# Graham and Dodd's
# Security Analysis

## Fifth Edition


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period until early 1973, many investors misinterpreted this concept, purchasing premium-quality, high-growth stocks at almost any price—to their subsequent regret.

**Total Return.** Price behavior may also be analyzed from the standpoint of total return. The research of others shows that annual total returns for common stocks (based on the S&P 500) were negative (measured from the beginning of a year to the end of the same year) in 19 out of the last 59 years (from 1926 through 1984). Furthermore, the compound total rate of return for common stocks (the S&P 500 with dividends reinvested) purchased at the beginning of 1965 and held until the end of 1984 (7.8 percent) was only slightly above the return on Treasury bills (7.1 percent) over the same period.[9] Figure 2.3 indicates that over the 20-year span, in only 11 holding periods did the total return for stock equal or exceed the return for Treasury bills. The price

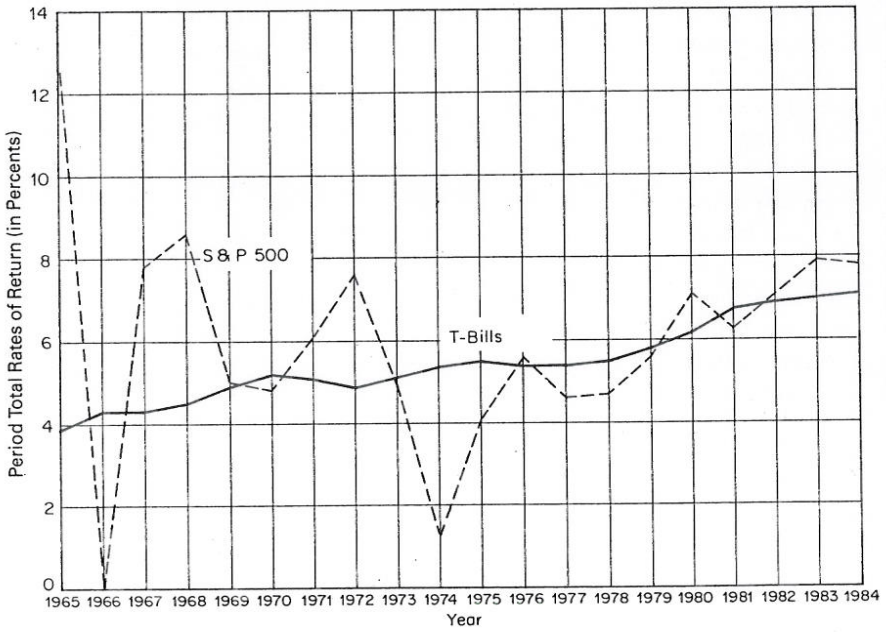


**Figure 2.3** Annualized cumulative compound total rates of return: S&P 500 and Treasury Bills. Stock investment beginning 1965, with returns on year-end basis, 1965–1984. (This period of measurement was prior to the dramatic subsequent increase in stock-holding period returns.) (*Source: Compiled by FRS Associates from Ibbotson Associates,* Stocks, Bonds, Bills, and Inflation: 1984 Yearbook, *Chicago, 1985.*)

[9]R. G. Ibbotson Associates, Inc., *Stocks, Bonds, Bills, and Inflation: 1984 Yearbook,* Chicago, 1985, pp. 90–91, 98.



appreciation from the beginning of 1965 to the end of 1984 was at a compound annual rate of only 3.3 percent.

## The Efficient Market Hypothesis

In its various forms, the efficient market hypothesis (EMH) has different implications for the discipline of security analysis.[10]

### Weak Form

One statement of the so-called weak form of the EMH is simply that prices of common stocks are independent, that is, past prices have no predictive power for future prices. In general, we agree with this proposition. Market analysis or technical analysis of price behavior is not, in our judgment, an adequate substitute for fundamental analysis in the selection of individual issues.

