THE LONG-TERM PERFORMANCE OF PARENT FIRMS AND THEIR SPIN-OFFS

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ABSTRACT

This study examines the four-year stock performance of firms that undertake a spin-off. The theoretical motivations for spin-offs have been widely documented in the literature; however, an empirical examination of the aftermarket performance of spin-offs across a protracted bear market remains an unexamined topic. I find that spin-offs and their parents consistently outperform market indices from the closing price on the first day of public trading to their four-year anniversaries. These findings are important because the existence of price patterns during a market correction can serve as an investment hedge within a mean-variance efficient portfolio.

JEL: G30, G38

INTRODUCTION

Complete and perfect market theory predicts that a spin-off announcement should not alter firm value. However, if management is unable to replicate the role of financial markets, then capital may be misallocated and a spin-off, by improving investment decisions, may enhance the value of the divested assets. Schipper and Smith (1983) contend that the creation of publicly traded firms results in new information that empowers stakeholders to more closely monitor the activity of managers, thereby reducing agency costs and enhancing shareholder wealth. The prevailing view of spin-offs in corporate finance theory is that the price of a firm's stock should reflect the market's best estimate of the firm's long-run value. If, however, the stock value of a diversified corporation sends a weak signal of the productivity of any given division, then a single-product stock could dominate a diversified-product stock.

A spin-off is defined as a segment of a corporation that is established as an independent company, and stockholders receive shares in this new entity on a pro-rata basis (Allan, 2001). Several studies have found empirical evidence of the positive short-term announcement returns surrounding the public offering of spin-offs. (Hite and Owers, 1983; Schipper and Smith, 1983). However, the long-term performance of a portfolio invested in spin-offs across a protracted bear market remains a largely unexamined topic in the literature. There are several important reasons why the study of the long-run performance of spin-offs is of interest. First, from an investor's perspective, the existence of price patterns during a market correction may present investment opportunities for active traders. Spin-offs represent an important hedge if they produce excess returns during a market contraction. Finally, from a corporate finance perspective, the cost of external capital for newly issued spin-offs depends not only on the issuance cost of going public, but also on the returns that investors expect in the secondary market (Ritter, 1991).

To summarize the empirical findings of this paper, the average four-year holding period returns for a portfolio of 101 spin-offs that went public from 1999 to 2003 is 29.78%. The holding period return is measured from the closing market price on the first day of issuance to the spin-off's 48-month anniversary. Moreover, two of the four years of seasoning occurred across the bear market experienced in 2001 and 2002. I document that every dollar invested in a portfolio of spin-offs purchased at the closing market price on the first day of trading and held until the four-year anniversary results in a terminal wealth of $1.2978 (29.78% gain); while every dollar invested in the equally weighted stock market index over the same period results in a terminal wealth of just $.9150 (8.50 loss). In the long-run, spin-offs

outperformed the market. The remainder of the paper is organized as follows: in the next section, I discuss the relevant literature. Next, I discuss methodological considerations. The paper continues with a discussion of the data and the presentation of the empirical results. The paper closes with concluding comments.

LITERATURE REVIEW

The literature on spin-offs identifies a number of motivations for undertaking these corporate restructurings. First, spin-offs often emerge in connection with technological innovations. Second, spin-offs are sometimes pursued to increase a subsidiary's direct access to the capital markets, instead of competing for limited parental funds as a non-core subsidiary within a multi-line company (Cooper, 1985). Finally, spin-offs are often economically efficient since the market will frequently value the parent and spin-off at a higher combined market capitalization than just the parent alone. Upward equity analysts' valuations following a spin-off are predictable when the parent and spin-off firms are in vastly different business lines or if there are different earnings growth prospects.

It is important to note that firms can also increase their focus by selling unrelated core assets to other firms rather than initiate a spin-off (Desai and Jain, 1999). However, there are several inherent advantages to concentrating on a sample of spin-offs. First, asset sales are often motivated by liquidity constraints or a desire to pay down debt. However, unlike the sale of assets, a spin-off does not involve an exchange of cash. Thus, a spin-off is generally not motivated because of the parent firm's desire to generate immediate cash. Third, Vijh (2002) finds that asset sales are frequently undertaken to provide a cheap source of funds, not necessarily to improve efficiency. However, a study of spin-offs is free from this confounding effect. Finally, since both the parent and the subsidiary trade as separate entities after the spin-off, their subsequent performance can be analyzed separately. This type of analysis is not feasible in asset sell-offs.

