



Industry Group Relative Variable Performance - October 31, 1996

The purpose of this study was to identify which of five key valuation and momentum variables exhibit the best ability to predict future performance within each of the fifteen industry groups Ford creates. We also sought to determine whether particular variables have increased usefulness in predicting returns when they are used for specific industry groups.

The study was conducted using two Ford momentum measures, price momentum and earnings momentum, and three value measures, price/earnings ratio, price/book ratio and Ford's price/value model. Each of Ford's fifteen industry groups was divided into quintiles based on the five variables listed above, with the most favorable ranking in quintile one. The quintile rankings were rebalanced quarterly for the period 12/75 to 12/95. Companies with not available codes for any of the five variables tested were excluded.

Variables ranked by effectiveness

The first part of the study ranks each variable for effectiveness within each of the fifteen industry groups. The average annual performance for the top quintile is compared with the industry group average return. Price/earnings ratio was the most effective variable on a relative basis in 6 of the groups. Price momentum and price/book ratio each ranked at the top of 3 groups. Earnings momentum was the most effective variable in two groups and price/value was the most effective variable in one industry group.

AUTOMOTIVE

	<u>Q1 - AVG</u>
Price/Earnings	4.6
Earnings Momentum	4.0
Price Momentum	1.3
Price/Value	1.3
Price/Book Value	1.2

MANUFACTURING

	<u>Q1 - AVG</u>
Earnings Momentum	5.8
Price/Book Value	5.1
Price Momentum	4.5
Price/Earnings	4.3
Price/Value	0.7

CONSTRUCTION

	<u>Q1 - AVG</u>
Price/Earnings	7.0
Price/Book Value	5.7
Price Momentum	5.5
Earnings Momentum	3.2
Price/Value	3.1

CONSUMER GOODS

	<u>Q1 - AVG</u>
Earnings Momentum	7.8
Price/Earnings	5.2
Price Momentum	3.1
Price/Book Value	2.5
Price/Value	1.5

OIL & GAS

	<u>Q1 - AVG</u>
Price/Book Value	3.9
Price/Earnings	3.6
Price/Value	2.9
Earnings Momentum	2.8
Price Momentum	2.6

FINANCIAL

	<u>Q1 - AVG</u>
Price Momentum	8.0
Price/Earnings	5.2
Earnings Momentum	3.2
Price/Book Value	1.6
Price/Value	-0.1

FOOD & BEVERAGE

	<u>Q1 - AVG</u>
Price/Value	6.0
Earnings Momentum	4.9
Price/Earnings	4.2
Price Momentum	3.3
Price/Book Value	1.8

PRIMARY PROCESS

	<u>Q1 - AVG</u>
Price/Earnings	3.6
Earnings Momentum	3.4
Price Momentum	2.4
Price/Value	1.4
Price/Book Value	-0.3

SERVICES

	<u>Q1 - AVG</u>
Price/Earnings	7.7
Price Momentum	5.6
Earnings Momentum	4.9
Price/Book Value	4.1
Price/Value	-2.0

RETAIL STORES

	<u>Q1 - AVG</u>
Price/Earnings	6.4
Price Momentum	4.6
Earnings Momentum	4.1
Price/Book Value	2.6
Price/Value	0.8

MACHINERY

	<u>Q1 - AVG</u>
Price Momentum	6.4
Price/Earnings	5.5
Earnings Momentum	4.0
Price/Book Value	2.3
Price/Value	1.4

TRANSPORTATION

	<u>Q1 - AVG</u>
Price/Earnings	9.5
Earnings Momentum	6.2
Price/Book Value	5.3
Price Momentum	5.1
Price/Value	-0.2

METALS & MINING

	<u>Q1 - AVG</u>
Price Momentum	6.3
Price/Book Value	5.8
Price/Earnings	4.8
Price/Value	4.5
Earnings Momentum	2.1

TECHNOLOGY

	<u>Q1 - AVG</u>
Price/Book Value	5.6
Price/Earnings	5.1
Earnings Momentum	5.0
Price Momentum	3.1
Price/Value	1.3

UTILITIES

	<u>Q1 - AVG</u>
Price/Book Value	3.2
Earnings Momentum	3.1
Price/Earnings	2.4
Price/Value	2.3
Price Momentum	2.1

Industry group performance versus universe of stocks

The second part of the study examines the effectiveness of the variable relative to an industry group versus the variable for the Ford universe. The price momentum model showed the best results for financial, machinery and metals & mining groups; earnings momentum model for consumer goods, transportation and manufacturing; price/earnings for transportation, services and construction groups; price/book ratio for metals & mining, construction, and technology; and price/value for food & beverage, metals & mining, and construction. Note that the top quintile outperformed the group average in all 15 industry groups for price momentum, earnings momentum, and price/earnings ratio. The top quintile outperformed the group average in 14 of 15 groups for price/book ratio and in 12 of the 15 groups for price/value ratio.

