The Value Line Ranking System

VALUE LINE INVESTMENT EDUCATION

Value Line®

Smart research. Smarter investing.™

FROM OUR EXECUTIVE DIRECTOR OF RESEARCH

Investors need to have independent, unbiased research. That is something Value Line subscribers have known for more than 85 years. Value Line has no investment banking business with any company, including the approximately 1,700 companies our analysts follow in *The Value Line Investment Survey®*. Unlike typical Wall Street brokerage firms, Value Line does not execute trades for its subscribers and, therefore, has no vested interest in whether these subscribers buy, sell, or hold a specific equity. Our staff of professional securities analysts is not permitted to own shares of a company that they are assigned to cover. Our subscribers receive only the highest quality, independent research.

If you are looking for unbiased, independent, and objective investment research and ideas, look no further than Value Line—we answer only to you.

Very truly yours,

Ian Gendler

Executive Director,
Value Line Research

The Value Line Ranking System

The Value Line Investment Survey® features our time-tested Ranking System, which ranks approximately 1,700 stocks relative to each other for price performance during the next six to 12 months, as well as for overall risk. Stocks are ranked from 1 to 5, with 1 being the Highest rank.

Note: *Any one Value Line stock Rank is always relative to the Ranks of all other stocks in the The Value Line Investment Survey universe of approximately 1,700 stocks.*

Timeliness

TIMELINESS	**4**	Lowered 11/18/16
SAFETY	**1**	Raised 10/5/07
TECHNICAL	4	Lowered 2/24/17
BETA .95	(1.00 = Market)	

Sample Ranks Box

The Value Line Timeliness Rank measures predicted relative price performance of the approximately 1,700 stocks during the next six to 12 months on an easy-to-understand scale from 1 (Highest) to 5 (Lowest). Components of the Timeliness Rank include historical stock-price performance, financial results, and earnings surprises. Our proprietary algorithm combines these elements into a forecast of the price change of each stock, relative to all of the approximately 1,700 stocks in The Value Line universe, for the next six to 12 months. The Value Line universe accounts for approximately 90% of the market capitalization of all stocks traded on the U.S. exchanges.

Rank 1 (Highest)/Rank 2 (Above Average): These stocks, as a group, are expected to outperform the Value Line universe during the next six to 12 months (100 stocks are Rank 1; 300 are Rank 2).

Since many stocks "stop in" at Rank 2 before moving up to 1, many investors' strategy is to select equities from among Rank 2 and Rank 1, depending on their preference for yield, Safety, etc.

Rank 3 (Average): These stocks, as a group, are expected to have relative price performance in line with the Value Line universe. They — and even Rank 4 stocks — may be considered if purchased for long-term appreciation potential and/or income.

Rank 4 (Below Average)/ Rank 5 (Lowest): Rank 4 stocks, as a group, are expected to have below-average relative price performance. Rank 5 stocks, as a group, are out of favor in regard to the Timeliness System (100 stocks).

Changes in the Timeliness ranks can be caused by:

1. New earnings reports or company announcements
2. Changes in the price movement of one stock relative to the approximately 1,700 other stocks in the publication
3. Shifts in the relative positions of other stocks

Safety

A second and crucial investment criterion is the Safety rank assigned by Value Line to each of the approximately

1,700 stocks. The Value Line Safety Rank measures the total risk of a stock relative to the approximately 1,700 other stocks. It takes into account a stock's Price Stability rank and the Financial Strength rating of a company. Safety ranks are also given on a scale from 1 (Safest) to 5 (Riskiest) as follows:

Rank 1 (Highest): These stocks, as a group, are the safest, most stable, and least risky investments relative to the Value Line universe.

Rank 2 (Above Average): These stocks, as a group, are safer and less risky than most.

Rank 3 (Average): These stocks, as a group, are of average risk and safety.

Rank 4 (Below Average): These stocks, as a group, are riskier and less safe than most.

Rank 5 (Lowest): These stocks, as a group, are the riskiest and least safe.

Stocks with high Safety ranks are often associated with large, financially sound companies, many of which regularly pay cash dividends; these same companies also often have somewhat more moderate growth prospects because their primary markets tend to be mature. Stocks with low Safety ranks are often associated with companies that are smaller and/or have weaker-than-average finances; on the other hand, these smaller companies sometimes have above-average growth prospects because they start with a lower revenue and earnings base.

Safety becomes particularly important in periods of stock market downswings, when many investors want to try to limit their losses. When you study the data (shown in the table on page 3), you will find that stocks with high Safety ranks generally fall less than the market as a whole when stock prices drop. The table shows how the Safety ranks worked out in all major market declines between 1972 and the present.

The lesson is clear. If you think the market may be headed lower, but prefer to maintain a fully invested position in stocks, concentrate on stocks ranked 1 or 2 for Safety. At the same time, try to keep your portfolio ranked as high as possible for Timeliness. Should you choose not to limit yourself only to stocks ranked high on both counts, you would then have to decide which is more important—price performance over the next six to 12 months, or Safety. We suggest stocks with a Safety Rank of 3, or better, and average (B+) or above Financial Strength be emphasized.

The Penalty and Reward of Risk

A risky stock is one which has low Price Stability and whose price fluctuates widely around its own long-term trend. It may also be a stock of a company with a low Financial Strength grade. One may reasonably assume that the price of a risky stock will go up more than that of a safe stock in a generally strong market. Yet, if in the interim it went down more sharply and you had to sell at an inopportune time, you could suffer a heavier penalty for having bought the high-risk stock instead of the safer issue.

