

Interaction Between Value Line's Timeliness and Safety Ranks

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The Value Line Investment Survey is one of the most well-known and most widely used sources of financial information and investment advice for individual investors. Value Line has managed to generate an impressive sustained investment track record that remains an unexplained market inefficiency, earning it the title *the Value Line enigma*. Value Line's performance has intrigued many in the field of finance ever since Black [1973] concluded that the rating system generated abnormal returns.¹

The two main investment criteria that Value Line provides for the stocks it tracks are its well-known *timeliness* and *safety* ranks. The timeliness rank is Value Line's prediction of security price appreciation for the coming 6 to 12 months. The safety rank is a measure of the level of risk associated with the stock. Investors are told to use the safety ranks to eliminate security choices that exceed their individual risk tolerance levels.

We examine the interaction of the timeliness and safety ranks to see how investors with different risk tolerance levels would fare if they follow Value Line's advice. We also identify the distinguishing characteristics of portfolios formed on the basis of Value Line's guidelines to determine what types of securities investors are directed toward. Portfolio riskiness is examined from three different perspectives. Finally, we check to see whether the timeliness and safety measures really provide

investors with meaningful information that is not readily available elsewhere.

BACKGROUND INFORMATION

The Value Line Investment Survey reports on approximately 1,700 stocks in over 95 industries and purports to represent 94% of the trading volume on all U.S. exchanges. Each stock in the Value Line universe is assigned a timeliness rank based on its predicted price performance in the following 6 to 12 months. While the exact formula is a proprietary algorithm, timeliness ranks are based on mechanical calculations using the "long-term trend of earnings, prices, recent earnings and price momentum, and finally earnings surprises" (*How to use the Value Line Investment Survey* [1995, p. 8]).

Timeliness ranks range from 1 to 5 and are updated weekly. Stocks that are assigned a timeliness rank of 1 (T1) are expected to have the best subsequent performance, while stocks with a ranking of 5 (T5) are expected to have the worst performance. Value Line recommends that investors choose stocks that are ranked T1 or T2.

Value Line assigns safety ranks designed to measure the level of total risk of a security. The five safety ranks are based on financial strength and price stability. A rank of 1 (S1) is given to the safest securities and a rank of 5 (S5) to the riskiest securities.

EXHIBIT 1

Average Annual Returns (%) for Portfolios Formed on Value Line Rankings for Timeliness (T) and Safety (S)

	All	S1	S2	S3	S4	S5
All	16.05 (0.45)	13.10 (0.81)	13.87 (0.70)	15.80 (0.52)	19.39 (1.79)	(3.93)
T1	21.02 (1.93)	23.83 (6.32)	23.93 (4.36)	21.72 (2.27)	16.38 (5.89)	
T2	16.69 (0.98)	10.00 (2.44)	15.63 (1.74)	15.63 (1.13)	24.34 (3.88)	18.39 (5.80)
T3	15.66 (0.61)	13.87 (1.08)	12.53 (0.98)	15.83 (0.74)	18.41 (2.56)	19.48 (4.56)
T4	15.40 (0.95)	12.70 (1.38)	13.80 (1.38)	15.32 (1.16)	17.44 (4.23)	24.12 (9.61)
T5	13.70 (2.51)	2.84 (3.56)	12.79 (2.52)	10.07 (2.16)	19.47 (7.70)	34.61 (22.50)

Standard errors in parentheses. Statistics for T1S5 group are excluded because of an insufficient number of observations.

Value Line recommends that conservative investors stick with securities ranked S1 or S2. Investors willing to take on an average level of risk could purchase securities ranked S3, while more aggressive investors could venture into the higher S4 and S5 rankings.

DATA

We examine stocks from the Value Line Investment Survey's Value/Screen II computer disks for the seven years from 1990 through 1996. We use Value Line's timeliness and safety ranks, as well as its financial and market information, all as of January 1 of each year. Returns are calculated from price and dividend data, which are obtained from the proprietary databases of Vestek Systems (an industry provider of financial data and analytics that is based in San Francisco; for some data Vestek Systems may use some other external vendors).

All our observations are made assuming investors buy and hold for calendar years. A buy-and-hold strategy is consistent with common practitioner advice to individual investors and with minimizing transaction costs. Picking stocks once per year handicaps Value Line's performance measures, which are updated weekly. An investor following Value Line's advice strictly would consider selling securities that are downgraded during the year rather than holding them until December 31.

