Stock Splits: A Re-Evaluation

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Abstract

In theory, stocks splits do not affect a firm's aggregate market value. Yet, firms often split

their stocks in order to keep the price in a desired trading range and, perhaps, to make the stock

more affordable to individual investors. Past studies have been inconclusive about whether

shareholder returns are affected and whether the effects, if any, are due to affordability or

signaling. Using fresh data, all since the decimalization of prices, I find positive effects on

shareholder returns, but not because splits make stocks more affordable. The more compelling

argument is that corporate stock splits signal a board's confidence in their company's prospects.

For ETFs and other funds, there is little evidence that shareholders benefit from splits or are

more attracted to funds after they split.

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Introduction

In his seminal treatise, *The Theory of Investment Value* (1938), John Burr Williams proposed the Law of the Conservation of Investment Value: the value of a firm depends on the cash it generates, regardless of how that cash is packaged or labeled. Nothing is gained or lost by combining income streams or by splitting income into parts.

Stock splits are an obvious example. If a corporation splits its stock, with no change in the company's operations, the firm's aggregate market value should be unchanged and the value of each share should be reduced proportionately. Doubling the number of shares halves the value of each share.

If stock splits are non-events, why do firms bother? The administrative costs of splitting a stock are significant (McGough 1993), so companies presumably perceive substantial benefits for their shareholders.

Company managers often report that they like having their stock trade in a customary range, say $30 to $50 per share, so they split their stock when the price rises far above this desired range (Baker and Gallagher 1980; Baker and Powell 1992). In practice, Lakonishok and Lev (1987) find that stock prices for splitting firms often rise above prices for non-splitting firms and then become comparable again after a split. Consistent with this perception of a desired trading range, they also find that the split ratios companies choose are correlated with how far a firm's share price diverges from the prices of comparable stocks.

One justification for this perception of an optimal trading range involves price ticks, the minimum change in a stock's price, which puts a floor on the bid-ask spread (Angel 1997). U.S.

stock prices were customarily quoted in eighths or thirty-seconds of a dollar before decimalization in 2001. An eighth of a dollar is 0.3125 percent on a $40 stock, but only 0.15625 percent on an $80 stock. So, the argument goes, splitting an $80 stock 2-for-1 in order to reduce the price to $40 increases the percentage profits for market makers, which has been confirmed empirically by Gray, Smith, and Whaley (2003). Perhaps companies prefer trading ranges that give customary profits to market makers. It is not clear why corporations would want to benefit market makers at the expense of their shareholders, and the tick/range argument is less relevant today with prices quoted in pennies and even fractions of pennies. If market makers are not constrained by fractional ticks, neither are their profits.

An alternative justification for a desired trading range is that if a company allows its price to rise to $200, $500, or $1,000 a share, some investors cannot afford to buy the stock. Periodic splits that maintain the price per share in a desirable trading range keep the stock affordable for ordinary investors, thereby broadening the shareholder base and increasing liquidity, which benefits all shareholders.

In a market dominated by large institutions, the affordability argument is a bit strained and sometimes preposterous. American Telnet, a television production firm, went public in March 1979 at 50 cents a share. By August 1980, the firm had yet to sell a television show and its stock price had sagged to 43 3/4 cents. At this point, the firm split its stock five for one so that, according to its president, it would be "more affordable." Given the structure of brokerage commissions, it doesn't make sense to buy one share of an 8-cent stock, and there is no real difference between buying 1,000 shares at 40 cents each or 5,000 shares at 8 cents each.

Berkshire Hathaway, run by Warren Buffett, has never split, even though its shares cost

hundreds of thousands of dollars apiece. In a Christmas card to a friend, Buffett wrote, "May you live until B-H splits."

In 1996, with Berkshire Hathaway selling for $33,000 a share, outsiders planned to buy Berkshire shares and resell them to investors in $1,000 pieces through unit investment trusts. Not wanting small investors to have to pay the sales fees and other administrative expenses that such trusts would entail, Berkshire Hathaway issued Class B shares—dubbed "Baby Berkshires"— each without voting rights and worth one-thirtieth of the regular Class A shares. In January 2010, Class B shares were split fifty-to-one, making each worth 1/1,500 the value of Class A shares. On April 5, 2018, Berkshire B closed at $200.85 and Berkshire A closed at $301,750.00, slightly more than 1,500 times as much. Affordability is evidently not an issue for Berkshire A shares.

