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Standard & Poor's Ratings Services' annual ratio median study includes U.S.-based firms whose credit quality measures (after adjustments) most closely resemble the data employed by our analysts in their quantitative assessments of companies' financial performance. This statistical study encompasses all of the industrial sectors covered by our corporate analysts, such as pharmaceutical, capital goods, chemicals, retailing, consumer goods, forest products, energy, and telecommunications. These medians are not meant to be benchmarks for any rating category. (If for no other reason, the various ratios will reflect the cyclical nature of general economic conditions and individual product markets 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 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 long-term debt and commercial paper ratings spectrum are generally quite pronounced. This median study includes 970 companies with long-term debt ratings; the adjusted commercial paper rating study covers 210 companies. Special caution should be used when examining the 'AAA' and 'CCC' medians, which were generated using a small number of companies.

When reviewing the annual medians for each rating category, investors should note how Standard & Poor's handles the inclusion of companies. For example, if companies were added to the rated universe in 2002, they will appear in the annual medians only for 2002; the annual medians for the previous years--1998 to 2001--do not include those companies because they were unrated prior to 2002. But, when calculating medians, Standard & Poor's includes three years of financial data (if available) on the new companies. Similarly, if a company's rating was withdrawn in 2002, its financial data will not be included in that year's median, but will be included in previous years'. As in previous years' studies, the data reflects the continuing movement of companies among the rating categories. In this regard, companies are included in a rating category based on the rating at that year's end. For example, Rohm and Haas Co. was once in the 'A' category based on its corporate credit rating at the end of 2001. But following its November 2002 downgrade, that company was included in the 'BBB' credit quality classification when medians for 2002 were compiled.

Note that for a key cash flow protection measure, funds from operations to total debt (FFO/TD), the 2000-2002 median ratio for the 'BBB' category--encompassing 'BBB-', 'BBB', and 'BBB+' ratings--was 31%. For a U.S. industrial company with an average business profile, cash flow coverage of 35% would indicate a 'BBB' rating, based on Standard & Poor's 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 280), the FFO/TD median for 2000-2002 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.)

Key industrial financial ratios are adjusted for unusual items and to capitalize operating leases. Detailed information for long-term debt and commercial paper ratings appear in the comparative ratio tables (see tables 1 and 2, below). The adjusted ratios were first published in 1993. These figures are representative of the actual quantitative data used by Standard & Poor's analysts in their evaluations of companies' financial results. Users of the data can compare a firm's adjusted financials with adjusted ratio median data. The methodology used to develop the adjusted ratios is detailed in the article titled,

Table 1 Adjusted Key Industrial Financial Ratios, Long-Term Debt							
Three-year (2000 to 2002) medians							
	AAA	AA	A	BBB	BB	B	CCC
EBIT interest coverage (x)	23.4	13.3	6.3	3.9	2.2	1.0	0.1
EBITDA interest coverage (x)	25.3	16.9	8.5	5.4	3.2	1.7	0.7
FFO/total debt (%)	214.2	65.7	42.2	30.6	19.7	10.4	3.2
Free oper. cash flow/total debt (%)	156.6	33.6	22.3	12.8	7.3	1.5	(2.8)
Return on capital (%)	35.0	26.6	18.1	13.1	11.5	8.0	1.2
Oper. income/sales (%)	23.4	24.0	18.1	15.5	15.4	14.7	8.8
Long-term debt/capital (%)	(1.1)	21.1	33.8	40.3	53.6	72.6	78.3
Total debt/capital (%)	5.0	35.9	42.6	47.0	57.7	75.1	91.7
No. of companies	6	20	121	224	279	264	56

Table 2 Adjusted Key Industrial Financial Ratios, Commercial Paper				
Three-year (2000 to 2002) medians				
	A-1+	A-1	A-2	A-3
EBIT interest coverage (x)	18.4	6.9	4.4	2.2
EBITDA interest coverage (x)	20.6	9.2	6.4	3.3
FFO/total debt (%)	79.4	43.1	34.6	17.2
Free oper. cash flow/total debt (%)	43.6	24.9	12.6	7.7
Return on capital (%)	29.8	18.5	13.5	8.7
Oper. income/sales (%)	23.8	18.0	16.2	12.6
Long-term debt/capital (%)	15.3	35.2	41.4	52.0
Total debt/capital (%)	24.0	43.2	47.7	60.7
No. of companies	25	74	95	16

