

Variation in Return Signs: Announcements and the Weekday Anomaly

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This paper investigates the announcement effect explanation of the weekday anomaly. In contrast to previous studies that examine mean index returns by weekday, this paper examines mean proportions of securities that display a particular return sign. A consistent and significant variation occurs in the proportion of securities with particular return signs across weekdays. This variation causes a parallel, consistently significant weekday effect for the CRSP equally weighted index. The magnitude of this movement lends support to the hypothesis that market-wide effects rather than firm-specific announcements cause the weekday effect in mean returns.

INTRODUCTION

A substantial body of literature documents significant variation in equity returns across weekdays attributable primarily to negative average Monday returns.¹ A continuing debate exists regarding the cause of this variation. Studies generally have concluded that the weekday anomaly is robust with regard to violation of test assumptions in security returns.² Likewise, studies of the impact of institutional factors on the weekday effect provide at best an incomplete explanation of return differentials.³ These findings, and the discovery of weekday effects in a wide variety of security markets, have encouraged the development of explanations for the weekday effect that do not rely on details of a particular market.⁴

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¹ Yale Hirsch advised subscribers to his annual *Stockholder's Almanac* to trade on the basis of variation in weekday returns as early as 1968. Cross (1973) reports that index returns are more likely to be negative on Monday than on Friday. French (1980) and Gibbons and Hess (1981) were the first to provide rigorous statistical proof of a weekday effect.

² Gibbons and Hess (1981) conclude that data deviations from normality do not cause the weekday effect. Both Keim and Stambaugh (1984) and Jaffe and Westerfield (1985) conclude that the weekday effect does not result from autocorrelations in daily returns. In contrast, Connolly (1989) argues that application of tests that do not assume normality leads to the conclusion that the weekday effect disappeared by 1975. This conclusion seems too sweeping given Wingender and Groff's (1989) finding that stochastic dominance comparisons maintain the day-of-the-week patterns observed in earlier studies.

³ French (1980) determines that differences between trading time and calendar time do not cause the weekday effect. Gibbons and Hess (1981) and Lakonishok and Levi (1982) investigate the influence of settlement effects. Keim and Stambaugh (1984) demonstrate that specialist-related bias does not create the weekday effect. Branch and Echevarria (1991) are unable to account for the weekday effect from the impact of the bid-ask spread.

⁴ Included among the markets for which a weekday effect has been found are Treasury bills, Gibbons and Hess (1981); Eurodollars, Coats (1981); foreign exchange, McFarland, Pettit, and Sung (1982); equity

The Blue Monday hypothesis, which suggests that variation in daily returns results from change in the level of investor optimism across the week, implies both market inefficiency and investor irrationality. This explanation, consistent with casual empiricism documenting pessimistic attitudes toward Mondays, receives support in the practitioner literature (Jacobs and Levy, 1988; Rystrom and Benson, 1989).

Miller (1988) argues that the weekday pattern results from social arrangements regarding the standard work week that cause seller-instituted trades to predominate on Monday and buyer-instituted trades to predominate later in the week.⁵ This work week argument does not require investor irrationality, but does imply a degree of market inefficiency because the market lacks sufficient liquidity to avoid an impact caused by supply and demand imbalance. Lakonishok and Maberly (1990) find empirical support for these hypothesized differences in seller- and buyer-instituted trades. They further illustrate that observed return differentials are smaller than the bid-ask spread for a typically priced stock.

Another explanation, which is the focus of this paper, hypothesizes that the weekday pattern in returns simply reflects a weekday pattern in the generation of information from public announcements. The announcement hypothesis allows for both market efficiency and investor rationality.⁶

ANNOUNCEMENT EFFECT STUDIES OF THE WEEKDAY ANOMALY

Because firms have considerable latitude in making public announcements, they could time such announcements in an attempt to mollify the impact on the firm's stock price. For instance, a firm may choose to release bad news late on Fridays to allow the market to digest the information over the weekend. If this practice is widespread, its effect on Monday openings may explain the weekday anomaly. Previous studies concerning this announcement hypothesis justify three conclusions. First, firms delay the release of bad news in recurring earnings and dividend announcements. Second, there is a tendency for bad news to be released on Friday. Third, this concentration of bad news on Friday does not provide an adequate explanation of the weekday effect.

markets in other developed countries, Jaffe and Westerfield (1985); gold, Ma (1986); emerging equity markets, Aggarwal and Rivoli (1989); future markets, Chamberlain, Cheung, and Kwan (1990); and corporate bonds, Jordan and Jordan (1991).

