Singapore Management University

Institutional Knowledge at Singapore Management University

Research Collection Lee Kong Chian School Of Business

Lee Kong Chian School of Business

6-2012

The Intra-industry Effects of Chapter 11 Filings: Evidence from Analysts' Earnings Forecast Revisions

Gary L. CATON
Montana State University - Bozeman

Jeffrey DONALDSON

Jeremy GOH
Singapore Management University, jeremygoh@smu.edu.sg

Follow this and additional works at: https://ink.library.smu.edu.sg/lkcsb_research

Part of the Finance and Financial Management Commons

THE INTRA-INDUSTRY EFFECTS OF CHAPTER 11 FILINGS: EVIDENCE FROM ANALYSTS' EARNINGS FORECAST REVISIONS

Gary L. Caton*, Jeffrey Donaldson**, Jeremy Goh***

Abstract

Shareholders suffer huge losses when firms they own file Chapter 11. Interestingly, even shareholders of rival companies experience statistically significant losses. We examine how the bad news associated with a bankruptcy filing is transferred to the filing firm's rivals. Using revisions in analysts' earnings forecasts as a proxy for changes in expected future cash flows, we find that after a bankruptcy filing the market revises downward its cash flow expectations for rivals. Regression analysis confirms a positive relation between changes in expected cash flow and stock market reactions. These findings are consistent with our hypothesis that bad news associated with bankruptcy filings are transferred to rivals through reductions in expected future cash flows.

Keywords: Chapter 11, Sharegolders, Bankruptcy Filings, Rivals

* Corresponding author, Montana State University, College of Business Bozeman, MT 59717-3040
Tel.: (406) 994-4421
E-mail: gary.caton@montana.edu
** College of Business University of Tampa 401 Kennedy Blvd. Tampa, FL 33606
Tel.: (813) 253-6221 x 3282
E-mail: jdonaldson@.ut.edu
*** Singapore Management University, 50 Stamford Road Lee Kong Chian School of Business Singapore 178899
Tel.: + (65) 6828-0739
E-mail: jeremygoh@smu.edu.sg

Introduction

Previous studies reveal that the market discounts the wealth of shareholders upon the announcement of a bankruptcy filing. For instance, Bradley and Rosenzweig (1992) report significant abnormal returns of -24.34% for a five-day period surrounding Chapter 11 filings. Lang and Stulz (1992) examine the effect of bankruptcy filings on the rivals of filing companies. They hypothesize that information contained in announcements of bankruptcy filings may have positive or negative implications for rivals and coin the term competitive effect to describe the former and contagion effect to describe the latter. Specifically, the competitive effect occurs if the bankruptcy indicates a weakness in the filing company alone that can be exploited for the competitive benefit of its rivals. Equity values of rivals gaining this competitive benefit are expected to react positively. On the other hand, the contagion effect occurs if the bankruptcy filing indicates an industry wide weakness that may spread like a contagion to rivals because of their similar cash flow characteristics. Equity values of rivals catching a financial virus are expected to react negatively to bankruptcy filings. Lang and Stulz's primary finding is that bankruptcy announcements decrease the value of a portfolio comprised of the equity of rival companies by 1 percent on average, and conclude that contagion effects dominate competitive effects for rival companies.

Our primary focus is to examine the underlying reason this negative valuation effect for announcing companies is transferred to industry competitors. A paper similar to ours in spirit is Ferris, Jayaraman, and Makhija (1997) who separate rival companies into two groups: those that file for bankruptcy themselves over the subsequent three years, and those that do not. Their premise is that at the original announcement, the market makes a prediction of the likelihood of future bankruptcy for the rival companies. The authors then use the actual reported bankruptcies over the subsequent three years as an indicator variable for the market's prediction at the original Chapter 11 filing date. Those companies the market predicts will fail (i.e., those that actually fail over the next three years) are expected to suffer declines in value due to the contagion effect, while those predicted to continue operations (i.e., those that do not fail over the next three years) are expected to gain in value due to the competitive effect. Similar to Lang and Stulz, Ferris, Jayaraman, and Makhija report a significant average announcement effect of -0.56 percent for their full sample over the three days surrounding the filing.

However, when they split the sample based on their prediction criterion, the equity of companies that subsequently file drop an average of -4.68 percent in value, while the equity of those that do not subsequently file drop - 0.49 percent. Since both numbers are statistically significant, they conclude that the contagion effect dominates the competitive effect even for those companies predicted to remain viable over the next three years.