Previous studies find significant abnormal announcement returns ranging from 2.9% to 3.3% on the announcement of spin-off depending upon the benchmark index and event window. These studies include Hite and Owers (1983), Miles and Rosenfeld (1983), Schipper and Smith (1983), Linn and Rozeff (1985), Copeland, Lemgruber and Mayers (1987), Vijh (2002), and Krishnaswami and Subramaniam (1999). These gains are attributed to improved managerial efficiency, reduced information asymmetry, and relaxed regulatory and tax constraints. The elimination of negative synergies is the most commonly cited reason for positive stock price reaction to spin-offs. Schipper and Smith (1983) argue that, just as there are economies of scale, there may be diseconomies of scale by combining disparate assets under one corporate umbrella. As the firm becomes more complex, the costs of decision management and decision control increase to the point where they may offset economies gained from increasing firm size. Hite and Owers (1983), Miles and Rosenfeld (1984), and Desai and Jain (1999), among others, note that spin-offs improve managerial efficiency by reducing the potential for misallocation of capital, eliminating cross subsidies, and enabling improved investment decisions. Krishnaswami and Subramaniam (1999) suggest that many spin-offs are motivated by the desire to mitigate the information asymmetry problem, as the market is forced to value the stock of a company that is really a portfolio of several dissimilar lines of businesses. The findings Desai and Jain (1999) that the announcement returns for focus-increasing spin-offs are significantly greater than the non-focus-increasing spin-offs are also consistent with an information asymmetry hypothesis.

At least two published academic studies have examined the long-term aftermarket performance of spin-offs prior to this study. Cusatis, Mikes, and Woolridge (1993) find significant long-term excess returns for a sample of spin-offs from 1965 to 1988. However, the majority of their excess returns are limited to spin-offs that were acquired within three years of their going public. Desai and Jain (1999) document significant short-term excess returns for spin-offs in the twelve months following public issuance. Their

analysis contains 155 spin-offs that originated during the 1975 to 1991 period. My research differs from these studies because of a more recent sample period from 1999 to 2003. This period is distinct from other decades due to the two-year bear market that lasted from 2001 to 2002. In addition, my sample is free of the slight survivorship bias observed in Cusatis, Mikes, and Woolridge (1993). In addition, to ensure that my return calculations are robust and not methodology specific, I employ several sensitivities on the matched market return portfolios.

Many rationales for the positive announcement effects of spin-offs have been proposed in the literature. Allen, Lummer, McConnell and Reed (1995) argues that spin-offs benefit the firm since, after the spin-off, the equity values of the securities traded provide a much "cleaner" signal of managerial productivity than when the two divisions were part of a combined firm. The argument is that this enables the firm to provide better incentives for firm management based on the stock price of the individual firms. Habib, Johnsen and Naik (1997) argue that spin-offs improve the quality of the information managers and uninformed investors can infer from the prices of the firm's traded securities, therefore leading to an increase in the expected price of the firm's equity. The firm may be undervalued if the market cannot observe the cash flows of each individual division of that firm. Therefore, the firm that needs external financing may resort to divestures such as spin-offs so that it can raise capital at a fair market price after the divesture.

DATA AND METHODOLOGY

I identify the sample of parent firms that undertake spin-offs from the following sources: (i) stock distributions by firms trading on the NYSE, Amex, and NASDAQ that the Center for Research in Security Prices (CRSP) identifies as spin-offs, and (ii) news wires and articles on Lexis-Nexis, Barron's and the Wall Street Journal that report spin-off transactions. I next match the spin-off sample firms with their monthly stock prices from CRSP. To avoid survival bias, I calculate returns for event firms until they are delisted on CRSP. This results in a sample of 101 spin-offs that went public between the years of 1999 to 2002. For the spin-offs that went public between 1999 and 2002, the long-term returns are calculated from issuance until their four-year anniversary. This calculation applies to 82 of 101 spin-off firms in my sample.

I define a market correction as a drop of market levels of at least 10%, but not more than 20%. The most recent example of a correction was the stock market downturn during third quarter 2001. Dismal labor and retail numbers pushed the stock market into a correction. By September 17, 2001, the first day of trading after the September 11 attacks, the Dow Jones Industrial Average had plunged 684.81 points to 8,921. That loss officially pushed the Dow into a bear market, which lasted until December 2002. Shortly thereafter, the stock market downturn of 2002 pushed the Dow and NASDAQ from 10,000 and 2,000 levels in March, to five- and six- year lows of 7,200 and 1,100 by October 2002.