⁵ Miller asserts that the weekday pattern in equity returns must result from a similar pattern in the ratio between buy and sell orders. He argues that individual traders who recently have been net sellers tend to make their investment decisions over the weekend. These decisions result in an accumulation of sell orders early Monday. In contrast, institutional traders who have been net buyers in recent years will make most of their decisions during the normal Monday to Friday work week. Further, broker-initiated trades for individuals, which are overwhelmingly buy orders, also occur during the normal work week.

⁶ The compatibility of market efficiency and an announcement effect may be challenged on the basis that traders should anticipate a recurring pattern to announce bad news after the Friday close. According to this argument traders should force down average stock prices in anticipation of falling prices for selected securities. This action would underprice those securities for which weekend announcements are not made (presumably the majority of traded securities) and systematically overprice those securities for which the announcements are made. Such mispricing only could be considered efficient if the trading were profitable. Because investors typically face transaction costs, traders could not benefit from indiscriminate sales on Friday, thus, the information effect explanation of the weekday anomaly remains consistent with market efficiency.

Several studies confirm a tendency to delay the release of bad news. Kross and Schroeder (1984) determine that delayed earnings announcements correspond to decreases in earnings. Patell and Wolfson (1982) report that earnings and dividend increases tend to be announced when the market is open, while decreases tend to be announced after the market closes. Penman (1987) finds a tendency for negative abnormal returns to occur when earnings are announced on Mondays and argues this tendency causes the weekday anomaly.

Damodaran (1989) provides a direct test of announcement effects on weekday returns using 18,996 earnings announcements and 7,670 dividend announcements from January 1981 through December 1985. An *announcement surprise* is defined as the difference of the previous value from the current value for both earnings and dividends. Consistent with an announcement effect explanation of the weekend effect, negative surprises occur most frequently on Fridays. For both dividends and earnings, the average value of the surprise is negative on Friday and positive on all other days of the week. In both cases, the difference in average surprise across weekdays is significant at the .01 level.

Damodaran determines that these surprises generate negative excess returns on the Friday announcement dates and the following Monday. He determines, however, that "these announcements explain a surprisingly small (3.4 percent) proportion of the weekend effect." (Damodaran, p. 607) This conclusion results from the finding that the average Monday return for all securities was -.1001, compared to an average Monday return of -.0967 when Monday returns following Friday reports are eliminated.⁷

Damodaran's conclusion overstates the ability of dividend and earnings announcements to explain the weekday effect, as it only considers negative excess returns for the Monday following Friday reports. Damodaran finds positive excess returns for Monday announcements.⁸ The joint impact of Monday and Friday earnings announcements on Monday returns, as measured by a weighted average, is positive. The total effect for earnings tends to increase, not explain, the mystery surrounding negative Monday returns. The effect from dividend announcements remains negative when both Monday and Friday impacts are considered.

Peterson (1990) provides additional evidence concerning the explanatory power of recurring dividend and earnings announcements on the weekday anomaly by comparing returns from a reporting index to returns for a nonreporting index. The reporting index results from the returns of all securities for which earnings are announced in a two day period. The nonreporting index results from the returns of all other securities. Peterson finds no significant weekday pattern in the return difference between the two indexes, suggesting that an earnings announcement effect does not cause the weekday effect. Peterson

⁷ To the extent that past values do not proxy current expectations, some efficiency is lost in measuring surprise by the difference between current and historic values. Such loss of efficiency either may understate or overstate the true value of an announcement effect.

