

**"SECURITY ANALYSTS"**

**A Definition**

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Like investment bankers, mergers and acquisition experts, or credit rating agencies, security analysts are a type of financial intermediary. By producing information about current and prospective borrowers, security (or “financial”) analysts help to direct the flow of investment funds between borrowers and lenders. However, analysts’ immediate concern is the valuation of assets which trade in secondary capital markets. The liquidity provided by secondary markets facilitates the sale of new stock and bond issues.

Security analysts are primarily investment advisors. They provide valuable inputs for security selection and portfolio management. Because of possible conflicts of interest between investors and corporate management, the analyst also has a stewardship role. Thus, at times, he serves as a corporate critic.

Few individual investors have the time or the skill to determine the true worth of large publicly-traded corporations. However, all are forced to make far-reaching personal investment decisions. Consequently, when investors trade securities, many rely on outside counsel. Usually, their premier concerns are safety of principal and freedom from administrative hassle. People want to avoid costly mistakes but they also would like to receive a “fair” return on capital. In addition, ambitious traders want “to beat the averages” and to earn speculative profits. It is a puzzling question of rationality why anyone believes that the precious insights which produce these profits are for sale to the general public. Probably, social norms of prudence, investor anxiety, and anticipation of regret over flawed decisions contribute to the demand for financial expertise (Shefrin and Statman [1986]; De Bondt [1991]).

In any event, much financial information and advice is sold, directly or indirectly, by security analysts employed by brokerage houses. Further, large institutional investors, money management firms, and investment banking companies employ analysts in-house. The analysts prepare detailed studies of individual stocks and bonds, make careful comparisons between companies (resulting in industry reports), and form expert opinions on their likely future earnings and investment performance.

As we enter the 1990s, security analysis is still more art than science. A passive buy-and-hold strategy for a well-diversified portfolio of randomly selected stocks guarantees average returns with limited risk. However, individual investors and professional money managers alike find it difficult to do better and easy to do worse. It is

somewhat of an accomplishment if an active manager can keep up with market indices and recuperate his trading costs (Malkiel [1990]).

Broadly speaking, there are two types of security analysis: Technical analysis and fundamental analysis. Technicians believe that there are systematic statistical dependencies in security returns. In other words, “history tends to repeat itself” (Levy [1966]). Chartists use various trading rules to exploit true or imagined short-term patterns in prices. A common view is that a stock should be purchased because its price has increased and that it should be sold because the price has declined (Magee and Edwards [1954]). Market timing is a form of technical analysis. It aims to identify turning points in the performance of major stock indices. Other methods of technical analysis include filter rules, measures of “relative strength,” line and bar charts, 200-day moving averages in prices, the study of trading volume, and aggregate demand/supply analysis. Evidently, technical analysis is completely at odds with the efficient markets hypothesis. At this time, there is little or no statistical evidence suggesting that technicians can beat the market (Jensen and Benington [1970]).

The more influential method of security analysis is fundamental analysis. Benjamin Graham --a lecturer at Columbia University who started his career as an analyst of railroad bonds and who later became a partner in several Wall Street firms--taught the first business school course on the topic in 1929. Based on class notes, Graham and his colleague at Columbia, David Dodd, wrote the investment classic Security Analysis. The title of this 1934 book eventually became the generic name for a whole financial discipline. The original Graham and Dodd concept of security analysis does not include an exact (refutable) financial theory in the modern-day sense of that term. Rather, it amounts to a general approach, a well-structured set of principles and investigation techniques to determine “investment value.” The authors warn against too much rigidity in either concept or method. Sound judgment, common sense, exactness, and diligence are the indispensable personality characteristics of the successful analyst.

Graham and Dodd’s Security Analysis draws distinctions between investment and speculation and between price and intrinsic value. According the book’s fifth edition (Cottle et al. [1988], p. 41), intrinsic value is “the value which is justified by assets, earnings, dividends, definite prospects, and the factor of management.” In contrast to what the price may be, the analyst estimates what the exchange value of the stock (in terms of other goods) should be. The presence of a margin of safety of calculated value over current price is “the distinguishing characteristic of true investment” (p. 128). This

margin allows traders to absorb unfavorable future developments and yet to obtain satisfactory results.