Although the equity of both groups in the Ferris, Jayaraman, and Makhija sample show statistically significant declines in value, the magnitude of the difference in average revaluations is consistent with the idea that market expectations for future bankruptcy affect current announcement period returns. However, their proxy for market expectations, i.e., whether the firm actually declares bankruptcy over the subsequent three years or not, is not available a priori. We hypothesize that rather than making yes/no predictions of future bankruptcy for each rival, market participants simply revise their estimates of future cash flows. Unexpected decreases in expected future cash flows due to the new information should produce negative changes in firm values. Thus our primary question is the following: Does a bankruptcy filing by a firm affect the expected future cash flows of industry rivals? We use changes in analysts' earnings forecasts to indicate changes in the market's expected future cash flows for these companies. If earnings forecasts for rival companies are revised after a bankruptcy filing then the equity values of those companies would be expected to change as well.

Our results support our hypothesis. But first, similar to Bradley and Rosenzweig (1992), we find stock market reactions for our sample of 183 companies filing a bankruptcy petition that average - 28.83% for the three days surrounding the announcement. In addition, we find results that support both Lang and Stulz (1992) and Ferris, Jayaraman, and Makhija (1997). For our portfolio comprised of 3,250 rival companies representing 121 different industries we find significantly negative stock price reactions that average -0.51 percent. Our contribution, however, is an analysis of abnormal earnings forecast revisions. We find these revisions to be both negative and significant for rivals of failed companies. This finding is consistent with our hypothesis that the transfer of negative information from filing companies to their rivals is due to a decrease in expected future cash flows, a change in expectation created by new information regarding the entire industry provided by the bankruptcy announcement of a single member therein. Finally, we use regression analysis to formally test for a significant relation between the market reactions and earnings forecast revisions of individual rival companies. The negative forecast revisions for rivals, their respective market reactions, and our cross-sectional regression results showing a positive and significant relation between the two, are consistent with our hypothesis that the contagion effect is transmitted from filing companies to rivals through revisions in rivals' future cash flows, revisions that were made as a result of the original Chapter 11 filing.

Sample selection

We compiled our sample of companies filing for bankruptcy primarily through a search of the Lexis/Nexus files. Secondary sources include the Wall Street Journal Index, and information obtained from both Indepth Data Corporation and New Generation Research Company. Our sample companies filed for bankruptcy between October 1, 1979 (the date the Bankruptcy Reform Act was implemented) and December 31, 1994. To be included in the final sample, we require sufficient data in the Center for Research in Security Prices (CRSP) data files. The resulting sample of Chapter 11 filing companies includes 183 companies operating in 121 different four-digit Standard Industrial Classification (SIC) codes. Table 1 presents a time series of the sample of filing companies and shows that the mid-1980s was a time of few failures, while the rate of firm failure steadily increased during the early 1990s. The top half of table 2 presents descriptive statistics for the filing companies. The mean and median market values of equity of the 183 filing companies are $65.8 million and $12.5 million, respectively, with a standard deviation of $452.4 million. Apparently, the market value of filing companies is relatively small as might be expected of companies filing bankruptcy.

An analysis of intra-industry effects of Chapter 11 filings requires, by definition, data from the filing company's industry rivals. Following Lang and Stulz (1992), we define a filing company's industry rivals as all companies with the same four-digit SIC code. In order to qualify for our sample of rivals a company must have sufficient stock return data, but in addition, it must have sufficient earnings forecast data in the Institutional Brokers Estimation System (IBES) earnings forecast database for the 25 months surrounding the Chapter 11 filing. Previous studies have shown that the IBES database can contain errors. Following Ederington and Goh (1998), we eliminate a firm from our sample if its earnings forecast revision (defined below) is more than five standard deviations from the overall mean over all firms in the IBES database for any given month. After the initial round of data eliminations, the standard deviation is recalculated and again firms with observations outside five standard deviations are eliminated. After applying these various requirements our final sample of rivals includes 3,250 rivals in those same 121 industries. The bottom half of table 2 reports summary statistics for the rival companies indicating that they are very similar in size to the filing companies. Their mean and median market value of

equity is $60.45 million and $11.31 million, respectively, with a standard deviation of $265.16, about half that of the filing companies. In addition, the mean and median number of rivals competing with each filing company is 17.75 rivals and 6 rivals, respectively, with a range from one rival in one of the four-digit industries to 210 rivals in another industry.

