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Investor partitioning of the components of value in corporate earnings announcements

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Abstract

This study provides new insight into the market's allocation of dividend-related and capital gains-based returns on common stock around earnings announcement surprises. To the extent that investors' cash flow forecasts are revised as earnings surprises occur, Americus Trust prime and score returns reflect changes in respective future dividends and capital gains. About 70% of the value gain from positive surprises accrues in the capital gains (score) value adjustment, with expected dividends (primes) reflecting the remaining 30%. The relative proportion is greater in magnitude at the announcement of fiscal fourth quarter results when dividend changes are more likely to follow the quarter earnings announcement.

JEL classification: G120

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1. Introduction

It has long been known that corporate earnings surprises significantly affect returns to investors. Researchers have examined the impact of quarterly and annual earnings announcements on stock prices, trading volume, average transaction size, option volatility, and option open interest, among other issues. A nearly universal conclusion in the literature is that earnings announcements have significant information content, and thus are important to investors in estimating future cash flows. The purpose of this study is to measure the impact of earnings surprises on the expected capital gains and dividend returns to common stockholders. Americus Trust securities provide a novel means by which to partition the components of return and to analyze the relative contribution of each component to total return.

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The Americus Trust program, a derivative security innovation of the early 1980s, provided a means of splitting the return of dividend paying firms into its two basic sources. For about five years, stockholders in 27 large companies had the opportunity to tender their shares to the Americus Shareowner Service Corporation in exchange for a new security known as a *unit*. The certificate for each unit was perforated and divisible into a *prime* (Prescribed Right to Income and Maximum Equity) and a *score* (Special Claim On Residual Equity), each of which traded separately. Primes gave investors the right to the firm's quarterly dividend income plus a fixed termination value, on or before a stated termination date. A prime closely resembled a corporate bond, especially when the stock price exceeded the termination value. Scores represented the right to a stock's capital gains, that for Americus Trusts are the excess of the underlying stock's price over the termination value. Scores, that shared the primes' termination dates, were much like long-term call options. Up to 5% of each firm's outstanding stock could be exchanged for Americus Trust securities. After 5% of a firm's shares were tendered the Trust closed, and the primes, scores, and units were obtainable only in the secondary market.

Tax rulings by the IRS have discouraged the formation of any new Trusts identical to the original series. The last remaining primes and scores expired in August 1992; however, the ephemeral existence of the Trusts does not diminish their relevance to the financial markets, for several reasons. First, the popularity of long-term call options has increased greatly, as the major exchanges have listed LEAPS, options with expiration periods of up to 39 months, on over 300 individual stocks and about a dozen indexes. Second, a new generation of similar trusts may emerge. Any new Americus Trusts will, of course, have to comply with the IRS ruling that doomed the first generation. The new securities may even be issued by the respective firms themselves, involve more than 5% of the stock, and thus enhance their importance relative to the original Trusts. Third, primes and scores provide a means of examining financial issues that would otherwise be more difficult or impossible to address. A case in point is research by Venkatesh (1991), that shows how Americus Trust securities can be used to analyze dividend capture trading. Finally, dual-purpose funds currently exist for investors that allow investors to select current income return or long-term return from funds of stocks and bonds.

The present study uses Americus Trust securities to decompose the stock market's response to earnings surprises into its constituent parts. The division of returns to investors attributable to expected dividends versus stock price changes is found to be roughly 30 versus 70%. Analysis of these proportions shows them to be remarkably constant across a number of dimensions, including corporate payout policies, earnings estimation models, and abnormal return measures.

2. Literature review and testable hypotheses

2.1. Americus Trust securities

The finance literature has investigated primes and scores from a variety of perspectives. Jarrow and O'Hara (1989) examine the possible mispricing of primes and scores relative to the underlying stocks. After controlling for transaction costs, they find that the underlying

stock consistently sold at a discount relative to Americus Trust instruments. The authors conclude that this disparity arises from regulatory constraints on short sales of common stock, with trading in primes and scores possibly serving as an attractive hedging alternative to short selling. Thus, the effect that Jarrow and O'Hara observe may represent demand for Americus Trust securities driven by a paucity of hedging vehicles for firms' stock. Despite the pricing disparities noted, transaction costs are found to be large enough to prevent systematic gains from arbitrage.

