

The Market Value of the Corporate Risk Management Function

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Abstract

Much of the debate about the value of risk management to the firm centers around models such as the Capital Assets Pricing Model and whether investors place a value on risk management activities by the firm. This article explores this relationship empirically and finds that investors do value firm-specific risk management activities.

Introduction

While the use of risk management strategies have increased dramatically over the last 30 years, measuring the value of risk management activities has been difficult. Much of this can be attributed to the fact that the impact of losses prevented or reduced through risk management practices cannot be easily measured. Schmit and Roth (1990) provide an explanation of the activities performed and tools used by practicing risk managers. The current study examines the issue of whether shareholders value the risk management function.

Previous Work

Valuation of the firm can be done through several theoretical models such as the Gordon Dividend Growth Model, the Capital Asset Pricing Model (CAPM), and the Arbitrage Pricing Theory model (APT). Cho (1988) explores the relationship between firm value and risk management activities using Gordon's Constant Dividend Growth Model. With the assumption that risk management activities affect the firm's cost of capital, he shows that under certain conditions, risk management activities lower the cost of capital,

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thus raising the present value of the firm to investors. This suggests that the investors might place some positive value on the risk management process.

If the CAPM is valid, rational investors eliminate firm-specific risk through the process of holding a well diversified portfolio of assets, leaving only systematic or market risk. Other authors have examined the issue of whether risk management can be reconciled with the CAPM (see Diallo and Kim, 1989; Cho, 1988; Cross, Davidson, and Thornton, 1986; Cummins, 1976 and 1983; Doherty, 1984 and 1985; Doherty and Tinic, 1981; Hiebert, 1983; Main, 1983a and 1983b; Mayers and Smith, 1982; MacMinn, 1987; and Sprecher and Pertl, 1983), an issue on which the current article provides empirical evidence.

Sprecher and Pertl (1983) provide the only other empirical work that is related to this question of the value of risk management activities. Using an event study methodology, they find that large, firm-specific losses create negative abnormal returns. Further, they argue that because the risk management techniques of loss prevention and control can reduce the negative impact of large losses, risk management activities should be positively valued by stockholders.

Research Methods

An event study methodology similar to that used by Cross, Davidson, and Thornton (1986 and 1989) and Diallo and Kim (1989) is used in this study. The events of interest are defined as published announcements of the formation or expansion of a risk management department in the sample firms. These announcements appeared in various weekly issues of *Business Insurance*. Investor reaction to these announcements should indicate the value placed on risk management activities by financial market participants. There were 117 announcements of this type identified during the period from 1980 through 1986. To be included in the final sample, the announcements had to refer to firms for which the Center For Research in Security Prices Daily Stock Return contained the necessary stock return information. The final sample consisted of 80 announcements relating to firms whose common stocks are traded on either the New York Stock Exchange or the American Exchange.

Unlike other daily "announcement" event studies in which events are usually identified as having been reported in a daily publication such as the *Wall Street Journal*, this study uses announcement dates associated with a weekly publication. Furthermore, the information appearing in the published announcements arrives at the publishers in the form of a press release two to five weeks prior to the publication date. Sometime during this pre-event period the original announcement is released and investors are exposed to this new information. This means that any shareholder wealth effect associated with this new information would be expected to occur sometime during this five-week period prior to the identified announcement date rather than on the actual publication date. For this reason, the analysis in this study focuses on

the share price reaction during this period prior to the actual publication date.¹

An event methodology is used to calculate abnormal stock returns during a 51-day event period that straddles the publication date of the announcement. The days numbered -25 to -1 represent the stock trading days occurring during the five-week period leading up to the announcement publication, day 0 represents the publication date, and days 1 to 25 represent the five-week trading period following the announcement.

If investors make investment decisions solely within the context of the CAPM, they are indifferent to firm specific risk management activities, and the abnormal returns prior to the published announcement should not be different from zero. If agency costs are considered, the abnormal returns associated with a firm's risk management activities may be positive or negative. Additionally, if investors believe the benefits of risk management activities that finally accrue to the owners of the firm outweigh the associated costs, positive abnormal returns will occur but if investors believe that risk management costs represent an unnecessary expense or that the costs outweigh the benefits, negative abnormal returns should occur. Once the information has been available for a few weeks and is finally published in *Business Insurance*, no abnormal returns should exist.

Results

The mean abnormal returns (AR_{nt}) and the associated test statistics (the standardized abnormal returns (SAR_{nt})) for the sample of $n = 80$ securities over the event period are presented in table 1. The only statistically significant single day abnormal return ($t = 6.34, \alpha = .01$) is positive and occurs on day -11, two weeks prior to the publication of the announcement information in *Business Insurance*.² This day corresponds with the publication deadline prior to the publication date. There were no significant single day abnormal returns during the 25-day post publication period.

