

David Lugg, New York (1) 212-438-7845; Wesley E Chinn, New York (1) 212-438-7689

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(Editor's note: This story, originally published on July 12, 2004, is being republished with the final tables.

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This statistical study by Standard & Poor's Ratings Services incorporates the median credit ratios and rating category profiles for rated U.S. industrial companies, based on 2003 financial information and our preliminary adjustments. These medians reflect firms whose credit quality measures most closely resemble the data used by our analysts in their quantitative assessments of companies' financial performance. All of the industrial sectors (except transportation) covered by our corporate analysts, including metals and mining, health care, capital goods, chemicals, retailing, consumer goods, forest products, oil and gas, and technology, are represented in the following ratio tables.

These medians are not meant to be benchmarks for any rating category, if for no other reason than that the various ratios reflect the cyclical nature of general economic conditions and individual industry subsectors, not only in the U.S., but also internationally. Nevertheless, these medians can help indicate the general credit quality of companies once their business profiles have been analyzed. Assessing the strength of their business profiles, ranging from well below average to well above average (for the very strong investment-grade categories) is the critical step prior to using the medians, which can then be risk-adjusted.

The differences in ratio medians throughout the spectrum of long-term debt and commercial paper ratings are generally quite pronounced. This median study covers almost 900 companies with long-term debt ratings; the adjusted commercial paper rating study covers 198 companies. Special caution should be used when examining the 'AAA' and 'CCC' medians, which were derived using a small number of companies.

When reviewing the median tables for each rating category, investors should note that certain revisions have been made. We now include total debt to EBITDA in the key ratio tables rather than in the supplemental tables because of widespread investor interest in that median. On the other hand, the median for operating income (before D&A) as a percentage of sales, also known as operating margin, has been moved to the supplemental tables. The strength of operating margins is not indicative of a particular rating category and is best used when analyzing specific industries. In addition, long-term debt as a percentage of capital, total debt to market-value equity, total equity, and total asset medians have been eliminated. This reflects our view that the usefulness of that data has declined over time and that those medians are no longer representative of the statistical information our analysts use in evaluating credit quality.

Note that for a key cash flow protection measure, funds from operations to total debt (FFO/TD), the 2001-2003 median ratio for the 'BBB' category--encompassing 'BBB-', 'BBB', and 'BBB+' ratings--was 35%. For a U.S. industrial company with an average business profile, cash flow coverage of 35% would indicate a 'BBB' rating, based on our risk-adjusted ratio guidelines. These guidelines link levels of business risk with financial ratios. In the 'BB' category, which has one of the largest samplings of companies (almost 265), the FFO/TD median for 2001-2003 was 20%, on par with the 20% benchmark for a company with an average business profile. (If a company's business profile were viewed as below average, that company would need approximately 25% cash flow coverage to meet the 'BB' rating guideline.)

Among the standard adjustments our analysts perform is the capitalizing of operating leases. The operating lease methodology has been used for all companies included in the adjusted ratio medians (see the related article titled, "CreditStats Operating Lease Analytical Model," published on Aug. 20, 2004). Ratios for companies that lease part or all of their operating assets are more comparable with those of firms that buy all plant and equipment. The lease adjustment affects all ratios.

