INTERNAL RESTRUCTURING AND FIRM VALUATION: A STATISTICAL ANALYSIS

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ABSTRACT

With internal restructuring making much news in the past several years, the press has placed an emphasis on the effect of internal restructuring on the firm's stock price. The objective of this statistical study is to determine whether there is a true correlation between internal restructuring and a firm's stock price.

INTRODUCTION

Corporate restructuring has dramatically increased over the past decade. During the period 1990 thru 2005, there have been numerous reports of corporations restructuring in hopes of boosting their stock price. Hence, suggesting that somehow corporate restructuring is directly correlated with a firm's valuation. The objective of this study is to analyze existing data from 1990 thru 2005 to determine the long term effect of corporate restructuring and a firm's valuation.

THE DATA

Data from 1990 thru 2005 for firms in various industries were gathered from MSN Money Central. These firms have gone through internal restructuring in the period studied and were mainly motivated to restructure due to a sagging stock price. The announcement dates were captured from corporate/press release websites announcing restructuring plans. The stock price on the day of the announcement was gathered as well as the day before and the day after. Stock prices ninety days prior to and ninety days after the announcement were also included to examine the long-term impact of restructuring on a firm's stock price.

METHODOLOGY

The following model was utilized:

$$PE_i = b_0 + b_1 D_i + b2 D2_i + b_3 Ln(EQUITY\ VALUEi) + e_i$$

Where: PE_i = two day announcement period for observation i
$D1_i$ = one if the firm in observation i is a target prior to the announcement
$D2_i$ = one if the firm in observation i is a target following the announcement
EQUITY VALUE = total common equity value at the close of the day prior to the announcement
e_i = error term

RESULTS

Table 1 was created to calculate the percentage of change from the day of the announcement to +1 day and +90 days after the announcement of restructuring. A statistical analysis was performed; Table 2 shown the affected of restructuring on stock prices. The statistical results suggested a strong relationship between a restructuring announcement and stock price reaction. Z-statistics for two sample means was used to test the null hypothesis that there is no difference between -1 day and 0 day means against either one-sided or two-sided alternative hypotheses. The results of this analysis are provided in Table 3. A z-statistic of 1.95 allows rejection of the null hypothesis of no abnormal stock price behavior at the .05 level of significance. Thus, data in Table 1 in addition to the regression and z-test analysis prove that there is a strong relationship between stock prices and announcements of restructuring. Nonetheless, the returns around the announcements deviate extensively.

CONCLUSIONS

Results from actual data analysis and outside studies divulge that the impact of corporate restructuring on stock price differs from firm to firm. Many firms restructure to improve efficiency and cut costs. The reduction in expense is usually done by trimming down the workforce. Hence, investors in the short-run see this as a signal that the firm is doing well and boost up the stock price. However, this increase in price is not presented to all firms who restructure. Poorly performing firms that had high debt to equity ratio, for example, did not fare well as investors did not have much confidence in the firm's future performance. Healthy firms who were poorly organized did see a slight jump in the stock price, but a very small one, such as Charles Schwab and Pfizer as illustrated in Table 1. Over the long term, +90 days to be specific, stock prices in Table 1 on average were split depending on how soon the firms took up the restructuring plan. Those who did immediately, saw a decline in their stock price +90 days following the announcement as expenses incurred due to the restructuring were added onto the books decreasing earnings results.

Firm reorganize for several reasons such as to improve efficiency or to cut expenses. However, firms should improve their financial performance before looking towards a restructuring plan to boost their stock price. Reduction in the workforce could possibly deplete the company of valuable human resources and thus do more damage to remaining employee morale and final performance outcomes than benefit the company as a whole. Therefore, restructuring should not be strictly looked at as the only means for improving one's stock price. Stock prices will improve a small percentage point in the short-term, but a dramatic increase or a constant increase over the long-run is highly unlikely if a company does not have healthy balance sheets and cash flow statements.

TABLE 1: STOCK PRICES OF COMPANIES IN VARIOUS INDUSTRIES

Company Name	Ticker	Announce. Date	- 90 Days	-1 Day	0 Day	+ 1 Day	+ 90 Days	%change -1 Day	% change +1 Day	% change +90 Days
Sybase	SY	02/27/98	14.00	10.62	10.50	10.31	8.00	-1.13%	-1.81%	-23.81%
Marriott Corp.	MAR	12/30/98	21.87	29.75	30.00	29.00	34.37	0.84%	-3.33%	14.57%
Mitsubishi Electric Corp.	MIELY	03/30/99	32.00	31.00	31.00	33.00	36.00	0.00	6.45%	16.13%
AT&T	T	10/25/00	160.00	134.38	116.87	109.06	116.56	-13.03%	-6.68%	-0.27%
TD Waterhouse	TD	07/30/01	25.51	25.32	25.38	25.60	22.66	0.24%	0.87%	14.57%
Sony	SNE	03/31/03	41.31	36.76	35.13	35.20	28.00	-4.43%	0.20%	-20.30%

FMC Technologies, Inc.	FTI	10/01/03	21.07	21.42	22.32	22.16	23.22	4.20%	-0.72%	4.03%
Advanced Micro Devices, Inc.	AMD	11/06/03	7.26	17.01	17.04	17.01	14.13	0.18%	-0.18%	-17.08%
Sprint Corp.	FON	11/23/03	14.45	15.38	15.56	15.15	18.30	1.17%	-2.63%	17.61%
EarthLink	ELNK	01/06/04	7.83	11.02	11.05	11.00	9.74	0.27%	-0.45%	-11.86%
Ahold	AHO	01/20/04	8.91	8.19	8.10	8.35	8.38	-1.10%	3.09%	3.46%
Charles Schwab & Co.	SCH	04/01/04	11.68	11.61	11.83	11.93	9.61	1.89%	0.85%	-18.77%
Pro-tech Communication Inc.	PTHD	04/20/04	0.02	0.03	0.03	0.03	0.04	-6.67%	7.14%	42.86%
Papa Johns	PZZA	11/16/04	29.00	35.27	34.61	35.12	35.50	-1.87%	1.47%	2.57%
Colgate-Palmolive Co.	CL	12/07/04	54.50	46.29	50.07	49.55	52.93	8.17%	-1.04%	5.71%
Sara Lee	SLE	02/10/05	24.32	22.97	23.92	23.57	20.83	4.14%	-1.46%	-12.92%
Pfizer	PFE	04/06/05	26.29	26.90	26.86	26.90	N/A	-0.15%	0.15%	#VALUE!
IBM	IBM	05/02/05	93.86	76.38	76.51	76.47	N/A	0.17%	-0.05%	#VALUE!

TABLE 2: STATISTICAL ANALYSIS

Statistics	
Multiple R	0.996918363
R Square	0.993846223
Adjusted R Square	0.935022693
Standard Error	3.279905042
Observations	18

ANOVA

	df	SS	MS	F	Significance F
Regression	1	29535.81	29535.81	2745.531	2.50023E-19
Residual	17	182.8822	10.75778		
Total	18	29718.69			

TABLE 3: Z-TEST

z-Test: Two Sample for Means		
	-1 Day	*0 Day*
Mean	31.12777778	30.37655556
Known Variance	9	2
Observations	18	18
Hypothesized Mean Difference	0.6	
Z	0.193444117	
P(Z<=z) one-tail	0.423305584	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.846611168	
z Critical two-tail	1.959963985	