

**WEB-ARTICLE  
TO ACCOMPANY  
THE MSCl EXECUTIVE CHART BOOK (ECB)**

**Note to Readers:** This is the first in a monthly series of articles by Dr. Roger K. Harvey, President of Value Associates, Ltd. using statistics from the annual *MSCI Executive Chart Book (ECB)*.

Each article is presented in three parts:

- I. Explanation of Topic
- II. Interpretation of *ECB* Statistics by Product Line-of-Business
- III. Statistical Data from the *ECB*

The statistical data from the *ECB* is presented as a downloadable Excel Worksheet. If you wish to go directly to the statistical data, please click [here](#).

This series of articles is presented for the benefit of both *ECB* subscribers and non-subscribers. Subscribers should refer to their confidential *ECB* for their center's calculated values of the performance measures referenced in this and future articles.

**If you are a non-subscriber** and wish to benchmark your center's performance, you will need to calculate your own performance measures using the formulas presented in Part I of the article.

**If you are a non-subscriber**, you may contact Chris Marti at MSCl headquarters ([cmarti@msci.org](mailto:cmarti@msci.org) or 773.867.8760 x104) for information on this free MSCl service.

**If you are a non-subscriber**, you can still receive your own confidential *ECB* by contacting Value Associates, Ltd. at [valueassociates@yahoo.com](mailto:valueassociates@yahoo.com) or 970.963.1444. It is not too late to submit a survey form with your 2001 annual data and receive a 2002 *ECB*. There is no charge for this MSCl service.

---

**ARTICLE I: GETTING MORE VALUE FOR YOUR STOCKHOLDERS  
THROUGH ECONOMIC VALUE ADDED MEASURES**

**I. What is EVA?**

**Overview:**

Economic Value Added (**EVA**) is an indicator of the market value of your service center's owner's equity, a measure especially important to closely-held companies, which do not have the benefit of a published stock price. For publicly traded companies, **EVA** correlates very closely with stock price.

**EVA** is measured by comparing your Return on Capital Employed (A.T.) with your Cost-of-Capital, also called your "Return Spread." A positive *Return Spread* indicates you are earning more than your cost-of-capital -- you are creating wealth for your owners or

stockholders. A negative *Return Spread* means you are earning less than your cost-of-capital -- reducing the wealth of your owners and stockholders.

As an example, if your Return on Capital Employed (A.T.) is 18% and your Cost-of-Capital is 15%, your Return Spread is +3%. If your Capital Employed is \$1,000,000, your **EVA** is a positive \$30,000. The market value of your owners' stock increased by \$30,000 (= \$1,000,000 x .03). By contrast, if your Return on Capital Employed (A.T.) is 12% and your Cost-of-Capital is 15%, your Return Spread is -3%. Your **EVA** is a negative \$30,000. The market value of your owners' equity value declined by \$30,000.

Whether your company is publicly traded or closely-held, managing to increase **EVA** is managing to increase the market value of your company's equity. Over 300 multi-nation corporations employ **EVA** as a management and executive compensation system.

### **Strategies for Increasing EVA:**

#### A. Operating Side (per Stern Stewart & Company)

1. Increase the returns from the assets already in the business by running the income statement more efficiently without investing new capital.
2. Invest additional capital and aggressively build the business so long as expected returns on new investments exceed the Cost-of-Capital.
3. Release capital from existing operations, both by selling assets that are worth more to others, and by increasing efficiency of capital by such tactics as turning working capital faster and speeding up cycle times.

#### B. Financing Side (lowering average Cost-of-Capital)

1. Aggressive use of debt
  - a) Tax benefit of substituting debt for equity;
  - b) Obligation of repaying debt will remove the irresistible temptation to over-invest in under-serving assets or make overpriced acquisitions;
  - c) Makes it easier to concentrate ownership in the hands of people best able to affect value -- managers and employees.
2. Reduce the Cost of Equity
  - a) Internal: reducing the overall business and operating risk associated with the company;
  - b) External: overall interest rates in the economy decline;
  - c) External: the risk premium on equity investments declines.