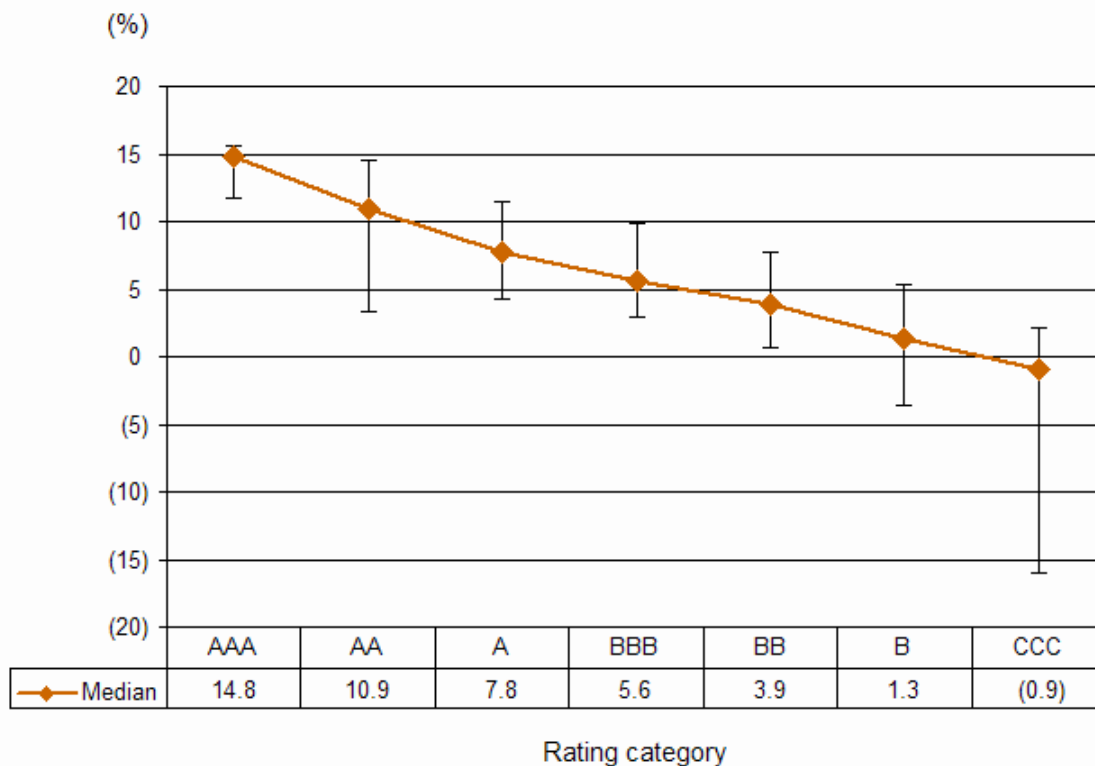
A New Measure of Operating Performance: FOCF/Sales (%)

As the technology behind our CreditStats evolves, it has become simpler and faster to perform ad-hoc queries. With this new capability, some initial steps were taken to investigate whether other ratios might serve as additional credit measures. The data generated to date suggests that free operating cash flow as a percentage of sales (FOCF/sales) is a good candidate as a broad measure for operating or cash generating efficiency.

One way to view operating efficiency is to consider that a company that more effectively turns revenue into free operating cash flow would be better able to service debt. Thus, a stronger FOCF/sales ratio should suggest stronger credit and a higher rating. However, this ratio might also vary so dramatically by industry that it would be used to compare only closely related companies, as is operating income to sales. These concepts were tested by designing a set of formulas in the CreditStats program and generating values for the standard universe of industrial companies included in CreditStats (see chart 1).

Chart 1

Free Operating Cash Flow/Sales



Note: The median values are of three-year weighted averages for all companies within a rating category. The error bars represent the upper and lower quartiles of the values in the set. In other words, 50% of the companies in the rating set are within the area between the bars.

As shown in chart 1, the results correlate well with the rating categories. The wide dispersion of values in the 'CCC' category is not terribly surprising, given that the companies in this category have a variety of severe financial stresses, from an inability to generate cash to an inability to pay near-term debt maturities.

Two other measures were also examined for comparison: return on capital, and operating income as a percentage of sales, or operating margin (see charts 2 and 3). The former has long been demonstrated to be a valuable, broad measure of financial health; operating margin is one of the most industry-specific measures.