Since the information effect relating to the firm's risk management activities would be spread over a multi-week period, it is necessary to examine various sub-periods within the 51-day event period. Table 2 presents the cumulative mean abnormal returns (CAR_{nN}) and the associated test statistics (the standardized cumulative abnormal returns ($SCAR_{nN}$)) for the sample of $n = 80$ securities over subperiods of length N . The cumulative abnormal returns are positive and statistically significant ($t = 4.51, \alpha = .01$) for the week prior

¹ Attempts were made to pinpoint the day of the initial press release by examining both the Wall Street Journal (WSJ) Index and the Dow Jones (DJ) News Retrieval database around the previously identified *Business Insurance* publication date. In only a few instances did information about the establishment of a risk management department by firms in the sample appear in the WSJ/DJ sources. Furthermore, there was no evidence of any other systematic events, e.g. a reorganization or a change in management, that could have affected the results reported in this study.

² A runs test performed on the AR_{nt} from days -15 to 0 was not significant at the $\alpha = .05$ level.

Table 1

Daily Mean Abnormal Returns (AR_{nt}) for the Sample of 80 Securities

EVENT DAY (t)	SAMPLE AR's (AR_{nt})	TEST STATISTIC (SAR_{nt})
-25	0.0017	0.682
-24	0.0004	0.137
-24	0.0004	0.136
-23	-0.0017	-0.555
-22	-0.0011	-0.005
-21	-0.0015	-0.499
-20	-0.0023	-1.559
-19	-0.0002	0.181
-18	-0.0024	-1.002
-17	0.0012	0.981
-16	-0.0012	-0.407
-15	-0.0010	0.254
-14	0.0031	1.383
-13	0.0017	1.039
-12	0.0010	1.066
-11	0.0046	6.341**
-10	0.0027	1.362
-9	-0.0005	-0.088
-8	0.0038	1.425
-7	0.0006	0.926
-6	0.0019	1.138
-5	0.0001	0.272
-4	0.0045	1.766
-3	0.0034	1.054
-2	0.0045	1.675
-1	-0.0016	-0.825
0	0.0015	0.726
1	-0.0026	-0.711
2	0.0008	0.214
3	-0.0020	-0.530
4	0.0009	0.571
5	0.0003	0.764
6	-0.0008	-0.493
7	0.0023	1.273
8	-0.0005	-0.738
9	-0.0012	-0.776
10	0.0008	0.454
11	-0.0014	-0.927
12	-0.0008	-1.094
13	-0.0025	-1.434
14	-0.0023	-0.419
15	0.0027	1.016
16	0.0034	1.472
17	0.0025	1.604
18	-0.0006	-0.336
19	-0.0016	-0.938
20	-0.0010	0.345
21	0.0021	1.178
22	-0.0025	-0.952
23	-0.0010	-0.128
24	0.0002	0.021
25	0.0025	1.091

** significant at .01

to the publication deadline (days -15 to -11) and significant and significant ($t = 2.22$, $\alpha = .05$) for the week following the publication deadline (days -10 to -6). Furthermore, the cumulative abnormal returns over various multi-week periods (days -25 to -1, -15 to -1, -10 to -1, and -15 to -6) surrounding the publication deadline and prior to the actual publication date of the announcement are also positive and statistically significant at the $\alpha = .01$ level. In contrast, none of the cumulative abnormal returns during any of the sub-periods following the publication date are significantly different from zero.

Table 2

Cumulative Mean Abnormal Returns (CAR_{nN})
for the Sample of ($n = 80$) Securities Over Various Subperiods of Length N

Event Period interval	N	Sample CAR_{nN}	Test Statistic ($SCAR_{nN}$)
days -25 to -21	5	-.0022	-0.11
days -20 to -16	5	-.0048	-1.28
days -15 to -11	5	.0094	4.51**
days -10 to -6	5	.0085	2.22*
days -5 to -1	5	.0110	1.76
days -15 to -6	10	.0179	4.69**
days -25 to -1	25	.0219	3.14**
days -15 to -1	15	.0289	4.85**
days -10 to -1	10	.0194	2.75**
publication day 0	1	.0015	0.73
days 1 to 10	10	-.0036	0.01
days 1 to 15	15	-.0079	-0.73
days 1 to 25	25	-.0040	0.10
days 6 to 15	10	-.0036	-0.99
days 1 to 5	5	.0043	0.14
days 6 to 10	5	.0007	-0.13
days 11 to 15	5	-.0043	-1.28
days 16 to 20	5	.0026	0.96
days 21 to 25	5	.0013	0.54

* significant at .05

** significant at .01

Summary and Conclusions

When a firm makes a decision to establish or expand its risk management department, a press release is sent to newspapers and other publications such as *Business Insurance*. While the information is not deemed important enough to be reported in the *Wall Street Journal*, the information, with some noise, finds its way into the market and investors react positively. By the time news

of the action is finally published in *Business Insurance*, the market has already incorporated the new information into the pricing of the firm's securities.

The results presented in this study have implications for the validity of past approaches used to examine the value of risk management activities within a theoretical framework. The results indicate that investors do value firm specific risk management activities, thus providing evidence against the validity of a CAPM- or APT-based argument that risk management activities are worthless. Furthermore, the results can be interpreted as supporting either the Constant Dividend Growth Model-based analysis of Cho (1988), a signalling related hypothesis, or an agency theory analysis similar to that of MacMinn (1987) in which the reduction of the agency costs of bankruptcy exceed the explicit costs of the risk management activity.

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