The theoretical basis for fundamental analysis is that the market's pricing mechanism reflects faulty and frequently irrational processes. Stock prices vary more rapidly and drastically than value. Indeed, "the market is always making mountains out of molehills and exaggerating ordinary vicissitudes into major setbacks" (Graham [1959], p. 110). There is now an appreciable amount of empirical evidence consistent with this view. The volatility of stock prices cannot rationally be justified by later movements in dividends (Shiller [1989]). Over the near term, the market appears to "overreact" to news but prices and values converge in the long run. For example, prior stock market losers systematically outperform prior winners (De Bondt and Thaler [1985]). These results agree with the theory of contrary opinion. Graham [1959] observed that, "our own records indicate that the interval required for a substantial undervaluation to correct itself averages approximately 1 1/2 to 2 1/2 years" (p. 37). This bold judgment turned out to be very perceptive. Recent studies of mean reversion in stock prices confirm that two- to five-year returns are surprisingly predictable (for a literature review, see De Bondt and Thaler [1989]). Thus, the data appear in conflict with random walk theory and with the notion of efficient markets.

The goal of fundamental analysis is to generate insights that are not already reflected by market prices. But much of the variation in prices is market- and industry-wide. Rational forecasts require a chain of forecasts for the economy, financial markets, industrial sectors and, finally, individual companies. This is the top-down approach. The overall level of economic activity affects corporate profits, investor attitudes and expectations, and ultimately asset prices. Economic analysis provides projections for the economy in terms of output, inflation, and government policy. Industry analysis is similar but recognizes that some factors affect some groups of firms more than others. Analysts almost always specialize in specific industrial sectors.

At the company level, security analysts start by gathering the important facts regarding a corporate stock or bond issue. Of course, there is a large element of continuity in the business activities of most firms. As a result, a corporation's past record is the logical starting point for future projection. Probably the principal source of information are the financial statements. Financial statement analysis not only yields many interesting insights by itself, it also appears useful for the prediction of stock returns (Ou and Penman [1989]). Analysts adjust the reported accounting numbers to improve

their accuracy, consistency through time, and comparability with other companies. Much of the analysis consists of calculating earnings growth rates, price ratios (e.g., the price-earnings ratio or price-to-book value ratio), and other financial ratios for liquidity, capital structure, profitability, and so on (Foster [1986]; Cottle et al. [1988]). The coverage of interest charges by net income before interest and taxes is a good example. Corporate bond analysts --who want to control the risk of default-- traditionally use this ratio as a measure of creditworthiness.

For equity, the main determinant of value is future earning power (also called "normal" earnings). Earning power is to be distinguished from periodically reported earnings-per-share (EPS). A good estimate is average past EPS --with extraordinary items omitted-- for a period long enough to allay the influence of the business cycle.

To value a stock, normal earnings are multiplied by a capitalization rate, for example, the average past price-earnings ratio for the S&P 500 index. The multiplier may be adjusted to reflect qualitative factors such as the competence of management or expected changes in the competitive position of the firm. Graham [1959] assesses the intrinsic value of Dow Jones companies (1924-1959) by capitalizing the average earnings of the previous ten years at a rate twice the current yield on Aaa-rated corporate bonds. He recommends purchasing any stock in the index if it sells below 80 percent of its value and disposing of it when the price rises to 120 percent. An investor who follows this rule would have sold in 1928 (before the Great Crash) and bought in 1931 (after the Crash). In 1928, the average past EPS for companies in the Dow Jones Industrial Average (DJIA) were \$11.28 and the corporate bond yield equalled 4.46 percent. This put the intrinsic value of the index at \$126.5, clearly below its actual range (between 193.0 and 300.0). In contrast, the low price for 1931 was \$74.6, not much more than half the DJIA's intrinsic value ( $\$11.89 \text{ EPS} / (2 \times 4.40 \text{ percent}) = \$136.1$ ).

The Graham and Dodd approach to stock valuation shares many similarities with dividend discount models (DDM). DDM were first developed by John B. Williams in the 1930s. Today, these models may well be the most widely used investment tool on Wall Street and they are central to the growth stock approach to investing. DDM require earnings forecasts as essential data inputs. As a result, predicting quarterly and annual company earnings --as well as five-year earnings growth-- takes up a large measure of the analysts' time. The analysts also make judgments as to the uncertainty of their forecasts.