Chart 2

Return on Capital

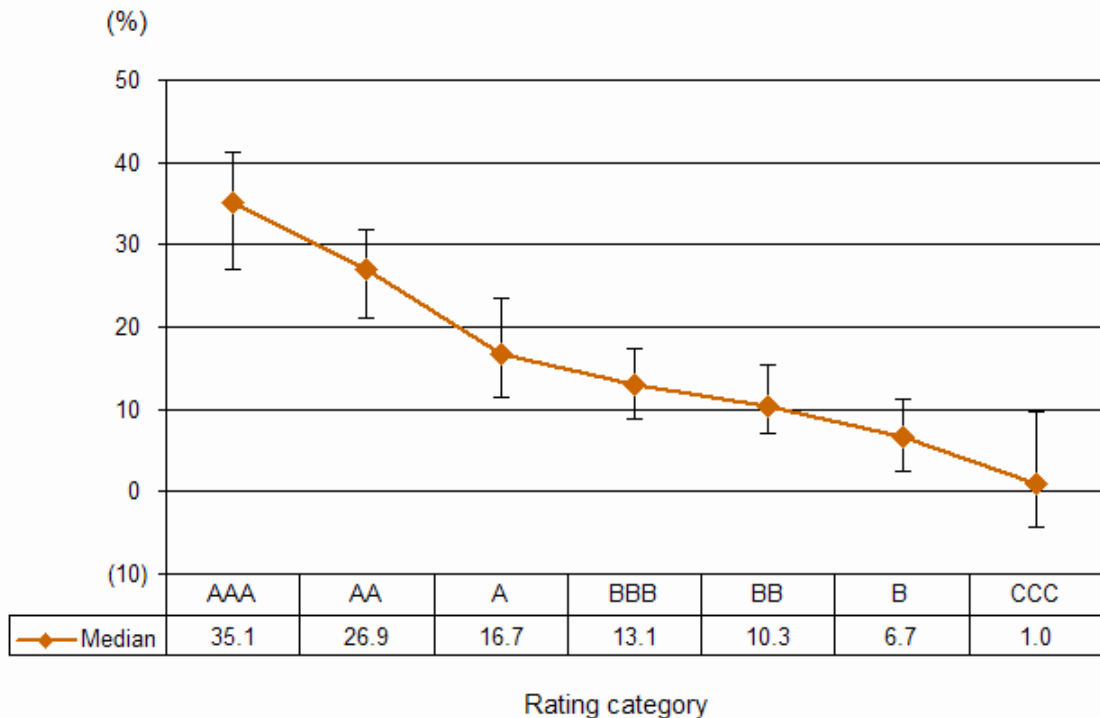
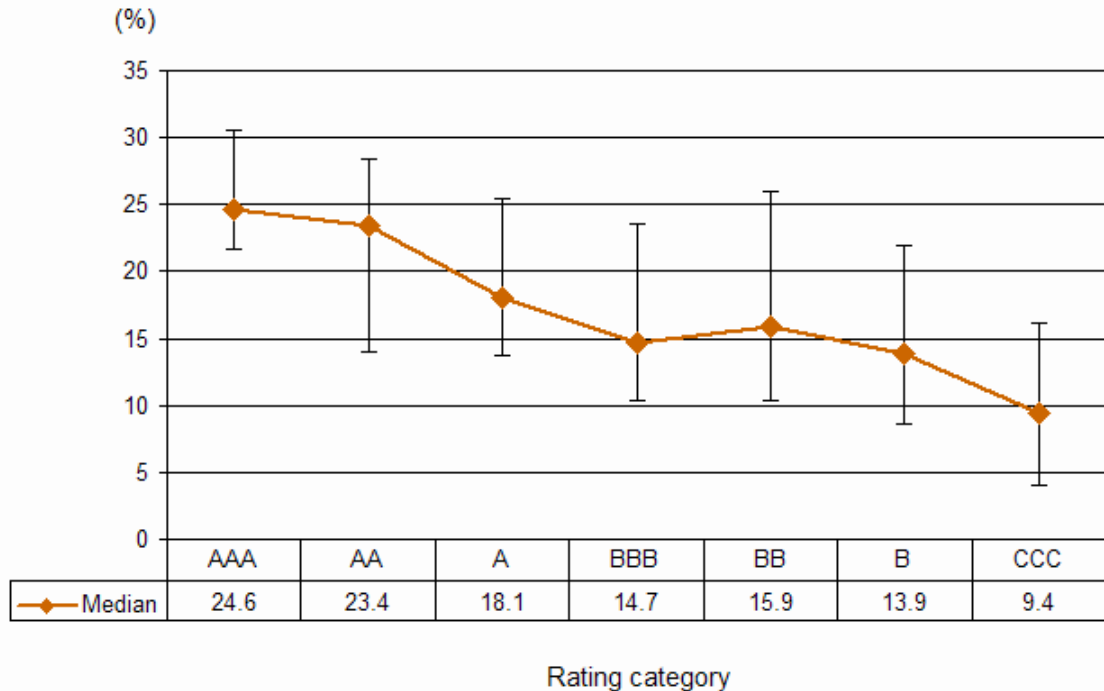