The signaling hypothesis is not necessarily a reason for splitting a stock, but rather an explanation for why a stock's price might rise after a split. If a stock's price goes up to $80 and the firm declares a two-for-one split, reducing the price back to $40, the split signals investors that the board of directors is confident that the run up was justified—not mindless speculation which, when it ends, will cause the price to collapse to below $20, where lesser stocks trade.

On April 23, 2014, with Apple stock trading at $524.75, Apple announced a seven-for-one split. Apple generally has very good reasons for doing what it does, so many investors thought that the highly unusual choice of a 7-for-1 split reflected the company's belief that the stock price would soon approach $700, which would be $100 after the 7-for-1 split. They were right. Four months after the split, Apple popped through $100.

The signaling hypothesis also explains why reverse splits are rare. If a stock price falls below $20, the company could do a 1-for-2 split that halves the number of shares and doubles the value

of each. However, resort to this tactic might be interpreted as a damaging admission by the company's board that the firm's prospects are not bright enough to increase the price in the foreseeable without a reverse split.

The seminal event study by Fama, Fisher, Jensen, and Roll looked at price changes before and after stock splits and concluded that their results "lend considerable support to the conclusion that the stock market is 'efficient' in the sense that stock prices adjust very rapidly to new information (1969, page 20);" however, their conclusion is tempered by the fact that they used monthly data.

Lakonishok and Lev (1987) found that firms that split their stock tend to have above-average earnings growth before splits and, to a lesser extent, after splits. However, studies have been inconclusive about the effects of stock splits on shareholder returns and, when there are effects, whether these are due to affordability or signaling. Several authors have concluded that stock returns tend to be abnormally positive following a split announcement and, to a lesser extent, after the split ex-date (Grinblatt, Masulis, and Titman 1984; Ikenberry, Rankinc, and Stice 1996; Desai and Jain 1997), and negative after the announcement of a reverse split (Woolridge and Chambers 1983; Desai and Jain 1997; Kim, Klein, and Rosenfeld 2008). On the other hand, Aggarwal and Chen (1989) found an increased variability in stock returns after split announcements, but no increase in average returns. Byun and Rozeff (2003) and Boehme and Danielsen (2007) also concluded that there are no persistent abnormal returns following splits.

Many of these studies were done some time ago, and the effects of stock splits on shareholder returns may have changed after decimalization and because of the growing importance of institutional investors who may be more aware of the fact that stock splits do not create value.

I use recent data to re-evaluate the affordability and signaling hypotheses by looking at stock returns near the time of the announcement date and the split ex-date, since the signaling argument suggests that a stock's price should increase more on the announcement date than on the split date. I also compare stock splits for corporations and exchange-traded funds (ETFs) and other publicly traded funds. Price increases on the announcement date should be larger for corporations than for ETFs since the managers of ETFs presumedly have little or no inside information and will base a decision to split an ETF solely on affordability considerations. Finally, I will test the affordability argument by seeing whether the volume of trading surges after splits.

Data

The Center for Research in Security Prices (CRSP) data base was used to identify all 2-for-1 stock splits that were announced and completed during the 10-year period, January 1, 2007, through December 31, 2016. Although daily return data are available for 2017, I did not look at splits that occurred after December 31, 2016, because I wanted to track returns for up to 250 trading days after a split occurred.

I focused on 2-for-1 splits because this is the most common split ratio and other ratios, such as Apple's 7-for-1 split, might introduce confounding factors (Brennan and Copeland 1988, Brennan and Hughes 1991). There were a total of 463 splits, but CRSP only recorded the announcement dates for 397 of these splits. Using Investment House (2018) and individual press releases available on the internet, I identified 63 of the 66 announcement dates that are not in the CRSP data base, and excluded the remaining 3 splits. For the handful of announcements that were made on days when markets were closed, I used the next market day as the effective

announcement date. Of the 460 recorded splits, 382 were by corporations and 78 were by ETFs and other publicly traded funds.

