRENT + β_6 CONCURRENT *X_{t1} + β_7 CONCURRENT *X_t + β_8 CONCURRENT *X_{t3} + β_9 CONCURRENT * R_{t3} + ε_t (Equation (2b))						
	(1)			**(2)**		
	Coefficient	**t-Statistics**	***p*-Value**	**Coefficient**	**t-Statistics**	***p*-Value**
Intercept	0.418	2.36	**	19.512	2.56	**
X_t1	0.803	1.58		6.313	1.58	
X_t	3.491	3.27	***	8.866	2.45	**
X_t3	1.303	2.25	**	3.041	1.47	
R_t3	0.013	1.93	*	0.010	0.66	
Concurrent	0.755	2.93	***	0.759	2.79	***
X_t1*Concurrent	0.085	0.11		0.581	0.41	
X_t*Concurrent	3.189	2.84	***	4.681	3.92	***
X_t3*Concurrent	1.044	1.72	*	1.412	1.98	**
R_t3*Concurrent	0.013	1.06		0.009	0.59	
BM				3.427	4.79	***
Size				0.067	0.74	
Earnvol				0.027	0.23	
X_t1*BM				5.466	1.55	
X_t1*Size				0.254	0.60	
X_t1*Earnvol				2.853	1.89	*
X_t*BM				3.008	0.74	
X_t*Size				0.214	0.53	
X_t*Earnvol				1.922	4.15	***
X_t3*BM				1.208	1.41	
X_t3*Size				0.134	0.44	
X_t3*Earnvol				0.841	0.80	
Adj. R Squared	3.23%			3.94%		
No. Obs	3.622			3.622		

Notes: *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level, respectively, in two-tailed tests.

Panel B of Table 5 shows the cross-sectional results of estimating Equation (2b) for concurrent announcers and matched samples at the earnings announcement quar-

ter. This model employs a pooled cross-sectional regression approach using concurrent split–earnings announcers and their matched sample firms. For both models without control variables (in Column 1) and the model with control variables (in Column 2), the results are identical. Consistent with the firm-level time-series findings reported in Panel A, the coefficient on the interaction term, *CONCURRENT* $*X_{t3}$, is positive and significant, indicating that concurrent announcers exhibit enhanced earnings persistence, where the informativeness of current earnings regarding future earnings is greater compared to matched standalone earnings announcement.

6.3. Extension—Decomposing Earnings into Cash Flows and Accruals

Following Tucker and Zarowin (2006), I extended Equation (2a,b) by decomposing earnings into cash flows and accruals to examine which component of future earnings is to be impounded in current stock prices.

$$\begin{aligned} R_t = {} & \beta_0 + \beta_1 CFO_{t1} + \beta_2 CFO_t + \beta_3 CFO_{t3} + \beta_4 ACC_{t1} + \beta_5 ACC_t + \beta_6 ACC_{t3} + B_7\, R_{t3} \\ & + \beta_8 CONCURRENT\_Q + \beta_9\, CONCURRENT\_Q * CFO_{t1} + B_{10}\, CONCURRENT\_Q * CFO_t \\ & + \beta_{11}\, CONCURRENT\_Q * CFO_{t3} + \beta_{12}\, CONCURRENT\_Q * ACC_{t1} \\ & + B_{13}\, CONCURRENT\_Q * ACC_t + \beta_{14}\, CONCURRENT\_Q * ACC_{t3} \\ & + \beta_{15}\, CONCURRENT\_Q * R_{t3} + \varepsilon_t \end{aligned} \tag{3a}$$

$$\begin{aligned} R_t = {} & \beta_0 + \beta_1 CFO_{t1} + \beta_2 CFO_t + \beta_3 CFO_{t3} + \beta_4 ACC_{t1} + \beta_5 ACC_t + \beta_6 ACC_{t3} + B_7\, R_{t3} \\ & + \beta_8 CONCURRENT + \beta_9\, CONCURRENT * CFO_{t1} + B_{10}\, CONCURRENT * CFO_t \\ & + \beta_{11}\, CONCURRENT * CFO_{t3} + \beta_{12}\, CONCURRENT * ACC_{t1} \\ & + B_{13}\, CONCURRENT * ACC_t + \beta_{14}\, CONCURRENT * ACC_{t3} + \beta_{15}\, CONCURRENT * R_{t3} + \varepsilon_t \end{aligned} \tag{3b}$$

In both Equation (3a,b), the coefficient of interest is β_{11}, as cash flow information is the main component to be used for equity valuation. If a stock split announcement enhances earnings informativeness about future cash flows, then the coefficient on β_{11} is expected to be positive.

