THE FRAUD BEAT

The numbers raise a red flag.

Irrational Ratios

BY JOSEPH T. WELLS

“F"nancial statements tell a story,” says accounting professor W. Steve Albrecht, “and the story should make sense.” If not, it’s possible the story is a fake. By standing far enough back from the numbers to get a good picture of the client’s business, auditors frequently can detect signs of financial statement frauds. Because the balance sheet, income statement and statement of cash flows are interrelated, such frauds can pop out when certain numbers don’t make sense. The inescapable logic of the accounting equation ensures that any major overstatement of assets or profits, such as in the infamous ZZZZ Best case, will show up over time.

Riding in the back of a taxi from the Federal Correctional Institute in Englewood, Colorado, to the Denver airport, I held a videotape in my hand. Two hours earlier, I had recorded the story of the legendary Barry Minkow, the “boy wonder” who, in the mid-1980s, had conned his investors and auditors in a $100 million financial-statement fraud scheme. I planned to use the video to train auditors. Minkow, who had volunteered for the interview, told me everything—something he’d not done even for “60 Minutes.”

For the briefest moment I thought, Minkow really is a pretty nice guy; then I smiled ruefully and shook my head. One of the greatest con artists of all time had just charmed an experienced (read: cynical) fraud examiner. But that is the nature of such tricksters: they appear bright, articulate, sincere and likable. Barry Minkow was certainly that—and much more.

Minkow had started a carpet-cleaning business in his parent’s garage when he was only 13. Within five years, ZZZZ Best Carpet Cleaning Service went public. But the company was built entirely on Minkow’s lies. By the time he was 20, the fraud had been uncovered and Minkow was sentenced to 25 years in federal prison (he served eight years before being paroled).

BORN TO COMMIT FRAUD?
Minkow said that, although he didn’t know exactly why, he’d been committing fraud almost since the day he opened for business. In the early days, when he couldn’t meet payroll, he’d steal checks and deposit them in his bank account. He also would kite checks, overbill customers and withdraw his checking account—whatever it took to stay afloat. What made Minkow believable was his verbal ability. After three decades of meeting and

Days’ Sales in Receivables Index

This sales index (or ratio) measures whether receivables and revenues are in or out of balance in two consecutive reporting periods. A material increase in the index could indicate a company’s receivables are phony. Professor Messo D. Beneish determined that companies that had not manipulated sales had a mean index of 1.031; companies that had manipulated sales had a mean index of 1.465, a 42% increase.
dealing with white-collar criminals, I would put Minkow at the very top; he is without question one of the most persuasive crooks I have ever met.

Minkow's early frauds had escalated to the point where, to keep from being discovered, he had to get outside financing. The first time he borrowed money, it was on the strength of inflated, unaudited financial statements and altered tax returns. When that loan came due, he borrowed from another bank using the same method. He did the same with the next bank—and the next. Finally, when his bank financing ran out, Minkow came up with the idea of going public. It was the only choice he had to avoid discovery. So he and his lieutenants created a mountain of phony documents to fool the auditors. The bulk of the fraud was concentrated in ZZZZ Best's sales and receivables, most of which were fictitious.

The silver-tongued Minkow managed to get past the audit. With the millions raised in the public offering, he was able to cover his previous frauds, and ZZZZ Best seemed poised to grow even bigger. Then he had a piece of bad luck. A disgruntled carpet-cleaning customer—suspicious of Minkow's business practices—contacted a Los Angeles Times investigative reporter. The deeper the reporter dug into Minkow's background, the more sinister the story became.

When a front-page article detailing Minkow's questionable past and his attempts to bilk numerous carpet-cleaning customers through double and phony billings hit the newsstands, Wall Street reacted. Trading in ZZZZ Best stock was suspended. With no further funds to cover the frauds, the company quickly collapsed. The audit firm paid millions for its failure to uncover Minkow's crimes. Investors lost a reported $100 million. When it was over, the assets of ZZZZ Best—all of them—were sold for less than $50 thousand.

THE NUMBERS DON'T LIE

The most basic analytical techniques (vertical, horizontal and ratio analyses) might have given the auditors for ZZZZ Best some important clues. Since these techniques compare changes in the numbers from year to year, they can point out significant discrepancies. In the ZZZZ Best case, look at what a simple ratio analysis would have revealed (see exhibit 1, above).

These numbers make no sense at all—they are all over the place. Particularly revealing are the current ratio and the debt to equity and return on equity ratios. The current ratio shows a company with no cash in 1986 despite record "revenues." The 1986 debt to equity ratio is up 8600% from the prior year; return on equity has dropped by more than 75%. These are not indicators of a legitimate business.

A NEW APPROACH?

Since the ZZZZ Best case, there have been attempts to develop new analytical techniques to better assist the auditor. In his 1999 article, "The Detection of Earnings Manipulation," (Financial Analysts Journal, Sep./Oct 99), Messod D. Beneish—an associate professor at the Kelly School of Business, Indiana University—researched the quantitative differences between public companies that had committed financial statement manipulations and those that had not.

Beneish theorized there may be up to five useful predictors of earnings manipulation, which he defined as an "instance in which a company's managers violate generally accepted accounting principles (GAAP) to favorably represent a company's financial performance." Beneish’s ratios, which he labeled "indexes," used figures he obtained from financial statements.

DAYS' SALES IN RECEIVABLES INDEX

This sales variable index (see equation below) measures whether receivables and revenues are in or out of balance in two consecutive reporting periods. A material increase in the index could indicate a company’s receivables are phony. That was exactly the situation with ZZZZ Best. By creating counterfeit documents, Minkow's employees manufactured receivables and sales out of thin air.

