METU Studies in Development, 24 (1) 1997, 139-147

Dyssynergy effect of voluntary spinoffs and market efficiency

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Abstract

The excess returns associated with spinoff announcements between 1980 and 1988 are investigated. It is found that spinoff announcements continued to create excess returns reaching a maximum of 2.88%, with a Z statistic of 8.22, between the period of one day before the announcement and the announcement date. A logit model is formed to investigate the relation between spinoff decision of companies and their asset growth rates. The results show that asset growth rate is a significant determinant of spinoff decision with a p value of 0.075.

1. Introduction

A spinoff occurs when a company distributes all of the common shares it owns in a controlled subsidiary to its existing shareholders, thereby creating a separate company. As a result, shareholders end up having shares of a completely new company. In most of the cases the spun off is in a completely different industry. The spinoffs make the shareholders to invest in a new company with a new management.

Various researchers examine the effect of voluntary spinoffs on shareholder's wealth. They find that spinoffs create very large amounts of excess returns. In complete and perfect markets, a spinoff announcement should not alter the value of the firm.

This paper examines the effects of spinoff announcements on shareholder wealth and investigates whether companies spin off to increase managerial efficiency. The purpose of this study is twofold: (i) to check the semi-strong

form of market efficiency hypothesis related to spinoffs, (ii) to check whether excess returns are created because of dyssynergy effect. In the following Section 2, the previous studies are reviewed. Data and methodology are discussed in Section 3. In Section 4 the results and their interpretation are presented.

2. Previous studies

Galai and Masulis (1976) argue that spinoffs erode the position of the bondholders, causing a transfer of wealth from bondholders to shareholders while leaving the value of the firm unaltered.

Schipper and Smith (1983) use 93 voluntary spinoffs between 1963-1981, and investigate the bondholder expropriation and relaxed regulatory environment hypotheses as the reasons of companies' spinoff decisions. They find that parent firm shareholders benefit from voluntary spinoffs and conclude that the source of the gains is not bondholder expropriation, but a combination of relaxed regulatory environment and increased productivity due to the reduced size of assets under a single management team. The authors agree with the idea that, on average, bondholders anticipate and attempt to control wealth transfers to shareholders. So it is unlikely that the excess returns are associated with bondholder expropriation.

Miles and Rosenfeld (1983) and Hite and Owers (1983) both find very large abnormal returns to current shareholders. Miles and Rosenfeld find 3.3% excess returns over a two-day announcement period. They compare the large spinoffs with small spinoffs, and decide that large spinoffs produce larger excess returns than small spinoffs.

Hite and Owers (1983) also find 3.3 % excess return over the interval -1 to 0 (0 refers to the announcement date and -1 refers to the day before the announcement). The authors examine the question of senior security holder wealth expropriation and conclude that the gains to shareholders do not come at the expense of senior security holders. They investigate the excess return to the companies that mentioned legal difficulties as the cause of spinoffs and find negative returns to these kind of firms. Hite and Owers suggest that there must be some fundamental change in the underlying opportunity set facing parent and subsidiary that leads to the spinoff and is announced simultaneously.

The work of Jensen and Meckling (1976) suggests that the wealth of the stockholders is influenced by the set of the contracts constituting the firm. For a firm involved in a variety of disparate activities, the optimal set of contracts

for the combined operations may preclude the use of contracts that would be optimal for the separate activities.

Schipper and Smith (1983) make a survey asking companies their reasons to spin off. 51.7% of their sample firms suggest that reducing the size and variety of the assets under one management may improve the allocation of resources. "Diminishing returns to management" may arise as the number and diversity of transactions organized within a firm expand. Diseconomies of decision management may result from costs of producing and disseminating the investment-related information. Diseconomies of decision control may arise from two types of increasing costs: costs of evaluating the managerial performance and the residual loss from managerial shirking.

The spinoff is a very costly process. It requires registration of share certificates and distribution of them. In the future, separate firms lose advantages of economies of scale in raising new capital. In order companies to decide to spin off, benefits of independent operations should exceed benefits of the joint operation.

Most of the studies in the literature were made with data from 1963 to 1980, and concentrated on bondholder expropriation and relaxed legal environment hypotheses. Although the majority of companies stated improving managerial efficiency by forming new units as their purpose of spinning off, this reason was mostly ignored by these studies.

In this paper we study the spinoffs after 1980 and estimate whether voluntary spinoffs still produce large abnormal gains to the shareholders. We also explore whether "reducing the size and variety of the assets under one management" (the reason of spinoff mentioned by 51.7% of the companies in Shipper and Smith paper) affects the spinoff decision by using a logit model.

3. Data and methodology

3.1. Data

We obtained the spinoff data from two sources: (i) Moody's Dividend Record, (ii) Standard and Poor's Dividend Record, and then checked the Moody's Industrial Manual to make sure that a new company or a subsidiary was formed. The data contain the voluntary spinoffs between 1981-1988. After this step, the *Wall Street Journal* Index was read to eliminate the companies which have other announcements in addition to spinoffs at the announcement day. The excess returns were calculated according to the methodology

suggested by Brown and Warner (1985).