Table 1. Distribution of bankruptcy filings by year

Year	Number of filings
1980	6
1981	6
1982	16
1983	12
1984	3
1985	2
1986	0
1987	3
1988	3
1989	10
1990	12
1991	37
1992	26
1993	23
1994	24
Total	183

Filing firms are a sample of 183 companies that filed for Chapter 11 bankruptcy protection between October 1, 1979, and December 31, 1994.

Stock Market Reaction

We compute standardized abnormal returns following Patel (1976) as modified by Mikkelson and Partch (1988). Day 0 is defined as the date the bankruptcy petition is filed with the courts. The abnormal returns are the difference between the actual return and an expected return generated by the market model. We estimate the parameters for the market model using daily returns data from day t-251 to day t-505 (We use this estimation period to prevent biased test results since we look at the cumulative abnormal returns in the pre-filing period from 250 days to 31 days prior to the filing.). Abnormal returns are generated for both the filing companies and an equally weighted portfolio of rival companies. Finally, we compute a Z- statistic and use it to test for statistical significance of standardized abnormal returns and cumulative standard abnormal returns (CAR).

Table 2. Summary statistics of firms filing Chapter 11 and their industry rivals

Filing Firms:	
Mean market value of filing firms	$65.80 million
Median market value of filing firms	$12.46 million
Standard Deviation of market value of filing firms	$452.38 million
Rival Firms:	
Mean market value of rival firms	$60.45 million
Median market value of rival firms	$11.31 million
Standard deviation of market value of rival firms	$265.16 million
Mean number of rivals per event	17.75 rivals
Median number of rivals per event	6 rivals
Minimum number of rivals per event	1 rivals
Maximum number of rivals per event	210 rivals

Filing firms are a sample of 183 companies that filed for Chapter 11 bankruptcy protection between October 1, 1979, and December 31, 1994. Rival firms are the 3,250 companies whose four-digit primary Standard Industrial Classification code is the same as that of the filing firms.

Table 3 reports the stock market reaction to a Chapter 11 bankruptcy filing for both the filing companies and their rivals. Consistent with earlier studies, we observe a large and significant negative stock market reaction to announcements of a bankruptcy filing for the filing companies. The three-day CAR (-1 to +1) for the full sample of 183 filing companies is -28.83 percent with z = - 43.79. Moreover, 78 percent of the abnormal returns over this three-day period are negative, which is significantly different from the null hypothesis of 50 percent. Clearly, as shown in previous studies, the market views bankruptcy announcements as important informational events for the filing companies.

Table 3. Effects of Chapter 11 filings on both the filing and rival firms' stock prices

Day	AAR %	z-statistic	Percent Positive	z-statistic	AAR %	z-statistic	Percent Positive	z-statistic
-10	-2.60	8.04***	39%	-1.95*	-0.03	-0.76	45%	-0.57
-9	-1.80	-6.33***	37%	-2.38**	-0.02	-0.86	43%	-2.34**
-8	-1.20	-0.75	41%	-1.29	-0.30	-3.25***	42%	2 70***
-7	0.60	0.61	45%	-0.43	-0.09	-1.11	46%	0.26
-6	-0.69	-2.45**	46%	0.03	-0.04	-1.08	43%	-2.20**
-5	-1.23	-3.82***	42%	-1.12	0.09	1.43	48%	1.28
-4	-3.06	-7.84***	34%	-3.39***	-0.20	-0.54	46%	0.15
-3	-1.81	-5.68***	41%	-1.44	-0.10	-1.05	46%	-0.07
-2	-2.71	-8.84***	34%	3 14***	-0.31	-1.72*	44%	-1.42
-1	-0.68	-0.55	40%	-1.53	-0.11	-1.70*	46%	0.1
0	-13.38	-40.50***	28%	-4.65***	-0.05	-0.86	45%	-0.46
1	-14.77	-35.24***	33%	-3.43***	-0.36	-3.41***	45%	-0.73
2	3.89	13.29***	46%	-0.13	0.10	0.05	45%	-1.01
3	4.51	13.35***	47%	0.2	-0.15	-0.87	44%	-1.48
4	1.73	4.52***	46%	-0.12	0.03	-0.13	47%	0.54
5	0.88	0.5	48%	0.35	-0.02	-1.35	46%	-0.15
6	3.34	7.88***	53%	1.55	-0.29	-2.22**	47%	0.7
7	0.98	6.64***	48%	0.5	0.05	1.59	44%	-1.48
8	1.45	3.85***	47%	0.27	-0.26	-2.00**	45%	-0.46
9	0.64	2.50**	54%	1.79*	-0.22	-1.72*	45%	-0.74
10	-3.10	-7.73***	41%	-1.22	0.39	2.48**	48%	1.30
Cumulative Returns								
-31,-250	-15.30	-6.56***	36%	2 75***	-4.83	-5.01***	48%	1.36
-1,1	-28.83	-43.79***	22%	6 11***	-0.51	-3.44***	42%	3 21***
31,250	107.31	13.20***	67%	4.78***	-7.32	-5.31***	45%	-0.54