Panel A of Table 6 reports the results for the time-series model estimating Equation (3a). The coefficient on *CONCURRENT_Q*CFO*$_{t3}$ is significantly positive (coef = 0.014, t-statistics = 2.68), implying that the predictability of future cash flows is greater for a concurrent split announcement quarter compared to the years prior to the concurrent announcement. Additionally, notice that *CONCURRENT_Q*ACC*$_{t3}$ is significantly positive (coefficient = 0.011, t-statistics = 2.39) for this sample, indicating that the predictability of future accruals is also greater for a concurrent split–earnings announcement year compared to the years prior to the announcement among the concurrent split–earnings announcers.

Panel B of Table 6 reports the results for the cross-sectional model estimating Equation (3b). Similar results are observed for the comparison between concurrent split–earnings announcement samples and standalone earnings announcement samples. The coefficient on *CONCURRENT*CFO*$_{t3}$ is significantly positive (coefficient = 0.049, t-statistics = 2.02), while the coefficient on *CONCURRENT*ACC*$_{t3}$ is not statistically significant. The results indicate that a concurrent split announcement enhances investors' ability to predict future cash flows. These results confirm that split announcements enhance earnings predictability (both in terms of cash flows and accruals).

Table 6. Panel A: Expanded model—firm-level estimation. **Panel B**: Expanded cross-sectional regression.

Panel A			
$R_t = \beta_0 + \beta_1 CFO_{t1} + \beta_2 CFO_t + \beta_3 CFO_{t3} + \beta_4 ACC_{t1} + \beta_5 ACC_t + \beta_6 ACC_{t3} + B_7 R_{t3} + \beta_8 CONCURRENT\_Q + \beta_9 CONCURRENT\_Q * CFO_{t1} + B_{10} CONCURRENT\_Q * CFO_t + \beta_{11} CONCURRENT\_Q * CFO_{t3} + \beta_{12} CONCURRENT\_Q * ACC_{t1} + B_{13} CONCURRENT\_Q * ACC_t + \beta_{14} CONCURRENT\_Q * ACC_{t3} + \beta_{15} CONCURRENT\_Q * R_{t3} + \varepsilon_t$ (Equation (3a))			
	Coefficient	**t-Statistics**	***p*-Value**
Intercept	0.426	2.70	***
CFO_t1	0.012	0.69	
CFO_t	0.028	2.01	**
CFO_t3	0.007	1.93	*
ACC_t1	0.004	0.22	
ACC_t	0.031	2.39	**
ACC_t3	0.016	2.90	***
Concurrent_Q	0.170	1.99	**
CFO_t1*Concurrent_Q	0.022	1.58	
CFO_t*Concurrent_Q	0.026	1.74	*
CFO_t3*Concurrent_Q	0.015	2.68	***
*ACC_t1*Concurrent_Q	0.024	1.56	
*ACC_t*Concurrent_Q	0.017	1.01	
*ACC_t3*Concurrent_Q	0.011	2.39	**
R3*Concurrent_Q	0.136	1.15	
BM	0.033	2.66	***
BM*CFO_t1	0.008	0.97	
BM*CFO_t	0.019	2.36	**
BM*CFO_t3	0.003	1.19	
Size	0.034	1.36	
Size*CFO_t1	0.002	1.20	
Size*CFO_t	0.005	2.54	**
Size*CFO_t3	0.001	2.17	**
Earnvol	0.021	0.45	
Earnvol*CFO_t1	0.001	0.92	
Earnvol*CFO_t	0.004	0.75	
Earnvol*CFO_t3	0.000	0.16	
BM*ACC_t1	0.004	0.51	
BM*ACC_t	0.016	2.06	**
BM*ACC_t3	0.003	1.12	
Size*ACC_t1	0.001	0.50	
Size*ACC_t	0.006	2.87	***
Size*ACC_t3	0.002	2.94	***
Earnvol*ACC_t1	0.000	0.06	
Earnvol*ACC_t	0.004	0.84	
Earnvol*ACC_t3	0.002	0.90	
Adj. R Squared	13.75%		
No. Obs	3.622		