The split-adjusted daily returns for January 1, 2007, through December 31, 2017, were taken from the CRSP data base. Daily market-adjusted excess returns were measured by calculating the difference between each stock's daily return (including dividends and other distributions) and the return for the CRSP value-weighted market portfolio (Ikenberry, Rankine, and Stice 1996).

The data on the split-adjusted daily volume of trading were also taken from the CRSP data base. The daily trading volume on and after the ex-date were split-adjusted by dividing the volume by two in order to account for the fact that twice as many shares must be bought or sold in order to acquire the same position. There is no obvious way for measuring the excess volume of trading, comparable to using the return for the CRSP value-weighted market portfolio to measure a stock's excess return. Unlike returns, the aggregate volume of trading grows over time as more stocks are traded and more investors trade stocks. In addition, the trading volume data include some anomalies because trading volume is inherently more susceptible to outliers than are return data. For example, three days after the announcement of a 2-for-1 split of the ProShares U. S. Treasury 7-10 Year Bond ETF, there were 5,059,700 shares traded, which was 498.98 times the normal trading volume.

To deal with these outliers, I used each stock's median daily trading volume over the 10 days preceding the announcement and the ex-date as bases, and calculated the stock's excess trading volume each day as its volume that day divided by the appropriate base. An excess volume of 1.05 on the third day after a split announcement means that trading volume that day was 5 percent higher than the median trading volume during the 10 days preceding the announcement.

The median excess volume was then calculated across stocks for each day; for example, the median excess volume across stocks on the third day after a split announcement.

Results

Table 1 shows the average excess returns for the 10 trading days preceding and following a split announcement and the ex-date for the corporate stock splits. The two-sided p-values are for a t-test of the null hypothesis that the expected value of the daily excess return is zero. The excess returns during the four days preceding the split announcement are positive (though small) and either statistically significant at the five percent level or close to being so, suggesting that a substantial number of investors anticipate the impending split announcement. The average excess returns on the day of the announcement and the four subsequent trading days are positive, substantial, and statistically significant. Investors evidently react very favorably to split announcements, though it is puzzling that the positive reaction takes four days to play itself out.

In contrast, none of the average excess returns for the 10 trading days preceding and following the split itself are substantial or statistically significant at the 5 percent level. While 64.0 percent of the stocks had positive excess returns on the announcement date (two-sided $p = 4.6 \times 10^{-8}$), only 50.5 percent of the stocks had positive excess returns on the split date (two-sided $p = 0.88$).

Table 2 shows the comparable results for the ETF splits. The excess returns are generally small and there is no consistent pattern. The p values are notably large on the announcement date (0.4436) and the ex-date (0.9471). Because there is no compelling explanation for the few returns that are statistically significant, the occasional low p values are most likely flukes that happen with multiple statistical tests. For example, I would not anticipate, *a priori*, a statistically

significant positive excess return five days before the announcement, followed by an offsetting statistically significant negative return the next day.

Figures 1 and 2 show the average cumulative excess returns, which were calculated by taking the difference between each stock's cumulative return and the CRSP index's cumulative return over the relevant horizon. For corporate stocks, the average cumulative excess return 10 trading days after the announcement is a very substantial 3.42 percent, while the cumulative excess return 10 trading days after the split is only 0.38 percent. For ETFs, the average cumulative excess return 10 trading days after the announcement is 1.16 percent, and the cumulative excess return 10 trading days after the split is -1.21 percent. The decline after the split completely offsets the modest increase after the announcement. There is no evidence of meaningful beneficial effects from an ETF splitting its stock.

Figures 3 and 4 show the average cumulative excess returns 250 days (approximately one calendar year) after the split announcement or the split itself. For corporate stock (Figure 3), the initial excess return for the first few days after the announcement persists. The average cumulative excess return is 3.42 percent 10 days after the announcement and 3.00 percent 250 days after the announcement. The relative unimportance of the actual split also persists, with an average cumulative excess return 0.38 percent 10 days later and 0.12 percent 250 days later.

The average cumulative returns for ETFs (Figure 4) are more volatile than for stocks, perhaps because of the smaller sample sizes (78 versus 382). Over the 250-day horizon, the average cumulative excess return was 0.32 percent following announcements and -0.29 percent following the ex-date.