If the markets satisfy the requirements for semi-strong form of efficiency, any excess returns that exist pre-announcement period should disappear after the announcement.

To check the dyssynergy effect, we exploit two different methods. These are as follows:

1) We do a regression analysis in which two day (-1, 0) excess returns are regressed against company growth rates to determine whether larger growth rates produce significantly larger returns.

2) Then we perform a logit analysis in which we regress the spinoff decision response variable against growth rate to determine whether asset growth rate is a significant determinant of spinoff decision.

3.2. Methodology

The parameters of the market model are estimated from historical returns between Day -200 through Day -51 before the announcement date, over the 150-day period. This interval is traditionally chosen by event study researchers. Traditionally excess returns are started to be calculated at day -40 and estimation period is ended 10 days before the prediction period.

$R_{it} = a_i + b_i R_{mt} + e_{it}$ $t = -200, \ldots\ldots -51$

R_{it} = return on stock of firm i on day t from CRSP

R_{mt} = CRSP value weighted index of returns on ASE and NYSE stock on day t

a_i, b_i = market model intercept and slope

Using the market model parameters we calculate the predicted returns for the firm j on the day t as:

$Pr_{jt} = a_j + b_j R_{mt}$

Accordingly, we calculate the prediction error for the firm j on the day t with the following formula:

$Pe_{jt} = R_{jt} - PR_{jt}$

$Pe_{jt} = R_{jt} - (a_j + b_j R_{mt})$

The cumulative prediction error from event day t1 to t2 is defined as:

$$CPE_j = \sum_{t1}^{t2} PE_{jt}$$

For a sample of N securities the mean cumulative prediction error (MCPE) is defined as:

$$MCPE = \frac{1}{N} \sum_{i=1}^{N} CPE$$

4. Results and interpretation

We computed the mean cumulative prediction errors for a fourteen-day period (-7 to +7) around the announcement of the spinoff in the *Wall Street Journal*. The daily prediction errors and mean cumulative prediction errors are reported in Table 1 and 2, respectively. The mean cumulative prediction errors become significant at day -1 with 1.59% excess return and a Z statistic of 6.94. If we look at Table 2, the excess returns become significant 40 days before the event with a Z statistic of 2.87 and reach its maximum for the period -1 to 0 with 2.88% excess return and a Z statistic of 8.22. During this two-day period the abnormal return is 2.88%. The abnormal returns started 40 days before the announcement, but became insignificant between 0 to 2. So in Day 1 people can still earn abnormal profits. Although excess returns disappear in Day 2, the fact that they can be earned in Days 0 and 1 make the semi-strong form of market efficiency hypothesis related to spinoffs invalid.

The results confirm those of the previous studies that spinoff announcements are associated with significant positive stock price reactions. The evidence shows that stockholders increase their wealth after spinoff announcements.

To test the hypothesis that firms spin off to improve managerial efficiency by forming new independent units, the growth rates of the companies' total assets in last two years are calculated. The names and the growth rates of the companies in the sample are presented in Table 3. The mean growth rate is 14.59% and the highest growth rate is 87.20%. When we regressed the excess return between Day -1 to 0 on the growth rate, insignificant results were obtained.

Model:

$CPE_{jt} = a + b\ GROWTH_j + e_{jt}$

CPE_{jt} = cumulative prediction error (-1, 0) for company j

Table 1

Abnormal Returns of Securities Surrounding the Wall Street Publication Date of the Spinoff Announcements

Date	Mean cumulative prediction error	Z Statistic [a]
– 7	–0.0021	–0.86
– 6	0.0096	2.82*
– 5	–0.0014	0.15
– 4	0.0006	–0.18
– 3	–0.0007	–0.67
– 2	–0.0023	–0.43
– 1	0.0159	6.94*
0	0.0130	4.68*
1	–0.0027	–0.73
2	–0.0041	1.60
3	–0.0015	–0.57
4	0.0052	1.59
5	–0.0049	–1.70
6	0.0032	0.69

[a] Z Statistic : $(X-\mu) / \sigma \sim N(0,1)$.

Table 2

Abnormal Returns of Securities Surrounding the Wall Street Publication Date of the Spinoff Announcements

Interval of trading days	Mean cumulative prediction error	Z Statistic
–1 , 0	0.0288	8.22*
–1 , 1	0.0261	6.29*
–10 , 1	0.0239	2.82*
–7 , 7	0.0264	2.55*
–10 , 10	0.0178	1.49
–20 , 0	0.0355	3.67*
–30 , 0	0.0358	3.16*
–40 , 0	0.0369	2.87*
0 , 1	0.0102	2.80*
0 , 2	0.0061	1.36

Note: The sign * indicates statistical significance at 5 % level.

