

EIGHT MODELS FOR MEASURING EARNINGS QUALITY

Center for Financial Research and Analysis

(www.cfraonline.com)

- Four criteria to uncover methods used to manipulate earnings.
- Report includes financial summary, accounting policy analysis, discussion of areas of concern.

Empirical Research Partners

(See also *Stock Selection: Research and Results March 2004*, and J. Piotroski, "Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers," *Journal of Accounting Research*, Supplement, 2000.)

- Three components: 1) net working-capital growth rate, net noncurrent assets, deferred taxes; 2) incremental earnings and free cash flow production relative to each new dollar of revenue or book value; and 3) nine financial indicators, put together for a single gauge of fundamentals.
- Items viewed favorably: positive return on assets and operating cash flow; increases in return on assets, current ratio, gross margin, asset turnover; operating cash flow that exceeds net income.
- Items viewed unfavorably: increases in long-term debt-to-assets; presence of equity offerings.
- Each indicator given a 1 if favorable, a 0 if not; scores aggregated on a 0 to 9 scale.

Ford Equity Research

(www.fordinv.com)

- Earnings variability is minimum standard error of earnings for past eight years, fitted to an exponential curve.
- Growth persistence considers earnings growth consistency over 10 years; projected earnings growth rate is applied to normal earnings to derive long-term value.
- Operating earnings calculated by excluding unusual items, such as restructuring charges and asset write-downs; earnings trend analysis done on this adjusted figure.
- Repurchases of an entity's own shares are analyzed to determine if results are favorable.

Lev-Thiagarajan

(See also "Fundamental Information Analysis," *Journal of Accounting Research*, Autumn 1993.)

- Each fundamental is assigned a value of 1 for positive signal, 0 for negative signal.
- Each of 12 factors are equally weighted to develop aggregate fundamental score.
- Negative signals include: decrease in gross margins disproportionate to sales; disproportionate (versus industry) decreases in capital expenditures and R&D; increases in S&A expenses disproportionate to sales; and unusual decreases in effective tax rate.
- Inventory and accounts receivable signals measure percent change in each (individually) minus percent change in sales; inventory increases exceeding cost of sales increases and disproportionate increases in receivables to sales are considered negative.
- Unusual changes in percent change of provision for doubtful receivables, relative to percent change in gross receivables, are also viewed negatively.

- Percent change in sales minus percent change in order backlog is considered an indication of future performance.
- Labor force reductions and unqualified audit opinions are viewed favorably.

Merrill Lynch (David Hawkins)

(See also *Quality of Earnings: Towards a 360° View of Reality*, 2002.)

- Higher return on total capital percentage (pretax operating return on total capital) equates to higher quality of earnings.
- Cash realization ratio (how close net income figure is to being realized in cash) above 1.0 indicates higher quality of earnings.
- Productive asset reinvestment ratio (commitment to maintain investment in capital assets) above 1.0 indicates higher quality of earnings.
- Effective tax rate percentage (degree of reliance on reporting low tax rates) at or above average for all companies indicates higher quality of earnings.
- Model also considers S&P long-term credit rating and S&P rank based on earnings and dividends growth stability over the last 10 years.

Raymond James & Associates (Michael Krensavage)

(See also *Earnings Quality Monitor*, 2003.)

- A rating of 1 (worst) to 10 (best) assigned for each of 10 proprietary benchmarks; equally weighted ratings are combined to determine earnings quality score.
- Indicators of lower earnings quality: increases in receivables; earnings growth due to decreased tax rate; capitalization of interest; high frequency/magnitude of one-time items.
- Large acquisitions made in recent periods are penalized.
- Practicing conservative pension fund management and increasing R&D budget faster than revenues are rewarded.
- Cash flow that grows along with net income and increases in gross margin positively impact earnings quality.

S&P Core Earnings

(See also *Core Earnings Technical Bulletin*, October 2002.)

- Attempts to give more-accurate representation of true performance of ongoing operations.
- Included in core earnings: employee stock option grant expenses; restructuring charges from ongoing operations; write-downs of depreciable or amortizable operating assets; pension costs; purchased R&D expenses; merger/acquisition expenses; and unrealized hedging gains and losses.
- Excluded items: goodwill impairment charges; gains (losses) from sales of assets; pension gains; litigation or insurance settlements; and reversal of prior-year charges and provisions.

UBS (David Bianco)

(See also *S&P 500 Accounting Quality Monitor*, 2003.)

- Compares GAAP to operating earnings; difference represents net one-time criteria.
- Employee stock option expenses are deducted from operating earnings.
- Assumed pension asset returns are adjusted to market value times interest or discount rate.
- Health-care costs are inflation-adjusted if reported to be 300 basis points higher than weighted average forecasted by S&P 500 companies.