The Fama-French (1993) three-factor model, augmented by a momentum factor (Carhart

1997), was used to see whether the observed patterns in daily returns can be explained by these four factors:

$$R = \alpha + \beta_1 MKT + \beta_2 SMB + \beta_3 HML + \beta_4 UMD + \varepsilon$$

where

R = stock return minus the return on Treasury bills

MKT = the CRSP value-weighted market return minus the return on Treasury bills

SMB = average return on three small-stock portfolios minus the average return on three
large-stock portfolios (size factor)

HML = the average return on two value portfolios minus the average return on two growth
portfolios (value factor)

UMD = average return on two high previous-return portfolios minus the average return on
two low previous-return portfolios (momentum factor)

The factor data were taken from Ken French's web site (2018).

This model reflects the historical evidence that macro factors affect stock returns; small stocks tend to outperform large stocks (Banz 1981; Reinganum 1981); value stocks tend to outperform growth stocks (Rosenberg, Reid and Lanstein, 1985); and stocks that have been doing well tend to continue doing sell in the short run (Jegadeesh and Titman 1993).

Chan (1988) and Fama and French (1992) argue that, since the stock market is efficient, these factors reflect risks that must be compensated with above-average returns. Others, including Lakonishok, Shliefer, and Vishny (1994) and Keil, Smith, and Smith (2004), argue that the above-average returns as evidence of market inefficiencies. For example, value stocks are often inexpensive because investors overreact to news. Either way, the question here is whether the

observed variations in returns before and after split announcements and the actual splits can be explained by these four factors.

Table 3 shows the alpha estimates and two-sided p values. This alphas show the same patterns as the simple excess returns in Tables 1 and 2. For corporate stock, the alphas are positive for the four days preceding and following the split announcement with two-sided p values below 0.05 in all but one case. The alphas are particularly large and statistically significant on the day of the announcement and the next trading day. None of the alphas for the 10 trading days preceding and following the split itself are substantial or statistically significant at the 5 percent level. For ETFs, there is no consistent pattern. The alphas are very small and the *p* values are especially large on the announcement date (-0.0613 and 0.8878, respectively) and the ex-date (−0.0689 and 0.8094, respectively).

Trading volume can also be used to gauge the affordability argument. Table 4 shows the median excess volume for corporate stocks during the 10 trading days preceding and following the announcement and the ex-date. The binomial distribution was used to calculate the exact two-sided *p*-value for a sign test of the null hypothesis that the population median is 1.0. The median excess volume is positive and statistically significant on the day preceding and on each of the seven days following the split announcement. This post-announcement surge in trading evidently accompanied the post-announcement price surge.

In contrast, average excess trading volume is muted before and after the ex-date. There is a brief increase the day before, day of, and day after the split, followed by several large decreases after the split, when the stock has become more affordable.

Table 5 shows the median excess volume for ETFs. Overall, there is increased trading after

the announcement, though three days after is the only day with a *p* value less than 0.05. Trading

volume declines five days before the ex-date and stays below 1 up to 10 days after the ex-date,

even though the ETF is now more affordable.

Discussion

Corporate split announcements were typically preceded and followed by positive excess

returns. The positive returns shortly before split announcements may well reflect investor

anticipation of the announcement. The largest effects occur on the day of the announcement and

the day after, which might be explained by the fact that split announcements sometimes occur

after the market closes. It is puzzling, however, that there continue to be substantial positive

excess returns two, three, and four days after the announcement. The efficient market hypothesis

implies that the benefits from a stock split should be fully reflected in the price immediately, not

several days later. This evidence contradicts the assertion by Fama, Fisher, Jensen, and Roll cited

earlier that "stock prices adjust very rapidly to new information."

The existence of substantial and statistically significant excess returns shortly after a

corporate split is announced, but not after the split itself, is consistent with the signaling

hypothesis. The announcement sends a signal, but the split itself does not, because it has been

anticipated well in advance of its occurrence.

The absence of positive excess returns after the actual split seemingly undercuts the

affordability hypothesis, which predicts an increased buying interest after the stock becomes

more affordable. Any positive effects of the stock becoming more affordable on the ex-date may

be reflected in the price bump when the split is announced, though that argument is undercut by

the ETF data and the trading-volume data.