⁸ Damodaran (1989) identifies 3,611 Monday earnings reports with mean abnormal returns of .1251 percent; the mean abnormal return for Mondays following 2,664 Friday earnings report is -.1421. The net effect for Monday from an earnings announcement effect may be determined, therefore, as the weighted average of these two effects. Net effect = $3611 * (.1251 \text{ percent}) + 2664 * (-.1421 \text{ percent}) = .0117 \text{ percent}$. Similar calculations for dividends determines a net effect of -.1045 percent for those announcements net within ten days of an earnings announcement.

does note that the signs of the return differences for the equally weighted index, although not significantly different from zero, are uniformly in agreement with an announcement effect. For the value-weighted index, however, the signs for the return differences are not consistent with an announcement effect.

Schatzberg and Datta (1992) also discount the impact of information release as the cause of the weekday effect in a study of dividend announcements. They study 138,824 dividend announcements occurring for 3,484 firms from 1963 through 1988. They find no evidence that low Monday returns result from a tendency to release adverse dividend reports after Friday's close. To the contrary, they find "a propensity to issue good news over the weekend" (Schatzberg and Datta, p. 70). This conclusion is based on three findings:

- Announcements of changes in dividends are least likely to be released on Mondays and Fridays, and Mondays have the lowest percent of dividend decrease announcements of any day of the week;
- The average prediction error for Monday returns following Friday dividend announcements is positive, significantly different from zero, and higher than for any other day of the week; and
- A return series from which a 21 day period containing the dividend announcement is removed still has a significant weekday effect and contains an average Monday return that is lower than the return data around the announcement date.

Although they reject the possibility that an announcement effect from periodic dividend disclosures creates the weekday anomaly, Schatzberg and Datta concede that these expected announcements are not the only public disclosure made by corporations. Nonrecurring announcements concerning such variables as contract awards, product development, and various types of litigation may contain more surprise than do regularly scheduled earnings and dividend announcements. If these announcements are subject to the same seasonal pattern documented for earnings and dividend reports, the weekday anomaly still may be explained by announcement effects.

DeFusco, McCabe, and Yook (1992) investigate this possibility by identifying periods of high and low firm-specific news. They hypothesize that the five day period centered on corporate board meeting dates represents a high potential news period. For a sample of 233 firms during the 1986 calendar year, daily returns are averaged for the high potential news period and the periods two weeks before and two weeks after the board meeting week.

DeFusco, McCabe, and Yook find empirical support for an announcement effect in two comparisons. Monday returns are significantly less than zero only in the five day event week surrounding the board meeting. In three of the four other weeks Monday returns are positive. The announcement effect hypothesis is supported further by a general tendency for returns of weekdays other than Monday to be high during board meeting weeks. DeFusco, McCabe, and Yook argue that these higher returns result from a tendency to postpone the release of bad news until the weekend during this period.

DeFusco, McCabe, and Yook provide support for an announcement effect explanation of the weekday anomaly when all firm-specific announcements (not just dividend and earnings announcements) are considered. This support is limited, however, by the use of a

single sample year. This paper extends the DeFusco, McCabe, and Yook study by testing the comprehensive firm-specific announcement hypothesis from a different perspective which allows a sample period of 28.5 years.

This paper tests for a firm-specific announcement effect by comparing the familiar weekday pattern in returns indexes with the weekday pattern in the proportion of securities with negative, positive, and zero price changes. This comparison relies on an unique contention of the announcement effect hypothesis. All other explanations of the weekday anomaly rely on market-wide forces instead of firm specific announcements. If market-wide forces create the weekday effect, the weekday pattern in index returns should be mirrored in the proportion of securities with return changes of a particular sign. If the proportion of securities with a particular return sign does not vary with the weekday over the extended sample, additional support would be given for DeFusco, McCabe, and Yook's evidence that the weekday anomaly results from a tendency for firms to make unexpected bad news announcements late on Fridays. On the other hand, if the proportion of securities with negative returns is consistently high on Monday (when mean returns are negative) and consistently low for Friday (when mean returns are high), support is provided for the contention that some market-wide effect causes the weekday anomaly.

DATA AND METHODOLOGY

The data are created from individual security returns gathered from the CRSP NYSE-AMEX tape for July 1962 through December 1990. From these returns the percent of securities with negative, zero, and positive changes are calculated on a daily basis. Contrasts are made with both the CRSP value-weighted (CVWI) and the CRSP equally weighted (CEWI) return indexes. The CVWI provides a proxy for the behavior of large firms, and the CEWI more closely reflects the behavior of small firms. To provide a close, albeit not perfect, match between securities used to calculate the daily proportions and index returns, the samples are reformed on an annual basis including only those securities listed on CRSP for the entire year.