In another comparison of stocks and their Americus Trust counterparts, Deshpande and Jog (1989) compute average betas for stocks (1.07), primes (.45), and scores (5.06). The unusually high volatility for the scores probably reflects the fact that most scores are near the money (termination value) during the measurement period. Of course, were a stock price well above the termination value, the score's beta would more closely reflect that of the stock. Venkatesh (1991) uses primes to document the existence of substantial dividend capture trading. He hypothesizes that because trading costs are greater for primes than for stocks, cum-ex trading is likely to manifest itself in the form of increased volume in stocks rather than primes. The empirical results of Venkatesh suggest that the ex-dividend period trading volume of securities be related to their transaction costs.

Canina (1999) looks specifically at primes' and scores' price reaction to dividend change announcements. She reports a significant, positive 1.44% 3-day excess returns for scores and a significant, positive .89% 3-day excess returns for primes. Without distinguishing scores for their moneyness, she concludes that dividend increases are viewed mostly as a long-term change to the earnings ability of the firm.

2.2. Earnings announcements

The informational value of earnings announcements has long been demonstrated. For instance, Rendleman et al. (1982) confirm that the market rewards firms revealing positive earnings surprises, and penalizes those announcing lower-than-expected earnings. Aharony and Swary (1980) measure the announcement date earnings response coefficients (ERCs) to be about +.52%, and 21 day (days −10 through +10) abnormal returns to be around 2.1%, suggesting that there is a strong information content to earnings announcements.

As a further test of the information hypothesis, Cready (1988) focuses on changes in the size of the average transaction around annual and quarterly earnings announcements. Wealthy investors are assumed to have more information than other market participants do, and they also tend to trade in larger blocks. He discovers a strong positive relationship between mean unexpected transaction size and absolute price changes in the announcement week, again consistent with the hypothesis that earnings announcements are important information events. The generally accepted explanation for such findings is that the market uses earnings revelations to re-evaluate a firm's expected future cash flows, and investor behavior and stock prices adjust accordingly. It is not clear, however, whether the stock price adjustment results from changes in the market's expectations of future dividends, capital gains, or both.

Kane et al. (1984), for example, report a positive relationship between earnings and dividend changes. In the sample of Kane et al., 60% of earnings changes are accompanied

by dividend changes in the same direction. Consequently, if an earnings increase is announced, the value of a company's prime (the dividend-bearing portion of an Americus Trust Unit) should rise. Such earnings information might not have immediate cash flow implications for prime holders if related dividend declarations precede rather than follow earnings announcements; however, in Aharony and Swary's sample of 3399 earnings announcements, associated dividend declarations *follow* earnings revelations 77% of the time. Thus, it is expected that an unanticipated earnings change would have a direct impact on the prime's returns. Further, because stock prices are observed to change significantly in response to quarterly earnings announcements, it is expected that the score's price would be affected similarly.

The association between earnings and stock prices is further explored by Beaver et al. (1997), who show that the earnings/stock price relationship can be modeled using a simultaneous equations approach. Their analysis, however, is hampered by uncertainty over which instrumental variables should be used in the necessary multi-stage regressions.

Additional empirical work on ERCs by Kallapur (1994) and Sivakumar and Waymire (1993) shows that the market may view the level of a firm's dividend to be a sign of the credibility it can assign to earnings announcements. Kallapur finds ERCs to be positively related to the announcing firm's dividend payout ratio. Sivakumar and Waymire examine 51 firms between 1905 and 1910, when earnings announcements were discretionary. They observe significant positive returns for dividend-paying firms, but not for non-dividend-paying firms. Dividend increases are associated with greater stock price movements than are earnings increases, suggesting that the market considers earnings to be more credible if accompanied by dividend changes.

Hayn (1995) shows that the ERCs for profits and losses are asymmetric. The coefficient is smaller for losses than for profits, suggesting that the practice of pooling profits and losses has the effect of driving down computed ERCs.