The general absence of substantial and statistically persuasive effects on shareholder returns of ETF split announcements and splits themselves is evidence that the signaling hypothesis is more important than the affordability hypothesis. Investors evidently interpret a corporation's decision to split its stock as a vote of confidence in the company's prospects. Since there is no comparable signal when an ETF splits its stock, the absence of positive returns suggests that affordability is of little importance in attracting investor attention.

This conclusion is bolstered by the fact that the volume of trading generally falls after a corporate stock's split ex-date and, even more strongly, after an ETF split ex-date. If affordability were an important consideration, trading should increase after the ex-date, but there is no evidence here that it does.

There are positive effects of stock splits on shareholder returns, but not because splits make stocks more affordable. The more compelling argument is that corporate stock splits signal a board's confidence in their company's prospects. For ETFs and other funds, there is little evidence that shareholders benefit from splits or are more attracted to funds after they split.

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Table 1 Average Percent Excess Return for Corporate Stock

	Before and After Announcement		Before and After Split	
Trading Day	Daily Return	2-sided p-value	Daily Return	2-sided p-value
-10	0.139	0.2129	0.026	0.7957
-9	0.012	0.8930	0.166	0.0825
-8	0.041	0.6443	0.106	0.3771
-7	0.015	0.8646	0.039	0.7069
-6	0.020	0.8409	0.124	0.3405
-5	0.002	0.9816	-0.039	0.7245
-4	0.241	0.0209	-0.039	0.6714
-3	0.312	0.0061	-0.066	0.4955
-2	0.187	0.0819	0.053	0.5581
-1	0.191	0.0545	-0.002	0.9893
0	1.088	0.0000	0.088	0.5123
1	1.033	0.0000	0.262	0.0854
2	0.368	0.0073	-0.059	0.6514
3	0.277	0.0094	0.048	0.7176
4	0.329	0.0197	-0.019	0.8533
5	-0.067	0.5886	0.030	0.7902
6	0.111	0.3435	-0.178	0.1147
7	0.061	0.5213	0.035	0.7504
8	0.088	0.4020	0.001	0.9917
9	-0.110	0.3303	0.033	0.7777
10	0.184	0.1102	0.126	0.2315

Table 2 Average Percent Excess Return for ETFs

	Before and After Announcement		Before and After Split	
Trading Day	Daily Return	2-sided p-value	Daily Return	2-sided p-value
-10	0.034	0.8846	0.119	0.6560
-9	0.044	0.9033	0.350	0.0441
-8	0.324	0.0795	-0.425	0.3108
-7	0.064	0.6794	-0.064	0.7650
-6	-0.111	0.6886	-0.099	0.7231
-5	0.638	0.0005	0.283	0.1852
-4	-0.677	0.0137	0.215	0.4265
-3	-0.478	0.2748	-0.446	0.1202
-2	-0.390	0.1629	0.129	0.4504
-1	-0.278	0.2306	0.389	0.0301
0	0.231	0.4436	-0.018	0.9471
1	0.157	0.4192	-0.308	0.2391
2	-0.379	0.0928	-0.113	0.5210
3	0.334	0.1178	-0.356	0.1223
4	-0.080	0.6332	0.416	0.0669
5	0.499	0.0431	-0.150	0.5812
6	0.050	0.8169	-0.015	0.9571
7	0.031	0.8829	-0.131	0.3734
8	-0.114	0.5102	-0.236	0.3874
9	0.472	0.1305	-0.161	0.5583
10	-0.105	0.4873	-0.011	0.9660