For both index returns and proportion of returns, the hypothesis that all weekday means are equal is tested using standard weekday methodology with ordinary least squares regression, as shown in equation (1):

$$(1) Y_t = \alpha_1 + \alpha_2 * \delta_u + \alpha_3 * \delta_w + \alpha_4 * \delta_{th} + \alpha_5 * \delta_f$$

where:

- Y_t = Either the CEWI, CVWI, or the percent of sample securities experiencing negative (positive, zero) return changes for a particular trading day, depending on the model being considered; and
- δ_u = A dummy variable with the value of one for a Tuesday trading day and zero elsewhere (and so on).

If a standard F-test rejects the hypothesis of equality, Duncan's multiple range test is applied to all possible pairwise combinations (e.g., Monday mean to Friday mean). If the regression analysis finds index returns unequal but no significant difference when applied

to the return proportions, the announcement effect is supported. If significant differences exist in both cases, the existence of a market-wide effect cannot be rejected.

EMPIRICAL RESULTS

Mean weekday returns of the CEWI and CVWI for the period July 1962 through December 1990 are reported in Panel A of Table 1. These empirical results, consistent with previous findings, display a significant weekday effect. Panel B of Table 1 shows that the hypothesis that means are equal across weekdays is rejected at the .0001 level for both indexes. For both indexes, Monday's average return is negative and significantly less than the average returns for each other weekday, all of which have positive average returns. Because Monday returns appear extreme relative to other weekdays, the regression analysis is repeated with these returns omitted to determine if the weekday effect depends solely on Monday's negative returns. The hypothesis of equal weekday returns still is rejected at the .0001 level for the CEWI, but the level increases to .0160 for the CVWI. The general pattern of weekday returns is similar for the CEWI and the CVWI. In both cases, average returns increase from Monday through Wednesday, dip on Thursday, and increase again for Friday.

If weekday patterns similar to those found in return indexes are not evident in the proportion of securities with a particular return sign, then, consistent with the announcement hypothesis, unequivocal support is provided for a firm-specific cause of the weekday anomaly. The empirical results indicate that this is not the case. Instead, negative Monday returns result from a general tendency for negative returns to exist across securities. In this sample, the proportion of securities experiencing negative returns on Monday is significantly higher than the proportion on any other day. Likewise, the proportion of securities experiencing positive returns is lowest on Monday and significantly lower than the proportion on any other weekday. Application of a standard ANOVA test finds a significant difference in the proportion of securities with a particular return sign across weekdays at the .0001 level for negative, positive, and zero return signs.⁹ If Monday is excluded, this difference remains significant at the .0001 level for both negative and positive return signs.¹⁰

The proportion of securities with negative (positive) return signs is lowest (highest) on Fridays. And this proportion is significantly lower (higher) than for any other weekday. Only Wednesday and Thursday are not significantly different from one another with regard to the proportion of securities with positive or negative return signs.

⁹ Because a reported zero return may result from no trading activity, the significantly lower percent of securities with zero returns on Monday suggests an unusually broad trading range. Such activity is consistent with the work week explanation of the weekday effect because this explanation suggests individuals initiating sales over a broad range of securities.

¹⁰ In addition, the overall results are checked for consistency by examining differences in weekday proportions on a year by year comparison. (The sample period of 28.5 years allowed 29 comparisons by using the last half of 1962 as a separate subperiod.) These annual comparisons support a consistent weekday effect. In 23 of the 29 sample periods the hypothesis that the percentages of firms experiencing negative returns is the same across all weekdays is rejected at the .10 level. Although these results are generally more significant than similar annual comparisons for the CEWI, the relative magnitude of the p-values for the two variables across years is similar. A significant (at the .10 level) weekday effect for the CEWI occurs only once (1966) in 29 sets of annual tests without a corresponding significance occurring for the percent-age variable.