Beneish determined that companies that had not manipulated sales (non-manipulators) had a mean index of 1.031; companies that had manipulated sales (manipulators) had a mean index of 1.465, a 42% increase. In the case of ZZZZ Best, the index was a whopping 177,622. The reason for this huge difference is that in year one, ZZZZ Best had no accounts receivable but in year two it had nearly $700,000—all fictitious.

Some of the condensed financial statement numbers for ZZZZ Best are shown in exhibit 2, page 82.

The formula for the days' sales in receivables index is

\[
\text{Accounts receivable}_{t-1} / \text{Sales}_{t-1} = \text{days' sales in receivables index}
\]

(continued on page 82)
(Note: Current-year income statement and balance-sheet items are indicated with a subscript t and prior year items have a t-1 subscript. The change in account balances from one year end to the next is denoted by Δ, delta. Delta is used to calculate total accruals, which are discussed later in the article.)

Using numbers from the ZZZZ Best financials, the index is calculated as follows:

\[
\frac{693,773}{4,845,347} - 1 = \frac{177,622}{1,240,524}
\]

Two observations: First, material increases may not be the result of receivables manipulation, but rather could be caused by legitimate factors, such as liberalized credit policies from one period to the next. Second, this index and the others here are not foolproof: In Beneish’s research they correctly identified predictors in about one-half to three-quarters of the cases.

**GROSS MARGIN INDEX**

One sign that a company’s performance is suffering relates to its gross margins. If an entity’s gross margins on sales shrink from one period to the next, the risk is higher that management will engage in fraud to create artificial profits or decrease losses. In Beneish’s research, the mean for nonmanipulators was 1.014; for manipulators 1.193, an increase of 18%. However, in the ZZZZ Best case, the gross margin index produced no useful comparisons. The formula for the gross margin index is

\[
\frac{\text{Sales}_{t} - \text{Cost of sales}_{t}}{\text{Sales}_{t}} = \text{gross margin index}
\]

ZZZZ Best’s numbers in this equation were

\[
\frac{1,240,524 - 576,694}{1,240,524} = 0.92781
\]

Note: This index will not tell you whether a company is engaging in financial statement fraud: It is designed to alert you that the risk of earnings manipulation is higher when gross margins drop. But, if the company is already engaging in attempts to inflate earnings, gross margins will be just the opposite: higher than normal.

**ASSET QUALITY INDEX**

The asset quality ratio derives from dividing noncurrent assets (minus property, plant, and equipment) by total assets. It measures the proportion of total assets for which future benefits may be less certain. For the purpose of evaluating earnings manipulation, an increase in the asset quality index may indicate a company’s propensity to capitalize costs. In Beneish’s study, nonmanipulators had a mean of 1.039, manipulators 1.254, an increase of 21%. ZZZZ Best’s index was 2.043, a 97% increase over the mean for nonmanipulators. This index could have alerted auditors to irregularities. The formula for the asset quality index is

\[
1 - \frac{\text{Current assets}_{t} + \text{Net fixed assets}_{t}}{\text{Total assets}_{t}} = \text{asset quality index}
\]

ZZZZ Best’s numbers were

\[
1 - \frac{1,727,973 + 2,401,487}{5,045,671} = 0.20435
\]

\[
1 - \frac{107,096 + 57,490}{178,036} = 0.20435
\]

**SALES GROWTH INDEX**

By using the sales growth index, which is computed by dividing the current period’s sales by the last period’s, the auditors should be able to tell whether a company is adding fake sales. The mean for nonmanipulators in this study was 1.134; for manipulators 1.607, a 42% increase. An increase in the index reflects a rise in sales, which may or may not be legitimate. The formula for the sales growth index is

\[
\frac{\text{Sales}_{t+1}}{\text{Sales}_{t}} = \text{sales growth index}
\]

The ZZZZ Best numbers were

\[
\frac{4,845,347}{1,240,524} = 3.905
\]
Note: The sales growth index can detect potential fraud only when sales have increased. The sales growth index of a company that is adding fictitious revenues just to stay even with last year will not be out of line. In ZZZZ Best's case, the index was 3.905, compared to 1.134 for nonmanipulators. Clearly, this could have been a warning sign for auditors.

**TOTAL ACCRUALS TO TOTAL ASSETS INDEX**

For purposes of this index, total accruals are calculated as the change in working capital accounts (other than cash) less depreciation. In Beneish's study, the mean index of nonmanipulators was (.018), compared with manipulators (.031), a 72% increase. An increase in accruals from one period to the next may indicate management is attempting to manipulate earnings through its discretionary authority over accrual policy. The formula for the total accruals to total assets index is:

\[
\frac{\Delta \text{Working capital} - \Delta \text{Cash} - \Delta \text{Current taxes payable} - \text{Depreciation and amortization}}{\text{Total assets}}
\]

For ZZZZ Best, the numbers were:

\[
\frac{144,628 - 56,693 - 28,027 - 95,116}{5,045,671} = -0.064
\]

The presence of higher accruals and a corresponding decrease in cash often can be an attempt by management to internally finance its losses. In the ZZZZ Best case, the index of .064 is almost four times the study's mean for nonmanipulators, another possible clue of fraud.

**A FINAL WORD OF CAUTION**

Fraud, by its nature, is easy to conceal and difficult to detect; an entity that manipulates its earnings only once might avoid discovery altogether. But manipulating financial statements is usually a continuous process that grows and deepens. So the indexes discussed above—along with vertical, horizontal, and ratio analyses—can give the auditor tools to help identify fraud. You should be cautioned, though, that no one irregularity is a sign of financial statement manipulation. Rather, you should carefully observe patterns over a period of time. Step back, assess the numbers, look at the big picture and see if it tells the right story.

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