## Explanation:

- A. **EVA** uniquely includes the Cost-of-Capital in its calculation—a factor cost that is excluded from conventional accounting measures.
- B. No “real” money is made or value created until the operating profits exceed the dollar return required by the owner(s) and lenders.
- C. **EVA** doesn’t measure wealth directly—it correlates better than any other measure with the changes in the stock price (publicly traded companies) or equity market value (closely-held companies).
- D. What counts most are changes in **EVA**: Continuous increases will be rewarded with increases in equity market value of the company, while declining **EVA** is punished with declining equity market value.
- E. Peter Drucker writing in the Harvard Business Review: “Until a business returns a profit that is greater than its Cost-of-Capital, it operates at a loss. The enterprise still returns less to the economy than it devours in resources ... until then it does not create wealth; it destroys it.”

## Formulas and Definitions for EVA:

$$\text{EVA} = (\text{Return on Capital Employed After Taxes \%} - \text{Cost-of-Capital \%}) * (\text{Capital Employed})$$

- 1. "After Tax Operating Profits" divided by "Capital Employed" is "Return on Capital Employed After Taxes."
- 2. "After Tax Operating Profits" are Operating Profits Before Taxes minus Bad Debt times one minus your company’s Effective Tax Rate. Your Effective Tax Rate is Taxes divided by Profit Before Taxes.
- 3. "Capital Employed" is interest bearing debt plus equity or, equivalently, your company’s Net Assets which are Total Assets less non-interest bearing debt, such as Accounts Payable and Accrued Expenses.
- 4. "Cost-of-Capital" is your weighted average cost of debt and equity capital. The weight for debt is the ratio of interest-bearing debt to Capital Employed; the weight for equity is the ratio of equity to Capital Employed. The sum of the weights is 1.00.

The component Cost-of-Debt is the "Average Rate of Interest for Debt" that you reported on your survey form times one minus your Effective Tax Rate. This is your "After-Tax Cost of Debt" and is shown in your *ECB*.

Your component Cost-of-Equity is the same for all reporting firms. It is based on an industry Beta of 1.5 and "Equity Market Risk Premium" of 6%. (The "Equity Market Risk Premium" is the difference between the average historical return in the equity markets [12%] and the yield on long-term Treasury Bonds [6%.]) The formula Value

Associates' uses for calculating the Cost-of-Equity Capital for the typical metal service center is:

$$\begin{aligned}\text{Cost-of-Equity Capital} &= \text{T-Bond Yield} + \text{Beta} * (\text{Equity Market Risk Premium}) \\ &= 6\% + .15 * 6\% \\ &= 15\%\end{aligned}$$

This formula is widely used for calculating the Cost-of-Equity Capital; it is known as the Capital Asset Pricing Model.

## II. Interpretation of *ECB* Statistics

The statistics referred to in this section of the article may be found in the downloadable *Excel* table at the end of this article: Table I-A. The **EVA** Drill-Down and the Return on Capital Employed Drill-Down at the end of this section provide both an explanation and interpretation of the performance measures that drive **EVA**.

**EVA** for even upper quartile firms in all lines of business (All Firms, General Line, Plates & Shapes, Flat Rolled, Bar, Tubing, Stainless/Non-Ferrous) was negative in 2001. This indicates that very few service centers, if any, generated positive wealth for their shareholders; or to put it more bluntly, they reduced the wealth of their shareholders in 2001. Value was not only lost in the stock market in 2001, but also in the majority of service centers.

The largest median negative loss in **EVA** occurred in the Flat Rolled LOB (a negative \$1,456,000) while the smallest median negative loss occurred in the General Line LOB (a negative \$449,000). If you were one of the very few centers with a positive **EVA**, you and your management team deserve a "big bonus;" but given the lousy state of the industry, all we can give you is a "BIG pat-on-the-back." (Companies that build their management system around **EVA** frequently award incentive pay based on **EVA**. Surprisingly, managers give back prior year bonuses when **EVA** is negative... not a pleasant thought in the metal service business!)