Table 1—Comparison of Mean Index Returns and Proportion of Securities Returns by Sign

Panel A
Average Values by Weekday

	Monday	Tuesday	Wednesday	Thursday	Friday
Index	Mean Returns By Weekday				
CEWI	-0.00122	0.00007	0.00140	0.00105	0.00213
CVWI	-0.00099	0.00046	0.00116	0.00044	0.00107
Return Sign	Mean Proportions By Weekday				
Negative	0.4286	0.4059	0.3891	0.3925	0.3756
Positive	0.3565	0.3721	0.3847	0.3807	0.3969
Zero	.2148	0.2221	0.2262	0.2269	0.2275

Panel B
Tests of Equality Across Weekdays

Index	Model With All Days		Model With Mondays Excluded	
	F-Statistic*	P-Value	F-Statistic*	P-Value
CEWI	38.62	0.0001	19.68	0.0001
CVWI	14.72	0.0001	3.44	0.0160
Return Sign				
Negative	42.14	0.0001	17.70	0.0001
Positive	24.77	0.0001	12.40	0.0001
Zero	21.80	0.0001	4.85	0.0022

Panel C
Pairwise Comparisons

Variable	Significant Contrasts**
CEWI	Friday > each other weekday Monday < each other weekday Wednesday > Tuesday and Thursday > Tuesday
CVWI	Monday < each other weekday Tuesday < Wednesday and Thursday < Wednesday
- SIGN	Friday < each other weekday Monday > each other weekday Wednesday < Tuesday and Thursday < Tuesday
+ SIGN	Friday > each other weekday Monday < each other weekday Wednesday > Tuesday and Thursday > Tuesday
0 SIGN	Monday < each other weekday Friday, Wednesday, and Thursday > Tuesday

* The F-statistic results from a standard ANOVA test

** Significant contrasts are made using Duncan's comparison with $\alpha = .05$

A consistent pattern across securities rather than large return changes for specific securities causes the weekday effect. This weekday pattern across securities is reproduced accurately in the mean returns of the CEWI in terms of which weekdays have the highest

and lowest returns and even in terms of which pairwise comparisons are significant.¹¹ Because the weekday effect associates with significant changes in the proportion of securities with a particular return sign, the weekday anomaly cannot be ascribed to large return changes in a few securities and a market-wide effect cannot be rejected. This finding does not eliminate an announcement effect explanation because these firm-specific events could be sufficiently numerous to cause a significant change in security proportions.

A review of the magnitude of the tendency for return signs to change across the week provides additional evidence to distinguish between the announcement effect and competing hypotheses. On average, the percentage of firms with negative returns increases by 5.03 percentage points from Friday to Monday, according to Table I. Applying this percentage to the total number of securities in each sample year provides the implied average number of negative weekend announcements, if the weekday anomaly results from an announcement effect.

Table 2 reports the number of securities in each sample year along with the corresponding required average number of negative weekend announcements. The net number of securities changing from a positive or zero return sign on Friday to a negative return sign on Monday varies from 104 to 138, depending on the size of the yearly sample. If the weekday anomaly results from an announcement effect, on average from 104 to 138 corporations released bad news on each weekend during the sample period. The existence of this number of securities changing signs each weekend may be seen as evidence against the announcement effect hypothesis if one concludes that it is unlikely that this many firms release delayed bad news each weekend. Alternatively, this magnitude may be viewed as evidence of the pervasive nature of the tendency for firms to postpone bad news announcements.¹²

¹¹ Despite the similarities noted above for the weekday effect in the CEWI and CVWI, certain contrasts exist that support the conclusion that the weekday effect results in broad movements across securities rather than announcements affecting specific firms. Although test results reject equality of index returns across means at the .0001 level for both indexes, the range of the difference in mean daily returns is 50 percent larger for the CEWI. Also, the average return is largest for the CVWI on Wednesday in contrast to the CEWI which has a larger average return on Friday. The latter is consistent with the proportion of securities with positive returns being highest on Friday. The most important deviation deals with the annual comparisons discussed in the previous section. The weekday effect is similar for the CEWI and proportions throughout the sample. For the CVWI the pattern is similar through 1976 but dissimilar thereafter, with the weekday effect largely absent for the CVWI. As the weekday pattern in the CEWI is consistently stronger and consistently more similar to the weekday pattern in return proportions than is the CVWI, the conclusion that the weekday effect results from a broad movement across securities is strengthened. As registered on the CVWI, some factor whose impact is growing diminishes the weekday effect for large firms.