2.3. Time sensitivity of results

Lang (1991) shows that the response of IPO stock prices to earnings surprises tends to vary across time, depending on the level of uncertainty surrounding the firm's earnings. The data set in the present study is composed of firms that are substantially different from Lang's IPO sample. Nonetheless, Lang's results raise the question of whether the proportional reactions of primes and scores are constant over time. The time to expiration of each Trust at the date of an earnings surprise is used as the measure of time sensitivity. The more dividend payments a firm has remaining before Trust expiration, the more chances exist for managers to revise the amount. On the other hand, additional time also means that the score has the opportunity to rise further into the money, providing enhanced capital appreciation. The net effect will be determined by the relative discount rates that investors apply to dividend income versus capital gains, an unobservable factor.

2.4. Moneyness

Scores share several important characteristics with call options. The termination value for each Trust serves as a *de facto* exercise price. The concept of moneyness (the extent to which

a score is in- or out-of-the-money) is particularly important to this study. The moneyness for the score of Firm j on Day t is calculated as

$$\text{Moneyness}_{jt} = \frac{\text{Stock Price}_{jt} - \text{Termination Value}_{j}}{\text{Termination Value}_{j}} \quad (1)$$

Recall that the prime's value includes all dividends plus an amount up to a termination value. If the stock price is *below* the termination value at the time of a value-increasing, positive surprise, then the prime's return will reflect both the increased expected future dividends plus the capital appreciation toward the termination claim. Such observations are likely to introduce error into the present analysis, because in theory the prime will reflect a pure dividend stream and the score a pure capital gain return only if the score is in or at the money. Hence, only scores that are in the money during the entire parameter estimation and event period are included in the final sample. Some noise doubtless remains, because the prime can never represent a *perfect* dividend stream. Even when the stock price is above the termination value, some of the prime's return during earnings surprises will still reflect whether the prime holder's receipt of the termination claim is made more certain or less certain as a result of the earnings news.

The safety effect for primes associated with in-the-money scores has an analogy elsewhere in corporate finance. Jin (1992) finds that even though the promised payments remain fixed for corporate bonds, the returns for such securities tend to be highly correlated with the sign of corporate earnings surprises. In the present study, the upshot of this safety effect is to overstate somewhat the dividend income component of return. The proportional return from primes should thus be viewed as an upper bound dividend return.

Even with out-of-the-money scores eliminated, there remains a high degree of cross-sectional variability in moneyness among surviving observations. The prime's safety effect will become smaller when a Trust's score is deep in-the-money, thus causing the score's proportional return to be higher relative to the prime. A countervailing effect could arise from the propensity of stock prices toward mean reversion, as discussed by De Bondt and Thaler (1985, 1987). In order for a score to be deep in the money, the stock price must have risen significantly since the Trust's inception. Mean reversion behavior would suggest that a price decline is more likely for stocks in the sample than for stocks whose price had not risen; however, De Bondt and Thaler note that the phenomenon is far less striking for prior winners than for losers. Consequently, mean reverting tendencies are expected to have only a minor impact on in-the-money scores, and by extension on the division of returns between prime and score.

2.5. Fiscal quarter effects

Jones and Bublitz (1990) address the question of higher-than-expected errors in earnings forecasts found to persist in fiscal fourth quarters. Non-recurring items are much more likely to be included in that quarter's reported income than in other quarters'. Accordingly, the market's average reaction to unexpected fourth quarter earnings is somewhat muted. Such a finding raises the question of whether the present study's results might be driven by its fourth

quarter observations. If fourth quarter earnings after extraordinary items are more variable than those of other quarters, it follows that permanent dividend changes should not be as strongly tied to earnings in that quarter. Thus, one should expect a greater relative return from scores versus primes around fourth quarter earnings announcements.

3. Data and methodology

The primary data for this study cover 26 Americus Trusts. The original AT&T trust, established in 1983, is eliminated from the sample due to a paucity of historical earnings information for the newly restructured firm. GTE's Trust is limited to the sample period before its acquisition of Contel in March 1991. There are 459 earnings announcements in the initial sample, representing the time period December 1, 1985 (when only the Exxon Trust existed) through July 31, 1992 (when only the American Express Trust remained). The present study's requirement that scores be in-the-money results in the loss of 323 observations, meaning that nine Trust firms are not represented at all in the sample.