Table 6. *Cont.*

Panel B			
$Rt = \beta_0 + \beta_1 CFOt_1 + \beta_2 CFOt + \beta_3 CFOt_3 + \beta_4 ACCt_1 + \beta_5 ACCt + \beta_6 ACCt_3 + B_7\ Rt_3 + \beta_8 CONCURRENT + \beta_9\ CONCURRENT\ *CFOt_1 + B_{10}\ CONCURRENT\ *CFOt + \beta_{11}\ CONCURRENT\ *CFOt_3 + \beta_{12}\ CONCURRENT\ *ACCt_1 + B_{13}\ CONCURRENT\ *ACCt + \beta_{14}\ CONCURRENT\ *ACCt_3 + \beta_{15}\ CONCURRENT\ *\ Rt_3 + \varepsilon_t$ (Equation (3b))			
	Coefficient	**t-Statistics**	***p*-Value**
Intercept	0.149	0.30	
CFO_t1	0.096	0.59	
CFO_t	0.168	1.03	
CFO_t3	0.004	0.10	
ACC_t1	0.290	1.67	*
ACC_t	0.399	2.53	**
ACC_t3	0.001	0.02	
Concurrent	0.910	4.47	***
CFO_t1*Concurrent	0.073	0.78	
CFO_t*Concurrent	0.125	1.46	
CFO_t3*Concurrent	0.049	2.02	**
*ACC_t1*Concurrent	0.036	0.42	
*ACC_t*Concurrent	0.117	1.41	
*ACC_t3*Concurrent	0.044	1.56	
R3*Concurrent	0.010	0.93	
BM	1.614	3.16	***
BM*CFO_t1	0.099	1.00	
BM*CFO_t	0.020	0.47	
BM*CFO_t3	0.039	1.25	
Size	0.030	0.48	
Size*CFO_t1	0.020	1.32	
Size*CFO_t	0.007	0.34	
Size*CFO_t3	0.005	0.98	
Earnvol	0.200	0.81	
Earnvol*CFO_t1	0.035	1.01	
Earnvol*CFO_t	0.008	0.15	
Earnvol*CFO_t3	0.003	0.19	
BM*ACC_t1	0.244	1.68	*
BM*ACC_t	0.224	1.55	
BM*ACC_t3	0.047	1.18	
Size*ACC_t1	0.032	2.02	**
Size*ACC_t	0.027	1.53	
Size*ACC_t3	0.004	0.61	
Earnvol*ACC_t1	0.035	0.78	
Earnvol*ACC_t	0.017	0.38	
Earnvol*ACC_t3	0.004	0.21	
Adj. R Squared	21.46%		
No. Obs	3.622		

*, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level, respectively, in two-tailed tests.

6.4. Robustness Check

To assess the robustness of the main results, I re-estimated Equation (1a,b) using two additional event windows. These include the period starting one day before the announcement and extending to two days after the announcement (CAR [−1, +2]) and the period encompassing two days before and two days after the announcement (CAR [−2, +2]). The results reported in Table 7 are consistent with those of the main tests reported in Table 4 Panels A and B.

Table 7. Panel A: Firm-level estimation. **Panel B**: Cross-sectional estimation.

Panel A						
CAR [−1, +2] or CAR [−2, +2] = $\alpha + \beta_1$ UE + β_2 CONCURRENT_Q + β_3 UE* CONCURRENT_Q + β_4Controls + β_5Control*UE + ε, (Equation (1a))						
Depvar:	**CAR [−1, +2]**			**CAR [−2, +2]**		
	Coefficient	**t-Statistics**	***p*-Value**	**Coefficient**	**t-Statistics**	***p*-Value**
Intercept	0.019	1.20		0.007	0.67	
UE	−2.719	0.75		0.906	1.29	
Concurrent_Q	0.003	0.37		0.005	1.65	*
Concurrent_Q*UE	0.839	1.33		1.290	3.48	***
Size	−0.001	−0.71		−0.001	−0.98	
Size*UE	0.631	1.78	*	−0.121	−1.10	
Earnvol	0.001	0.54		−0.002	−1.47	
Earnvol*UE	−0.222	−0.32		0.211	0.55	
Loss	0.016	1.14		−0.018	−3.10	***
Loss*UE	−2.579	−2.19	**	−0.314	−0.84	
Adj. R Squared	1.06%			1.37%		
No. Obs	3.622			3.622		
Panel B						
CAR [−1, +2] or CAR [−2, +2] = α + β1 UE + β2 CONCURRENT + β3 UE* CONCURRENT + β4Controls + β5Control*UE + ε, (Equation (1b))						
Depvar:	**CAR [−1, +2]**			**CAR [−2,+2]**		
	Coefficient	**t-Statistics**	***p*-Value**	**Coefficient**	**t-Statistics**	***p*-Value**
Intercept	0.002	0.32		0.027	1.80	*
UE	0.957	1.81	*	−1.151	−0.42	
Concurrent	−0.001	−0.45		0.003	0.42	
Concurrent*UE	1.145	5.80	***	2.425	1.84	*
Size	−0.001	−1.93	*	−0.001	−0.65	
Size*UE	−0.140	−1.68	*	0.227	0.45	
Earnvol	−0.001	−1.02		0.001	0.80	
Earnvol*UE	0.228	0.72		0.250	0.23	
Loss	−0.001	−0.41		0.018	1.13	
Loss*UE	−0.306	−1.06		−0.714	−0.28	
Adj. R Squared	1.23%			1.17%		
No. Obs	3.622			3.622		

*, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level, respectively, in two-tailed tests.