To see what caused the reduction in wealth, we need to drill down using the **EVA** Drill-Down Chart at the end of this section. The first level down on the Drill-Down Chart shows that **EVA** is the mathematical product of the Return Spread and Capital Employed.

The Return Spread (i.e., the difference between Return on Capital Employed and Cost-of-Capital) was negative for all lines-of-business and all quartile groups. This means that very few service centers earned a Return on Capital Employed After Tax that exceeded their Cost-of-Capital. The median Return on Capital Employed for All Firms was 4.6% while the median Cost-of-Capital was 10.3%. The typical service center paid more for their capital funds than they earned on them. The widest negative spread between Return on Capital Employed and Cost-of-Capital was among Plates and Shapes service centers (a negative 7.2%); the narrowest among General Line service centers (a negative 5.5%). It is easy to see why shareholder wealth deteriorated in 2001: service centers paid more for their money than they earned on it by a margin of 5% to 7%.

Drilling down to the next level on the **EVA** Drill-Down Chart, we see that Return on Capital Employed is the mathematical product of Net Operating Profit Margin After

Taxes and Capital Turnover. The median Net Operating Profit Margin for All Firms was 1.7% and the median Capital Turnover was 2.44 times. The range in Net Operating Profit Margin between the lower quartile center (.2%) and the upper quartile center (2.8%) was a wide 2.6%. When it came to managing Income Statement variables (Gross Profit Margin, Operating Expense Margin, and Other Income & Expense items), there was a wide fluctuation in performance among service centers. Among the lines-of-business, the Bar centers' upper quartile group earned a whopping 6.7% Net Operating Profit Margin, while the Stainless/Non-Ferrous group earned a negative .8% margin. For the Bar group, the 6.7% margin traveled up one level on the Drill-Down Chart to give them an upper quartile Return on Capital Employed of 12.9%. – the highest upper quartile of any of the lines-of-business groups.