Table 3 Fama-French Alphas

| | Corporate Stock | | | | ETFs | | | |
| | Announcement | | Split | | Announcement | | Split | |
Day	Alpha	2-sided p	Alpha	2-sided p	Alpha	2-sided p	Alpha	2-sided p
-10	0.1225	0.2782	0.0012	0.9940	0.0295	0.9074	0.4412	0.1810
-9	-0.0012	0.9898	0.1779	0.0654	0.2091	0.6280	0.2842	0.1870
-8	0.0382	0.6702	0.1144	0.3426	0.1740	0.4144	-0.5390	0.2286
-7	0.0296	0.7350	0.0366	0.7094	0.1201	0.4404	-0.3720	0.1070
-6	0.0099	0.9212	0.1198	0.3564	-0.2294	0.4106	-0.3733	0.2198
-5	0.0044	0.9652	-0.0273	0.8012	0.7254	0.0008	0.2978	0.1976
-4	0.2178	0.0316	-0.0725	0.4252	-0.6620	0.0378	0.1054	0.7046
-3	0.2974	0.0086	-0.0791	0.4168	-0.8205	0.1484	-0.4964	0.0830
-2	0.1815	0.0892	0.0579	0.5204	-0.3727	0.2106	0.0648	0.7188
-1	0.1962	0.0464	-0.0029	0.9794	-0.1849	0.3916	0.3603	0.0492
0	1.0714	0.0000	0.0541	0.6406	-0.0613	0.8878	-0.0689	0.8094
1	1.0624	0.0000	0.0915	0.5532	-0.0127	0.9530	-0.2797	0.3228
2	0.3279	0.0134	-0.2687	0.0582	-0.2278	0.2628	-0.2970	0.0990
3	0.2505	0.0178	0.0603	0.6064	0.2334	0.3586	-0.5042	0.0474
4	0.2981	0.0342	-0.0615	0.5429	-0.0247	0.8970	0.2772	0.2902
5	-0.0677	0.5842	0.0001	0.9992	0.0976	0.6854	-0.0869	0.7696
6	0.1117	0.3310	-0.2117	0.0584	0.1130	0.6106	0.2347	0.3790
7	0.0491	0.6102	-0.0174	0.8696	-0.0782	0.7120	-0.0313	0.8232
8	0.0700	0.4870	0.0088	0.9418	-0.2731	0.1608	-0.0694	0.8188
9	-0.1014	0.3668	-0.0253	0.8290	0.0980	0.6274	-0.3412	0.1878
10	0.1804	0.1192	0.1101	0.2994	-0.0251	0.8686	0.5461	0.0264

Table 4 Median Excess Volume for Corporate Stock

Trading Day	Before and After Announcement		Before and After Split	
	Daily Volume	2-sided p-value	Daily Volume	2-sided p-value
-10	0.996	0.7937	1.007	0.6033
-9	0.976	0.2320	1.006	0.9165
-8	0.988	0.2536	0.998	0.9577
-7	0.964	0.0060	1.001	0.9577
-6	1.005	0.9165	0.997	0.8753
-5	1.002	0.7948	0.985	0.4354
-4	1.003	0.8753	0.976	0.1463
-3	0.998	0.9165	0.982	0.2751
-2	1.025	0.0969	1.008	0.6774
-1	1.060	0.0009	1.032	0.0170
0	1.238	0.0000	1.024	0.4354
1	1.394	0.0000	1.085	0.0007
2	1.263	0.0000	0.990	0.8753
3	1.151	0.0000	0.931	0.0332
4	1.091	0.0005	0.925	0.0428
5	1.088	0.0197	0.941	0.0691
6	1.116	0.0011	0.868	0.0001
7	1.104	0.0001	0.893	0.0002
8	1.020	0.4367	0.934	0.0043
9	1.074	0.1952	0.909	0.0332
10	1.071	0.0128	0.931	0.0109

