Modern Corporate Train Wrecks
Forgotten Lessons from the W. T. Grant Bankruptcy?

By

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ABSTRACT: As James Largay and Clyde Stickney’s (1980) analysis of the W. T. Grant Company’s bankruptcy observed an apparent disregard for operating cash flows among investors in that company, this study examines whether stock prices for various failed companies of the early 2000s, including Enron and Worldcom, likewise failed to account for operating cash flow. This study attempts to measure a typical lag between operating cash flow and rate of return on common stock, and the strength of correlation between these two observables.

Key Words: Operating Cash Flows

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**Introduction:**

James Largay and Clyde Stickney’s (1980) analysis of the W. T. Grant Company’s bankruptcy and subsequent liquidation helped give rise to a general recognition among financial analysts of the need for inclusion of the statement of cash flows in corporate financial reporting. While standard ratio analysis of profitability, turnover, liquidity, and solvency as applied to W. T. Grant’s balance sheet and income statements though the mid-1970’s gave investors confidence in the continuing viability of that firm, these ratios belied an anemic multi-year trend in the company’s operating cash flows that continued until its bankruptcy in 1975. Largay and Stickney demonstrate that disparate signals can - and in the case of W. T. Grant most certainly did - arise between standard ratio analysis involving the balance sheet and income statement on the one hand, and measurements of cash flow on the other.

While Largay and Stickney’s assessment regarding the importance of cash flow examination is today conventional wisdom, and quality of income measurements are routinely included in financial statement analyses, there is however little recent study to determine whether any patterns similar to those observed for W. T. Grant Company preceded certain dramatic corporate downfalls (including Enron and Worldcom) of more recent vintage. And while the most notorious of these debacles were characterized by fraudulent reporting practices thus precluding a prima facie acceptance of published income statement and balance sheet figures, the question of whether in any of these instances there was at some point ante firm collapse a significant absence of internal consistency among the statements as presented (including the statement of cash flows) to have alerted investors and the general public that something was amiss is worthy of
earnest investigation. History does sometimes repeat itself, if for no other reason than because we fail to learn from it. As Largay and Stickney noted that the price of W. T. Grant stock failed to fully reflect publicly available information about the firm until shortly before its collapse, it may also be true that, say, Enron's dramatic 56% increase in its stock price during 1999, and 87% increase in 2000, resulted in part because investors in that firm, as did those in W. T. Grant, failed to properly integrate published, albeit imperfect, information on corporate cash flows with selected financial ratios. We cannot help but wonder whether the lessons of the W. T. Grant bankruptcy were lost on a later generation of investors who, while benefiting from access to the formal statement of cash flows, nevertheless failed to remember how fundamental analysis, absent a close scrutiny of that document, can produce a nonsensical portrait. To the extent that we can identify trends of the type uncovered by Largay and Stickney for the W. T. Grant Company circa early 1970’s as precursors to potential corporate disasters of our day, this paper attempts to answer the question – “Must history repeat itself?”

**Objectives:**

1. Determine whether the major ill-famed corporate failures of the past two decades were characterized by market inefficiencies stemming from a disregard by investors for operating cash flows that is significantly larger than that existing for other firms of similar size. Of particular interest will be large U.S. firms in manufacturing, retail, communication, and transportation that experienced bankruptcy during the past decade. The following will be included in the study:
<table>
<thead>
<tr>
<th>Company</th>
<th>Year of Bankruptcy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worldcom, Inc.</td>
<td>2002</td>
</tr>
<tr>
<td>Enron Corp</td>
<td>2001</td>
</tr>
<tr>
<td>Conesco, Inc</td>
<td>2002</td>
</tr>
<tr>
<td>Pacific Gas and Electric Co.</td>
<td>2001</td>
</tr>
<tr>
<td>Global Crossing Ltd.</td>
<td>2002</td>
</tr>
<tr>
<td>UAL Corp.</td>
<td>2002</td>
</tr>
<tr>
<td>Delta Air Lines, Inc.</td>
<td>2005</td>
</tr>
<tr>
<td>Adelphia Communications</td>
<td>2002</td>
</tr>
</tbody>
</table>

Certain of these bankruptcies were characterized by fraudulent accounting reporting that may necessitate an examination of restated financial reports.