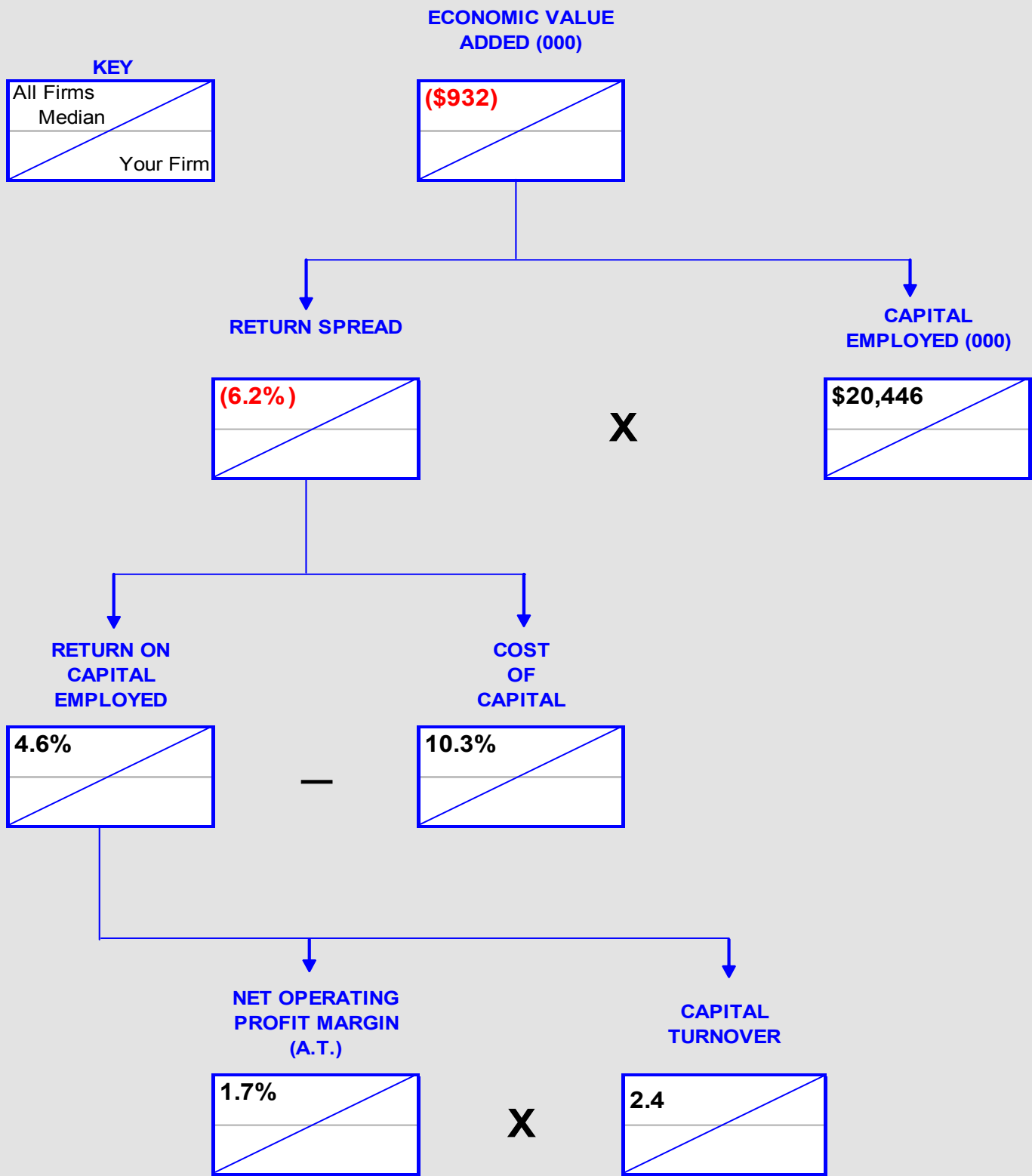
The other component at this level is Capital Turnover. A service center can either “earn” its way to a high Return on Capital Employed with a high Net Operating Profit Margin or it can “turn” it that way with a high Capital Turnover. The line-of-business with the highest upper quartile turnover is the General Line group (3.77 turns), while the lowest lower quartile turnover is the Flat Rolled group (1.82). Among the lower quartile Flat Rolled centers, they were only generating \$1.82 in Sales for every \$1.00 in Capital Employed – not very high capital productivity, but not unexpected during recessionary periods. To make matters worse for the lower quartile Flat Rolled group, they were only able to generate a negative .2% Net Operating Profit Margin. The result, of course, was a negative Return on Capital Employed (-.4%) for more than 25% of the Flat Rolled service centers.

The key to profitability and a positive **EVA** during these periods is controlling Income Statement variables and targeting a high Net Operating Profit Margin. With dropping or flat revenues, it is difficult to downsize capital assets, especially the machinery and equipment component of the asset base. This leaves concentrating on the variables that drive Net Operating Profit Margin. Future articles in this series will focus on these variables, especially productivity and compensation variables. For the remainder of this article, let us dig one level deeper into Return on Capital Employed.