This independence of stock prices has given the market the descriptive term a *random walk.* Elaborate tests of the correlation of successive prices, runs, and filter rules find some weak relationships, but they are not sufficient to generate trading profits after taking account of transaction costs. Buying on relative strength and attempting to catch the "January effect" from year-end tax selling are among the frequently explored avenues to successful stock selection without analytical effort. Compared with all the fortunes made from long-term investing based on in-depth security analysis, the absence of large cumulative additions to wealth from market analysis is a striking commentary.

However, another dimension of the behavior of share prices should not be ignored: the investment community's entrancement with fads or the pseudo-rationalization of "new insights." We do not need to return to experiences with the South-Sea Bubble or Tulipmania from the pages of Charles Mackay's *Extraordinary Popular Delusions and the Madness of Crowds* (1841); we can consult the records of periodic "hot new issue" speculation, one-decision investing in quality growth stocks in the 1960s, the popularity of real estate investment trusts in the 1970s, and the merger mania of the 1980s. All these waves of enthusiasm are propelled by persistent price trends right up to the hour of their reversal. B. Rosenberg and A. Rudd

[10]For a comprehensive and insightful overview of the efficient market hypothesis, its forms, and specific research see B. L. Boldt and H. L. Arbit, "Efficient Markets and the Professional Investor," *Financial Analysts Journal,* July–August 1984, pp. 22–33; also E. J. Elton and M. J. Gruber, *Modern Portfolio Theory and Investment Analysis,* 2d ed., John Wiley & Sons, New York, 1984, pp. 394–402. An excellent discussion of the evidence developed from accounting data relative to the semistrong and strong forms is provided in W. H. Beaver, *Financial Reporting: An Accounting Revolution,* Prentice-Hall, Englewood Cliffs, N.J., 1981, chaps. 5 and 6.

argue, for example, that the serial correlation of certain components of monthly returns permits adding to return by portfolio rebalancing.[11]

### Semistrong Form

The semistrong form of the EMH is simply that all public information is reflected in the market price. Because a changing mix of favorable and unfavorable information about companies, industries, the capital market, and the economy is constantly arriving at the marketplace in a random fashion, prices, broadly viewed, should behave in an equally random pattern as the information is translated into share prices. New information, numerous tests have demonstrated, is rapidly incorporated in the security price. Given the broad access to wire services and news releases, the speed of transmission is not surprising; however, rapidity is not always equivalent to accuracy.

One astute observer of markets, Jack Treynor, observes that in addition to information which is clear in its significance, there are "slow" ideas. The diligent analyst may accumulate a number of discrete pieces of information used to construct a mosaic which provides an unfolding picture of a company very different from the consensus view. At a trade show, the analyst observes that Company A has operational and deliverable chemical pumps, whereas Company B, seeking to meet the same market demand, displays only a mock-up. Since neither pump has actually been tested in use, the difference in orders, sales, and earnings will not show up on the broadtape for some months. Other "slow" ideas may emerge from apparently unrelated developments which investors will not relate to a particular company for an extended period.

In essence, there are extramarket returns from analysts' greater diligence and superior understanding which are independent of the timing or breadth of distribution of the information. The trained, knowledgeable analyst can, and frequently does, interpret information with materially better judgment than that expressed by the consensus in the marketplace. To the extent that this occurs, the semistrong form of market efficiency has not been validated.

An example which demonstrates that extramarket returns can result from the superior use of public information is the Value Line Timeliness Ranking Model. This model is based on publicly available information from which are derived relative earnings and prices, an earnings and price momentum factor, and an earnings surprise factor for each of the 1700 stocks in the Value Line universe. Through the use of multiple

[11]B. Rosenberg and A. Rudd, "Factor-Related and Specific Returns of Common Stocks: Serial Correlation and Market Inefficiency," *Journal of Finance*, May 1982, pp. 551–552.