An additional limiting factor relates to the likelihood that some of the T1 or T2 stocks would have received these rankings at an earlier time. Stickel [1985] and Peterson [1987]

show that significant changes in the prices of stocks occur with the announcements of changes in timeliness ranks. Chandy, Peavy, and Reichenstein [1993] and Peterson [1995] likewise show that securities react to recommendation in Value Line's "Stock Highlights."

VALUE LINE PERFORMANCE

The timeliness and safety ranks generally performed in a manner consistent with Value Line's predictions. Exhibit 1 shows the arithmetic average annual returns of securities, based on 9,062 observations for the calendar years 1990–1996 for timeliness and safety ranks.

As a group, the timeliest stocks significantly outperformed stocks receiving lower rankings. The mean return for T1 stocks over the period is 21.02% compared to 13.70% for T5 stocks. For the sample as a whole, T1 stocks performed significantly better than T2 through T5 stocks according to ANOVA and Fisher's LSD at the 5% significance level.² Holders of T2 stocks, however, missed out on this strong performance, as the returns on T2 through T5 stocks are not significantly different from each other.

The first row of Exhibit 1 shows performance based on safety ranks. Average annual returns increase across the safety rankings. They range from 13.10% for S1 stocks to 21.67% for S5 stocks, which is consistent with the reward of riskier securities with higher returns. The returns of stocks ranked S1, S2, and S3 are significantly lower than those ranked S4 and S5.

For the overall Value Line population, T1 stocks

EXHIBIT 2

Average Book-to-Market Ratios for Portfolios Formed on Value Line Rankings for Timeliness (T) and Safety (S)

	All	S1	S2	S3	S4	S5
All	0.66 (0.01)	0.45 (0.01)	0.53 (0.01)	0.61 (0.01)	0.83 (0.02)	1.84 (0.30)
T1	0.26 (0.01)	0.18 (0.02)	0.23 (0.02)	0.26 (0.01)	0.27 (0.02)	
T2	0.42 (0.01)	0.28 (0.02)	0.35 (0.01)	0.42 (0.01)	0.49 (0.02)	0.59 (0.05)
T3	0.65 (0.01)	0.46 (0.01)	0.55 (0.01)	0.64 (0.01)	0.80 (0.03)	1.21 (0.11)
T4	0.85 (0.02)	0.56 (0.02)	0.62 (0.01)	0.79 (0.02)	1.19 (0.08)	2.59 (0.43)
T5	1.31 (0.18)	0.61 (0.05)	0.69 (0.05)	0.88 (0.03)	1.62 (0.15)	5.70 (2.47)

□ Standard errors in parentheses.

were big winners, but we also test to determine whether both conservative and aggressive investors fared equally well by following the timeliness rankings. For investors willing to accept only average to below-average risk (choosing stocks ranked S1 to S3), the performance of stocks with above-average risk (S4 and S5 ranks) is not relevant. Aggressive investors may likewise select only stocks with above-average S4 and S5 risk levels, hoping to capitalize on their expected higher returns.

For S1 to S3 stocks, the timeliness ranks were even better performance predictors than for the overall population. We form five timeliness portfolios (T1 to T5) of just the S1 through S3 securities. For this combination of securities, T1 stocks were again significantly better performers, followed by the group of T2 through T4 stocks (with no significant differences among the three), and finally T5 stocks.

Value Line's timeliness ranks, however, did not perform well for aggressive investors who chose only securities ranked S4 and S5. Stocks ranked as timeliness 1, safety 4 (T1S4) were actually the worst performers in the high-risk categories, earning an average return of 16.38% compared to 34.61% for T5S5 stocks. There are, however, no statistically significant differences in the returns across the timeliness ranks. Higher-risk S4 and S5 stocks as a group earn more than their lower-risk S1 to S3 counterparts, but the timeliness ranks provide no useful information to aggressive investors.

VALUE LINE RANKS AND VALUE VERSUS MOMENTUM

While an unsuspecting individual investor might not know better, it is obvious that the Value Line system does not favor value stocks. Exhibit 2 shows the value measure of average book-to-market ratios across timeliness and safety ranks. T1 stocks had an average book-to-market ratio of 0.26 compared to 1.31 for T5 stocks. Higher book-to-market ratios are also apparent with riskier securities, as investors demand more value to compensate for the higher risk levels.

Note the large differences between the T1S1 and T5S5 categories with book-to-market ratios of 0.18 and 5.70, respectively. Although it is not shown, similar relationships are evident in the sales-to-price ratios.