The ratios generated by this study have not been adjusted for the enhancements to Standard & Poor's rating methodology introduced in March 2003 related to postretirement liabilities. Standard & Poor's has refined its financial adjustments to help ensure that ratings fully reflect unfunded, defined benefit pension and other postretirement obligations, including health care obligations, retiree lump-sum payment schemes, and other forms of deferred compensation. These enhancements represent a

formalization of new analytical tools, which involve calculations affecting profitability, cash flow protection, and capitalization analyses. Consequently, these ratio adjustments are an important rating consideration when benefits obligations are material.

The companies' data have been adjusted for the following:

- Nonrecurring gains or losses have been eliminated from earnings. These include gains on asset sales, significant transitory income items, unusual losses, losses on asset sales, and charges due to asset write-downs, plant shutdowns, and retirement programs. These adjustments affect chiefly interest coverage, return on capital, and operating margin ratios.
- Unusual cash flow items similar to the nonrecurring gains or losses have also been reversed, unless the non-cash nature of the charge has already been included in the reported cash flow figures. These changes affect cash flow ratios.
- The operating lease methodology has been performed for all companies included in the adjusted ratio medians. 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 (see the article titled, "CreditStats Operating Lease Analytical Model," published on RatingsDirect on Sept. 8, 2003, for a discussion of the operating lease methodology).
- Beginning with the median study published in August 2002 is the inclusion of adjustments commonly made by analysts at Standard & Poor's on a case-by-case basis, reflecting net debt and the captive finance company rating methodology. The net debt adjustment affects median ratios largely for the 'AAA' rating category, which includes cash-rich pharmaceutical companies. By making the net debt adjustment, the interest coverage, cash flow to debt, and debt ratios for the 'AAA' category are distorted because some of these firms have debt on a net basis (see individual industry sector tables published separately on RatingsDirect under the heading "CreditStats: [Industry Sector]"). The captive finance adjustment has a greater effect, mainly on automobile, department store, and some capital goods companies. However, because these companies are spread over several rating categories, the effect of this adjustment is diluted.

Investors should note that the 1999-2001 medians (published in August 2002) involving EBITDA and the subsequent 2000-2002 medians are not directly comparable to the medians published in 2001. Beginning with the financial data for 2001 (and adjusting previous years' data), EBITDA now excludes all non-operating income such as equity income and interest income, and non-operating expenses.

Supplemental U.S. Industrial Median Credit Ratios

The supplemental median credit ratios and rating category profiles for rated U.S. industrial firms are for illustrative purposes only. As with the adjusted ratio medians, the supplemental financial measures are not intended to be used as benchmarks to achieve a specific rating. These ratios are sometimes used in Standard & Poor's quantitative analyses of firms' historical performance and to forecast prospective financial performance. A few ratios, such as debt to market capital, are presented to reflect the market's perspective of current-value financial leverage relative to ratings. The rating category profiles include median sales, equity, and total asset figures for long-term debt and commercial paper (see tables 3 and 4).

Table 3 Adjusted Key Industrial Financial Ratios (Supplemental), Long-Term Debt							
Three-year (2000 to 2002) medians							
	AAA	AA	A	BBB	BB	B	CCC
EBITDA int. + div. cov. (x)	4.0	3.8	4.2	4.2	3.0	1.7	0.8

Disc. cash flow/total debt (%)	88.5	19.2	15.7	13.2	8.6	2.6	(2.3)
Total debt/EBITDA (x)	0.2	1.0	1.7	2.4	3.8	5.4	7.3
Total liabilities/net worth (%)	74.0	123.7	139.6	163.7	175.0	197.0	234.1
EBITDA/total assets (%)	24.5	22.4	17.2	14.0	13.0	12.2	6.5
Total debt/market-value equity (%)	0.3	8.7	21.7	41.1	89.1	128.9	340.4
Total debt/market capitalization (%)	0.3	8.0	17.8	29.2	47.1	56.3	77.3
Sales (mil. \$)	39,718.4	16,141.8	5,392.2	2,773.9	1,110.4	442.4	225.2
Equity (mil. \$)	21,601.3	7,135.1	2,451.9	1,202.3	428.8	100.2	31.1
Total assets (mil. \$)	34,238.8	14,921.7	5,629.1	2,904.7	1,242.0	557.1	471.5
No. of companies	6	20	121	224	279	264	56