Technical

The Value Line Technical rank uses a proprietary formula to predict short-term (three to six month) future price returns relative to the Value Line universe. It is the result of an analysis that relates price trends of different durations for a stock during the past year to the relative price changes of the same stock over the succeeding three to six months. The Technical rank is best used as a secondary investment criterion. We do not recommend that it replace the Timeliness rank. As with the other ranks, the Technical rank goes from 1 (Highest) to 5 (Lowest).

Industry

Value Line also publishes Industry Ranks, based on the Timeliness system, along with a detailed report by a senior analyst. The ranks are updated weekly and published on the front and inside pages of the *Summary & Index*. They also appear at the top of each Industry Report.

ADDITIONAL INVESTMENT CONSIDERATIONS

Value Line is very proud of its Ranking System, and its long history of quality performance. However, before taking a position in any stock, we strongly recommend that subscribers evaluate the many other aspects of the Value Line stock report, including the analyst commentary, estimates and projections, growth rates, and other proprietary ratings. For more information regarding the many elements of our reports, we encourage reviewing *The Value Line Investment*

Survey Product Guide, as well as *How to Read a Value Line Report*. Both of these documents can be found in the Investment Education section of www.valueline.com.

VALUE LINE INDEXES

On June 30, 1961, we introduced the Value Line Composite Index. This widely recognized benchmark assumes equally weighted positions in every stock covered in T*he Value Line Investment Survey*, excluding the closed-end funds. That is, it is assumed that an equal dollar amount is invested in each and every stock. The returns from doing so are averaged geometrically every day across all these stocks and, consequently, this index is frequently referred to as the Value Line (Geometric) Average (VALUG). It was intended to provide a rough approximation of how the median stock in the Value Line universe performed.

On February 1, 1988, Value Line began publishing the Value Line (Arithmetic) Average (VALUA) to fill a need that had been conveyed to us by subscribers and investors. Like the VALUG, the VALUA is equally weighted. The difference is the mathematical technique used to calculate the daily change.

The VALUA provides an estimate of how an equal-dollar weighted portfolio of stocks will perform. Or, put another way, it tracks the performance of the average, rather than the median, stock in our universe. It can be shown mathematically, for all practical purposes, that the daily percentage price change of the VALUA will always be equal to or higher than the VALUG. The systematic understatement of returns of VALUG is a major reason that the VALUA was developed. Moreover, although the differences between daily price changes may seem small, the magnitude of the annual differential between the two averages can be quite large. The greater the market volatility, the larger the spread between the geometric and arithmetic averages becomes.

In 1965, when the current Ranking System for Timeliness was developed, our only market average was the VALUG, so we scored the ranks on a geometric basis. This allowed us to compare the performance of the ranks versus the market (as measured by the VALUG). After we started the VALUA, we began scoring the ranks both on a geometric and arithmetic basis.

Results of Safety Ranks in Major Market Declines

Start Date	End Date	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	S&P 500	Russell 1000	Russell 2000
04/14/72	09/11/74	–40.5%	–39.9%	–47.2%	–53.3%	–70.0%	–37.6%	N/A	N/A
06/17/81	08/11/82	–10.5%	–16.2%	–25.2%	–33.6%	–31.4%	–23.0%	–24.2%	–28.2%
08/26/87	12/04/87	–24.7%	–28.7%	–36.0%	–40.7%	–46.9%	–33.1%	–32.9%	–38.9%
07/16/90	10/11/90	–9.0%	–16.2%	–23.7%	–31.3%	–27.7%	–19.9%	–20.5%	–29.4%
10/07/97	10/27/97	–6.9%	–6.3%	–8.7%	–10.0%	–11.6%	–10.8%	–10.3%	–9.4%
07/17/98	08/31/98	–11.3%	–14.9%	–23.6%	–31.2%	–32.3%	–19.3%	–19.9%	–26.9%
09/23/98	10/08/98	–1.4%	–5.7%	–12.9%	–19.3%	–18.7%	–10.0%	–10.7%	–17.5%
07/16/99	10/15/99	–9.4%	–11.6%	–13.7%	–11.5%	–10.6%	–12.1%	–12.2%	–10.9%
03/24/00	04/14/00	3.3%	1.1%	–4.0%	–18.0%	–16.4%	–11.2%	–12.1%	–21.0%
09/01/00	10/09/02	–4.0%	–6.0%	–8.8%	–40.4%	–28.1%	–48.9%	–49.6%	–39.7%
11/27/02	03/11/03	–10.4%	–9.6%	–15.1%	–21.3%	–21.6%	–14.7%	–14.3%	–15.4%
10/09/07	03/09/09	–46.8%	–54.9%	–54.3%	–63.3%	–62.4%	–56.8%	–56.9%	–59.4%
04/23/10	07/02/10	–12.1%	–12.2%	–17.2%	–23.7%	–31.3%	–16.0%	–16.3%	–19.3%
04/29/11	10/03/11	–12.9%	–17.2%	–25.8%	–34.7%	–47.7%	–19.4%	–20.3%	–29.6%
05/21/15	08/25/15	–9.2%	–8.8%	–14.9%	–20.0%	–23.3%	–12.4%	–12.3%	–12.2%
11/03/15	02/11/16	–6.6%	–7.5%	–18.7%	–25.9%	–33.4%	–13.3%	–14.07%	–19.96%

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