The Value Line system places a considerable amount of emphasis on momentum. Exhibit 3 shows the average price percentage change of portfolios over the previous 26 weeks by timeliness and safety ranks. The timeliest stocks ranked T1 and T2 had 34.72% and 15.84% average price increases, respectively. These contrast with 8.52% and 21.70% average drops in value for T4 and T5 stocks. All 9 of the individual categories of T1 and T2 stocks across the different safety levels are significantly different from all 15 of the T3 through T5 categories. (That is, T1S1 is different from T3S2 or T5S4.)

Although it is not shown, we observe a similar pattern in the average percentage change in earnings per share over

EXHIBIT 3

Average Price Percentage Change Over Previous 26 Weeks for Portfolios Formed on Value Line Rankings for Timeliness (T) and Safety (S)

	All	S1	S2	S3	S4	S5
All	3.51 (0.26)	6.79 (0.47)	5.08 (0.40)	3.59 (0.31)	2.44 (1.01)	-5.02 (2.15)
T1	34.72 (1.14)	18.74 (2.93)	22.35 (2.16)	34.56 (1.30)	46.27 (3.51)	
T2	15.84 (0.59)	12.78 (1.38)	13.10 (1.03)	14.20 (0.61)	20.34 (2.03)	35.04 (6.11)
T3	2.42 (0.29)	7.12 (0.60)	4.64 (0.50)	1.93 (0.35)	1.49 (1.17)	-4.52 (1.89)
T4	-8.52 (0.43)	3.22 (0.74)	0.62 (0.68)	-9.95 (0.54)	-20.09 (1.60)	-26.17 (2.55)
T5	-21.70 (0.90)	-7.15 (2.02)	-8.29 (1.54)	-17.98 (0.99)	-34.13 (2.17)	-51.87 (3.35)

Standard errors in parentheses.

the previous 12 months. We consider this an interesting documentation of the importance of momentum factors in determining the timeliness ratings.

VALUE LINE RANKS AND COMPANY SIZE

While it makes sense that there would be a relationship between safety and firm size, there is also a relationship between firm size and timeliness rank. Exhibit 4 shows that larger companies are in the safer categories *and* the more

timely categories. S1 stocks have average market equities of \$14.1 billion; S5 stocks weigh in at only \$357 million. The average market equity of T1 stocks is about \$4.2 billion compared to \$1.5 billion for T5 stocks. This relationship holds within each individual safety category, as well.

Companies with higher market equities and the resultant higher liquidity levels show higher levels of momentum and come through with higher timeliness ranks, even when controlling for the safety level.

EXHIBIT 4

Average Market Equity (\$ Millions) for Portfolios Formed on Value Line Rankings for Timeliness (T) and Safety (S)

	All	S1	S2	S3	S4	S5
All	3,134 (78)	14,106 (690)	5,016 (232)	2,069 (52)	649 (33)	357 (38)
T1	4,220 (337)	25,317 (3339)	9,804 (1587)	2,821 (226)	1,114 (140)	
T2	3,555 (193)	18,670 (2066)	7,813 (828)	2,398 (128)	638 (48)	445 (64)
T3	3,156 (113)	14,156 (985)	4,530 (274)	2,052 (74)	679 (49)	422 (71)
T4	2,846 (169)	11,307 (1169)	3,477 (371)	1,702 (102)	521 (105)	223 (46)
T5	1,453 (130)	4,520 (1320)	3,726 (630)	1,239 (120)	312 (52)	148 (35)

Standard errors in parentheses.

EXHIBIT 5

Average Debt-to-Equity Ratios for Portfolios Formed on Value Line Rankings for Timeliness (T) and Safety (S)

	All	S1	S2	S3	S4	S5
All	283.91 (25.04)	100.18 (6.47)	176.99 (8.02)	199.20 (6.63)	338.56 (32.08)	1,950.43 (547.50)
T1	64.38 (6.91)	25.32 (3.66)	39.13 (7.81)	65.74 (9.08)	79.54 (16.81)	
T2	157.42 (7.46)	80.01 (18.82)	147.12 (17.01)	147.10 (9.03)	212.42 (27.36)	242.51 (30.14)
T3	243.90 (10.51)	106.14 (9.64)	199.46 (12.38)	216.99 (9.38)	321.02 (38.90)	800.88 (157.71)
T4	350.99 (42.27)	111.70 (11.70)	170.51 (13.76)	252.34 (21.19)	528.67 (101.30)	2,435.25 (841.32)
T5	980.61 (351.79)	86.44 (10.22)	205.69 (46.31)	247.44 (36.23)	611.43 (214.70)	9,767.99 (4754.41)

Standard errors in parentheses.