Quarterly primary earnings per share before extraordinary items are obtained from the Compustat database from the first quarter of 1972 through the expiration of each Trust. The earnings variable used is item number Q19 (EPSPXQ) in Compustat PC-Plus. For each observation, the analysis requires that there be at least one dividend declaration remaining between the earnings announcement date and the expiration date of the Trust.

The *Wall Street Journal Index* is used to identify earnings announcement dates and to check for potentially confounding events over a two-day announcement period. Events such as dividend declarations, merger news, and securities offerings are considered to be potential contaminants, that result in the deletion of 37 observations.

The final sample consists of the 99 surviving data points. Panel A of Table 1 shows the time distribution of the sample. Most observations are found after 1989, due to the fact that several firms' stocks did not rise above the termination value until late in the sample period.

To evaluate the market's response to earnings surprises, cumulative abnormal returns (CARs) are examined for the underlying stock and its corresponding prime and score from the Americus Trusts. Abnormal returns are generated as the difference between a security's actual daily return and its expected return. The expected return is the return for the CRSP equally weighted index. The market adjusted returns methodology is used in lieu of the market model approach, because option betas can be quite unstable even when the underlying stock's beta is constant (see Cox and Rubinstein, 1988, p. 190). Day -1 is defined as the public earnings announcement date, with the publication of the news in *The Wall Street Journal* taking place on Day 0 in many cases. Significant CARs would indicate whether the market sees earnings surprises as having long-term effects reflecting increased expected dividend streams (significant CARS would be found for stocks and primes), capital appreciation/depreciation effects (significant CARS for the stocks and scores only), or implications for cash flows from dividends as well as price changes (significant responses in all return series).

The market's reaction to an event is expected to reflect the sign and magnitude of the earnings surprise. Following Kane et al. (1984), Schachter (1988), and Easton and Zmijewski

Table 1
Sample description

Company	1986	1987	1988	1989	1990	1991	1992	Total
Panel A: Chronological distribution of earnings announcements								
American Home Products	0	0	0	2	4	0	0	6
Amoco	0	0	0	0	2	0	0	2
Bristol Myers Squibb	0	0	0	0	2	1	0	3
Chevron	0	0	0	0	1	0	0	1
Coca Cola	0	0	0	2	4	0	1	7
Dow Chemical	0	0	4	4	0	0	0	8
DuPont	0	0	0	0	0	2	0	2
Exxon	1	4	4	4	3	0	0	16
Ford Motor Co.	0	0	1	1	0	0	0	2
General Electric	0	0	0	0	1	0	0	1
GTE	0	0	0	4	4	0	0	8
Johnson & Johnson	0	0	0	0	2	1	1	4
Mobil	0	0	0	0	2	1	1	4
Merck	0	0	0	3	4	3	0	10
Philip Morris	0	0	0	3	4	3	3	13
Procter & Gamble	0	0	0	2	4	4	1	11
Union Pacific	0	0	0	0	0	0	1	1
Total	1	4	9	25	37	15	8	99

Variable[a]	Mean	Median	SD
Panel B: Other sample characteristics			
Time to Expiration (years)	1.93 years	1.93 years	1.04 years
Moneyness	40.53%	29.66%	41.37%
Earnings surprise			
Foster model	10.09%	5.50%	35.16%
Naive model	13.73%	16.48%	39.80%
Long-term dividend payout ratio	56.17%	54.53%	3.61%

[a] Moneyness is the percentage premium over termination value. The Earnings Surprises are the percentage deviation from expected earnings using Foster's model and a Naive model. The Long-Term Dividend Payout Ratio is computed as the average (from 1983 through the date of each earnings surprise) of the firm's quarterly dividend divided by the prior quarter's earnings before extraordinary items.