DDM justify paying a substantial premium for stocks with rapid projected

earnings growth because the multiplier for these companies is larger. The practical usefulness of DDM hinges on the quality of the EPS forecasts. Analysts' forecasts are more accurate than time-series forecasts (Brown et al. [1986]). However, prediction errors are large in both cases. Analysts' forecasts are prone to be too optimistic and too extreme (De Bondt and Thaler [1990]). Because analysts are often employed by brokerage and investment banking firms, the optimism bias may simply reflect an economic incentive to encourage trading. Alternatively, the bias may be due to pressure from company management. The overreaction bias is more severe for long-term forecasts. Graham [1959] was keenly aware of this tendency. "No one really knows anything about what will happen in the distant future but analysts and investors have strong views on the subject just the same" (p. 133), he writes. A further danger emphasized by Graham and Dodd is excessive optimism or pessimism when past earnings trends are naively extrapolated. Early editions of Security Analysis recommend that the capitalization rate for a growth stock never exceed 20.

Forecasting company earnings is difficult but very important. In terms of its impact on capital markets, the annual earnings number is probably the single most important piece of information that the firm releases. Empirically, earnings and earnings forecasts are strongly related to stock prices (for literature reviews, see Brown et al. [1985] and Watts and Zimmerman [1986]).

What is less clear is whether market prices incorporate earnings news in a correct and timely manner. Two common assertions about the links between security returns and EPS are the hypotheses of functional fixation and investor myopia. Many investors are fixated on reported accounting earnings and they pay little consideration to the methods used to compute EPS (see, e.g., Hand [1990]). Investor myopia suggests that the capital market has a short run focus. For example, Bernard and Thomas [1990] find that stock prices reflect naive earnings expectations. Much like the financial press, traders anchor on year-to-year changes in quarterly earnings. These results are related to the post-earnings announcement drifts in stock returns. Bernard and Thomas [1989] conclude that the market is slow to absorb new earnings information.

Functional fixation, investor myopia, and other types of non-rational noise trading define an economic role for security analysts as expert advisors to rational investors. Can fundamental analysis in fact earn speculative profits by correcting systematic pricing errors? Academic opinion remains divided on this issue. Many authors are still not convinced that persistent anomalies such as the price-earnings ratio

or winner-loser effects are evidence of inefficiency in the first place (see, e.g., Watts and Zimmerman [1986]). On the other hand, the studies of De Bondt and Thaler [1985], Ou and Penman [1989], Shiller [1989], Bernard and Thomas [1989; 1990], and others agree that uninformed trading and/or irrational fads drive a wedge between price and value. In the end, the answer to the question depends a good deal on a priori faith in market rationality. Without a definition of risk which is widely accepted and operational, one cannot be sure whether the empirical evidence shows the consequences of naive information processing, rationally changing risk premia, or both.

To complicate matters, the notion of market rationality itself is riddled with paradox. In strong form efficient markets, no analyst can assume to have superior insight. The reason is competition among security analysts. Because of their intensive efforts to detect mispriced securities, new information is rapidly impounded into prices. However, as Grossman and Stiglitz [1980] ask, if markets are efficient, how does the prospect of zero trading profits convince analysts to continue their research? Definitely, in equilibrium, the monetary gains from discovering pricing errors must balance the costs of information production. Therefore, the survival of security analysis as a financial discipline seemingly provides certain proof of (perhaps moderate) market inefficiency. With time, only the best analysts will remain employed because only they will earn economic rents on their accumulated expertise.

Nevertheless, even within the framework of efficient markets, security analysts have a role to play. Modern portfolio theory is about the matching of investor preferences (particularly, their willingness to bear risk) with specific asset portfolios. Analysts' projections of risk and return for individual securities are important to find the "efficient frontier." Also, because not everyone faces the same tax regime or pays identical trading commissions, it may be possible to take advantage of clientele effects in market prices. Again, security analysts provide the information necessary to design these strategies in an optimal way.

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