VALUE LINE RANKS AND RISK

We examine the makeup of the safety ranks from three different perspectives. Value Line's safety ranks are based on financial strength and price stability. In Exhibit 5 we look at the average debt-to-equity ratios across timeliness and safety ranks as a measure of company financial strength. As expected, the debt-to-equity ratios rise from S1 to S5. S1 stocks average 100.18%, and S5 stocks average 1950.43%. All are significantly different except S1 and S2.

We would expect that when controlling for safety lev-

els there should be no significant differences in the risk levels of the timeliness groups, but the debt-to-equity ratios actually increase across timeliness ranks. T1 stocks average 64.38% compared to 980.61% for T5 stocks. The debt-to-equity ratios are significantly different across all timeliness ranks except T4 and T5. So, for this measure of risk, less timely securities are significantly riskier than their more timely counterparts, even when the safety level is the same.

We feel that systematic or market risk, as measured by a security's beta, is a more appropriate risk measure, especially at the portfolio level where idiosyncratic risk is

EXHIBIT 6

Average Betas for Portfolios Formed on Value Line Rankings for Timeliness (T) and Safety (S)

	All	S1	S2	S3	S4	S5
All	1.06 (0.00)	0.86 (0.01)	0.88 (0.01)	1.07 (0.00)	1.25 (0.01)	1.21 (0.02)
T1	1.24 (0.01)	1.01 (0.02)	1.03 (0.02)	1.23 (0.01)	1.42 (0.03)	
T2	1.13 (0.01)	0.98 (0.02)	1.01 (0.01)	1.12 (0.01)	1.29 (0.02)	1.21 (0.03)
T3	1.03 (0.00)	0.86 (0.01)	0.88 (0.01)	1.04 (0.01)	1.22 (0.01)	1.19 (0.03)
T4	0.99 (0.01)	0.78 (0.01)	0.80 (0.01)	1.03 (0.01)	1.23 (0.02)	1.21 (0.03)
T5	1.06 (0.01)	0.76 (0.04)	0.82 (0.02)	1.05 (0.01)	1.24 (0.02)	1.31 (0.05)

Standard errors in parentheses.

EXHIBIT 7

Average Returns (%) for Months with 10 Largest Declines for Portfolios Formed on Value Line Rankings for Timeliness (T) and Safety (S)

	All	S1	S2	S3	S4	S5
All	-4.62 (0.08)	-2.97 (0.18)	-3.55 (0.14)	-4.75 (0.10)	-5.71 (0.31)	-6.17 (0.66)
T1	-5.30 (0.33)	-3.38 (1.03)	-4.89 (0.68)	-5.36 (0.39)	-5.90 (1.08)	
T2	-5.03 (0.19)	-3.78 (0.54)	-3.88 (0.37)	-5.25 (0.22)	-5.21 (0.69)	-5.78 (1.13)
T3	-4.22 (0.12)	-2.54 (0.25)	-3.52 (0.21)	-4.30 (0.15)	-5.68 (0.43)	-4.63 (0.91)
T4	-4.31 (0.19)	-3.18 (0.32)	-3.16 (0.27)	-4.48 (0.26)	-4.96 (0.84)	-8.11 (1.58)
T5	-6.47 (0.44)	-4.16 (0.90)	-3.49 (0.63)	-6.37 (0.52)	-7.60 (1.10)	-9.43 (2.76)

Standard errors in parentheses.

diminished. Exhibit 6 shows the average betas of securities across timeliness and safety ranks. For the sample as a whole, securities ranked as having higher levels of total risk are also those with higher betas. The average betas of the timeliness groups are all significantly different except T3 and T5.

We find that investors choosing the timeliest securities tended to take on relatively high levels of systematic risk, even when controlling for safety level. For example, the T1 and T2 stocks in the safest risk category (S1) have an average level of market risk, with mean betas of 1.01 and 0.98, respectively. In the event of an overall market decline, these S1 securities would actually be expected to decline as much as the market and 15%–30% more than their less timely counterparts. Likewise, for aggressive investors, T1S4 securities have an average beta of 1.42, which is significantly higher than all of the other S4 timeliness ranks. While S4 indicates above-average risk, the mean beta of the T1 securities in this group is more than 17% higher than the overall mean beta for the “riskiest” category, S5. Value Line’s timeliest security selections appear to be biased toward higher levels of systematic risk.