To evaluate the long-run performance of the parents of spin-offs, two measures are used: four-year cumulative average adjusted returns (CAR) are calculated in excess of the market benchmark and four-year buy and hold returns are calculated for sample firms and market index. The methodology used in this paper is similar to that used in other long-term return studies (Rauterkus and Song (2005); Barber and Lyon (1997)). Monthly market-adjusted returns are calculated as the monthly raw return on a stock minus the monthly benchmark market return for the corresponding 21-day trading period.

Fama (1998) documents that long-term return estimation is often sensitive to the methodology used. To avoid methodology specific bias, sensitivities are run on market benchmarks to include (1) an index of the CRSP equally weighted stock market index, and (2) an index of the CRSP value-weighted index. Canina, Michaely, Thaler and Womack (1998) observed that the equally weighted CRSP index sometimes results in an upward overestimation of long-term returns, therefore the value-weighted index is used as a

robustness check to avoid methodology-specific bias. Therefore, the benchmark-adjusted return (ar_{it}) for stock *i* in event month *t* is calculated for the spin-off from initial pricing to the firm's 48-month anniversary, defined as

$$ar_{it} = r_{it} - r_{ew} \quad (1)$$

$$ar_{it} = r_{it} - r_{vw} \quad (2)$$

where r_{it} is the stock return for event firm *i* in month *t*, r_{ew} is an index comprised of equally weighted stocks and r_{vw} is the value-weighted index from CRSP.

The average benchmark-adjusted return on a portfolio of *n* stocks for event month *t* is the equal-weighted average of the benchmark-adjusted returns for

$$\bar{AR}_t = 1/N \sum_{i=1}^{N} ar_{it} \quad (3)$$

where N is the number of spin-off firms.

The cumulative benchmark-adjusted aftermarket performance (CAR) from event month *q* to event month *s*, where *q* is January of the event year and *s* is December, is represented by the equation:

$$CAR_{q,s} = \sum_{t=q}^{s} \bar{AR}_t \quad (4)$$

As an alternative to the CAR, which implicitly assumes monthly portfolio rebalancing, a 48-month holding period return, R_i, for firm *i* is calculated as:

$$R_i = \prod_{t=1}^{48} (1 + r_{it}) - 1 \quad (5)$$

These equations measures the total return from a buy and hold strategy where a stock is purchased at the first closing market price after a spin-off goes public and held for a four-year period. To interpret this four-year total return, I compute the buy and hold excess returns (BHER) for firm *i* as:

$$BHER_i = R_i - R_{mkt} \quad (6)$$

where R_i is the holding period return for $1 invested in a portfolio of spin-offs and R_{mkt} is the holding period return for $1 invested in the market portfolio. A BHER that is greater than zero is interpreted as a portfolio of the parent firms of spin-offs outperforming the market and a BHER of less than zero indicates a portfolio of the parent firms of spin-offs underperforming.

RESULTS

Table 1- Panel A reports that the top performing spin-off over the sample period, Cavco, experienced the highest annualized return of 371%. Cavco Industries went public at an opening list price of $12.70. Cavco Industries primarily focuses on the production of manufactured homes in the southwestern United States. Although not reported in Table 1, I analyze the industry affiliations of the 101 parent firms that engaged in a spin-off and the 101 subsidiaries that were spun-off, and find that the distribution of subsidiaries is spread evenly across sixteen distinct industries with no one industry having a concentration of more than four spin-offs. Based on Lexis-Nexis news runs, the motives most often cited for spinning-off a subsidiary are improvement of business focus, enhanced market valuation of the separate entities, and increased access to capital markets. These motives are similar to the academic explanations for spin-offs presented in the literature review section of this paper.