(1989), percentage earnings announcement surprises are estimated using the methodology of Foster (1977). First, for each firm j, one year changes in earnings are regressed on the one quarter lag of the change in one year's earnings, as noted in Eq. (2):

$$[EPS_{j,t} - EPS_{j,t-4}] = \alpha_j + \beta_j [EPS_{j,t-1} - EPS_{j,t-5}] + e_{j,t}, \quad (2)$$

where $EPS_{j,t}$ is the earnings per share before extraordinary items for firms in quarter t, and $e_{j,t}$ is a random error term assumed to be normally distributed. Using the parameters estimated in Eq. (2), expected earnings are computed with Eq. (3), as follows:

$$[EPS_{j,t+1} - EPS_{j,t-3}] = \alpha_j + \beta_j [EPS_{j,t} - EPS_{j,t-4}]. \quad (3)$$

The percentage earnings surprise is measured as the difference between the actual earnings in any period and the expected earnings for that period divided by the absolute value of expected earnings.

For comparison purposes, and following Aharony and Swary (1980) and Damodaran (1989), a naive earnings estimation model also is used. Canina (1999) also relied on a naïve expectations model for dividends. Her findings are congruent with our own. Expected earnings are thus defined as the earnings from the corresponding quarter in the fiscal year:

$$E(EPS_{j,t}) = EPS_{j,t-4}, \tag{4}$$

and surprises are computed as for the Foster model.

Panel B of Table 1 provides summary statistics for the data set, including information about time to expiration of the Trusts, moneyness of the scores, the size of the earnings surprises, and dividend payout ratios for each firm. Many of the scores are far in the money, with the median stock price exceeding the termination value by almost 30%. The mean time to expiration is about two years, so each Trust has about eight dividend payments remaining.

Other issues remain. The fact that the score holders realize the greatest price impact reflects the high elasticity of this option-like security; however, the low price of most scores relative to the termination value makes the *dollar* return impact much smaller than the percentage return would suggest. For example, on October 12, 1989, the closing market prices for primes and scores of Coca Cola Corp. were $44.70 and $25.10, respectively. The next day, the firm announced a positive earnings surprise of 11.0% relative to the expectation generated by Foster's model and 25.9% based on a naive model. After adjustment for market factors, the prime's abnormal return in the two days in the earnings announcement period is 3.5% and the score's abnormal return is 21.3%. Dollar returns to Coca Cola investors, however, are $1.58 for the prime and $5.35 for the score. The difference in the dollar returns is obviously much smaller than the six fold difference in percentage terms. An analysis of the proportional price-based abnormal returns to stockholders must include an adjustment that considers the relative values of the prime and score.

Hence, the dollar returns to prime holders, for example, are best represented by multiplying the prime's CAR by the proportion of the total stock value the prime constitutes. Formally,

$$ACAR_{pr} = CAR_{pr} * \frac{V_{pr}}{V_{pr} + V_{sc}} \tag{5}$$

where V_{pr} and V_{sc} are market closing prices of the two securities the day before the earnings announcement is made. The score's ACAR is computed analogously.

To address the hypotheses developed earlier with regard to time to expiration, moneyness, fourth quarter dividend announcements, and the magnitude of the surprise, the following multiple regression model is used to analyze cross-sectionally the division of returns between primes and scores:

$$RATIOM = \alpha_{0j} + \alpha_{1j}(TTEXP) + \alpha_{2j}(MONEY) + \alpha_{3j}(QTR4) + \alpha_{4j}(SURPRISE) + \varepsilon_j. \tag{6}$$

RATIOM is the ratio of the proportional prime return divided by the proportional return for the score, with returns generated by the market-adjusted return method. Another regressand,

Table 2
Abnormal returns around earnings announcements for Americus Trust firms[a]

Security	Sign of earnings surprise					
	Positive			Negative		
	CAR (%)	*t*-statistic	*N*	CAR (%)	*t*-statistic	*N*
Foster's (1977) classification model						
Stock	0.32[b]	2.83***	73	−0.13	−0.24	26
Prime	0.16	1.46*	73	0.40	0.42	26
Score	1.41	2.69***	73	−1.63	−0.20	26
Naive classification model						
Stock	0.26	1.58*	76	−0.05	−0.09	23
Prime	0.11	0.99	76	0.51	0.56	23
Score	1.20	2.27**	76	−1.36	−0.17	23

[a] This table contains two-day cumulative abnormal returns (CARs) for stocks, primes, and scores around the time of earnings announcements. The abnormal return technique used is the market-adjusted returns approach.
[b] All abnormal returns are for days −1 and 0.
* Statistically significant at .10 level, one-tailed test.
** Statistically significant at .05 level, one-tailed test.
*** Statistically significant at .01 level, one-tailed test.