Yet another risk measure is how the securities with the various timeliness and safety ranks performed during market downturns in our seven-year sample period. We reviewed performance during the ten months with the greatest declines in the S&P 500 index from January 1, 1990, through December 31, 1996. Exhibit 7 shows that the negative returns are more pronounced at higher risk

levels. S1 stocks dropped an average of only 2.97% compared to a 6.17% average decline for S5 stocks. S1 and S2 returns are not significantly different from each other, and neither are S4 and S5 returns.

In these market downturns, T1 and T2 stocks as a group dropped more than average and more than all of the timeliness groups except T5. For the full sample, T1 and T2 security returns are not significantly different, and neither are T4 and T5 security returns.

For conservative to average-risk investors choosing S1 through S3 stocks, the declines in the timely T1 and T2 stocks are not significantly different from those of T5 stocks, but they are significantly worse than the performance of T3 and T4 stocks. These findings are generally consistent with the betas observed in Exhibit 6.

DO VALUE LINE RANKS REALLY WORK?

We have seen various characteristics of the securities in the timeliness and safety categories, and we know that T1 stocks generated superior returns. But do the Value Line ranks provide any additional information that is not readily available elsewhere? We examine whether the information embodied in selected factors (26-week price change, 12-month earnings per share growth, market equity, book-to-market ratio, sales-to-price ratio, debt-to-equity ratio, and beta) supercedes the usefulness of timeliness and safety ranks in predicting security returns.

EXHIBIT 8

Regression of Timeliness and Safety Ranks and Other Factors on Annual Security Returns

	Full Sample			S = 1 to 3 Only			S = 4 and 5 Only		
	Coefficient	t-Statistic	p-Level	Coefficient	t-Statistic	p-Level	Coefficient	t-Statistic	p-Level
Intercept	2.896	0.809	0.419	6.073	1.746	0.081	-11.592	-0.691	0.49
BETA	8.351**	4.324	0.001	5.479**	2.808	0.005	21.109**	3.084	0.002
Ln(ME)	-0.905*	-2.345	0.019	□-0.36	-0.97	0.332	-5.430**	-2.686	0.007
Ln(BE-ME)	0.118	0.108	0.914	0.684	0.622	0.534	-2.118	-0.532	0.595
Ln(S-P)	0.706	0.900	0.368	1.613*	2.099	0.036	-6.936*	-2.068	0.039
Ln(D-E)	2.161**	3.464	0.001	1.202	1.955	0.051	8.668**	3.436	0.001
Ln(Price)	-6.249*	-2.484	0.013	-8.807**	-3.298	0.001	0.193	0.025	0.980
Ln(EPS)	-0.395	-0.413	0.679	-0.052	-0.05	0.960	-1.167	-0.414	0.679
T1	10.300**	5.195	0.001	13.227**	6.775	0.001	-5.811	-0.723	0.470
T2	2.788*	2.16	0.031	3.057*	2.415	0.016	0.342	0.064	0.949
T4	-2.779*	-2.228	0.026	-2.314	-1.936	0.053	-7.409	-1.179	0.239
T5	-7.995**	-3.948	0.001	-7.321**	-3.717	0.001	-12.391	-1.401	0.162
S1	3.623*	1.990	0.047	2.529	1.493	0.135	-----	-----	-----
S2	1.726	1.262	0.207	1.11	0.876	0.381	-----	-----	-----
S4	-0.684	-0.422	0.673	-----	-----	-----	-----	-----	-----
S5	-3.215	-0.853	0.394	-----	-----	-----	-5.749	-0.945	0.345
F statistic	6.617			7.614			1.973		
Adjusted R ²	0.012			0.014			0.014		

* Significant at 0.05 level.

** Significant at 0.01 level.

The regression equation using annual security returns, RETURN%, as the dependent variable takes the form:

$$\text{RETURN}\%_i = \beta_1 + \beta_2 \text{ME}_i + \beta_3 \text{BE-ME}_i + \beta_4 \text{S-P}_i + \beta_5 \text{D-E}_i + \beta_6 \text{PRICE}_i + \beta_7 \text{EPS}_i + \beta_8 \text{T1}_i + \beta_9 \text{T2}_i + \beta_{10} \text{T4}_i + \beta_{11} \text{T5}_i + \beta_{12} \text{S1}_i + \beta_{13} \text{S2}_i + \beta_{14} \text{S4}_i + \beta_{15} \text{S5}_i$$

where ME, BE-ME, S-P, D-E, PRICE, and EPS are the natural logs of market equity, book-to-equity-to-market-to-equity ratio, sales-to-price ratio, debt-to-equity ratio, 26-week price change, and 12-month earnings per share growth, respectively. T1, T2, T4, and T5 are dummy variables for the respective timeliness ranks that are one if true and zero otherwise. S1, S2, S4, and S5 are dummy variables for the safety ranks that are one if true and zero otherwise. Our results are shown in Exhibit 8.