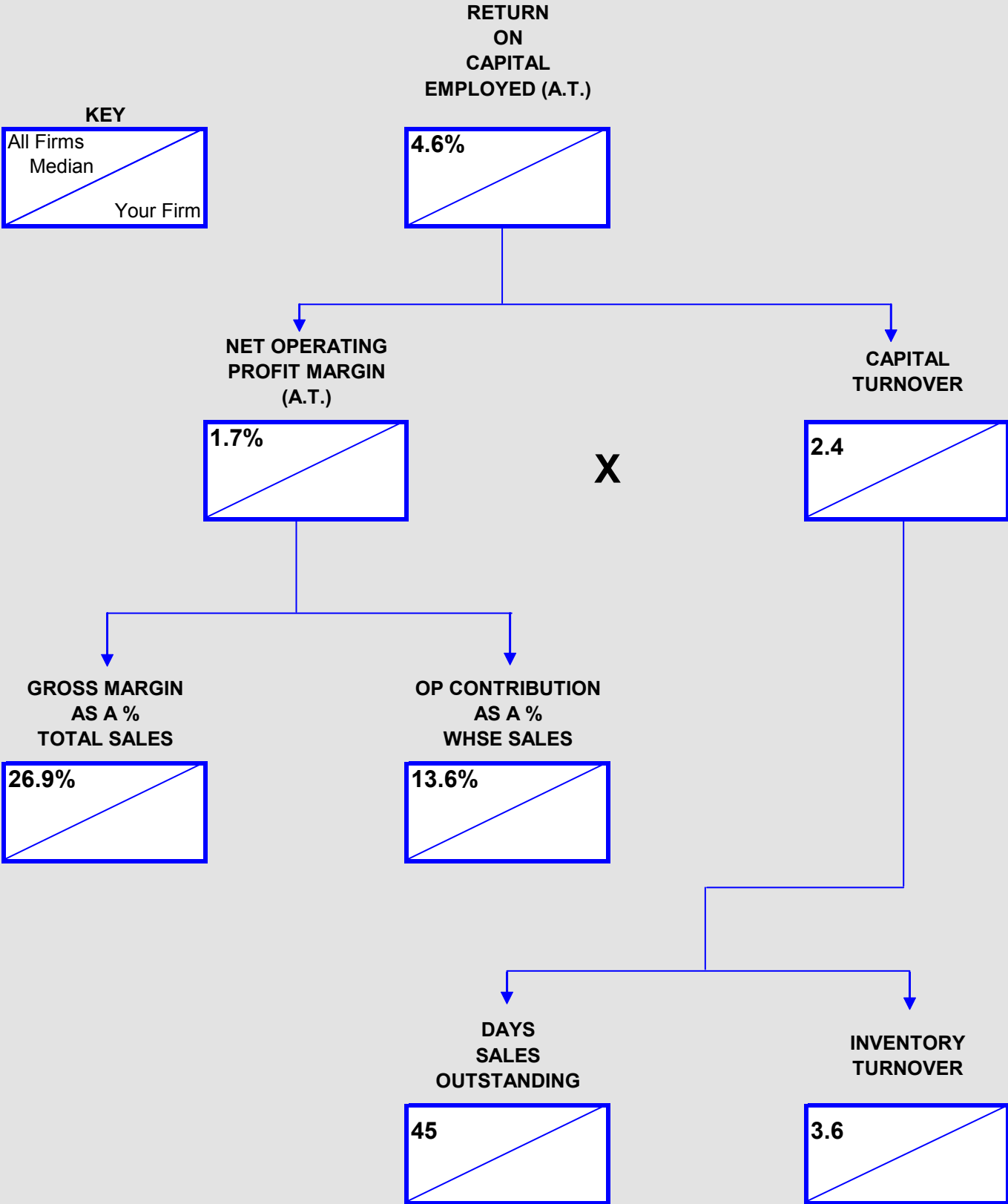
The reader is directed to the Return on Capital Employed Drill-Down Chart at the end of this section for drilling down to lower levels of analysis. A review of all the **EVA** component statistics reveals a bleak picture for 2001. No lines-of-business, not even those in their upper quartile groups, did well. Twenty-five percent (those in the lower quartile) of all reporting firms did very, very poorly: Gross Margins of 22% and below; Operating Contribution Margins of 10% and below; Days Sales Outstanding of 50 days and more; and Inventory Turnovers of 2.7 and below. These variables and their components are management controllable variables. The data suggests that service center managers have the opportunity to significantly improve their **EVA's** even when revenues are flat or declining. An important tool for this improvement is benchmarking and **The MSCI Executive Chart Book**.

There is little hope for positive **EVA's** in 2002, not only because economic and industry conditions continue to deteriorate in 2002, but because interest in benchmarking has fallen off. To have a chance for positive **EVA's** in 2002, service center managers are encouraged to incorporate benchmarking into their management system. Tight internal controls and data-based planning using the *MSCI Executive Chart Book* is one of the few effective tools for managers during tough economic times. Plan on participating in the MSCI quarterly as well as annual benchmarking services.