2. Determine whether stock prices and traditional financial ratios lag operating cash flows for various types of large-cap corporations differentiated by continuing viability, ultimate insolvency, or considerable failure to adhere to GAAP.

Theoretically, a firm’s operating cash flow is ultimately the only source of sustainability for operations and dividend payouts absent the unrealistic assumption of unlimited access to borrowed funds or infinite injections of capital. For this reason, operating cash flow is today viewed as a vital metric of firm viability over the long run. However, operating cash flow is somewhat subject to manipulation by aberrant movements in one or more of the associated accruals (e.g., accounts receivable, inventories, accounts payable, taxes payable). In such cases, we will attempt to control for the particular accrual that masks an otherwise deteriorating movement in operating cash flow.

**Review of Selected Literature:**

We survey here a few significant works that detail the effects of published
operating cash flow data on market efficiency during the era of Enron, Worldcom, and other recent corporate failures. Gomez (2002) who produced one of the earliest cash flows analyses for Enron following its bankruptcy makes the case that because of offsetting trends in cash flows from investing and financing activities, operating cash flows for Enron as reported on its 10K reports for 1998 through 2000 were large enough to fend off suspicion that anything was amiss. He presents figures for net cash from each of these activities in a panel that makes obvious to even casual observation the counteracting movements of these components. The lesson here is that isolation of each activity may in some instances be necessary for a cash flow analysis that provides real benefit to investors. Luo (2008) likewise demonstrates that a lack of detailed reporting of operating cash flow in current reporting practices often does mislead investors. He maintains that reporting of cash flows from unusual operations would significantly increase the predictive ability of cash flow reporting. These findings give added weight to the notion that a pre-W. T. Grant mindset continues to prevail in equity markets.

Catanach and Roades-Catanach (2003) illustrate that Enron’s reported earnings increase between 1997 and 2000 occurred simultaneously with a dramatic downturn in operating cash flow as well as in other common measures of performance. Further, there was a simultaneous increase in volatility for these measures during the same time period. Significant for our attempt to find any of the patterns of inconsistencies that existed at W. T. Grant as having reoccurred in the most infamous corporate failure of our time, we note that Catanach and Roades-Catanach wonder whether such “uncoupling” of share price from standard performance measures, fraudulent reporting notwithstanding, should have been a signal of the accounting irregularities that we now know began at Enron in 1997.
Of course the question of why historical cash flow data should have any forecasting power for future stock prices must be dealt with firstly before any conclusions about market efficiency can be drawn from the result of Largay and Stickney or from the conclusions of hypothesis testing we will conduct in this study. Why after all would historical cash flows be predictive of current stock prices in the first place if, as much theory and practice suggests, it is the present value of future cash flows that is the basis for a firm’s value? Greenberg et al. (1986) and Murdoch and Krause (1989) demonstrate that earnings forecast future cash flows with greater accuracy than do past cash flows. The researcher asks that for the moment the reader accept that from a time consistency point of view it is reasonable that past operating cash flows should have significant predictive power for future operating cash flows.

**Methodology:**

The first stage in our analysis is to chart times series plots of company stock prices and ratios measuring profitability, turnover, liquidity and solvency along with that of operating cash flow for certain failed, problem, and no-problem firms of the last two decades. We define failed firms as those that actually became insolvent during the period of study. Problem firms are those of approximately the same market capitalization and belonging to the same industry as Failed firms, but known also to have manipulated their financial statements through violations of GAAP over the same period. No-problem firms will likewise resemble the Failed firms, but are not identified as having violated GAAP in their financial statements. Our approach to categorizing firms somewhat follows that used by Beneish in his 1997 study analyzing an application of the probit model to assess the probability of earnings manipulation of firms in the 1990s.
immediate interest for our study will be an investigation into whether, and to what extent, negative cash flows from operations preceded reversal of net income and share price for each of these firms. This was the basic approach of Largay and Stickney with W. T. Grant. Their conclusion was that operating cash flows for that company began to trend downward approximately 3 years ahead of the precipitous fall in net income and market price for its common stock, as well as for several of the traditional ratios. Accordingly, the objective here will be to investigate whether any similar such lag occurred for our selected failed firms, and whether this lag, if present, was significantly longer than for other firms (problem, and no-problem) of the same time period.