regression analysis, the stocks are classified by expected price performance over the next 12 months so that Group 1 is expected to have the best performance and Group 5, the poorest. As shown, the 20.5-year record (April 1965 to December 1986) of the rankings indicates that this fact-based model using historical data trends can produce above-average risk-adjusted returns, thus refuting the semistrong form of market efficiency:[12]

| Ranking group | Price change (percent) |
|---|---|
| 1 | 2071 |
| 2 | 1103 |
| 3 | 495 |
| 4 | 166 |
| 5 | 24 |
| Dow-Jones industrial average | 109 |

### Strong Form

The strong form of EMH states that security prices fully reflect all knowable information. Furthermore, intensive analysis will not enable the analyst to reach judgments different from the market's prices with enough consistency to earn additional returns. The EMH fully recognizes security analysts' contributions—their fruitless efforts to identify mispricings are what make the market efficient. In this view, security analysis is a public service which assists markets in the optimum allocation of resources, but it need not be rewarded with more than civil service compensation scales, nor should investors replace their dart boards with this volume. Instead investors can participate in low-cost market index portfolios which can track the selected index with a small margin of error and minimum transaction costs.

The "evidence" offered of market efficiency is derived in part from analysis of the performance of actively managed portfolios, and mutual funds frequently are used.[13] The average performance of the average mutual fund manager may be expected to fall short of his or her universe by the costs of transactions; safekeeping and accounting functions; distribution, legal, and auditing services; shareholder records

[12]"Selection & Opinion," *The Value Line Investment Survey*, January 23, 1987, p. 719.

[13]See such historic studies as W. F. Sharpe, "Mutual Fund Performance," *Journal of Business, Security Prices, A Supplement*, January 1966, pp. 119–138; M. C. Jensen, "The Performance of Mutual Funds in the Period 1945–64," *Journal of Finance*, May 1968, pp. 389–416; I. Friend, M. Blume, and J. Crocket, *Mutual Funds and Other Institutional Investors: A New Perspective*, McGraw-Hill, New York, 1970; P. J. Williamson, "Measuring Mutual Fund Performance, *Financial Analysts Journal*, November/December 1972, pp. 78–84.

and reporting; and management fees. Actually different groups of funds outperform their universes of stocks for extended periods. We believe that the fact that some funds outperform their market sectors consistently by the decade is not by chance but is instead evidence that disciplined security analysis applied across different markets has a logic which can be tested and validated.

There can be little doubt that improvement in analytic techniques and in the recognition of sound principles has increased the efficiency of the market. Gross disparities between economic values and market prices have been substantially reduced since the first edition of this book in 1934. We hope that this edition will make a contribution to further reducing the inefficiency of analysts and thereby to increasing the efficiency of security pricing, but our fundamental conviction is that market prices, like a stopped clock, are a correct representation of value twice in an investor's day.

Despite the gains in market efficiency, careful study has shown the existence of *anomalies*,[14] including the small-company effect, the low prices-to-earnings multiple undervaluation, and similar phenomena which challenge the accuracy of the market's pricing mechanism. One knowledgeable observer's view is expressed in this provocative editorial in the *Financial Analysts Journal*:

> The rush of these new-found anomalous market characteristics is large enough to warrant its own buzzword.... It's idiosyncratic.... Enter an abundance of idiosyncrasies—small firm effect, turn-of-the-year effect, low price-earnings ratio, junk bonds (stocks?), low-priced stocks, the Value Line phenomenon, weekend effects, performance of low beta portfolios, sector rotation, and information coefficients. Documented idiosyncratic market phenomena, like crocuses, herald a new season. The question is: How long can the EMH continue, unrevised, against the burgeoning list of idiosyncratic phenomena?[15]

Finally, if all stocks are efficiently priced, as EMH maintains, the proven necessity for broad diversification would be eliminated. One would only need to match the variability characteristics of handful of issues with the owner's tolerance for uncertainty of returns. A further implication of EMH is that there is comfort in the thought that it is difficult to do worse than the returns provided by one's risk class, because shares are so efficiently priced. Our thoughtful judgment is simply that one should not assume efficient pricing but should undertake to verify it by disciplined security analysis.