Chart 3

Operating Income/Sales



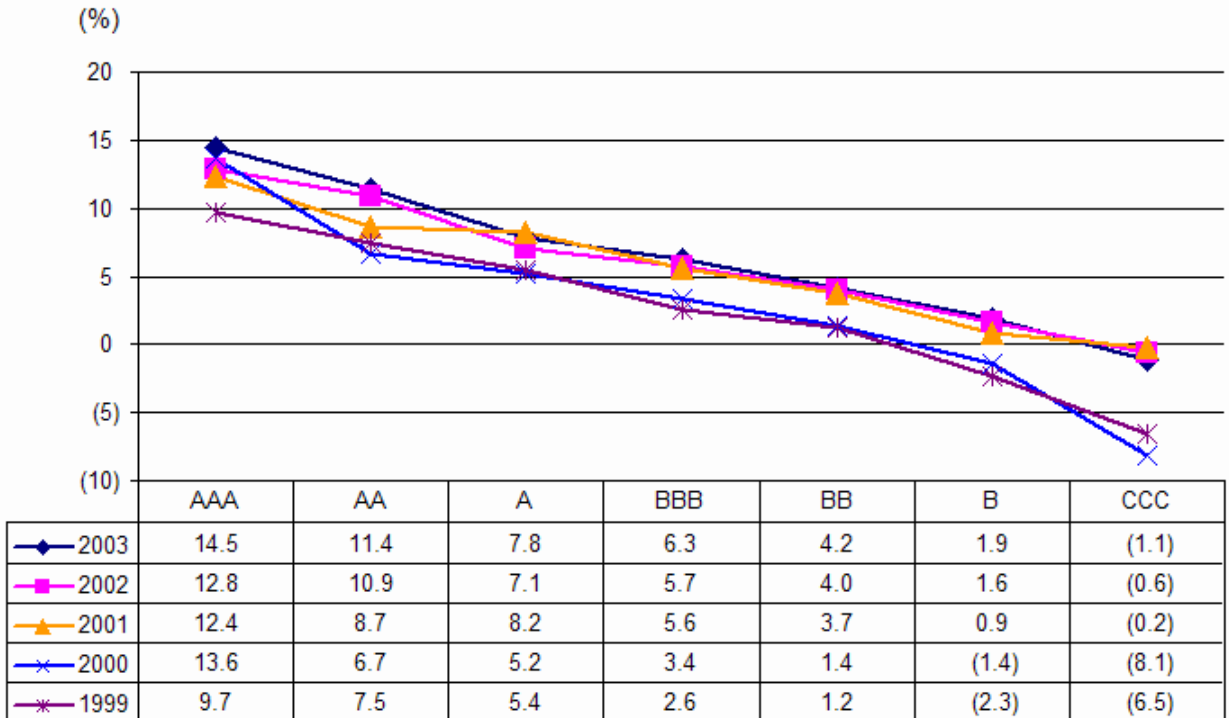
Clearly, FOCF/sales is more similar to return on capital than to operating margin, supporting the ratio's use as a broad credit measure.

Given that capital spending programs are episodic in nature, the correlation seen with three-year averages might vanish when looking at data for a single year. To examine this, the median values for each of the last five years were calculated and summarized in chart 4.

Chart 4

Free Cash Flow/Sales

Yearly medians by rating category



Note: The median values are of each company's value for a single year within a rating category. The error bars represent the upper and lower quartiles of the values in the set. In other words, 50% of the companies in the rating category are within the area between the bars.