RATIOC, is computed identically, but is derived from the comparison period abnormal returns approach. TTEXP is the time to expiration of each Trust (in years), and MONEY is the percentage by which each firm's stock price exceeds the Trust's termination value. QTR4 is a dummy variable assigned a value of 1 if the earnings result is from the fiscal fourth quarter and 0 otherwise, and SURPRISE controls for the magnitude of the positive or negative earnings surprise relative to the value predicted by Foster's model or the naive model.

4. Results

4.1. General findings

Observations in the entire population of earnings announcements are classified as positive or negative surprises, and then the security returns are examined. Table 2 indicates that for the screened sample, the prices of stocks, primes, and scores all react strongly to announcements of positive earnings surprises using a naïve model. Negative earnings surprises are associated with statistically insignificant abnormal returns to all three securities. When classified using Foster's (1977) specification, positive surprises induce statistically significant two-day abnormal returns for all three security types. Thus, earnings surprises clearly alter the market's perception of the sign and magnitude of all future cash flows, from both dividends and capital gains.

Empirical results in Table 2 show that the response to earnings surprises is relatively consistent across the two earnings expectation models. As the samples overlap significantly, this observation may say as much about the classification consistency (i.e., discrimination between positive versus negative surprises) of the models themselves as it does the robust-

Table 3
Adjusted cumulative abnormal returns for share equivalent investment in Americus Trust securities[a]

Security	Sign of earnings surprise					
	Positive			Negative		
	ACAR (%)	Proportion	*N*	ACAR (%)	Proportion	*N*
Naive classification model						
Prime	0.0864	0.2913	73	0.7358	0.3397	26
Score	0.3865	0.7087	73	−0.3100	0.6603	26
Foster's (1977) classification model						
Prime	0.1209	0.2886	71	0.3047	0.3804	28
Score	0.4249	0.7164	71	−0.3720	0.6196	28

[a] Adjusted cumulative abnormal returns for primes ($ACAR_{pr}$) are two-day cumulative abnormal returns to primeholders times [$V_{pr}/(V_{pr} + V_{sc})$], where the V_{pr} and V_{sc} are the closing prices on the day before an earnings announcement. For scores, $ACAR_{sc}$ equals market model abnormal returns to scoreholders times [$V_{sc}/(V_{pr} + V_{sc})$]. Proportion for primes is the $ACAR_{pr}/(ACAR_{pr} + ACAR_{sc})$. Proportion for scores is defined analogously. The following example attempts to clarify the concept of ACARs and proportional return:

	Prime	Score	Stock
Market value	$10	$20	$30
CAR	10%	7%	8%
ACAR	3.33%	4.67%	8.00%
Proportional return	41.67%	58.33%	100.00%

Viewing common stock as a portfolio of a prime and score, the adjusted CAR for the prime is 10% times the prime's weight in the portfolio (one-third). The score's ACAR of 4.67% equals the 7% return to the score times its portfolio weight (two-thirds).

ness of the observed proportions. The CARs and adjusted CARS reported in Tables 2 and 3 are based on the pre-announcement market values of the primes and scores. The combined value of the two securities is within arbitrage bounds of equaling the stock's value (see Jarrow and O'Hara, 1989).

As Table 3 indicates, at the time of positive surprises, prime holders receive roughly 30% of the total return whereas score holders reap about 70%. These findings are quite robust across other earnings estimation models and abnormal return metrics. For the firms in this sample, then, positive earnings surprises induce significant changes in investor expectations of future capital gains, and a much smaller revision in perception of the firm's future dividend policy. This evidences dividend stickiness, that means that dividends are linked to earnings somewhat loosely and with a time lag.

4.2. Fiscal quarter effects

Table 4 shows the results for the regression model using both market-adjusted and comparison period returns. The OLS coefficients in Panel A indicate that the proportional contributions of primes and scores to the total return around positive earnings surprises do not differ significantly across in-the-moneyness and expiration states. Likewise, the magnitude of earnings surprises does not seem to affect the division of returns.