For the full sample considering all safety levels, the Value Line timeliness ranks are all significant predictors of security returns. The signs and magnitudes of the regres-

sion coefficients on the timeliness ranks are also consistent with Value Line's predictions.

The coefficients on T1 and T2 are 10.300 and 2.788, respectively. Both these timeliness categories earned significantly more than T3 securities. The coefficients on T4 and T5 are both significant and negative at -2.779 and -7.995, respectively. There is a considerable spread between the predicted returns of T1 and T5 stocks.

These findings suggest that the timeliness ranks provide information in addition to the security beta, market equity, debt-to-equity ratio, and 26-week price change, which are also significant. The book-to-market ratio, sales-to-price ratio, and growth in earnings per share are not significant factors.

The last two regression results in Exhibit 8 show that it is the conservative- to average-risk, S1 to S3, selections that drive the Value Line ranking system's success. The timeliness ranks are significant predictors when considering safer investments (T4 barely misses significance with a p-level of 0.053), but they are not useful for the more aggressive investments with safety levels S4 and S5. There are no significant coefficients on any of the safety

ranks for the full sample or for the breakdowns of conservative and aggressive investors.

CONCLUSIONS

Individual investors adhering to Value Line's guidelines would not have been disappointed. Over our study period, Value Line's timeliness ratings were, in fact, significant predictors of stock returns. T1 stocks as a group significantly outperformed their less timely counterparts. When we look at only below-average to average-risk S1 through S3 stocks, T1 stocks were still winners by a significant margin, while T5 stocks significantly underperformed all the other groups. For high-risk S4 and S5 stocks, the timeliness ratings were not meaningful. Thus, for conservative investors the Value Line ranking system would seem to be a useful tool.

Most impressively, we find that Value Line's timeliness ranks are significant predictors of success even when several other key financial and market characteristics are considered. T1 and T2 ranks are positive and significant indicators of subsequent return performance, while T4 and T5 ranks are significant negative indicators. Our findings again suggest that the timeliness ranks are useful only in discriminating among S1 through S3 stocks.

Investors selecting Value Line's timeliest stocks, however, tend to take on relatively high levels of market risk, as measured by beta. We believe that individuals should focus on security betas rather than Value Line safety ranks when they make investment decisions. Value Line's assignments of timeliest ranks appear biased toward higher-beta securities, even when safety ranks are held constant. This could expose uninformed investors to higher levels of the relevant systematic risk than they might truly want. Furthermore, the value of the safety ranks, as far as predicting subsequent returns, is superceded by other factors such as beta and debt-to-equity level.

So what is the typical portfolio makeup of individual investors who follow Value Line's timeliness guidelines? We have shown that Value Line's timeliest stocks, those rated as T1 and T2, are, on average, large market-capitalization companies with significant price and earnings growth momentum. These are not value-oriented companies; they rate as poor bargains when considering both book-to-market and sales-to-price measures. These timely securities had lower-than-average financial risk, as measured by debt-to-equity ratios, but higher-than-average market risk, as measured by beta. During market downturns these stocks dropped more than both T3 and T4

stocks, which make up about two-thirds of the Value Line population.

The Value Line ranking system generated abnormal returns over our study period and has proven to be a useful tool for individual investors. The timeliness ranks can provide useful information to both unsophisticated and sophisticated investors alike.

Value Line continues to represent an important anomaly arguing against efficient markets theory, even after more than 30 years.

ENDNOTES

¹See also Holloway [1981, 1983], Copeland and Mayers [1982], Hanna [1983], Stickel [1985], Huberman and Kandel [1987, 1990], Lee and Park [1987], Peterson [1987], Hall and Tsay [1988], Affleck-Graves and Mendenhall [1992], Chandy, Peavy, and Reichenstein [1993], Yobaccio [1994], and Peterson and Peterson [1995].

²Unless it is otherwise stated, we use the analysis of variance methodology for comparisons. If overall ANOVA results are significant, Fisher's LSD pairwise comparison testing is conducted. All tests are conducted at the 0.05 level of significance.

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