Table 5 Median Excess Volume for ETFs

| Trading Day	Before and After Announcement		Before and After Split	
	Daily Volume	2-sided p-value	Daily Volume	2-sided p-value
-10	1.028	0.3236	1.160	0.0956
-9	0.970	0.5366	1.022	0.6267
-8	0.954	0.3307	1.013	0.8954
-7	0.988	0.9906	1.031	0.9910
-6	0.994	0.9906	1.022	0.8954
-5	1.017	1.0000	0.903	0.3375
-4	1.007	0.9903	0.998	1.0000
-3	1.031	0.8002	0.830	0.1525
-2	0.972	0.3901	0.974	1.0000
-1	1.095	0.1467	0.971	0.7110
0	1.181	0.0536	0.759	0.0009
1	1.125	0.8002	0.748	0.0089
2	1.144	0.1467	0.811	0.0175
3	1.311	0.0300	0.876	0.0570
4	1.111	0.6217	0.739	0.0020
5	1.007	0.9903	0.704	0.0043
6	0.807	0.1798	0.684	0.0001
7	1.011	1.0000	0.860	0.0570
8	0.869	0.1798	0.817	0.1525
9	1.014	1.0000	0.991	1.0000
10	0.750	0.0536	0.944	0.8032
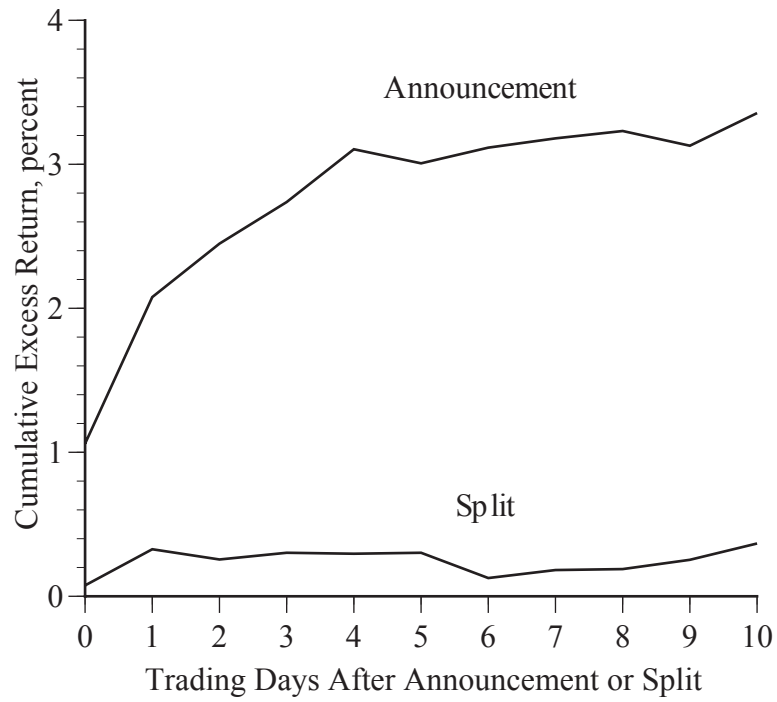
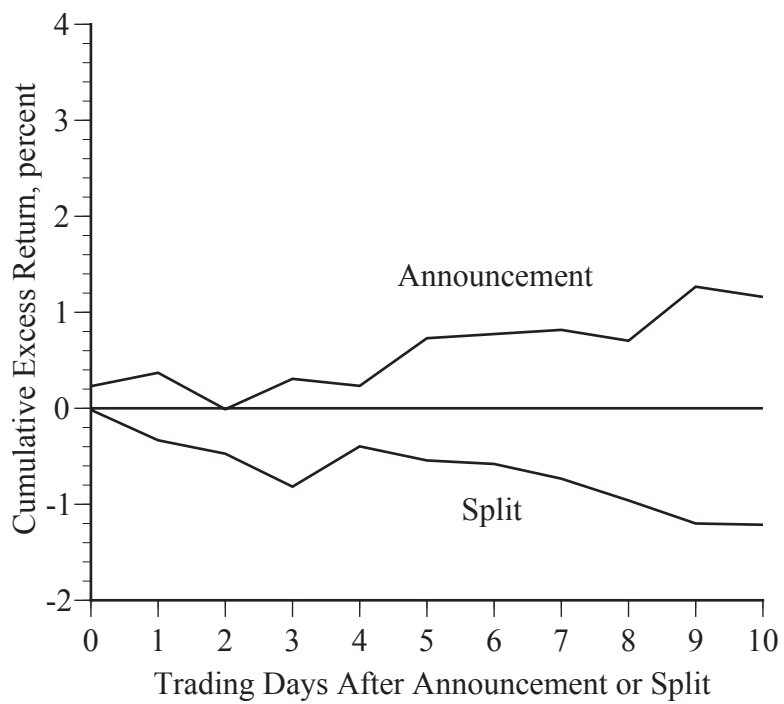Figure 1 Average Cumulative Excess Return For Corporate Stock After Announcement or Split