ANNUALIZED QUARTERLY RETURNS 12/75-12/95

PRICE MOMENTUM	Q1-AVG VS.		QUINTILES					AVG
	Q1-AVG	Universe	1	2	3	4	5	
Financial	8.0	4.0	27.2	22.5	18.8	17.3	9.8	19.2
Machinery	6.4	2.4	21.1	19.0	14.1	11.4	6.5	14.7
Metals & Mining	6.3	2.3	18.8	11.4	11.3	11.6	5.7	12.5
Services	5.6	1.6	26.8	21.7	21.8	19.0	15.3	21.2
Construction	5.5	1.5	22.3	21.1	19.2	13.1	7.4	16.8
Transportation	5.1	1.1	21.9	18.2	17.4	14.0	9.7	16.8
Retail Stores	4.6	0.6	21.6	19.0	19.0	14.2	10.0	17.0
Manufacturing	4.5	0.5	23.0	22.1	19.7	17.0	9.6	18.5
Food & Beverage	3.3	-0.7	22.0	21.8	18.8	15.5	14.0	18.7
Consumer Goods	3.1	-0.9	21.8	20.3	22.2	16.3	12.0	18.7
Technology	3.1	-0.9	21.3	22.3	19.4	14.3	12.9	18.2
Oil & Gas	2.6	-1.4	15.4	13.9	15.1	13.1	4.5	12.8
Primary Process	2.4	-1.6	17.4	19.0	16.2	15.0	6.8	15.0
Utilities	2.1	-1.9	18.3	18.1	16.7	13.9	13.6	16.2
Automotive	1.3	-2.7	18.8	19.5	17.2	14.5	15.1	17.5
Universe	4.0		21.7	20.1	19.1	15.3	12.3	17.7

EARNINGS MOMENTUM	Q1-AVG VS.		QUINTILES					AVG
	Q1-AVG	Universe	1	2	3	4	5	
Consumer Goods	7.8	2.6	26.5	19.1	16.0	17.0	13.9	18.7
Transportation	6.2	1.0	23.0	17.0	15.0	13.8	12.6	16.8
Manufacturing	5.8	0.6	24.3	22.4	17.3	15.4	12.3	18.5
Technology	5.0	-0.2	23.2	18.8	17.1	17.7	13.6	18.2
Food & Beverage	4.9	-0.3	23.6	18.8	18.3	16.5	14.8	18.7
Services	4.9	-0.3	26.1	21.9	20.7	16.6	19.6	21.2
Retail Stores	4.1	-1.1	21.1	19.0	17.6	12.8	13.3	17.0
Automotive	4.0	-1.2	21.5	18.9	16.4	16.4	10.9	17.5
Machinery	4.0	-1.2	18.7	11.9	17.3	12.5	11.6	14.7
Primary Process	3.4	-1.8	18.4	18.3	14.4	11.1	12.1	15.0
Construction	3.2	-2.0	20.0	17.6	15.8	16.7	12.8	16.8
Financial	3.2	-2.0	22.4	19.9	17.7	19.0	16.1	19.2
Utilities	3.1	-2.1	19.3	17.6	16.4	13.6	13.9	16.2
Oil & Gas	2.8	-2.4	15.6	12.6	13.8	12.2	7.8	12.8
Metals & Mining	2.1	-3.1	14.6	18.6	10.7	7.6	6.6	12.5
Universe	5.2		22.9	19.3	17.1	16.0	13.4	17.7