¹² Some back-of-the-envelope calculations indicate that these numbers appear to be too large to result solely from delays in corporate board announcements as studied by DeFusco, McCabe, and Yook. In their sample DeFusco, McCabe, and Yook find an average of slightly over nine board meetings per firm. If we assume that this number is representative across years and across firms, we estimate between 346 to 461 weekly board meetings per year depending on the year. Without *a priori* information, we assume that board meetings are just as likely to provide favorable as unfavorable news. Under this assumption there are from 173 to 230 bad news announcements each week. In order for these announcements to be consistent with the number of return sign changes, 60 percent must be delayed.

Table 2—Annual Sample Size and Implied Negative Weekend Announcements

Year	Sample Size	Implied Announcements Each Weekend
1962	2007	106
1963	1968	104
1964	2004	106
1965	2050	108
1966	2084	110
1967	2068	109
1968	2042	108
1969	2112	111
1970	2245	118
1971	2355	124
1972	2485	131
1973	2610	138
1974	2622	138
1975	2591	137
1976	2545	134
1977	2490	131
1978	2415	127
1979	2333	123
1980	2284	121
1981	2240	118
1982	2234	118
1983	2214	117
1984	2172	115
1985	2136	113
1986	2088	110
1987	2165	114
1988	2314	122
1989	2399	127
1990	2434	129

For several reasons the authors consider it unlikely that this large of a number of firms are delaying the release of bad news on average every weekend. The argument for delaying the release of bad news assumes that corporate officials wish to allow the market time to digest the negative information. This argument requires that corporate officials assume that investor overreaction would place the price of the stock below its true value if the news were released during market hours. This argument must apply to a restricted number of cases in which the news would have a substantial impact on the price of the stock. What benefit exists for a firm to prevent an overreaction of a few ticks if the news reduces the stock's true value by only a small amount? It seems unlikely that, on average, 5.03 percent of the corporations in our sample would experience such extremely bad news that the corporation would have an incentive to delay the news release until the weekend. Further, if the practice of delaying bad news is pervasive enough to affect an average of over 100 firms each week, surely anecdotal evidence for such action would be abundant. The absence of such evidence in the literature argues against an announcement effect causing the weekday effect. Still, the question warrants empirical investigation.

The empirical question is twofold. How many firms make weekend news releases? And what is the nature of the releases? If an announcement effect is causing the returns of over 100 firms to change to negative on Monday, then on an average weekend, the num-

ber of negative corporate announcements must exceed the number of positive or neutral announcements by over 100.

The number of total announcements is determined using the *Dow Jones News Retrieval System*. This system allows access to all releases made to the *Dow Jones Business Wire Service* starting in July 1989. From these total releases, the number of weekend releases by NYSE and AMEX corporations (the sample used in tests reported above) is tallied for five different weekends.¹³ This sample allows the determination of the total number of weekend announcements. In conjunction with CRSP return data, this sample also provides information concerning the nature of the announcements. An announcement is judged to be negative if returns for the firm's equity are negative the following Monday. Further, returns for the announcing firms are compared to the market index.

As reported in Table 3, the number of weekend announcements in the sample is small (ranging from approximately one dozen to two dozen) relative to the number of firms experiencing sign changes in equity returns from Friday to Monday. Moreover, announcements are not overwhelmingly negative, as required by the announcement effect hypothesis. Based on the return sign for the following Monday, negative announcements predominate in only two of the five weekends. Although a slight majority of all announcing firms experience below market returns (50 below and 47 above), only 44 of the 97 announcements produce negative returns. Far from producing an average excess of 100 negative announcements each weekend, as required by the announcement effect hypothesis, in this sample negative announcements are in the minority.¹⁴ This study documents that the significant variation in equity returns across weekdays results from significant changes in the proportion of securities with a particular return sign. Because the numbers of negative weekend announcements are far too small to account for these changes, we reject the announcement effect explanation of the weekday anomaly.