# ECONOMIC VALUE ADDED (EVA) DRILL-DOWN



# RETURN ON CAPITAL EMPLOYED (ROCE) DRILL-DOWN



**Table I-A  
MSCI ECB EVA STATISTICS  
From Year 2001 Data**

Ratio ID	Performance Measure	Your Firm	All Firms			
			Count	Lower Quartile	Median	Upper Quartile
RAT565	Economic Value Added (EVA) (000)		66	(\$4,303)	(\$932)	(\$98)
RAT564	Return Spread (Avg)		66	(11.2%)	(6.2%)	(1.7%)
RAT162	Capital Employed (000) (Avg)		87	\$55,147	\$20,446	\$7,841
RAT562	Return on Capital Employed A.T. (Avg)		86	0.6%	4.6%	7.9%
RAT563	Calculated Cost-of-Capital (Avg)		67	12.7%	10.3%	8.3%
RAT560	Net Operating Profit Margin (A.T.)		90	0.2%	1.7%	2.8%
RAT561	Capital Turnover (Avg)		87	1.90	2.44	3.18
RAT112	Gross Margin on Total Sales		90	21.9%	26.9%	33.4%
RAT255	Op Cont'n as % of Whse Sales		76	10.4%	13.6%	17.6%
RAT122	Days Sales Outstanding (Avg)		89	50	45	40
RAT123	Inv Turn Stock & Pass Throu (Avg)		75	2.67	3.64	4.20

Ratio ID	Performance Measure	Your Firm	General Line			
			Count	Lower Quartile	Median	Upper Quartile
RAT565	Economic Value Added (EVA) (000)		19	(\$8,448)	(\$449)	(\$58)
RAT564	Return Spread (Avg)		19	(14.8%)	(5.5%)	(1.4%)
RAT162	Capital Employed (000) (Avg)		21	\$35,991	\$15,247	\$3,427
RAT562	Return on Capital Employed A.T. (Avg)		21	1.6%	3.8%	6.8%
RAT563	Calculated Cost-of-Capital (Avg)		19	12.5%	11.0%	9.4%
RAT560	Net Operating Profit Margin (A.T.)		21	0.9%	1.2%	1.9%
RAT561	Capital Turnover (Avg)		21	2.52	3.32	3.77
RAT112	Gross Margin on Total Sales		21	24.2%	28.0%	32.4%
RAT255	Op Cont'n as % of Whse Sales		16	10.7%	13.8%	16.0%
RAT122	Days Sales Outstanding (Avg)		21	47	42	34
RAT123	Inv Turn Stock & Pass Throu (Avg)		16	3.73	4.18	5.23

Ratio ID	Performance Measure	Your Firm	Plates & Shapes			
			Count	Lower Quartile	Median	Upper Quartile
RAT565	Economic Value Added (EVA) (000)		13	(\$4,065)	(\$1,207)	(\$471)
RAT564	Return Spread (Avg)		13	(12.3%)	(7.2%)	(2.2%)
RAT162	Capital Employed (000) (Avg)		18	\$47,988	\$11,481	\$2,706
RAT562	Return on Capital Employed A.T. (Avg)		17	3.0%	5.7%	11.5%
RAT563	Calculated Cost-of-Capital (Avg)		14	13.8%	12.3%	9.7%
RAT560	Net Operating Profit Margin (A.T.)		19	0.6%	2.0%	2.7%
RAT561	Capital Turnover (Avg)		18	2.09	2.49	3.16
RAT112	Gross Margin on Total Sales		19	26.4%	29.8%	38.3%
RAT255	Op Cont'n as % of Whse Sales		16	12.0%	14.4%	16.7%
RAT122	Days Sales Outstanding (Avg)		19	51	45	41
RAT123	Inv Turn Stock & Pass Throu (Avg)		15	3.13	3.84	4.54