*** Indicates significance at the 0.01 level.
** Indicates significance at the 0.05 level.
* Indicates significance at the 0.10 level.

We estimate average abnormal returns based on the market model around the announcement day (Day 0) of chapter 11 filings. The market model is estimated over the (-251,-505) period. The sample includes 183 firms filing for Chapter 11 protection from creditors between October 1, 1980, and December 31, 1994, and 3,250 rival firms.

The equally weighted portfolio of rival companies has an average three-day CAR that equals -0.51 percent with z = -3.34. In addition, 58 percent of the abnormal returns over this period are negative, which is significantly different from 50 percent. These finding for the rival companies is similar to both Lang and Stulz, who report a - 1.07 percent reaction over the eleven days surrounding the filing, and Ferris, Jayaraman, and Makhija, who report a - 0.56 percent reaction over the same three-day event window as ours, both of which have different sample periods. Due to their magnitude, these average cumulative abnormal stock returns for rival companies do not appear to be economically

significant in percentage terms, but as pointed out by Ferris, Jayaraman, and Makhija, they are significant in dollar terms. This is because the sum of the equity value of the competitors is much larger than that of the companies filing for bankruptcy. In fact, Ferris, et al, report that for their sample the competitor portfolio loses $3.32 of equity value on average for every dollar of equity value lost by the bankrupt companies.

These event study findings indicate that bankruptcy filings are bad news, on average, for both the companies making the filing and their industry rivals. We now turn our focus to determining how this bad news is transmitted to the rivals hypothesizing that the transfer of bad news is made through a revision of the cash flow estimations of the rivals upon the bankruptcy filing. The next section presents our methodology for testing this hypothesis, and the results of that test.

Abnormal Earnings Forecast Revisions

To judge whether or not the market reaction for rival companies is due to changes in expected cash flow we need a proxy for those expectations. Earnings analysts help set the market's initial level of expected cash flows with their initial forecasts of future earnings. Similarly, revisions in analyst's forecasts help to reset cash flow expectations to some new level. We use reported earnings forecast revisions subsequent to a bankruptcy filing as a proxy for changes in the market's expectations of future cash flow from the rival companies. Significant earnings revisions after a filing are consistent with the hypothesis that bad news for bankrupt companies is transferred to their rivals through a change in the market's cash flow expectations for those companies.

Following Brous (1992), we measure earnings forecast revisions (FR) using the following equation:

$$FR_{i,t} = [(F_{i,t} - F_{i,t-1})/ P_i] \times 100 \qquad (1)$$

where $F_{i,t}$ is the median analyst earnings forecast in month t for the annual earnings per share of firm i for the current fiscal year, and P_i is the stock price for firm i six months prior to the bankruptcy filing

Mean values of FR are reported in column two of table 4 from six months before, through six months after the filings, as well as cumulated forecast revisions in the bottom two rows, while their t-statistics are in column three. As shown there, large and significant negative revisions in analysts' earnings forecasts are observed in every month both prior to and after Chapter 11 filings for rivals of filing companies.

Table 4. Abnormal earnings forecast revisions for rival firms

Month	FR	T	AFR	t
-6	-0.245	-6.70***	-0.025	-0.79
-5	-0.318	.7 00***	-0.127	-2.72***
-4	-0.345	.7 27***	-0.149	-3.13***
-3	-0.398	-7.68***	-0.214	-4.09***
-2	-0.296	-5.80***	-0.025	-0.56
-1	-0.282	.7 27***	-0.035	-0.90
0	-0.286	-6.82***	-0.087	-2.19**
1	-0.232	-6.21***	0.002	0.06
2	-0.197	-5.17***	0.012	0.32
3	-0.285	-6.88***	-0.094	-2.22**
4	-0.241	-5.67***	-0.051	-1.27
5	-0.240	-4.93***	-0.040	-0.87
6	-0.176	-4.56***	0.051	1.36
Cumulative Forecast Revisions				
-6,-1	-1.884	-12.18***	-0.575	.4.89***
0,5	-1.436	-11.03***	-0.218	-2.17**

*** Indicates significance at the 0.01 level.
** Indicates significance at the 0.05 level.
* Indicates significance at the 0.10 level.