Additionally, we hope to obtain a more precise analysis of the lag between operating cash flows and rate of return on stock price by the methodology below:

Assume that for each year \( t \) in the span of \( 2n \) years we are given a firm’s annual operating cash flow \( OCF_t \) and the rate of return \( ROR_t \) on its common stock. Then the series \( \{OCF_t\}_{t=n+1}^{2n-d} \) and \( \{ROR_t\}_{t=n+1}^{2n} \) for any value of \( d = 0, 1, 2, \ldots, n \) will be simultaneous for \( n - d \) terms (\( d \) is the delay between the two series) and have a Pearson cross correlation given by

\[
 r_d = \frac{\sum_{t=n+1}^{2n}(OCF_{t-d} - \overline{OCF})(ROR_t - \overline{ROR})}{\sqrt{\sum_{t=n+1}^{2n}(OCF_{t-d} - \overline{OCF})^2} \sqrt{\sum_{t=n+1}^{2n}(ROR_t - \overline{ROR})^2}} 
\]

where \( \overline{OCF} \) and \( \overline{ROR} \) are the means of each series, respectively. Computing the above
for all $d$ will result in $n + 1$ separate correlation coefficients. For example, suppose we have operating cash flow and rate of return data given at the end of each of the most recent $2n = 2(3) = 6$ consecutive years. We then can cross correlate the latest occurring 3-year series of rates of return with any of three earlier as well as the contemporaneous 3-year series of operating cash flows (see Figure 1).

Example: Series of length $n = 3$ will require $2n = 2(3) = 6$ years of data thus producing $n + 1 = 4$ correlations

However, as linearity between the series variables cannot be assumed, we will utilize data rankings instead of raw data values. Doing so will convert the output of (1) to the Spearman rank correlation coefficient. Accordingly, we will conclude that the Spearman coefficient of largest absolute value corresponds to the value of $d$ that best estimates the typical time lag between operating cash flows and rate of return on common stock.

Acceptance of this conclusion will be contingent on a test of statistical significance of the
Spearman coefficient facilitated by calculating

\[ t = r \frac{\sqrt{n - 2}}{\sqrt{1 - r^2}} \]  

which has an approximate Student’s \( t \) distribution with \( n - 2 \) degrees of freedom under the null hypothesis. Most likely we will select \( \alpha = 0.05 \) for the test.

Initially, for the selected firms we will set \( n = 5 \) and calculate Spearman \( r_d \) for \( d = 0, 1, 2, \ldots, n = 5 \). It may be that we will need to adjust \( n \) depending on data availability and results. For \( n = 5 \) we will require access to rate of return and operating cash flow data over \( 2n = 10 \) years. Further, the same calculations will be performed on a set of similarly-sized firms to control for industry, sector, and macroeconomic trends. Data will be collected in a chart of the following format:

<table>
<thead>
<tr>
<th>Firm</th>
<th>series 1 type</th>
<th>series 2 type</th>
<th>series 2 end year*</th>
<th>( N )</th>
<th>( D )</th>
<th>Spearman’s ( R )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enron</td>
<td>( OCF )</td>
<td>( ROR )</td>
<td>2000</td>
<td>5</td>
<td>0</td>
<td>0.324</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>0.422</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>0.564</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>0.671</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>0.439</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>0.325</td>
</tr>
</tbody>
</table>

* Last full year of operations before bankruptcy

Mean values of \( d \) according to firm and \( n \) will be reported for failed, problem and no-problem firms. Obviously if several firms are analyzed this will require a summarization of the results presented in the table above before inclusion in the write-up.

Additionally, we may utilize data from firm 10Q reports to determine values of \( d \) with higher precision (i.e. to the appropriate quarter).
As can be noted, the main objective here is a simple determination of whether $d$ is significantly larger for failed firms than for problem firms or at least those represented by the control set (no-problem firms). A formal hypothesis test will be conducted if an appropriate test statistic for $d$ can be determined.

**Hypotheses 1:**

Following are statements of the competing hypotheses for this part of the study.

The level of significance for both tests will be 0.05:

1. $H_0$: $d_{\text{failed}} \leq d_{\text{problem}}$

   $H_1$: $d_{\text{failed}} > d_{\text{problem}}$

2. $H_0$: $d_{\text{failed}} \leq d_{\text{no problem}}$

   $H_1$: $d_{\text{failed}} > d_{\text{no problem}}$

A low degree of market efficiency should lead to a rejection of the null-hypothesis in both tests.

