THE RELATIONSHIP OF NET INCOME AND OPERATING CASH FLOW INTRODUCTION

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ABSTRACT

In September 1998 SEC Chairman Arthur Levitt declared war on U.S. public companies for the practice of earnings management. Since that time the business world has been inundated with a plethora of writings on this topic. Included in these writings is the theory that the true performance of a company can generally be evaluated by most investors by studying net income in conjunction with cash flow from operations. The theory continues that if, over a period of time, a company reports increasing net income and has negative cash flow from operations, the net income is suspect. This paper examines that theory by studying the S&P 100 companies over a period of seven years.

DATA AND METHODOLOGY

The data base is the Standard and Poor's 100 companies. The net income was identified for each of the companies for the seven-year period 1995 through 2001. The following calculations were made: the sum of the seven-years of net income and the average net income for the seven years. The cash flow from operations was identified for each of the companies for the same seven-year period. The sum of the seven-years and the average for the seven-years were calculated.

Given that the data base consists of high quality companies, a similar analysis for the seven companies most often criticized for accounting irregularities during 2002 was performed. The seven companies are Worldcom, Adelphia, Waste Management, Enron, Global Crossing, Healthsouth, and Nortel Networks. With the exception of Global Crossing, the net income for a seven-year period was compared to cash flow from operations for seven years. Only four years of data were available for Global Crossing; therefor the analysis for that company is based on four rather than seven years.

FINDINGS FROM THE S&P 100 DATA BASE

1.A total of 90 of the S&P 100 companies had cash flow from operations in excess of net income for the seven-year period.

2.Of the 10 companies that had cash flow from operations less than net income:

- 6 had negative cash flow from operations.
- 2 had cash flow from operations between 2% and 44% of net income.
- 2 had cash flow from operations between 78% and 94% of net income.

3.The 6 companies that had negative cash flow from operations for the seven-year period were financial services companies. The negative cash flow resulted primarily from massive reductions in trading assets and securities borrowed.

4.Cash flow from operations as a percentage of net income was calculated for the 94 companies with positive cash flow from operations for the seven-year period. The following table shows the distribution of the percentages.

Percentage Range	Number of Companies in the Range
2-99 %	4
100-130%	16
131-160%	21
161-190%	9
191-220%	8
221-250%	9
251-280%	5
281-310%	5
311-410%	5
411-510%	4
511-610%	2
611-710%	1
Over 1000%	5

5.Within the 100 companies, there were instances where it might be possible to challenge the cash flow from operations for a specific year. These related to such items as cash flow from non-recurring items, securitization, and tax benefits from goodwill amortization. It is clear, however, that these items reverse themselves over a seven-year period. In essence, any potential overstatement of cash flow from operations is offset by an understatement in another year(s).

FINDINGS FROM THE SEVEN COMPANIES WITH PUBLICIZED ACCOUNTING IRREGULARITIES

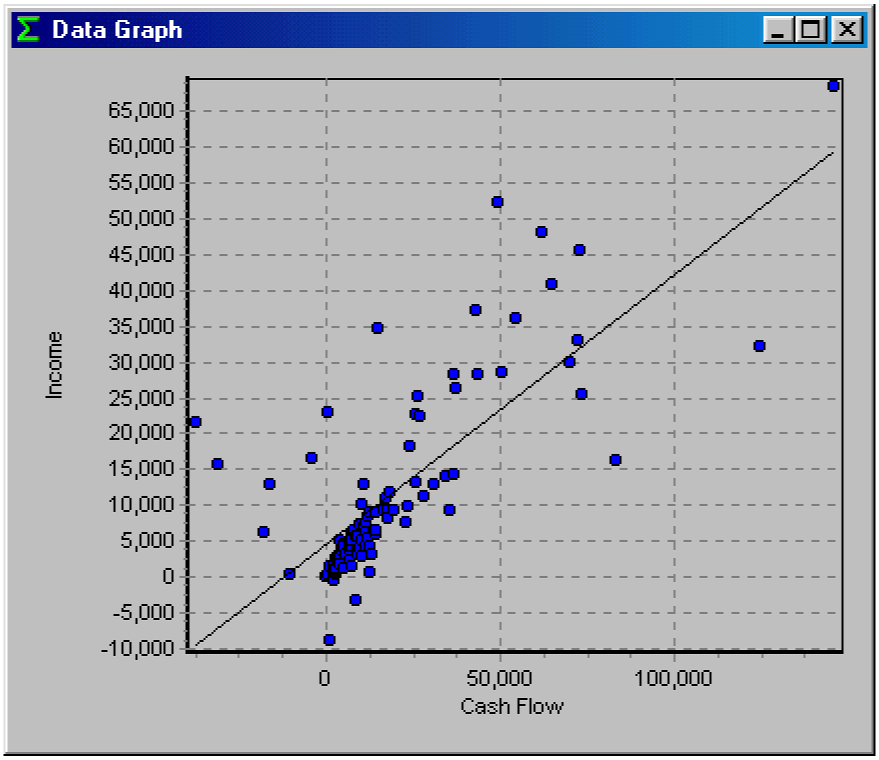
1.All seven of the companies had cash flow from operations substantially in excess of net income during the seven-year period (four-year period in the case of Global Crossing).
2.Adelphia, Waste Management, Global Crossing, and Nortel Networks had negative net income for the period but positive cash flow from operations for the period. The relationships for the remaining three companies are as follow:

Company	Cash flow from operations as a % of net income
Worldcom	685%
Enron	217%
Healthsouth	322%

3.In an attempt to reduce the amount of debt on the 2000 balance sheet, Enron used structured finance with Citigroup and J.P. Morgan Chase & Company. Enron set up the financing to look like a series of gas trades instead of bank debt. This resulted in an understatement of bank debt and an overstatement of cash flow from operations.
4.Much has been written about WorldCom's technique of "capitalizing operating expenses". By so doing, it transferred millions of dollars of what should have been "cash used by operations" and reclassified them as cash used to make investments in capital assets.
5.Nortel Networks Inc. reported revenue even though the cash would not be received within one year. The long-term receivable was buried in a category called other investments. The revenue is recorded, net income increases, but there is no offsetting increase in accounts receivable. As a result, cash flow from operations is artificially increased.

REGRESSION ANALYSIS

A standard bi-variate regression analysis was performed using cumulative seven-year cash flow as the predictor variable and cumulative seven-year net income as the target variable for the S&P 100 database. A scatter diagram featuring the two variables is shown in Figure 1.



The regression analysis revealed a strong positive correlation between the two variables (r = 0.757). These results underscore the notion that over the longer run operating cash flow and net income are linked. The corresponding r-square of 0.57 indicates that other factors are also in play. The linear regression, also shown in Figure 1, was statistically significant at the 0.05 level (p-value = 0.000).

CONCLUSIONS

- Cash flow from operations is definitely a useful measure in evaluating the quality of earnings. Comparing cash flow from operations over a period of time, (in this study seven-years) increases the validity of this measure.
- In a given year, cash flow from operations can be misleading because of cash flow from non-recurring-recurring items. These will not affect cash flow from operations over a seven-year period.
- Given that most companies use the indirect method in preparing the statement of cash flow, and given that the indirect method is dependent on accounting data, companies that intentionally employ questionable accounting techniques to improve the income statement and the balance sheet will also inflate cash flow from operations.
- The database revealed a strong positive correlation (r=0.757) between cumulative cash flow and cumulative net income over a seven-year period. This suggests that cumulative cash flow and cumulative earnings are linked. Accordingly, cumulative cash flow can be used as an independent predictor on the “quality” of earnings as part of the overall auditing process.