Table 4
Analysis of adjusted cumulative abnormal returns[a]

Intercept	TTEXP	MONEY	QTR4	SURPRISE	*F*	Adj-R^2
Panel A: Foster's model surprises						
Dependent variable: RATIOM						
−2.2064	0.5834	1.1841	1.7700	−0.9278	0.92	0.00
(−1.48)	(1.07)	(0.89)	(1.57)	(−0.67)		
Dependent variable: RATIOC						
−0.7945	0.1976	0.2844	1.4648	−0.8139	1.56	0.02
(−0.95)	(0.648)	(0.382)	(2.323)*	(−1.044)		
Panel B: Naive model surprises						
Dependent variable: RATIOM						
−2.3284	0.6411	1.2922	1.6537	−0.7333	0.89	0.00
(−1.50)	(1.08)	(0.95)	(1.47)	(−0.55)		
Dependent variable: RATIOC						
−0.9144	0.2561	0.3884	1.3597	−0.6817	1.49	0.0197
(−1.05)	(0.769)	(0.508)	(2.151)*	(−.907)		

[a] The dependent variable in each of the following regressions is the ratio of proportional abnormal returns associated with Americus Trust primes and the proportional returns for scores. RATIOM is for market-adjusted returns and RATIOC is for comparison period abnormal returns. TTEXP is the time to expiration of each Trust (in years); MONEY is the degree to which each firm's stock price exceeds the Trust's termination value (in percent); QTR4 is a dummy variable taking on a value of 1 if the earnings result is from the fiscal fourth quarter and 0 otherwise; SURPRISE is the magnitude of the positive or negative earnings surprise relative to the value predicted by Foster's [13] model or a naive model. Below each parameter estimate, the t-statistic is given in parentheses.

* Statistically significant at the .05 level.

The only statistically significant coefficient is on the dummy variable for the fiscal quarter. The coefficient's sign is positive, that is unexpected. One possible explanation stems from the casual observation that firms tend to make dividend changes immediately after or concurrent with announcements of fourth quarter earnings results. Typically, fourth quarter-induced changes ought to be reflected in dividends that are actually paid in the first fiscal quarter.

An examination of Compustat quarterly dividend data from 1983 through 1992 strongly confirms this suspicion. In the 1983 through 1992 period there are 291,281 quarterly dividend changes (initiations, omissions, increases, and decreases) among Compustat's active firms. Relative to the previous fourth quarter's dollar payout, dividends changed for 14.6% of firms in fiscal first quarters. On average, 12.2% of firms changed their payments during each of the other fiscal quarters. The Wilcoxon rank sum statistic shows the two percentages to be significantly different at the .01 level (one-tailed test). With dividend changes being most likely to follow fourth quarter earnings realizations, it is not surprising to find that the prices of primes are affected disproportionately when year-end earnings are announced.

5. Conclusions

Americus Trust primes and scores represent unique vehicles by which to view the components of return. This study provides new insight into the market's allocation of

dividend-related and capital gains-based returns on common stock at the arrival of new earnings information. To the extent that investors' cash flow forecasts are revised as earnings surprises occur, Americus Trust prime and score returns reflect changes in respective future dividends and capital gains.

Cumulative abnormal returns to both primes and scores are found to be positive around positive earnings surprises, though no significant reaction is detected around negative earnings events. It seems, then, that investors adjust their expectations of both current payout and capital gains when there is good news. For the large capitalization firms in the Americus Trust program, about 70% of the value gain from the surprise accrues in the capital gains (score) value adjustment; with expected dividends (primes) reflecting the remaining 30%. These relative proportions are found to be robust across multiple earnings estimation models, over time, and across score at- or in-the-moneyness levels. This is in line with Canina (1999), although her implied 61.8% impact to the long term valuation for dividend announcements does not control for announcement quarter timing or moneyness of the scores. Recall that the ratio of prime and score returns for fourth quarter earnings surprises is significantly higher than those in other quarters.

This study's results contribute to the corporate earnings literature by showing the precise nature of investors' cash flow revisions around earnings surprise announcements. One limitation is that the findings may be less relevant to smaller growth firms, as the present sample necessarily consists of large companies. Also, because it does not represent a perfect dividend-related return, the prime's relative return (30%) should be viewed as an *upper bound* proportional dividend contribution. Still, the results for the study are remarkably robust to methodology used. Research such as this can provide designers of new financial instruments with a better understanding of the behavior and relative pricing characteristics of the securities being engineered.