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

Three-year (2000 to 2002) medians				
	A-1+	A-1	A-2	A-3
EBITDA int. + div. cov. (x)	3.8	3.9	4.1	2.6
Disc. cash flow/total debt (%)	27.5	17.8	10.3	6.1
Total debt/EBITDA (x)	0.8	1.7	2.3	4.4
Total liabilities/net worth (%)	109.4	153.5	171.1	240.5
EBITDA/total assets (%)	23.3	17.9	14.7	9.8
Total debt/market-value equity (%)	5.8	19.7	40.8	83.1
Total debt/market capitalization (%)	5.5	16.5	29.0	45.4
Sales (mil. \$)	21,479.4	6,342.1	4,786.4	5,134.3
Common equity (mil. \$)	9,627.7	3,134.4	2,121.3	1,926.5
Total assets (mil. \$)	19,750.6	8,673.2	6,628.7	6,685.0
No. of companies	25	74	95	16

Supplemental figures are based on the same universe of adjusted company data as the adjusted key industrial financial ratio medians. Each rating category contains the same group of companies and incorporates the same adjustments as noted in the "Formulas for Key Ratios" (see below). The most important adjustment is the capitalization of operating leases, which affects all ratios.

Several supplemental ratios are given greater emphasis in the quantitative analysis of companies with speculative-grade ratings. Some of these firms have undervalued or overvalued assets, negative net worth, or have undergone recent recapitalizations or management buyouts. Traditional credit ratios that rely heavily on measures based on historical cost accounting, such as total debt to capital, are not particularly useful. Standard & Poor's focuses on other measures that gauge economic leverage for

lower-rated firms.

EBITDA to interest plus dividends.

This ratio is essentially cash flow coverage of payments to stakeholders, whether common, preferred, or debt holders. Analysis of a firm's speculative-grade ratings focuses on cash flow generation and the ability of cash flow to meet current interest and preferred dividend obligations. To the extent that companies do not pay common dividends, EBITDA to interest is not materially different from EBITDA to interest plus dividends. For example, the 2000-2002 'BB' median adjusted-EBITDA-to-interest ratio is 3.2x, and the supplemental ratio is 3.0x. The difference stems from preferred dividends paid and the high percentage of firms in the rating category that pay common dividends. There is no difference in the ratios for the 'B' group, with EBITDA to interest and dividend coverage at 1.7x, and EBITDA to interest coverage also at 1.7x. In the investment-grade rating category, the 2000-2002 EBITDA interest and dividend coverage median for 'AAA' debt is 4.0x, lower than the coverages of 4.2x for both the 'A' and 'BBB' categories. The generous common dividends of the 'AAA' companies account for the lower coverage.

Standard & Poor's does not view common dividend payments as fixed obligations. Moreover, many preferred issues are also given equity treatment because dividends can be cut or omitted without triggering debt payment or covenant default, or increasing the risk of such default. Most companies are extremely reluctant to cut their dividends, however. Firms must remain attentive to the goals of both stockholders and bondholders. Some stock funds are prohibited by their investment criteria from buying the equity of companies that do not pay common dividends. Analysts screen companies based on, among other factors, the record of dividend payments and increase rates. Some companies increase dividends by extremely small amounts each quarter or year to pass these screenings.

Despite the reluctance of firms to cut dividends, those in cyclical industries or those affected by a marked change in market conditions decrease or eliminate dividends to retain cash. The flexibility to reduce cash dividend payments must be considered when evaluating the ratio of EBITDA to interest plus dividends.

Discretionary cash flow to total debt.