**Extended Methodology:**

For the purpose of giving strength to any market efficiency implications derivable from the hypothesis tests mentioned above, we will attempt to determine whether the correlation between operating cash flows and rate of return is significantly stronger for no-problem firms than for failed firms. If indeed investors in firms that ultimately fail actually do a poorer job of integrating operating cash flow data in their analysis, this should be revealed by a significantly lower correlation coefficient between operating cash flows and rate of return on common stock for the failed firms.
For a selected failed firm, we will calculate the correlation between a series of rates of return terminating in the year of bankruptcy with the particular operating cash flow series of identical length that maximizes correlation. We will label the value of this correlation $r_1$. For a similar no-problem firm of the same industry we will select equal length series of operating cash flows and rates of return where each series terminates simultaneously with the like series obtained for the failed firm. We will label the value of the correlation between these two series as $r_2$.

A test of statistical difference for Pearson’s $r$ between the two firms can be achieved by converting each $r$ to the standard normal distribution via Fisher’s transformation:

\[
  z' = \frac{1}{2} \ln \frac{1 + r}{1 - r} = \text{arctanh}(r)
\]  

(3)

Additionally the test statistic $z'_1 - z'_2$ has standard error

\[
  \sigma_{z'_1 - z'_2} = \sqrt{\frac{1}{n_1 - 3} + \frac{1}{n_2 - 3}}
\]

(4)

where $n_1$ is the number of ($OCF_i, SP_i$) pairs recorded for the failed firm, and $n_2$ is the number of such pairs for the no-problem firm. The confidence interval

\[
  z'_1 - z'_2 \pm z_{\alpha/2} \sigma_{z'_1 - z'_2}
\]

will estimate the parameter difference at level $1 - \alpha$ upon backing out $r$ from each $z'$. We will likely select $\alpha = 0.05$. 

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Hypotheses 2:

Following are statements of the competing hypotheses for this part of the study.

H$_0$: The typical correlation between operating cash flows and rate of return on common stock is no less for failed firms than for no-problem firms.

H$_1$: The typical correlation between operating cash flows and rate of return on common stock is less for failed firms than for no-problem firms.

Additional Questions:

By substituting $FR_t$ for $ROR_t$ in (1) we can likewise estimate lags between operating cash flow and any of the financial ratios alluded to above. This may be important for inclusion in the paper as Largay and Stickney give space to it and note that for W. T. Grant the traditional financial ratios also lagged operating cash flows. Their observations suggested that the financial ratios were more simultaneous with net income and stock price than with operating cash flows.

Supplementary to any potential findings mentioned so far, we will include an examination of operating performance for the failed firms. Here we will simply observe simultaneous time series of

1. Income before extraordinary items and discontinued operations (IBE)
2. Cash flow from operations (CFO)
3. Comprehensive Income (CI)
4. Free Cash Flow (FCF)

While we have borrowed Catanach and Rhoades-Catanach’s (2003) idea here, their application was confined to Enron and over the years 1991-2000. Our survey, by including other firms for the early 2000s as well as for the 1990s, may show instances of
uncoupling between income and operating cash flows in addition to that which they observed as having occurred at Enron.

Yet another line of inquiry will involve a DuPont analysis on the performance of the failed firms. We intend to present a basic panel data summary with measurements of the return on equity along with asset turnover, profit margin ratio, and leverage ratio. The aim is to determine if there are firms exhibiting a particular pattern of behavior with respect to operating cash flows on one hand and any of the three fundamental ratios on the other. For Enron, Catanach and Rhoades-Catanach observed an abrupt and sustained decline in the profit margin ratio over the years immediately preceding bankruptcy. Remarkably, this decline was coexistent with an increasing share price and with persistent support in the asset turnover or leverage ratio. We are interested in whether this or like phenomena can be observed for our failed firms and how such events are correlated with $d$ above.

**Data Collection:**

All data for this study should be obtainable through Standard and Poor’s Compustat database and individual 10K reports filed with the SEC. Data on cash flow from operations are generally available on Compustat II for 1984 onwards.
References