For our sample of 3,250 rival companies, we define the forecast revision, FR for Month t as the mean of analysts' forecasts reported in the IBES database in month t less the mean of analysts' forecast in month t-1, scaled by stock price at the end of the month preceding the chapter 11 filing announcement. We define the adjusted forecast revision, AFR for month t as the scaled forecast revision for month t less the expected forecast revision for month t. The *t* statistics test the hypothesis that the mean analysts' earnings forecast revision is different from 0.

Unadjusted forecast revisions such as these, however, are biased. O'Brien (1988) shows that earnings forecasts systematically decrease month after month until the actual earnings are announced by the firm. This implies that forecasters are systematically over optimistic when making their first earnings forecast for a company, and that they never fully correct for that over optimism. A different type of bias in unadjusted forecast revisions is reported by Brous (1992) who shows that the median monthly earnings forecast revisions for a specific company across all analysts covering that company tend to be serially correlated. That is, if favorable new information arrives that leads to an upward revision in a company's average earnings forecast, for example, that average will tend to continue to rise in future months. Brous argues that this serial correlation is due to the fact that analysts typically update their forecasts for any specific company only every four to five months. That is, in any given month only about 20 percent of forecasts are updated. To test our hypothesis for intra-industry information transfer effects of bankruptcy filings, we need a measure of forecast revisions after correcting for these two effects. This measure we call the abnormal earnings forecast revision (AFR).

We follow the methodology of Caton and Goh (2003), which is a modified version of that employed by Ederington and Goh and Brous, to isolate surprise forecast revisions. We start by randomly choosing 500 companies from the IBES database. Then, for each company we randomly select a 25-month period between January 1984 and December 1990. Finally, we pool the resulting data and estimate the following equation:

$$FR_{i,t} = -.093 + .085\ FR_{i,t-1} + .085\ FR_{i,t-2} + .081 \quad (2)$$
$$FR_{i,t-3} + .072\ FR_{i,t-4} + .058\ FR_{i,t-5} +$$
$$.040\ FR_{i,t-6} + u_{i,t}$$

The negative intercept in this equation, -.093, is consistent with the finding by O'Brien that absent new information, analysts tend to reduce their forecasts over time. For instance, for a firm with a P/E ratio of 20, the negative intercept implies an average revision of -1.86 percent (20 x .093%) every month. The positive coefficients on the lagged forecast revisions are consistent with Brouse's finding that revisions in the median forecast tend to be followed by further revisions of the same sign as more analysts update their forecasts. For instance, the coefficients for the $FR_{i,t-i}$, for all $i = 1$-6, indicate that a doubling of the median forecast one month tends to be followed by an increase of about 8.5 percent the following month, 8.5 percent two months hence, 8.1 percent three months later, and so on.

Using the parameters from equation 2 and each firm's past values of FR, we calculate the expected forecast revision, $E(FR_{i,t})$, for each month t. We then define the abnormal earnings forecast revision for month t, $AFR_{i,t}$, as the difference between the actual revision in the consensus forecast in month t and its expected forecast revision calculated as outlined above. Specifically:

$$AFR_{i,t} = FR_{i,t} - E(FR_{i,t}) \quad (3)$$

Columns four and five of table 4 presents the abnormal earnings forecast revisions for the rivals of companies filing for bankruptcy. First note the significant negative abnormal forecast revision of -0.087 in month zero, the Chapter 11 filing month. This is consistent with our hypothesis that Chapter 11 filing produces changes in the market's cash flow expectaions for rivals which then lead to abnormal equity returns. As mentioned above, Brouse reports that because analysts cover more companies than they can updated in any given month, that it may take up to six months for news to be fully reflected in the forecasts of all analysts' following a particular compmany. For this reason we cumulate the abnormal forecast revisions for the six months from the filing month to month +5. The mean cumulative abnormal forecast revision over this period is -0.218, which is statistically significant below the 5 percent level. This result is consistent with the result for the filing month itself. That is, if earnings expectations do indeed proxy for expected future cash flow, the sudden decrease in expected cash flow resulting from a Chapter 11 filing may lead to the negative abnormal equity returns found by us, Lang and Stulz (1992), and Ferris, Jayaraman, and Makhija (1997).