Table 1: High and Low Performing Corporate Spin-offs

Spin-off/Parent	Spin Date	Initial Price ($)	Annual Return (%)	Result
Panel A: High Performing Firms				
Cavco/Centex	06/08	12.70	371.4	Active
Mind Speed/Conexant Sys	06/08	2.05	304.0	Active
Gen Probe/Chergal	09/08	6.50	219.4	Active
Brookfield Homes/Brookfield	01/08	8.50	195.1	Active
Hdsn Highland/Mnstr VW	03/08	9.00	174.7	Active
Medco Health	08/08	22.60	110.9	Active
Marine Products/RPG	02/08	3.07	86.1	Active
Fordin/Can Pacific	02/08	22.00	83.0	Active
Genesis Healthcare/Genesis	11/08	15.50	74.0	Active
MWE Development/Magna Intl	08/08	17.65	70.0	Active
Plains E&P/Plains Res	12/08	9.20	71.5	Active
Tender Lvg Cr/Staff Blds	10/99	0.10	68.8	Active
Ceva/DSP Group	11/08	5.10	64.6	Active
Levitt/BankAtlantic	12/08	16.00	63.0	Active
ENPRO/Goodrich	05/08	8.45	57.5	Active
Duck Head/Delta Wdide	06/00	4.50	49.7	Active
Panel B: Low Performing Firms				
VelocityHI/BREProps	08/00	2.00	-99.2	Active
Key3 Media/Softbank	08/00	5.50	-95.7	Delisted
APW/Actuant	07/00	37.00	-97.6	Delisted
ANC Rental/AutoNation	06/00	6.50	-92.6	Delisted
Wllms Com/Wllms Cons	09/99	23.00	-92.4	Delisted
Tikcro Tech/Orckit Com	06/00	15.00	-91.1	Delisted
Gentek/GeneralChem.	04/99	13.00	-82.9	Delisted
Seera Nova/Intelligroup	07/00	10.63	-81.0	Acquired
Crstlne Cptl/Hst Mrrit	12/98	14.50	-79.0	Active
Circle.com/Snyder Comm	10/99	13.00	-77.9	Acquired
eLoyalty/Tech sol	02/00	350.00	-63.1	Active
Lanier Worldwide/Harris	11/99	6.50	-47.5	Acquired
McData/EMC	02/08	53.50	-45.2	Active
Overhill Farms/Overhill	11/08	3.00	-39.0	Active
VIAlta/ESS Tech	08/08	1.40	-38.2	Active
Synavant/IMS Health	08/00	12.50	-33.5	Acquired
Roxio/Adaptec	05/08	13.00	-30.6	Active
Evercel/Energy Res	03/99	3.13	-30.4	Active

The top performing parent firms and their spin-offs are presented from a sample of over one hundred firms. These firms went public during the years 1999-2003. Firms are ranked by highest annualized returns from high to low during the January 1, 1999 to December 31, 2003 sample period.

Table 1 – Panel B reports that approximately half of the low performing spin-offs declared bankruptcy within three years of their issuance. The empirical literature finds the performance of spin-offs with respect to growth and survival is generally above the average survival rate on an initial public offering. This result is, however, conditional on the parent being financially and strategically healthy. The positive effect of a strong parent-progeny relationship is consistent with evolutionary organizational theory's predictions that routines and procedures are inherited by the spin-off from the parent (Helfat and Lieberman, 2002). Other research documents the importance of a deliberate planning process as a key predictor factor in the survival of the spin-off. Research has found that this direct support is more

important in predicting the stand-alone success than either the product line or type of business. Furthermore, Klepper (2001) finds there are much higher observed survival rates from parental initiated spin-offs when compared to entrepreneurial initiated spin-offs.

As a cautionary tale to potential spin-off investing, Table 1 – Panel B reports that Velocity experienced the lowest annualized return of -99.2% of any firm in the sample. Velocity is a high-speed internet company based in San Francisco that went public in August 2000. Shortly after issuance, Velocity entered bankruptcy protection in the early fall of 2001. In conjunction with this bankruptcy announcement, Velocity declared that it entered into an asset purchase agreement with Reallinx of Dallas. Velocity sold its major assets for $350,000. However, given the company's outstanding debt, Velocity did not expect any distributions to stockholders following the transaction because of the size of the company's outstanding debt.

Table 2 – Panel A reports the average matching firm-adjusted returns (AR) and cumulative average value-weighted stock market index adjusted returns (CAR) for the first 48 months after the offering date for Spin-Off firms. Thirty-six of the 48 monthly average adjusted returns are positive. The positive average adjusted returns, after a slight decrease in the first 10 months of seasoning, increases to 137.83% by the end of month 48. Focusing first on the raw returns, a positive initial return of 11.71% is followed by monthly average raw returns varying between negative 3.48% and positive 8.51%. The cumulative average raw return peaks at 101.64% in month 48. The poor performance of the stock index is strongly influenced by the bear market that lasted through December 2002 and by the September 11, 2001 tragedies.