¹³ The announcement effect stresses the release of information on Friday after market close. The sample also includes all Saturday and Sunday announcements. The sample excludes Monday morning announcements, as such announcements would not allow the market time to digest the information. If Monday morning news releases are included in the sample, the total number of announcements increases about 30 percent. The net number of negative announcements, however, decreases substantially.

¹⁴ Because of the small sample size (the cost of accessing the system is expensive), the authors do not claim to provide conclusive evidence that weekend announcements are not predominately negative. The crucial question for this paper is: can such an effect explain the proportion of NYSE and AMEX firms that experience a return sign change from positive to negative? In this regard, although the sample size is small, convincing evidence exists to suggest that weekend announcements are not sufficiently frequent to cause over 100 NYSE/AMEX securities to change to negative return signs.

Table 3—Corporate Announcements, Selected Sample Weekends

Date	Equally Weighted Index	Total Firms	Announcing Firms Negative Returns	Below Market Returns	Average Returns
7/17/89	.001089	21	8	14	-.010913
9/25/89	-.004070	16	13	11	-.020591
3/12/90	.000312	22	11	13	.008880
8/20/90	-.004910	11	6	6	-.042286
9/17/90	-.001359	27	6	6	.016516
Total Sample		97	44	50	

CONCLUSION AND SUMMARY

Some investigators suggest that the well-documented tendency for index returns to be negative on Mondays results from a tendency for firms to delay the announcement of bad news until after the market closes on Friday. Using data from July 1962 through December 1990, this paper examines the tendency for the mean proportion of securities with a particular return sign to vary across weekdays. Contrary to predictions inherent in the announcement effect explanation, consistent and significant variation occurs in the proportion of return signs across weekdays, exemplified by an unusually high proportion of securities with negative returns occurring on Monday and with positive returns occurring on Friday. The weekday anomaly results from a general tendency for security returns to vary across the week, rather than from a phenomenon that affects a relatively few securities at a time. Further, a sample of weekend announcements drawn from the *Dow Jones News Service* indicates that the number of weekend announcements is too small to cause the observed shifts in returns from Friday to Monday. Based on these results, the conclusion must be made that the firm-specific announcement effect does not provide an adequate explanation of the weekday anomaly.¹⁵

An announcement effect still might provide a viable explanation for the weekday effect if consideration is given to announcements that affect securities in general. For example, political considerations conceivably may cause delays in the release of negative economic news until the weekend. The plausibility of this explanation suffers because government-compiled economic indicators are released on predetermined dates. A macro-announcement explanation of the weekday anomaly, therefore, must rely on unspecified nonrecurring announcements.¹⁶

¹⁵ We acknowledge the possibility that firm-specific announcements could be contagious, causing declines to spread to other securities. Given the pervasive nature of the tendency for Monday's returns to be negative across securities documented in this paper, surely the market would develop a natural immunization to such a disease over time.

¹⁶ A cursory examination of the announcements contained in the column "Tracking the Economy" suggests a general tendency for announcements to concentrate midweek. For example, money supply and unemployment statistics generally are released on Thursday. GNP components (such as new car sales, new home sales, factory orders, personal income, etc.) generally are released on Tuesday or Wednesday. Although there are some releases on Monday and Friday (the leading economic indicator index is released on the last Friday of the month), there appears to be a tendency to avoid Monday and Friday releases. Even if Monday and Friday releases were predominant, asserting causation for the weekday effect requires certain bold assumptions. The required assumption is that Monday announcements systematically must provide negative surprises and Friday announcements systematically must provide positive surprises.

These findings are consistent with two other explanations of the weekday effect. A Blue Monday effect should cause the proportion of securities with negative (positive) returns to be high (low) on Monday and low (high) on Friday, when investors may reflect a generally pessimistic (optimistic) mood. Likewise, the variations in weekday trading patterns postulated by the work week effect predict that the proportion of securities experiencing negative (positive) returns will be high (low) on Monday and low (high) on Friday. (The latter explanation has the advantage of assuming investor rationality.) Further research is needed to distinguish between these or other hypotheses consistent with variation in mean returns resulting from general market movements.

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