Although there is year-to-year movement in the medians, a subject for further study, the overall contention that this ratio could be useful for a single year is supported.

This data lends support to the use of FOCF/sales as a broad measure of credit quality, useful at least in annual, if not interim, contexts. Whether it should be considered a key credit statistic can be determined only after gaining more experience with individual companies. Also, this dataset was limited to U.S. industrial companies, excluding both utility and transportation issuers. A similar study for U.S. utilities showed no clear linkage. The universe of U.S. rated transportation companies with data available at the time of this study was too small to draw meaningful conclusions.

Three-year (2001-2003) medians							
	AAA	AA	A	BBB	BB	B	CCC
EBIT interest coverage (x)	23.8	13.6	6.9	4.2	2.3	0.9	0.4
EBITDA interest coverage (x)	25.3	17.1	9.4	5.9	3.1	1.6	0.9
FFO/total debt (%)	167.8	77.5	43.2	34.6	20.0	10.1	2.9
Free oper. cash flow/total debt (%)	104.1	41.1	25.4	16.9	7.9	2.6	(0.9)

Total debt/EBITDA (x)	0.2	1.1	1.7	2.4	3.8	5.6	7.4
Return on capital (%)	35.1	26.9	16.8	13.4	10.3	6.7	2.3
Total debt/capital (%)	6.2	34.8	39.8	45.6	57.2	74.2	101.2
No. of companies	6	18	124	207	274	250	43

Table 2 Final Adjusted Key Industrial Financial Ratios, Commercial Paper

Three-year (2001-2003) medians				
	A-1+	A-1	A-2	A-3
EBIT interest coverage (x)	15.8	7.3	4.5	2.3
EBITDA interest coverage (x)	18.0	10.1	6.4	3.5
FFO/total debt (%)	81.2	47.2	36.8	18.9
Free oper. cash flow/total debt (%)	47.6	27.0	17.1	10.7
Total debt/EBITDA (x)	0.8	1.6	2.2	4.4
Return on capital (%)	29.0	18.1	14.1	8.1
Total debt/capital (%)	24.0	40.3	45.1	54.4
No. of companies	23	77	82	24

Table 3 Final Adjusted Key Industrial Financial Ratios (Supplemental), Long-Term Debt

Three-year (2001-2003) medians							
	AAA	AA	A	BBB	BB	B	CCC
Oper. income/sales (%)	24.6	23.4	18.2	14.7	15.8	13.9	11.4
Free cash flow/sales (%)	14.8	10.9	7.8	5.7	3.9	1.3	(0.9)
EBITDA int. + div. cov. (x)	4.0	3.9	4.1	4.5	3.0	1.7	1.0
Disc. cash flow/total debt (%)	42.2	25.4	16.9	14.3	7.6	2.2	(1.8)
Total liabilities/net worth (%)	70.3	123.6	138.8	149.1	194.2	202.7	(208.3)
EBITDA/total assets (%)	22.2	21.2	16.5	13.7	12.9	10.3	7.0
Total debt/market capitalization (%)	0.5	8.1	17.2	27.2	43.2	55.9	80.8
Sales	38,859.3	17,382.2	5,471.7	3,202.0	1,171.1	512.8	271.0
No. of companies	6	18	124	207	274	250	43

Table 4 Final Adjusted Key Industrial Financial Ratios (Supplemental), Commercial Paper

Three-year (2001-2003) medians				
	A-1+	A-1	A-2	A-3
Oper. income/sales (%)	23.6	17.7	15.9	12.5

Free cash flow/sales (%)	13.0	8.4	5.8	4.3
EBITDA int. + div. cov. (x)	3.9	3.9	4.1	2.6
Disc. cash flow/total debt (%)	31.0	17.3	11.5	8.6
Total liabilities/net worth (%)	117.0	150.3	157.9	217.5
EBITDA/total assets (%)	23.3	17.0	14.4	9.4
Total debt/market capitalization (%)	5.8	16.4	26.2	46.8
Sales	23,758.4	6,492.5	4,809.1	12,212.7
No. of companies	23	77	82	24

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