[14]The following list is indicative of the scope and nature of the research: E. F. Renshaw, "Stock Market Panics: A Test of the Efficient Market Hypothesis," *Financial Analysts Journal*, May–June, 1984, pp. 48–52; D. A. Goodman and J. W. Peavey, III, "Industry Relative Price-Earnings Ratios as Indicators of Investment Returns," *Financial Analysts Journal*, July–August, 1983, pp. 60–66; R. F. Vandell and G. W. Kester, *A History of Risk-Premia Estimates for Equities: 1944 to 1978*, Financial Analysts Research Foundation, Charlottesville, Va., 1983, p. 135; M. R. Reinganum, "Abnormal Returns in Small Firm Portfolios," *Financial Analysts Journal*, March–April 1981, pp. 52–57; C. P. Jones, R. J. Rendleman, Jr., and H. Latane, "Stock Returns and SUEs during the 1970s," *The Journal of Portfolio Management*, Winter 1984, pp. 18–22; C. M. Budwell, III, "A test of market efficiency: SUE/PE," *The Journal of Portfolio Management*, Summer 1979, pp. 53–58; R. Ferguson, "An efficient stock market? Ridiculous!" *Journal of Portfolio Management*, Summer 1983, pp. 31–37; K. P. Ambachtsheer and J. L. Farrell, Jr., "Can Active Management Add Value?," *Financial Analysts Journal*, November–December 1979, pp. 39–45; K. P. Ambachtsheer, *The Predictive Accuracy of the Value Line and Wells Fargo Stock Advisory Services*, Canavest House, Toronto, Canada, November, 1976.

[15]"Editorial Viewpoint," *Financial Analysts Journal*, March–April 1984, p. 9.

portfolio did. Attribution seeks to determine *why* a portfolio performed as it did.

Various objective tests may be used to check whether the valuation approach produces satisfactory results. For example, a purchase at a 20 percent discount from the central value—the center or midpoint of the valuation range—may be taken as the "justified purchase price." The top of the range—say, 20 percent above the central value—could be taken as the "justified selling price." It should be reached within a reasonable period of time, such as the next four years. Under normal conditions, central value would grow over the four-year period, presumably at the rate at which the company's earning power was growing. An investment purchased at a 20 percent discount and sold at a 20 percent premium to intrinsic value provides more than a mere 50% gain. The investor will also receive dividends and growth of the intrinsic value. If one assumes (1) a 4 percent dividend, (2) 6 percent growth, and (3) a 4-year holding period, the annual return would be over 20 percent, or a doubling of the investment in 4 years.

The success of the valuation technique could be judged by the percentage of issues purchased below their central value that actually reached a premium to the central value within four years. The result must be adjusted, of course, to eliminate the effect of action of the market as a whole. The measurement of excess return on the stock (of which price is a major component) is always relative to the market (S&P 500) adjusted for the stock's beta.

### Value-Oriented Approaches Compared to the S&P 500

In this performance measurement process, there are many tests of different valuation approaches. Some examples of value-oriented management records follow:

| | Compound annual total return 1981–1985 (%) |
|---|---|
| First Manhattan Capital Management | 21.7 |
| Prudential Equity Management Associates | 19.6 |
| Trinity Investment Management | 21.1 |
| Windsor Fund | 22.6 |
| Standard & Poor's 500 | 14.6 |

To be sure, this 1981–1987 period was a favorable one for value-oriented managers, but the results were achieved with a generally lower level of volatility, as measured by the standard deviation of returns.



In addition to such portfolio performance results, a useful measure can be to compare analysts' rankings of stocks in order of attractiveness against subsequent three- to five-year realized returns. The Value Line Timeliness Rankings cited in Chapter 2 are an example, for a shorter time horizon, of determining whether the rankings add to the returns subsequently earned by investors.

