

Beyond Profit: Can Financial Statement Analysis Detect Hidden Warning Signs?Author: Maria Rahy¹*Affiliation:*

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Abstract:

Enron Corporation remains one of the most closely examined corporate failures in modern financial history, yet the numbers it reported in the years before its collapse looked, on their face, unremarkable, a company posting fast revenue growth and rising profits. This paper asks whether a closer reading of those same numbers, using standard financial statement analysis alongside the Beneish M-Score, would have surfaced warning signs earlier. Working only from Enron's own reported 1998–2000 financial statements, the analysis tracks how revenue, net income, margins, receivables, liquidity, and operating cash flow moved together or, more often, apart. Revenue rose from \$31.260 billion in 1998 to \$100.789 billion in 2000, an increase of approximately 222.6%, while net income grew only 39.3% over the same period, from \$703 million to \$979 million. Net profit margin fell from roughly 2.25% to 0.97%, and accounts receivable grew 404.7%, outpacing revenue growth and pushing receivables from 6.59% to 10.31% of sales. None of these patterns proves manipulation on its own. Taken together with the Beneish framework's role as a screening device rather than a verdict, they illustrate why relationships between accounts not headline growth figures — are where financial statement analysis earns its keep.

Keywords:

financial statement analysis; earnings quality; earnings management; Beneish M-Score; Enron; forensic accounting

JEL Classification : G30 ; G34 ; M41 ; M42

Introduction:

Financial statements are supposed to provide investors, creditors, and managers with information on how the business is performing. In practice, headline numbers such as revenue and net income rarely provide the whole picture. A company can report strong sales growth in one year, while at the same time, its margins, receivables, leverage, or operating cash flow take a direction very different from the top line and this direction is often far more instructive on the durability of the business than the headline figures would suggest.

The disconnect between reported revenue growth and the underlying reality is even more telling and even more important when the former appears unusually rapid. Financial statement analysis is precisely designed to identify such situations: by comparing numbers across years and assessing their interconnections, rather than viewing any figure in isolation, the analyst can highlight liquidity, profitability, efficiency, and capital structure trends that a press release would never dream of mentioning. Earnings quality research then builds on this foundation, asking not merely whether profit is real, but whether it is likely to be repeated.

Enron Corporation is an unusually well-documented case study in the kind of analysis described above. Its financial reports show revenue surging from \$31.260 billion in 1998 to \$40.112 billion in 1999 and then \$100.789 billion in 2000, while net income moved from \$703 million to \$893 million and then \$979 million over the same three-year span figures that were public, audited, and even filed years before the company's collapse became known.

The questions this paper sets out to explore are straightforward: could financial statement analysis have uncovered warning signs that Enron was in serious trouble using the publicly available information prior to its bankruptcy? Four sub-questions run through the paper:

How did Enron's revenue, net income, and profitability change between 1998 and 2000?

What changes occurred in accounts receivable, liquidity, leverage, and operating cash flow over the same period?

What relationships between financial statement accounts should have drawn analytical interest?

How can the Beneish M-Score complement conventional financial statement analysis when screening for unusual earnings patterns?

Correspondingly, the paper aims to analyze Enron's reported financial performance with only publicly available information; highlight the most significant changes in terms of profitability, working capital, liquidity, and leverage; take a close look at how revenue, receivables, net income, and operating cash flow changed in relation to each other; apply the logic of the Beneish M-Score for detecting earnings manipulation as an additional screen; and, in general, demonstrate what the financial statement analysis can and cannot say in a real-life corporate failure scenario.

Literature Review:

The basic premise behind the financial statement analysis lies in the fact that the numbers come alive when they are put together, rather than looked at in isolation over time. Ratio analysis provides such a comparison with a specific focus on profitability, liquidity, leverage, or operating performance; however, the accounting literature has long suggested that the reported earnings should be tempered by the analysis of cash flows and the quality of accruals in them.

Sloan (1996) was the first to demonstrate it empirically: earnings that are driven primarily by accruals tend to be less persistent than earnings generated by cash flows, thus providing another argument for the need for the comparative analysis of income statements.

Dechow, Ge, and Schrand (2010) in their review of the literature on earnings quality, in turn, suggest that the earnings quality is a multifaceted concept that emerges out of the analysis of the firm's accounting choices, operating environment, and the question of business the analyst wants to ask, suggesting that there is rarely a single proxy that can stand for earnings quality.