7. Conclusions

This study revisited the signaling explanation for stock splits by investigating how the market interprets a split in the presence of concurrently available earnings information. Previous research documents positive market reactions to stock split announcements, but there is little consensus regarding the nature of the specific information conveyed by splits. I examined the information content of stock splits in an earnings announcement setting because earnings announcements provide substantial details that help the investors understand the implications of other information signals. In other words, I viewed the role of splits as a signaling mechanism that increases the persistence of the permanent components of announced earnings into subsequent periods.

In showing consistency with the predictions, this study demonstrates that the market reacts more positively to earnings news accompanied by stock split announcements, as evidenced by greater announcement returns for concurrent split–earnings announcements given the same amount of unexpected earnings. Furthermore, the findings indicate that a simultaneous stock split and earnings announcement is linked to higher earnings persistence, which accounts for the positive reaction to split announcements.

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Abbreviations

Variable	Definition
CARs	The 3-day, size, and book-to-market-adjusted cumulative abnormal returns for the period [−1, +1], where 0 is the earnings/split announcement day.
UE_t	Unexpected earnings for quarter t, calculated as quarter t's actual EPS minus the average of individual analysts' EPS forecasts of quarter t made within 60 days prior to quarter t's earnings announcement date, deflated by the stock price at the beginning of quarter t.
BM_t	Book-to-market ratio at the beginning of quarter t.
$SIZE_t$	Logarithm of the market value at the beginning of quarter t.
AT_t	Total assets at the beginning of quarter t.
$EARNVOL_t$	Earnings volatility measured over the 3 years prior to the earnings announcement.
EPS_t	The earnings per share, adjusted for split and stock dividends for quarter t, undeflated.
EPS_{t3}	The sum of earnings per share for quarters t + 1 through t + 12, undeflated.
X_{t1}	The annual EPS (cumulative quarterly EPS beginning from quarter t8 to quarter t4), deflated by the stock price at the beginning of the quarter.
X_t	The annual EPS (cumulative quarterly EPS beginning from quarter t4 to quarter t), deflated by the stock price at the beginning of the quarter.
X_{t3}	The sum of EPS for fiscal quarters t + 1 through t + 12, deflated by the stock price at the beginning of quarter t.
CONCURRENT_Q	Dummy variable that equals 1 if quarter t includes the concurrent split and earnings announcement date and 0 otherwise.
CONCURRENT	Dummy variable that takes the value of 1 for the concurrent split–earnings announcers and 0 for the matched standalone earnings announcers.
CFO_{t1}	The operating cash flows for fiscal year t1 (cumulative quarterly CFO beginning from quarter t8 to quarter t4), deflated by the market value at the beginning of quarter t.
CFO_t	The operating cash flows for fiscal year t (cumulative quarterly CFO beginning from quarter t4 to quarter t), deflated by the market value at the beginning of quarter t.
CFO_{t3}	The sum of operating cash flows for fiscal year t + 1 through t + 3 (cumulative quarterly CFO beginning from quarter t + 1 to quarter t + 12), deflated by the market value at the beginning of quarter t.
ACC_t	The total accruals for fiscal year t1 (cumulative quarterly ACC beginning from quarter t8 to quarter t4), deflated by the market value at the beginning of quarter t. Quarterly ACC is obtained by subtracting operating cash flows from the net income before extraordinary items and discontinued operations.
ACC_t	The total accruals for fiscal year t (cumulative quarterly ACC beginning from quarter t4 to quarter t), deflated by the market value at the beginning of quarter t.
ACC_{t3}	The total accruals for fiscal year t + 1 through t + 3 (cumulative quarterly ACC beginning from quarter t + 1 to quarter t + 12), deflated by the market value at the beginning of quarter t.

Notes

[1] Existing studies suggest that managers are disinclined to make optimistic projections because they believe that such projections would expose them to lawsuits if they do not materialize (Ruhnka and Bagby 1986; Skinner 1997). Thus, managers might prefer to use indirect communication mediums such as stock splits and discretionary accruals over more direct mediums such as press releases and conference calls to convey their optimism (Louis and Robinson 2005).