Ratio ID	Performance Measure	Your Firm	Flat Rolled			
			Count	Lower Quartile	Median	Upper Quartile
RAT565	Economic Value Added (EVA) (000)		22	(\$3,260)	(\$1,456)	(\$437)
RAT564	Return Spread (Avg)		22	(9.7%)	(6.2%)	(2.8%)
RAT162	Capital Employed (000) (Avg)		28	\$53,166	\$30,169	\$14,716
RAT562	Return on Capital Employed A.T. (Avg)		28	(0.4%)	3.7%	6.0%
RAT563	Calculated Cost-of-Capital (Avg)		22	11.2%	8.3%	7.2%
RAT560	Net Operating Profit Margin (A.T.)		29	(0.2%)	1.6%	2.4%
RAT561	Capital Turnover (Avg)		28	1.82	2.32	2.71
RAT112	Gross Margin on Total Sales		29	18.9%	21.6%	25.0%
RAT255	Op Cont'n as % of Whse Sales		24	8.2%	9.8%	12.6%
RAT122	Days Sales Outstanding (Avg)		28	49	45	43
RAT123	Inv Turn Stock & Pass Throu (Avg)		24	3.22	3.74	3.98

Ratio ID	Performance Measure	Your Firm	Bar			
			Count	Lower Quartile	Median	Upper Quartile
RAT565	Economic Value Added (EVA) (000)		4			
RAT564	Return Spread (Avg)		4			
RAT162	Capital Employed (000) (Avg)		9	\$37,463	\$11,026	\$4,651
RAT562	Return on Capital Employed A.T. (Avg)		9	6.8%	10.4%	12.9%
RAT563	Calculated Cost-of-Capital (Avg)		4			
RAT560	Net Operating Profit Margin (A.T.)		9	1.4%	3.0%	6.7%
RAT561	Capital Turnover (Avg)		9	1.85	2.44	2.69
RAT112	Gross Margin on Total Sales		9	25.9%	28.0%	37.0%
RAT255	Op Cont'n as % of Whse Sales		8	15.1%	19.7%	21.2%
RAT122	Days Sales Outstanding (Avg)		9	49	48	34
RAT123	Inv Turn Stock & Pass Throu (Avg)		8	2.47	2.65	3.64

Ratio ID	Performance Measure	Your Firm	Tubing			
			Count	Lower Quartile	Median	Upper Quartile
RAT565	Economic Value Added (EVA) (000)		2			
RAT564	Return Spread (Avg)		2			
RAT162	Capital Employed (000) (Avg)		4			
RAT562	Return on Capital Employed A.T. (Avg)		4			
RAT563	Calculated Cost-of-Capital (Avg)		2			
RAT560	Net Operating Profit Margin (A.T.)		5	2.0%	2.3%	2.3%
RAT561	Capital Turnover (Avg)		4			
RAT112	Gross Margin on Total Sales		5	26.0%	28.9%	29.3%
RAT255	Op Cont'n as % of Whse Sales		5	19.3%	20.1%	20.8%
RAT122	Days Sales Outstanding (Avg)		5	52	44	42
RAT123	Inv Turn Stock & Pass Throu (Avg)		5	2.21	2.56	2.86

Ratio ID	Performance Measure	Your Firm	Stainless/Non-Ferrous			
			Count	Lower Quartile	Median	Upper Quartile
RAT565	Economic Value Added (EVA) (000)		6	(\$2,200)	(\$1,331)	(\$93)
RAT564	Return Spread (Avg)		6	(9.3%)	(6.4%)	0.5%
RAT162	Capital Employed (000) (Avg)		7	\$126,508	\$16,319	\$8,075
RAT562	Return on Capital Employed A.T. (Avg)		7	(1.7%)	2.4%	8.8%
RAT563	Calculated Cost-of-Capital (Avg)		6	10.9%	9.0%	8.5%
RAT560	Net Operating Profit Margin (A.T.)		7	(0.8%)	1.3%	3.6%
RAT561	Capital Turnover (Avg)		7	1.87	2.05	2.61
RAT112	Gross Margin on Total Sales		7	17.7%	23.9%	30.8%
RAT255	Op Cont'n as % of Whse Sales		7	10.2%	12.4%	20.2%
RAT122	Days Sales Outstanding (Avg)		7	52	51	42
RAT123	Inv Turn Stock & Pass Throu (Avg)		7	2.15	2.46	2.88