Beainy and Kamel (2026) discuss how cryptocurrencies have become an increasingly popular asset in financial statements, while technology did improve the financial performance of firms (Khalife et al., 2024), yet this same technology is rendering financial statements harder to analyze without proper business experience and technology knowledge (Chaanine et al., 2023). Technology, which can today predict economic quadrants on a large scale (Nasser et al., 2025), even quantify investor sentiments (Khalife et al., 2025) would easily enhance internal audit if applied correctly (Sawaya et al., 2026) and combined with auditor independence (Sawaya et al., 2025), however the application of smart models (Subrahmanyam & Beainy, 2027) need to be purposefully used to enhance transparency not to misrepresent the financial situations of companies (Saber & Sassine, 2022).

Dechow, Sloan, and Sweeney (1996) take the question to the next level by examining the financial statements of firms that are subject to the SEC enforcement action and identifying the traits that are disproportionately found among manipulators. They reveal that earnings manipulation leaves its fingerprint on the financial statements of the manipulated firm, although one might need additional accounting expertise to identify it.

Beneish (1999) applies such a multivariate approach by developing a model that examines eight indices, including Days' Sales in Receivables Index, Gross Margin Index, Asset Quality Index, and Sales Growth Index, among others, to identify the firms with abnormal financial statement proclivities, which is later summarized in the M-Score. Beneish stresses the importance of this score, not as a determinant of earnings manipulation but rather as a screening tool that allows for the identification of potentially interesting cases for further scrutiny.

Together, these works support the need for a dual approach to the analysis of earnings, one that combines the traditional assessment of financial performance with the assessment of the quality of accruals and cash flows, which forms the basis for this paper. While the latter aspect has been discussed in detail in academic literature, its application in practice has remained limited, which this paper aims to address by applying it to a single corporate case.

Methodology:

This is a retrospective, quantitative case study about one company. The unit of analysis is Enron Corporation, and the time of observations is fiscal years 1998 through 2000. This is the time of the company's collapse, and the three last years for which the company published comparative financial statements. Specifically, Enron's 2000 annual report provides comparative financial data

with numbers for 2000, 1999, and 1998, and will be the primary dataset in this research, using figures in millions of US dollars, as presented in the report.

The report uses a set of variables common for the analysis of companies' financial performance. They include revenue, net income, accounts receivable, current assets and liabilities, total assets, long-term debt, operating cash flow, cost of goods sold, selling, general and administrative expenses, depreciation, depletion and amortization, property, plant, and equipment. Specifically, the following five are taken from the presented numbers without additional calculations:

$$\text{Revenue growth} = (\text{current-year revenue} - \text{prior-year revenue}) / \text{prior-year revenue}$$

$$\text{Net profit margin} = \text{net income} / \text{revenue}$$

$$\text{Accounts receivable-to-revenue ratio} = \text{accounts receivable} / \text{revenue}$$

$$\text{Current ratio} = \text{current assets} / \text{current liabilities}$$

$$\text{Debt-to-equity ratio} = \text{long-term debt} / \text{shareholders' equity}$$

The Beneish M-Score is layered on top of these as a sixth measure a weighted combination of eight financial-statement indices designed to flag unusual earnings patterns. Beneish's (1999) original specification is:

$$\text{M-Score} = -4.84 + 0.920(\text{DSRI}) + 0.528(\text{GMI}) + 0.404(\text{AQI}) + 0.892(\text{SGI}) + 0.115(\text{DEPI}) - 0.172(\text{SGAI}) + 4.679(\text{TATA}) - 0.327(\text{LVGI})$$

Here, too, the score is used as a screen rather than an independent fraud test. All percentage changes and ratios stated in the Results are calculated from numbers reported by Enron, and throughout the analyses are descriptive rather than causal.

Results:

The most significant trend in the data provided is the difference between Enron's growth in revenue and net income. The company's revenue grew from \$31.260 billion in 1998 to \$40.112 billion in 1999 and \$100.789 billion in 2000 an increase of roughly 222.6% across the full period. Net income, over the same three years, moved from \$703 million to \$893 million to \$979 million, an increase of about 39.3%. In other words, revenue has increased almost six times faster than the profit that the company reports.