Table 2 – Panel B reports the average matching firm-adjusted returns (AR) and cumulative average market index adjusted returns (CAR) for the first 48 months after the offering date for the Parents of Spin-offs. Twenty-nine of the 48 monthly average adjusted returns are positive, while 19 are negative. The cumulative average market adjusted returns, after a slight decrease in the first four months of seasoning, increases to 105.64% by the end of month 48. The cumulative average raw return peaks at 122.32% in month 40. It is important to note that the poor performance of the entire market was influenced by the bear market experienced from September 2001 to December 2002 and by the September 11, 2001 tragedy. Yet, the spin-offs and their parent firms beat their matching value-weighted market indices.

Table 3-Panel A reports the average matching firm-adjusted returns (AR) and cumulative average market adjusted returns (CAR) for Spin-offs after the first 48 months of their offering date. Thirty-five of the 48 monthly average adjusted returns are positive. The positive average adjusted returns, after a slight decrease in the first 10 months of seasoning, increases to 137.83% by the end of month 48. Focusing first on the raw returns, a positive initial return of 15.53% is followed by monthly average raw returns varying between negative 16.44% and positive 14.37%. The cumulative average raw return peaks at 150.93% in month 40. The measurement of the long-run performance of stocks is especially sensitive to the benchmark employed. This is commonly documented in event studies using long windows, as indicated by Dimson and Marsh (1986). Since the vast majority of the Spin-offs that trade on NASDAQ, a natural candidate for the most appropriate benchmark portfolio is the small stock market index. This index has the advantage that the industry mix more closely matches the sample spin-offs than does either the AMEX or NYSE.

Table 2: Value-Weighted Cumulative Adjusted Returns for Parent Firms and their Spin-offs

Month of	*Panel A*		*Panel B*	
Seasoning	**Spin-offs AR %**	**Spin-offs CAR %**	**Parents AR %**	**Parents CAR %**
1	11.71	11.71	-4.73	-4.73
2	8.51	20.22	0.23	-4.50
3	4.22	24.44	-4.15	-8.65
4	4.17	28.61	8.15	-0.50
5	0.79	29.40	11.92	11.42
6	2.96	32.36	-0.01	11.41
7	5.04	37.40	6.78	18.19
8	3.39	40.79	-3.94	14.25
9	-1.84	38.96	-2.95	11.30
10	-3.18	35.78	-7.13	4.17
11	4.56	40.34	3.55	7.73
12	3.87	44.21	3.47	11.20
13	2.96	47.16	5.24	16.44
14	1.59	48.76	-7.99	8.44
15	6.01	54.76	9.48	17.92
16	3.19	57.96	23.96	41.89
17	5.52	63.48	5.90	47.78
18	-1.98	61.49	-1.91	45.87
19	-0.24	61.25	4.08	49.95
20	4.44	65.70	-2.00	47.95
21	-2.67	63.03	12.47	60.42
22	-3.32	59.72	-0.07	59.71
23	-0.63	59.09	3.45	63.15
24	4.81	63.91	2.50	65.66
25	2.38	66.28	12.19	77.85
26	-1.00	65.28	18.43	96.28
27	-1.42	63.86	2.18	98.46
28	4.34	68.20	-6.86	91.60
29	1.80	70.00	7.50	99.10
30	5.79	75.79	0.06	99.16
31	1.13	76.92	-0.49	98.67
32	1.13	78.05	4.88	103.54
33	1.50	79.55	-6.06	96.94
34	-1.25	78.29	-12.58	84.36
35	4.23	82.52	6.16	90.52
36	2.03	84.55	13.37	103.89
37	3.00	87.55	6.03	109.91
38	1.91	89.47	2.44	112.35
39	2.55	92.02	0.00	112.35
40	2.93	94.95	8.89	121.24
41	0.73	95.68	1.08	122.32
42	2.47	98.15	-0.62	121.70
43	-0.98	97.18	-7.13	114.57
44	-1.40	95.78	-10.01	104.56
45	1.02	96.80	-4.52	100.04
46	1.23	98.03	-16.92	83.11
47	1.44	99.46	9.89	93.00
48	2.18	101.64	12.63	105.64

Average market-adjusted returns (AR) and cumulative average returns (CAR), for a sample of parent firms and their spin-offs that went public from 1999 to 2003 until their 48-month anniversary. The market-adjusted return (ar_{it}) for stock i in event month t is defined as $ar_{it} = r_{it} - r_{iL,t}$ where r_{it} is the stock return for event firm i in month t and $r_{iL,t}$ is the value stock market index.