[2] For example, Huang et al. (2011) found that except for dividend paying firms, firms that split their stocks have negative future profitability.

[3] As Fama (1998) and Titman (2002) pointed out, there remains substantial debate as to the statistical methodology and constructs used in studies on long-term stock performance. With respect to long-term returns subsequent to stock splits, Desai and Jain (1997) found that the use of a buy-and-hold strategy generates positive one-year and three-year abnormal post-split announcement returns of 7.05% and 11.87%, respectively, which confirms similar work by Ikenberry et al. (1996). However, when the long-term performance is measured from the ex-date instead of the announcement date, Byun and Rozeff (2003) did not find any consistent long-term abnormal returns. Boehme and Danielsen (2007) argued that the apparent anomaly in post-split long-term performance reflects modeling limitations and that modeling is not extremely robust. Behavioral finance constructs have also been used to evaluate the stock split event. Ikenberry and Ramnath (2002) confirmed this by showing that post-split stocks have excess returns for the year following a split and hypothesized that analysts are slow to update earnings estimates. They argued that this slowness causes an initial underreaction to the split signal.

[4] Mechanically, returns must be explained either by positive cash flow news or negative expected return news (Campbell 1991), which is missing in the split event.

[5] This analysis is related to prior research on market reactions to simultaneous information signals. For example, Ely and Mande (1996) examined analysts' forecast revisions following earnings and dividend announcements. They found that analysts' forecast revisions are more strongly associated with whether earnings and dividend signals are consistent than on the magnitude of the unexpected earnings and dividend news. These findings imply that market reactions to concurrent split and earnings announcements may be affected by either or both the consistency of signals and the magnitude of the news.

[6] The information content of financial reports, particularly reported earnings, has been the major research interest among accounting researchers for over 30 years. The research findings suggest that the magnitude of the ERC depends on the precision of the earnings signal, which is determined using the feature of the financial reporting process as well as the chosen proxies, assumptions, and judgments made in arriving at the estimates. The higher the earnings precision, the more investors learn about firm activities, and the greater the stock price reaction. This idea is captured in several models, such as Collins and Salatka's (1993) and Teoh and Wong's (1993). A positive association between earnings persistence and the ERC is theoretically and empirically supported (See Kormendi and Lipe 1987; Easton and Zmijewski 1989 among others). For example, Kormendi and Lipe (1987) documented that abnormal returns for earnings increases are greater for high-persistence firms than for low-persistence firms. Holthausen and Verrecchia (1990) demonstrated, using their theoretical model, that the stock price response increases with the precision of the information. The investor's perception of earnings precision has been measured with various proxies. For example, Teoh and Wong (1993) used a dichotomous variable: Big 8 vs. non-Big 8 auditors.

[7] When testing on the Compustat universe, regressions were performed separately for each year within the sample period to address potential issues arising from positive cross-sectional correlations of the residuals. The mean coefficients and t-statistics reported were obtained using the Fama and MacBeth (1973) procedures.

[8] For example, Nayak and Prabhala (2001) reported that many stock split firms contemporaneously announce dividends.

[9] The values for asymmetry and kurtosis for all the variables were between −2 and +2, which were considered acceptable in order to prove a normal univariate distribution (George and Mallery 2010; Hair et al. 2010). I also conducted Jarque–Bera tests on the main variables and found test statistics ranging from 8.6 to 17.3, indicating significance and leading to the rejection of the null hypothesis of normality for most of my variables. To address potential nonlinearity in the data, I then performed rank-transformed regressions using decile values of all the variables to estimate the regression models (untabulated). The findings from this regression approach align qualitatively with those obtained from the main analysis.

[10] I estimated Equations (1a)–(3b) using pooled cross-sectional ordinary least squares (OLS). One concern with pooled estimation is potential bias in the coefficient standard errors if the errors are serially correlated. To investigate this, I conducted Durbin–Watson tests (Durbin and Watson 1951) on the OLS estimations of Equations (1a)–(3b).The Durbin–Watson d-statistics for Equations (1a)–(3b) ranged between 1.8336 (p-value: 0.9935) and 2.1874 (p-value: 0.1323), indicating insignificance across all equations. These results suggest that there is no significant first-order autocorrelation in the pooled cross-sectional OLS estimation of Equations (1a)–(3b). I also checked variance inflation factors (VIFs) for all my regressions. As a rule of thumb, a variable with VIF values greater than 10 may merit further investigation. The mean VIF value of the variables in my regression models was 2.52, with the lowest VIF value being 1.12 and the highest VIF value being 3.16, suggesting that multicollinearity problems were unlikely to have affected my regression models.

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