Financial measure	1998	1999	2000
Revenue (\$ millions)	31,260	40,112	100,789
Net income (\$ millions)	703	893	979
Accounts receivable (\$ millions)	2,060	3,030	10,396
Current assets (\$ millions)	5,933	7,255	30,381

Current liabilities (\$ millions)	6,107	6,759	28,406
Total assets (\$ millions)	29,350	33,381	65,503
Long-term debt (\$ millions)	7,357	7,151	8,550

That widening gap is reflected in the margin. Net profit margin was pretty much on par between 1998 and 1999 (2.25%, then 2.23%) but dropped sharply to 0.97% in 2000. While the top line grew nearly threefold year after year, Enron's profits per dollar of revenue were cut by more than half.

Ratio	1998	1999	2000
Net profit margin	2.25%	2.23%	0.97%
Accounts receivable / revenue	6.59%	7.55%	10.31%
Current ratio	0.97	1.07	1.07

Accounts receivable tells a related, more pronounced story. Receivables grew from \$2.060 billion in 1998 to \$3.030 billion in 1999 and \$10.396 billion in 2000, an increase of approximately 404.7%, nearly double the pace of revenue growth. As a share of revenue, receivables climbed from 6.59% to 10.31%, meaning a growing portion of reported sales had not yet converted to cash.

Liquidity, on the other hand, was relatively stable: the current ratio was 0.97 in 1998 and 1.07 in both 1999 and 2000, indicating that the proportion of current assets to current liabilities remained roughly equal throughout the three years. Operating cash flow was more volatile, peaking at around \$1.640 billion in 1998, dipping to \$1.228 billion in 1999 before surging to \$4.779 billion in 2000; it should be read in conjunction with the changes in working capital discussed above, not measured independently.

The Beneish framework builds on this in part by aggregating all these different kinds of signals changes in receivables, margin, asset quality, and accruals into a single metric, rather than isolating any. Consistent with Beneish's own framing, an elevated score is read here as grounds for further investigation, not as proof that any figure was manipulated.

Discussion and Conclusion:

This study set out to ask whether financial statement analysis could have identified meaningful warning signs in Enron's own publicly reported numbers during 1998-2000. The clearest finding is the size of the gap between revenue growth and profit growth: revenue rose 222.6% over the period against net income growth of only 39.3%. Margin fell from 2.25% to 0.97% over the same stretch, while receivables grew 404.7% nearly twice the pace of revenue and rose from 6.59% to 10.31% of sales.

None of this, on its own, proves that any particular figure was manipulated, but what it does reveal is why analyzing the relationships between accounts (margin to revenue, receivables to sales, cash flow to earnings) can uncover discrepancies that revenue or profit growth on its own would miss. This is what the Beneish M-score provides as a second layer of analysis: it uses multiple ratios at once, rather than any given ratio, as its basis, and its value is to highlight areas of concern for

further, deeper inspection, not to replace the type of granular accounting analysis attempted here, and certainly not to prove impropriety outright.

Practically speaking, this means that analysts, investors, and creditors are better off evaluating revenue growth in tandem with receivables, margins, cash flow, liquidity, and leverage, rather than in isolation. Theoretically, it reaffirms a point made elsewhere in the literature on earnings quality: that is, that while any single metric can contribute meaningfully to an assessment of earnings quality, none are fully indicative on their own.

The study's limitations should also be acknowledged. First and foremost is that it analyzes a single company, and no claims of generalizability can be made based on this research. Second, it is descriptive in nature: it works with past case study, not present or prospective data. Third, the Beneish M-score is only a screening aid, and on its own, it cannot prove anything. Fourth, it analyzes quantitative data only, even though in reality, Enron's *modus operandi* involved complex qualitative factors in its financial reporting, governance, incentives, and relationships with outside entities, which contributed to its downfall.

Another limitation of this study is that it tackles financial statements only, not other important dangerous misrepresentations such as greenwashing (Daou et al., 2025) and it tackles the subject from a pure financial perspective without taking into consideration other important aspects of the ultimate goal of firms, such as a sustainable future as Subrahmanyam et al. (2024) argue, even though ESG was found to have significant impact on firm performance (Athari et al., 2024), in an era when green investments are gaining exponential importance (Beainy & Kamel, 2025), especially in developed countries (Athari et al., 2025).

Future research may well seek to apply this type of analysis to a larger data set of companies, not just Enron, and look to compare firms that ended up being investigated by the SEC to those that were not. Additionally, a separate body of work would benefit from attempting to combine financial-statement analysis (as performed in this study) with a qualitative review of the same company's disclosure policies, governance, and market environment.

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