The average benchmark-adjusted return across stocks for event month t is the equal-weighted average of the adjusted returns for event month t for spin-offs $\bar{A}R_t = 1/N \sum_{i=1}^{NL}$ *where N is the number of spin-off firms.*

Table 3. Equally-Weighted Cumulative Adjusted Returns for Parent Firms and their Spin-offs

Months of	Panel A		Panel B	
Seasoning	Spin-off AR %	Spin-off CAR %	Parents AR %	Parent CAR %
1	15.53	15.53	-8.83	-8.83
2	14.37	29.90	-1.27	-10.11
3	0.44	30.34	-7.79	-17.90
4	9.97	40.31	0.00	-17.70
5	2.04	42.35	22.60	4.86
6	-5.44	36.92	6.46	11.32
7	7.93	44.85	9.97	21.30
8	3.21	48.05	3.47	24.78
9	-12.12	35.93	-4.02	20.75
10	-3.38	32.55	-16.33	4.41
11	8.41	40.96	-5.50	-1.07
12	10.46	51.42	1.24	0.17
13	5.06	56.48	13.80	13.97
14	4.17	60.65	0.07	13.22
15	14.50	75.15	-8.19	5.04
16	10.86	86.01	36.52	41.56
17	1.01	87.03	32.05	73.62
18	0.36	87.39	1.60	75.20
19	1.47	88.86	3.80	79.01
20	3.56	92.41	-3.99	75.02
21	7.01	99.42	15.82	90.84
22	5.88	105.30	12.25	103.95
23	3.84	109.14	10.74	113.83
24	1.96	111.10	5.54	119.38
25	-2.13	108.97	11.23	130.06
26	-7.72	101.24	39.85	170.47
27	6.92	108.16	27.03	197.49
28	11.70	119.86	-12.37	185.13
29	-2.53	117.34	0.00	185.25
30	7.68	125.02	10.10	195.32
31	-13.33	111.69	0.00	195.97
32	-3.67	108.02	10.80	206.76
33	-3.43	104.58	6.40	213.20
34	1.63	106.22	-20.90	192.20
35	13.15	119.37	-13.90	178.27
36	0.61	119.98	18.70	197.04
37	5.23	125.21	20.90	217.99
38	8.18	133.39	10.50	228.65
39	9.41	142.79	-1.20	227.30
40	8.14	150.93	15.00	242.33
41	-16.44	134.48	10.80	253.21
42	0.80	135.28	7.70	260.92
43	-7.29	127.99	0.00	261.07
44	0.90	128.89	-17.60	243.44
45	3.64	132.53	-3.50	239.90
46	9.72	142.25	-30.00	209.81
47	-1.68	140.58	-12.70	197.07
48	-2.74	137.83	28.60	225.64

Average market-adjusted returns (AR) and cumulative average returns (CAR), for a sample of parent firms and their spin-offs that went public from 1999 to 2003 until their 48-month anniversary. The market-adjusted return (ar_{it}) for stock i in event month t is defined as $ar_{it} = r_{it} - r_{iL,t}$ where r_{it} is the stock return for event firm i in month t and $r_{iL,t}$ is the equally weighted market index. The average benchmark-adjusted return across stocks for event month t is the equal-weighted average of the adjusted returns for event month t for spin-offs

$\bar{A}R_t = 1/N \sum_{i=1}^{NL}$ *where N is the number of spin-off firms.*

Table 3 – Panel B reports the average matching firm-adjusted returns (AR) and cumulative average market index returns (CAR) for the Parents of Spin-offs after the first 48 months after their offering date. Focusing first on the raw returns, a negative initial return of -8.83% is followed by monthly average raw returns varying between negative 30.00% and positive 39.85. The cumulative average raw return peaks at 243.44% in month 48. While the excess CAR returns remain regardless of market benchmark used, my results confirm a slight upward bias in the non-value weighted indexes first reported by Canina, Michaely, Thaler and Womack (1998). Thirty-one of the 48 monthly average adjusted returns are positive. The positive average adjusted returns increases to 39.85% by the end of month 48.