Table 3
The Names and the Growth Rates of the Companies

ACTON	Financial Services	0.500
AMOCO	Petroleum Refining	–0.070
ANTA	Apparel	0.121
BAIRNCO	Cutlery, Hand Tools	0.244
BEARD OIL	Crude Petroleum	0.091
CARTER HAWLEY	Department Stores	0.160
CELERON	Crude Petroleum	0.185
CHELSEA	Plastic Products	–0.045
CLEVELAND	Metal Mining	0.123
CRANE	Metal Products	0.435
DAMSON	Crude Petroleum	0.133
EDISON BROTHERS	Shoe and Apparel	–0.033
FEDDERS	Air Cond. and Heating	0.706
FLORIDA ROCK	Coal Mining	0.148
GENERAL MILLS	Grain Mill Products	–0.029
GROW GROUP	Paints,Varnishes	0.872
GULF CANADA	Production of Petroleum	0.143
HI SHEAR	Bolts, Nuts, Screwdrivers	–0.268
HINDERLITER	Apparel	0.396
I.R.T. PPTY	Real Estate	0.010
I. U. INT.	Conglomerate	0.167
ITEK	Printing Machines	0.242
KN ENERGY	Natural Gas Transmission	0.077
KANEB SERVICES	Construction	0.130
KEYSTONE CONS	Steel Works and Blast Furnace	–0.064
L.T.V.	Steel Works and Blast Furnace	0.043
M.C.A	Motion Picture, Video	0.199
MAXUS ENERGY	Oil, Gas and Chemicals	–0.238
MOOG	Machinery and Equipment	0.081
N.U.I.	Natural Gas Distribution	0.089
NOBLE	Crude Petroleum	0.067
OGDEN	Facilities Support Services	0.098
PANHANDLE EASTERN	Natural Gas Transmission	–0.064
PENNZOIL	Petroleum Refining	0.018
PERINI	Building Constructors	0.112
PLANTRONICS	Telephone Apparatus	0.237
POPE TALBOT	Paper Mills	–0.031
R.L.C.	Truck Rental	0.108
RAYMOND JAMES	Security Brokers	0.872
ROLLINS	Services to Dwellings	0.201
SABINE	Production of Oil and Gas	0.428
SINGER	Household Appliances	0.134
SOUTHMARK	Gas and Electric Services	0.663
STANDEX	Industrial Products	0.030
TELEDYNE	Aircraft Engine	–0.009
TIME	Publishing	0.051
TORCHMARK	Insurance	0.128
TRACOR	Aircraft Parts	0.068
TRAFALGAR	Real Estate	0.083
TRANSAMERICA	Investment	0.051
TRANSWAY	Financial Services	0.044
U.S.G.	Concrete, Gypsum	0.065
UNIVAR	Chemicals	0.111
WILSHIRE	Crude Petroleum	0.024

Regression Results:

Variable	parameter	Std. error	t stat.	p value
GROWTH	0.0046 R^2 = 0.0004	0.0315	0.416	0.884

According to the regression results, the amount of excess return cannot be explained by the growth rate. Then we hypothesize that companies that experienced a big growth in their assets in previous two years decide to spinoff. We perform a logit analysis in which we regress the response variable of the decision of spinoff against the previous two years' average asset growth rate. In our analysis we form a control group of 54 companies from the same industry groups as our sample companies. The companies in the control group have not experienced spinoff during that period. We calculate the average asset growth rate of these companies and perform logit analysis on the combined group. The results are as follows:

Variable	Parameter	Std. error	χ^2	p value
INTERCEPT	–0.2292	0.2302	0.9915	0.3194
GROWTH	2.0275	1.1561	3.1671	0.0751

As the results show, the growth rate is significant on spinoff decision with a p value of 0.0751.

5. Conclusion

This study shows that spinoff announcements continue to create abnormal positive returns and asset growth rate of companies significantly affect their spinoff decision. However, the amount of excess return cannot be explained directly by the amount of the growth rate.

The companies believe in improved efficiency by spinoffs. Investors may also believe that spinoffs improve the efficiency; and that this may create excess returns. However, the rate of excess return is expected to change from company to company with the size of spun off, with the industry in which the new unit is in, and with the industry in which the company is in.

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Özet

Gönüllü yavrulama duyurularının sinerji bozucu etkileri ve piyasa etkinliği

Bu makalede 1980 ile 1988 tarihleri arasındaki yavrulama duyurularının yarattığı fazla getiriler araştırılmıştır. Yavrulama duyurularının anormal getiri sağlamaya devam ettiği ve duyurularda bir gün öncesi ve duyuru gününden oluşan iki günlük dönemde, 2.88 puan ve 8.22'lik Z istatistiği ile maksimum değere ulaştığı görülmüştür. Firmaların yavrulama kararları ile kaynak büyüme hızları arasındaki ilişkiyi incelemek üzere bir logit denklemi sınanmıştır. Sonuçlar kaynak büyüme hızının yavrulama kararını etkileyen önemli bir faktör olduğunu göstermiştir.