PRICE/EARNINGS RATIO	Q1-AVG VS.		QUINTILES					AVG
	Q1-AVG	Universe	1	2	3	4	5	
Transportation	9.5	4.0	26.3	20.5	15.4	9.3	10.0	16.8
Services	7.7	2.2	28.9	21.7	19.9	18.6	15.5	21.2
Construction	7.0	1.5	23.8	21.3	15.9	13.0	8.7	16.8
Retail Stores	6.4	0.9	23.4	20.6	14.1	13.5	12.0	17.0
Machinery	5.5	0.0	20.2	16.3	16.3	12.1	6.8	14.7
Consumer Goods	5.2	-0.3	23.9	18.3	18.0	16.8	15.1	18.7
Financial	5.2	-0.3	24.4	23.4	18.1	15.7	13.4	19.2
Technology	5.1	-0.4	23.3	21.6	16.4	15.1	13.7	18.2
Metals & Mining	4.8	-0.7	17.3	12.6	8.2	8.3	10.0	12.5
Automotive	4.6	-0.9	22.1	21.1	14.3	14.5	12.3	17.5
Manufacturing	4.3	-1.2	22.8	19.9	18.2	14.9	15.5	18.5
Food & Beverage	4.2	-1.3	22.9	23.8	18.5	15.8	10.9	18.7
Oil & Gas	3.6	-1.9	16.4	18.0	11.7	10.6	5.0	12.8
Primary Process	3.6	-1.9	18.6	14.8	16.4	12.8	11.4	15.0
Utilities	2.4	-3.1	18.6	19.2	15.9	14.4	12.2	16.2
Universe	5.5		23.2	20.5	17.0	14.3	13.4	17.7

PRICE/BOOK RATIO	Q1-AVG VS.		QUINTILES					AVG
	Q1-AVG	Universe	1	2	3	4	5	
Metals & Mining	5.8	1.6	18.3	13.0	11.7	5.8	8.8	12.5
Construction	5.7	1.5	22.5	15.0	15.5	16.5	12.9	16.8
Technology	5.6	1.4	23.8	18.8	17.8	16.6	13.1	18.2
Transportation	5.3	1.1	22.1	16.4	17.7	17.3	7.8	16.8
Manufacturing	5.1	0.9	23.6	20.8	16.0	15.1	15.8	18.5
Services	4.1	-0.1	25.3	22.5	18.9	18.5	19.3	21.2
Oil & Gas	3.9	-0.3	16.7	14.9	12.5	12.2	5.6	12.8
Utilities	3.2	-1.0	19.4	17.3	16.2	14.0	13.3	16.2
Retail Stores	2.6	-1.6	19.6	19.9	14.3	15.2	14.2	17.0
Consumer Goods	2.5	-1.7	21.2	21.8	18.1	15.4	15.3	18.7
Machinery	2.3	-1.9	17.0	14.5	16.7	10.0	13.3	14.7
Food & Beverage	1.8	-2.4	20.5	20.7	18.7	17.1	14.8	18.7
Financial	1.6	-2.6	20.8	21.9	20.3	15.6	16.2	19.2
Automotive	1.2	-3.0	18.7	17.7	17.9	14.3	15.7	17.5
Primary Process	-0.3	-4.5	14.7	16.8	17.3	13.8	11.4	15.0
Universe	4.2		21.9	19.8	16.0	15.9	14.6	17.7

PRICE/VALUE	Q1-AVG VS.		QUINTILES					AVG
	Q1-AVG	Universe	1	2	3	4	5	
Food & Beverage	6.0	4.7	24.7	17.7	18.7	20.1	10.6	18.7
Metals & Mining	4.5	3.2	17.0	14.0	6.5	9.7	10.7	12.5
Construction	3.1	1.8	19.9	18.0	15.7	14.4	14.5	16.8
Oil & Gas	2.9	1.6	15.7	14.7	13.7	12.3	5.6	12.8
Utilities	2.3	1.0	18.5	18.2	17.1	13.9	12.7	16.2
Consumer Goods	1.5	0.2	20.2	21.1	18.4	16.8	16.1	18.7
Primary Process	1.4	0.1	16.4	16.4	14.8	14.0	12.8	15.0
Machinery	1.4	0.1	16.1	13.6	14.8	13.8	13.3	14.7
Automotive	1.3	0.0	18.8	20.7	16.0	14.2	14.5	17.5
Technology	1.3	0.0	19.5	17.9	19.1	17.1	16.6	18.2
Retail Stores	0.8	-0.5	17.8	18.7	16.3	14.7	16.1	17.0
Manufacturing	0.7	-0.6	19.2	21.0	17.2	18.2	15.9	18.5
Financial	-0.1	-1.4	19.1	19.0	19.9	19.4	17.7	19.2
Transportation	-0.2	-1.5	16.6	21.0	18.4	15.2	11.3	16.8
Services	-2.0	-3.3	19.2	22.5	20.4	21.3	21.2	21.2
Universe	1.3		19.0	19.8	17.4	16.0	16.0	17.7