Cross-sectional regression

We formally test for a relation between abnormal earnings forecast revisions and changes in market values of equity using regression analysis. Specifically, we regress the abnormal stock returns cumulated over the three-day period surrounding the bankruptcy filing on the abnormal forecast revisions cumulated over the six-month period from month 0 through month 5. The six- month cumulation should capture all the change in earnings expectations caused by the filing. In addition, we control for other firm-specific information that could affect earnings forecast revisions. Hertzel and Jain (1991) and Hertzel and Rees (1998) both indicate that because of the serial correlation inherent in the IBES data, there is potential for a great deal of contaminating information since forecast revisions could reflect information released either months prior to or after the bankruptcy filing. In order to control for such firm-specific information, we include two variables in the cross-sectional regression models, the pre-announcement cumulative abnormal return over the interval from Day -250 to Day -31, and the post-announcement cumulative abnormal return over the interval from Day +31 to Day +250. These two variables should

capture any other firm-specific information that might cause analysts to revise their earnings forecasts.

Results for the cross-sectional regression analysis are presented in table 5 and suggest that the stock market reaction is strongly related to abnormal earnings forecast revisions. The regression coefficient is positive and with a t-statistic of 3.34 is significant below the 1 percent level. This is consistent with our hypothesis that the negative stock market reaction found by Lang and Stulz (1992), Ferris, Jayaraman, and Makija (1997) , and shown in table 3 herein, may be due to negative revisions in cash flow expectations. That is, the average contagion effect is the result of an industry-wide average reduction in cash flow expectations that are a result of the Chapter 11 filing.

Table 5. Cross-sectional analysis of rival firms' cumulative abnormal forecast revisions on their cumulative abnormal returns

Independent variables	Coefficient	t-statistic
Cumulative abnormal forecast revision	0.241	3.34***
Pre-announcement abnormal return	0.008	2.45**
Pre-announcement abnormal return	0.002	0.51

*** Indicates significance at the 0.01 level.
** Indicates significance at the 0.05 level.
* Indicates significance at the 0.10 level.

Conclusion

This paper provides evidence that the filing of a bankruptcy petition reflects the release of new information that affects the market values of rival companies. As documented elsewhere, the information contained in the filing comes as a surprise to the market as evidenced by the negative stock price reaction for rivals. We extend the analysis by looking more deeply at how this negative information is transferred from the filing company to its rivals. We find significant negative abnormal earnings forecast revisions for filing companies' industry rivals. Furthermore, the results of a cross-sectional regression analysis show a significant positive relation between abnormal stock price reactions and abnormal cumulative forecast revisions for rival companies, thus formally confirming a positive relation between the two. These findings are consistent with our hypothesis that a Chapter 1 filing produces a negative effect on the market's expected future cash flows for rival companies that leads to negative stock returns.

References

1. Bradley, M. and M. Rosenzweig, 1992, The untenable case for chapter 11, Yale Law Journal, 101, 1043-1089.

2. Brous, P.A., 1992, Common stock offerings and earnings expectations: a test of the release of unfavorable information, Journal of Finance 47, 1517-1536.

3. Caton, G.L., and J. Goh, 2003, Are all rivals affected equally by bond rating downgrades?, Review of Quantitative Finance and Accounting 20, 49-62.

4. Ederington, L.H. and J. Goh, 1998, Bond rating agencies and stock analysts: who knows what when?, Journal of Financial and Quantitative Analysis 33, 569-585.

5. Ferris, S.P., N. Jayaraman, and A.K. Makhija, 1997, The response of competitors to announcements of bankruptcy: An empirical examination of contaion and competitive effects, Journal of Corporate Finance 3, 367-395.

6. Hertzel, M. and P.C. Jain, 1991. Earnings and Risk Changes Around Repurchase Tender Offers, Journal of Accounting and Economics 14, 459-485.

7. Hertzel, M. and L. Rees, 1998. Earnings and risk changes around private placements of equity, Journal of Accounting, Auditing and Finance 13, 21-35.

8. Lang, L., and R. Stulz, 1992, Contagion and competitive intra-industry effects of bankruptcy announcements, Journal of Financial Economics 32, 45-60.

9. Mikkelson, W.H. and M.M. Partch, 1988, Withdrawn security offerings, Journal of Financial and Quantitative Analysis 23, 119-134.

10. O'Brien, P., 1988, Analysts' forecasts as earnings expectations, Journal of Accounting and Economics 10, 187-221.