### Price-Earnings Ratio Rankings

Another simple test uses the price-earnings (P/E) ratio as the chief criterion of relative value. Those stocks selling at the lowest P/E ratios are presumed to be undervalued as against those selling at high ratios. Various studies have been made along this line. One of the earliest was 1960.[3] Critics of these early studies have held that other factors in addition to P/E ratios were influencing the results—for example, small size of the firm, risk, and infrequent trading. A recent study "was designed to determine whether portfolios of low P/E stocks, constructed so that non-P/E-related biases were controlled for, could achieve excess rates of return."[4] Stocks were put into five P/E groups (portfolios)—with the lowest P/E stocks in group 1. There was quarterly rebalancing for 42 quarters from the beginning of 1970 to mid-1980. The results were as tabulated below:

| P/E portfolio | Annualized risk-adjusted returns (%) |
|---|---|
| 1 | 10.89 |
| 2 | 3.69 |
| 3 | 0.69 |
| 4 | −5.35 |
| 5 | −9.91 |

The study confirms the findings of others and shows that over time the return on low P/E stocks outperforms that on high P/E issues. There will

[3] S.F. Nicholson, "Price-Earnings Ratios," *Financial Analysts Journal*, July/August 1960, pp. 43–45.

[4] D.A. Goodman and J.W. Peavy, III, "Industry Relative Price-Earnings Ratios as Indicators of Investment Returns," *Financial Analysts Journal*, July/August 1983, pp. 60–65. The sample consisted of 40 stocks from each of three industries—electronics, paper container, and food. P/E relatives based on an index of the P/E ratio of a stock relative to its industry were used.

be limited periods, of course, in which this will not be true, notably after there has been an extended compression of P/E ratios.

## Undervalued versus Overvalued Issues

A fundamental of security analysis—supported reasonably well by overall experience—is that most of the wide discrepancies between price and value will be corrected by the market itself so as to produce satisfactory results for the investor who (using publicly available information and the tools of security analysis) has the ability to identify these discrepancies.[5] However, there is an important limitation. Both the nature of the stock market and the psychology of investors tend to confine these satisfactory results more to the purchase of undervalued issues than to the sale of overvalued ones. The intrinsic value approach provides a discipline that can be helpful in parting with overvalued winners.

Many such overvaluations are shown by "glamor" companies which tend to sell much above what conservative valuations would warrant. These issues are refractory material for analysis. To advise their sale may prove as embarrassing as to advise their purchase. After all, a potential loss is limited to 100 percent of the investment, but a gain can develop to many times the original outlay.

The valuation technique is undoubtedly useful in showing that many of the new stock offerings in bull markets are priced much too high and so also may be the prices for cyclical secondary stocks in a favorable market environment. The valuation may show that the investment component of a share price is small relative to the speculative fraction of the total.

## The Value Approach in Investment Timing

The intrinsic value approach proposed in this book is but one of several methods for determining both the absolute and the relative attractiveness of common stock issues. Those who practice this approach will use their conclusions as a basis for selecting issues to make up a common-stock portfolio and for recommending the sale of holdings that appear definitely overpriced or the replacement of less attractive by more attractive stocks.

[5] Clearly, if such wide discrepancies were obvious, the market would already have adjusted the price. The existence and full extent of a discrepancy are usually obvious only after the fact.



If classifying individual stocks as selling above or below their value range is feasible , then the same should be true of the market as reflected in a comprehensive index. Thus the adoption of the intrinsic value approach for single issues logically implies its application to the market as a whole, with necessary consequences as to overall holdings of common stocks. For example, if the prices of individual issues are above the value range and no attractive values are to be found, it logically follows that the market as a whole is overpriced. The reverse would, of course, be true of the market if many individual stocks are considered to be underpriced.

The distinction should be clear between this application of a standard of value to the level of the market and a forecast of the stock market's future behavior. Identification of a range of fair values is not a prediction of whether or when that channel will be breached in either direction. Nor does such a conclusion violate the classic advice to persons required to form judgments about the future: "Don't be afraid to predict the possible tops and bottoms of the stock market and don't be afraid to predict the timing of tops and bottoms; but *never* predict both together!"