

Historic Performance for Twelve Indicators of Investment Attractiveness

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Overview

There are dozens (if not hundreds) of backtests of systematic decision rules (such as low P/E, Low Price/Book, low Price/Sales, etc.) that have worked for long periods in the past and may continue to work in the future. We have put forth a number of reasons we think these strategies succeeded in a separate paper, *High Growth vs. Cyclical Stocks – Some Important Differences in the Factors Affecting Price Performance*.

This section summarizes a couple of backtests conducted in the late 1980's for clients of Investment Analytics. The results speak for themselves although the text may be difficult to read given the condition of the originals that were scanned.

In any event, performance of the models was excellent and would have produced solid results for any fund manager with the courage to use them. Meanwhile, we have enumerated the reasons most investors avoiding these strategies in a separate paper, *The Problem with Models*. For a different take on the subject, however, see *Illustration of the importance of Value-weighted Stock Selection Criteria to Performance* and *Investment Characteristics of Stocks Ranked #1 (Best) and #5 (Worst) on the Value Line Timeliness Rating*.

INTRODUCTION

This study examines performance of twelve criteria for stock selection over a six year period using thje Zuck's Equity Analysis System and historic database. The selection universe consisted of 367 large-cap stocks with a total market value on 12-31-86 was \$1.5 trillion.

Equally weighted portfolios comprised of 15, 30 and 60 stocks were selected at quarterly intervals and held for 3 months. The first portfolio was selected on 3-31-81 and the last on 9-30-86. Selection criteria whose availability depended upon corporate quarterly reports were only used three months beyond the related fiscal period end-date.

Average quarterly, as well as cumulative-linked holding period, returns are compared to the equally weighted selection universe and to the cap-weighted S&P 500 composite.

The standard deviation of quarterly returns for each test portfolio is shown along with the Sharpe Ratio (average quarterly return/standard deviation of return). Average portfolio betas on the date of purchase are also provided.

A short description of each of the models tested is given below:

Value Related

- (1) P/E FY1 EST: P/E Ratio on consensus EST EPS for the current fiscal year.
- (2) PRICE/BOOK: Price/Book Value Ratio on latest 12M BV advanced 1 qtr.
- (3) PRICE/SALES: Price/Sales Ratio on latest 12M sales advanced 1 qtr.
- (4) VALUE INDEX: Est Long-Term EPS Growth Rate + Yield / PE Ratio on FY1 Est.

Earnings-Momentum Related

- (5) 1M EST CHG: 1 month change in the consensus FY1 earnings estimate.
- (6) 3M EST CHG: 3 month change in the consensus FY1 earnings estimate.
- (7) 1M+3M EST CHG: Combined rank on 1 month EST change + 3 month EST change.

Composites: Value & Earnings Momentum

- (8) P/E+1M3M: Combined rank on P/E FY1 EST and 1M+3M EST CHG.
- (9) P/S+1M3M: Combined ranks on PRICE/SALES and 1M+3M EST CHG.
- (10) VI+1M3M: Combined ranks on VALUE INDEX and 1M+3M EST CHG.
- (11) MULTIPLE RANK #1: Includes the 10 top-ranked stocks on models (8), (9) & (10).
- (12) DUAL SCREEN #1: The 60 top-ranked stocks on 1M+3M EST CHG sorted best to worst on VALUE INDEX.

RESEARCH FINDINGS

Results are summarized on the next two pages. Returns are first shown by type of model and by size of the test portfolio. Next, they are ranked best to worst regardless of model or portfolio size. In all, 36 methods of selecting portfolios were examined that produced an average return over the full six year period of 267%. This compares to a return of 132% for the S&P 500 and 165% for the selection universe. Just as quarterly re-balancing tends to produce better results than annual rebalancing, the smaller portfolios in this study tended to outperform the larger ones.

HISTORIC PERFORMANCE FOR 12 STOCK SELECTION MODELS

- 23 Quarters: March 1981 to December 1986 -

MODEL & NUMBER OF STOCKS	23 QTR LINKED RETURN	EXCESS RETURNS		BETA	AVG Q'TRLY RETURN	STD DEV RTN	AVG RTN /SD RTN	
		MODEL vs S&P 500	MODEL vs UNIVERSE					
SELECTION UNIVERSE	367	165.3			4.7	8.8		
S&P COMPOSITE	500	132.0		1.00	4.0	7.8		
<u>VALUE</u>								
P/E FY1 EST	15	291.3	159.3	126.0	0.84	6.8	12.1	0.56
	30	292.9	160.9	127.6	0.80	6.6	10.3	0.64
	60	259.3	127.3	94.0	0.79	6.1	8.6	0.71
PRICE/BOOK	15	124.5	-7.5	-40.8	0.95	4.1	10.3	0.40
	30	180.3	48.3	15.0	0.95	5.0	9.7	0.52
	60	214.7	82.7	49.4	0.94	5.5	8.9	0.62
PRICE/SALES	15	335.0	203.0	169.7	0.95	7.2	11.5	0.63
	30	226.3	94.3	61.0	0.91	5.7	9.9	0.58
	60	231.3	99.3	66.0	0.92	5.7	9.2	0.62
VALUE INDEX	15	254.6	122.6	89.2	0.86	6.3	12.2	0.52
	30	208.3	76.3	42.9	0.84	5.6	10.7	0.52
	60	210.4	78.4	45.1	0.84	5.4	8.8	0.61
<u>EARNINGS MOMENTUM</u>								
1M EST CHG	15	259.7	127.7	94.4	1.02	6.3	11.0	0.57
	30	221.7	89.7	56.4	0.98	5.7	10.2	0.56
	60	225.3	93.3	60.0	0.93	5.7	9.7	0.59
3M EST CHG	15	265.1	133.1	99.8	1.04	6.4	11.4	0.56
	30	224.5	92.5	59.2	0.98	5.7	10.2	0.56
	60	216.1	84.1	50.8	0.92	5.6	9.4	0.60
1M+3M EST CHG	15	286.1	154.1	120.8	1.02	6.6	11.2	
	30	254.9	122.9	89.6	0.95	6.2	10.3	
	60	251.9	119.9	86.6	0.90	6.1	9.8	
<u>VALUE + EARNINGS MOMENTUM</u>								
P/E+1M3M	15	320.7	188.7	155.4	0.82	6.9	10.1	0.68
	30	319.2	187.2	153.9	0.81	6.8	9.3	0.73
	60	270.1	138.1	104.8	0.81	6.2	8.9	0.70
P/B+1M3M	15	294.4	162.4	129.1	0.81	6.6	9.5	0.69
	30	286.7	154.7	121.4	0.78	6.4	8.8	0.73
	60	285.4	153.4	120.1	0.78	6.4	8.9	0.72
P/S+1M3M	15	277.4	145.4	112.1	0.97	6.5	10.8	0.60
	30	272.2	140.2	106.9	0.93	6.4	10.2	0.63
	60	280.4	148.4	115.1	0.89	6.4	9.8	0.65
VI+1M3M	15	330.1	198.1	164.8	0.85	7.0	10.3	0.68
	30	321.3	189.3	156.0	0.82	6.9	9.4	0.73
	60	289.3	157.3	123.9	0.82	6.5	9.0	0.72
MULTIPLE RANK #1	18	322.5	190.5	157.1	0.89	6.9	9.8	0.70
DUAL SCREEN #1	15	389.7	257.7	224.4	0.86	7.6	10.1	0.75
	30	310.7	178.7	145.4	0.85	6.8	9.6	0.70

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SORTED ON 23 QTR LINKED RETURN

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