Table 4 - Panel A reports the four-year holding period returns for the parent firms of our spin-off sample. The median spin-off four-year return is 2.978% contrasted with .996% for the value weighted market index and .915% for the equally weighted market index. In other words, every dollar invested in a portfolio of spin-offs purchased at the closing market price on the first month of trading results in a terminal wealth of $1.03, while every dollar in the value-weighted market index would result in a terminal wealth of $.996 and a $.915 terminal wealth for the equally-weighted market index.

Table 4 - Panel B reports the four-year holding period returns for the parent firms of our spin-off sample. The median spin-off four-year return is 1.015% contrasted with .996% for the value weighted market index and .914% for the equally weighted market index. In other words, every dollar invested in a portfolio of spin-offs purchased at the closing market price on the first month of trading results in a terminal wealth of $1.01, while every dollar in the value-weighted market index would result in a terminal wealth of $.996 and a $.914 terminal wealth for the equally-weighted market index.

Table 4: Four-Year Holding Period Returns for Parent Firms and their Spin-offs and their Matched Market Returns

Market Index Type	***Panel A***			***Panel B***		
	Four-year Holding Period Returns, in %		**Spin-off BHER**	**Four-year Holding Period Returns, in %**		**Parent BHER**
	Spin-off Firms	**Market Index**		**Parent Firms**	**Market Index**	
	(1)	(2)	**(1) – (2)**	(1)	(2)	**(1) – (2)**
Value-weighted	2.978	0.996	**1.982**	1.015	0.996	**0.019**
Equally-weighted	2.978	0.915	**2.063**	1.015	0.915	**0.100**

Four-year holding period returns are calculated as [Π (1+ r_{it}) - 1] where *r* is the return on stock *i*. *The CRSP return tapes are the source of the monthly returns. To avoid survivorship bias, the total return is calculated until the delisting date for event firms that are delisted before the four-year anniversary. The corresponding matching index is calculated over the same period as that of the event firm. Buy and hold excess returns are calculated as event firm return minus the market return. Buy and hold excess returns are abbreviated in the table as BHER.*

The extant empirical literature provides several reasonable explanations for the excess returns documented in this study. For example, Allen, Lummer, McConnell and Reed (1995) theorize that the primary benefit derived from a spin-off is the removal of significant negative synergies between the parent and subsidiary. This is particularly apparent when two diverse business units are separated. Another explanation for the superior performance of spin-offs could be related to the documented positive announcement returns found for spin-offs that originate due to an acquisition and the subsequent streamlining of the parent firm. This explanation suggests that positive abnormal returns represent the re-creation of value that was destroyed at the time of the parent firm acquisition. My empirical results could also be explained by the informational symmetry explanation of spin-offs, first reported by Krishnaswami and Subramaniam (1999). Their study finds that the abnormal returns following the issuance of a spin-off is typically larger than other new initial public offerings because the spun-off firm has higher levels of information asymmetry. Similarly, Hakansson (1982) notes that if all information regarding the future

prospects of the spun-off entity is not fully disclosed at the time of a spin-off, then those holding private information may have the opportunity to earn positive excess returns in stock transactions following the spin-off.

CONCLUSION

This paper documents a strategy of investing in spin-offs at the end of the first day of public trading and holding them until their four-year anniversary. A portfolio invested fully in spin-offs would have left an investor with $1.298 cents relative to just $.996 for each dollar invested in the value-weighted market portfolio and $.915 for each dollar invested in the equally-weighted market portfolio. While a portfolio invested fully in the parents of spin-offs would have left an investor with $1.015 cents relative to just $.915 for each dollar invested in the equally weighted stock market portfolio and $.996 for each dollar invested in the value-weighted market portfolio. These findings are surprising because the parents and their spin-offs excess returns are observed during the bear market experienced in 2001 and 2002.

The finding that spin-off offerings over perform, on average, implies that the costs of raising external equity capital is high for these firms. The high transaction costs of raising external equity capital are similar to that documented for initial public offerings (Muscarella and Vetsuypens, 1990). Consequently, the small growth companies that predominate among spun-off firms face a higher cost of equity capital than is true for more established firms (Ritter, 1991).

The paper checks the robustness of the cumulative average market-index adjusted returns (CARs) by performing sensitivities on both the value- and equally-weighted indices. However, one limitation of this research is the specificity of its conclusions is limited to the corporate environment that spurned the restructurings in the early nineties. An extension of the current study would examine other down market periods wherein pronounced spin-off restructurings were undertaken by the parent firms of spin-offs. A final extension of this work would involve using a time-series analysis to examine the after performance of spin-offs over longer time intervals (greater than 10 years).

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