These results raise interesting implications for portfolio management. For investors and financial planners, these results suggest that allocation of investment dollars to stocks may be best done by also considering the variance of forecast error. That is, firms that frequently have earnings surprises, may better be represented in the portfolio around announcement time by derivatives than the stock itself. This would be especially true in the case of building or investing in a dual purpose fund. Also, these findings suggest a more efficient strategy in capturing earnings announcement surprises may be through the use of LEAPS than listed short-term options. Examination of these extensions is left to future research.

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References

Aharony, J., & Swary, I. (1980). Quarterly dividend and earnings announcements and stockholders' returns: an empirical analysis. *Journal of Finance, 35*(1), 1–12.

Beaver, W., McAnally, M. L., & Stinson, C. H. (1997). The information content of earnings and prices: a simultaneous equations approach. *Journal of Accounting and Economics, 23*(1), 53–81.

Canina, L. (1999). The market's perception of the information conveyed by dividend announcements. *Journal of Multinational Financial Management, 9*(1), 1–13.

Cox, J. C., & Rubinstein, M. (1988). *Options markets.* Upper Saddle River, NJ: Prentice Hall.

Cready, W. M. (1988). Information value and investor wealth: the case of earnings announcements. *Journal of Accounting Research, 26*(1), 1–27.

Damodaran, A. (1989). The weekend effect in information releases: a study of earnings and dividend announcements. *Review of Financial Studies, 2*(4), 607–623.

De Bondt, W. F. M. (1987). Further evidence on investor overreaction and stock market seasonality. *Journal of Finance, 42*(3), 557–581.

De Bondt, W. F. M., & Thaler, R. (1985). Does the stock market overreact? *Journal of Finance, 40*(4), 793–805.

Deshpande, S., & Jog, V. (1989). Primes and scores. *AAII Journal, XI*(7), 15–19.

Easton, P. D., & Zmijewski, M. E. (1989). Cross-sectional variation in the stock market response to accounting earnings announcements. *Journal of Accounting and Economics, 11*(2–3), 117–141.

Foster, G. (1977). Quarterly accounting data: time series properties and predictive ability results. *Accounting Review, 52*(1), 1–20.

Hayn, C. (1995). The information content of losses. *Journal of Accounting and Economics, 20*(2), 125–153.

Jarrow, R. A., & O'Hara, M. (1989). Primes and scores: an essay on market imperfections. *Journal of Finance, 44*(5), 1263–1287.

Jin, J.-D. (1992). The relationship between accounting earnings and bond returns. *Journal of Accounting and Public Policy, 11*(3), 245–267.

Jones, C. P., & Bublitz, B. (1990). Market reactions to the information content of earnings over alternative quarters. *Journal of Accounting, Auditing, and Finance, 5*(4), 549–566.

Kallapur, S. (1994). Dividend payout ratios as determinants of earnings response coefficients: a test of the free cash flow theory. *Journal of Accounting and Economics, 17*(3), 359–375.

Kane, A., Lee, Y. K., & Marcus, A. (1984). Earnings and dividend announcements: is there a corroboration effect? *Journal of Finance, 39*(4), 1091–1099.

Lang, M. (1991). Time-varying stock price response to earnings induced by uncertainty about the time series process of earnings. *Journal of Accounting Research, 29*(2), 229–257.

Rendleman, R. J., Jones, C. P., & Latané, H. A. (1982). Empirical anomalies based on unexpected earnings and the importance of risk adjustment. *Journal of Financial Economics, 10*(3), 269–287.

Schachter, B. (1988). Open interest in stock options around quarterly earnings announcements. *Journal of Accounting Research, 26*(2), 353–372.

Sivakumar, K. N., & Waymire, G. (1993). The information content of earnings in a discretionary reporting environment: evidence from NYSE industrials, 1905–10. *Journal of Accounting Research, 31*(1), 62–91.

Venkatesh, P. C. (1991). Trading costs and ex-day behavior: an examination of primes and stocks. *Financial Management, 20*(3), 84–95.