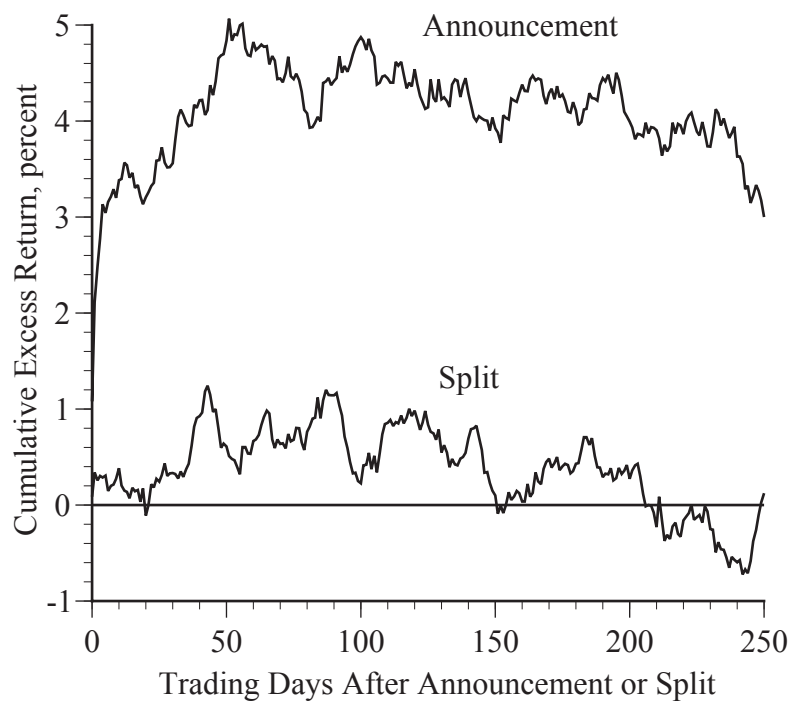Figure 2 Average Cumulative Excess Return For ETFs After Announcement or Split

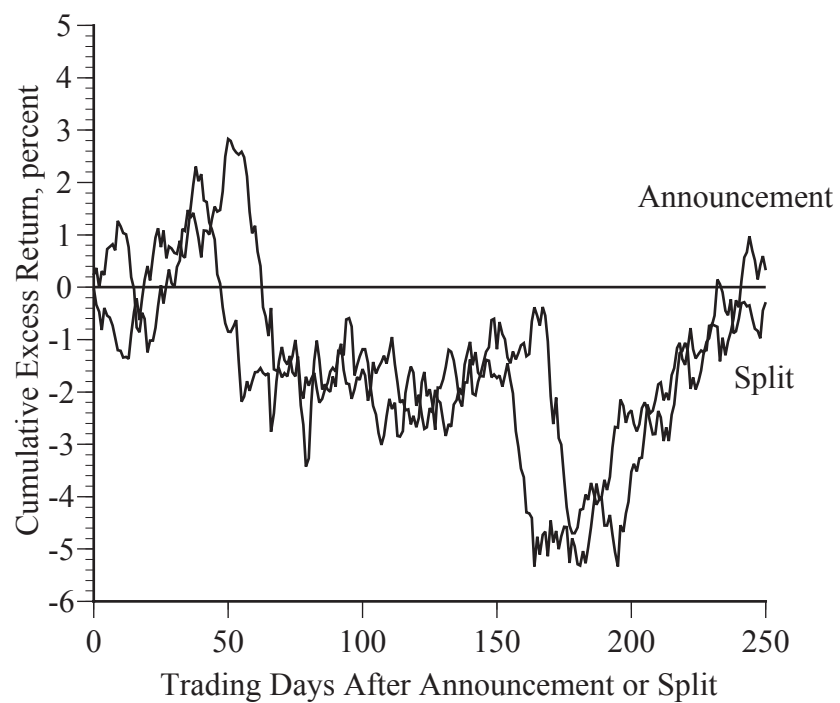Figure 3 Average Cumulative Excess Return For Corporate Stock After Announcement or Split

Figure 4 Average Cumulative Excess Return For ETFs After Announcement or Split