This ratio measures a firm's true discretionary cash flow--after payments to stockholders, taxes, and capital needs--relative to its debt burden. In contrast to the previous ratio, higher-rated companies clearly have greater discretionary cash flow to debt than do lower-rated companies. A high ratio indicates strong debt repayment ability, as well as the flexibility to internally fund acquisitions and common stock repurchases, while the reverse is true for a low ratio. The 2000-2002 median ratio for the 'AAA' category is 88.5%, dropping to 15.7% for the 'A' category and 8.6% for the 'BB' group.

The measure can be distorted from year to year because it subtracts all capital spending in the numerator. In Standard & Poor's review of projected results, analysts attempt to gauge ongoing maintenance capital needs and use that figure to compute discretionary cash flow. Often, this adjusted measure is based on confidential data and is not disclosed. The 15.7% three-year median for the 'A' category may seem low for a group well in the investment-grade category. This category is composed of firms that have ample growth opportunities and are investing in projects that could boost the firms' worth. This company-building activity lowers the ratio, although credit quality can be bolstered by such spending.

Total debt to EBITDA.

A staple of speculative-grade analysis, median total debt to pretax, pre-interest cash flow is presented for all rating categories. This measure is not affected by historical accounting because it compares the balance sheet value of debt owed by the firm (based on contracts and loan agreements, not market valuation) with cash flow generation in current dollars. This allows for better comparisons across

companies and industries in different countries. As expected, the figure is high for the speculative-grade 'BB' and 'B' categories, and low, at 1.7x, for the 2000-2002 median in the 'A' category. Because this figure is a median, it does not reflect business risk evaluation.

Total liabilities to net worth.

This ratio is affected by the ills of historical accounting because it compares balance sheet value of liabilities with balance sheet shareholders' equity plus preferred stock and minority interest. This ratio is intended to help guide analysis of financial leverage because many liabilities, including pension benefits and health care obligations, have debt-like characteristics. This ratio incorporates these ongoing obligations in a rather simplistic manner. Standard & Poor's has formalized new analytical tools to better assess benefit liabilities.

EBITDA to total assets.

This figure is a measure of pretax, pre-interest cash flow relative to book assets. It is considered a ratio of cash flow return on assets and supplements the more traditional figure of return on capital.

Total debt to market-value equity, and total debt to market capitalization.

Sometimes, companies present to Standard & Poor's credit analysts debt leverage that reflects the firm's current equity valuation as measured by the marketplace. These medians are computed to assist in comparing the rated universe with the "market-value" debt leverage of an individual U.S. industrial firm. The popular total-debt-to-capital ratio has the inherent weakness of measuring a firm's "going concern" equity value based on historical accounting. Basing the denominator on a market measure, as the supplemental ratio does, helps correct some of this distortion.

As expected, the high-investment-grade categories have very low market-value debt leverage: 17.8% (2000-2002 median) for the 'A' category, compared with its adjusted three-year median 42.6% total-debt-to-capital figure for 2000-2002. The differences narrow, however, for the lower rating categories, but they are still significant. In particular, firms rated 'BB' have three-year debt leverage medians based on current market capitalization and a book basis of 47.1% and 57.7%, respectively.

The weakness of these ratios is that they rely on year-end equity market valuations. Stock markets may reflect volatilities that have little to do with the company at the time the ratio measures market value. Standard & Poor's analysts make their own assessments of companies' long-term earnings and cash flow generation potential when assessing debt repayment capacity. For example, when technology stocks are in vogue, their increased market value lowers market-value leverage. Yet, they have high business risk, as these products are subject to rapid obsolescence. These factors, which affect technology companies' ability to generate cash flow in the long term, have not changed, regardless of the equity market's valuation of firms in this industry group. Use caution when examining this ratio.

The number of companies used to calculate total debt to market-value equity and total debt to market capitalization for each year is lower than the number of companies used to calculate the other ratios for that same year. The differences are more pronounced in the speculative-grade rating categories and reflect debt issuance by companies that have no publicly traded common stock. For example, in the 'B' category, 162 companies were used to calculate total debt to market-value equity and total debt to market capitalization for 2000-2002, far fewer than the 264 companies used to calculate the other ratios for that three-year median.

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