The Quarterly Journal of Austrian Economics

VOL. 15 | No. 2 | 221–236
SUMMER 2012

Fundamental Analysis as a Traditional Austrian Approach to Common Stock Selection

Richard C. Grimm

ABSTRACT: There are many methods for choosing common stocks for investment. These methods may or may not be consistent with a traditional Austrian view, depending on the processes involved and basic tenets of the analysis. Several Austrian authors display a positive affinity towards methods that fall into the category of fundamental analysis. This study explores fundamental analysis to determine its application as an Austrian approach to common stock selection. The thymologic method and the category of understanding are applied as frameworks for an Austrian approach and to evaluate fundamental analysis as a process for common stock selection. The analysis supports the conclusion that fundamental security analysis can be practiced in a manner consistent with traditional Austrian views and is suitable as a common stock selection method by those who wish to adhere to such views.

KEYWORDS: fundamental analysis, thymology, finance, investment

JEL CLASSIFICATION: G11, B53

Dr. Richard Grimm (richard.grimm@sru.edu) is Associate Professor of Finance at Slippery Rock University, Slippery Rock, Pennsylvania.

> "What we know about our own actions and about those of other people is conditioned by our familiarity with the category of action that we owe to a process of self-examination and introspection as well as of understanding of other people's conduct. To question this insight is no less impossible than to question the fact that we are alive."
>
> —Ludwig von Mises, *The Ultimate Foundation of Economic Science* (1962), p. 71

INTRODUCTION

The ultimate end of investors in equity markets is to gain satisfaction by executing investment strategies that increase wealth. Success ultimately depends on the ability to correctly anticipate the future direction of stock prices. In order to achieve this end in view, investors must have a rationale for the stocks they select. This is no easy task, due to the complexity involved in making such choices. In addition, there are times when upward momentum in stock prices can make defunct selection methods appear useful. This phenomenon tends to be more problematic when a government and/or central bank stimulates an economy through an expansion in money supply resulting in inflated financial asset prices. Periods of financial asset price inflation make it difficult to distinguish savvy investors who employ sound methods for investment selection from those who lack skill and/or employ errant methods but convey the illusion of savvy as an artifact of persistent upward momentum in stock prices.

Most investment strategies can be classified into one of four major categories: technical analysis, fundamental analysis, quantitative analysis and passive investing. Each category has distinguishing features that reflect investors' differences in their philosophic view of financial markets, the role of information, and the manner in which data is processed and analyzed. Based on the criteria that define each category, it is likely that some investment strategies may lack consistency with an Austrian view while others may be more closely aligned. A framework that defines the basic tenets of an Austrian view of investment selection could be of use in determining the merits of a specific investment strategy as an appropriate means for security selection.

This study focuses on fundamental analysis and its potential as a traditional Austrian approach[1] to common stock selection. Fundamental analysis was selected as the subject of this preliminary work due to its presence in Austrian literature and the favorable treatment it typically receives from Austrian authors. The topic has been discussed in the works of Pasour (1989) on market efficiency and entrepreneurship, Shostak (1997) on fundamental analysis and business cycles, and Kaza (2000) on fundamental analysis as a form of arbitrage. A study by Howden (2009) indirectly supports fundamental analysis by drawing attention to problems with the efficient market hypothesis which forms the basis for many quantitative and passive investment strategies. Closer to this study, Leithner (2005) describes Benjamin Graham's approach to value investing as an entrepreneurial process in order to demonstrate its consistency with an Austrian approach.[2] Value investing represents a specific application of stock selection that is often affiliated with fundamental analysis. To date, a methodological framework has not been applied to evaluate the basic premises of fundamental analysis and provide more conclusive evidence of its consistency with an Austrian view.

This study begins by describing the general framework for evaluating entrepreneurial/speculative actions and then proceeds to a brief description of fundamental analysis. Next, an example is provided to help describe the basic processes involved in performing a fundamental analysis of common stock. I then proceed to a discussion section in which the fundamental analysis process is compared to the key tenets of an Austrian-based thymologic view to determine consistency. If fundamental analysis conforms

---

[1] An Austrian approach is one that adheres to methodological individualism and is perhaps best represented in works such as *Human Action* by Ludwig von Mises, and *Man, Economy, and State* by Murray N. Rothbard.

[2] Value investing is an important application of fundamental analysis but is not explicitly used by the professional investment community. There are two problems with Graham's approach: (1) In a 1976 seminar, Graham stated "I am no longer an advocate of elaborate techniques of security analysis in order to find superior value opportunities" (as cited by John Train [1987]), and (2) modern application of Graham's technique negate analysis and simply rely on a screening process based on the stock price trading at a discount to working-capital (Bodie, Kane, and Marcus [2009]). The analysis process itself still is of value in applications.

to an Austrian view, there are important implications for both economy and investors. Assuming an Austrian view represents a correct view of the world, the proper application of fundamental analysis would provide a sound process for directing capital to the most deserving entrepreneurs. In addition, the investor's wealth gains from implementing fundamental analysis should reflect ability instead of luck. The last section of the study consists of conclusions.

DEFINING AN AUSTRIAN VIEW OF STOCK SELECTION

Although it is unlikely that there will be total agreement on what defines an Austrian approach to common stock selection, those who adhere to traditional Austrian views are likely to agree on some basic tenets. An Austrian approach would emphasize the role of purposeful human action and the effects and potential effects of such actions on common stock performance. It would encompass basic characteristics that differentiate human beings from other species and forms of matter, such as the possession of free will and consciousness. It would make provisions for the exercise of human mental processes involved in understanding and anticipating key developments. The approach would allow the investor to exercise his mental capacity to the fullest extent with enough flexibility to incorporate every detail deemed necessary to properly evaluate an investment opportunity and anticipate future conditions.

A traditional Austrian view acknowledges the common stock selection process as an entrepreneurial/speculative activity. Within this context, success depends on the investor's ability to excel at identifying opportunities for profit in dynamic and uncertain environments. Action follows conviction—the investor will only engage in a position when convinced that his view of future performance is correct.[3] There are also implications for the role of risk and uncertainty. Many Austrian economists dismiss the mainstream economist's view that it is solely the "quantifiable risk characteristics" of common stocks that determine future returns. A comparison of key authors of Austrian persuasion, who have written extensively

[3] Wood (2005), p. 5.

on the entrepreneur, indicates that the entrepreneur's perception of risk is often "shouldered aside" or "eliminated."[4]

All speculative activities are characterized by uncertainty. An Austrian view proclaims that future risks and uncertainty cannot be objectively measured due to the arrival of unforeseen events, unanticipated reactions, influence of cognitive biases, and misinterpretations of data that culminate from the actions of human actors. Therefore, risks and uncertainties are subjectively assessed at best during the stock selection process. In addition, it is important to realize that risk and uncertainty can be managed through actions apart from common stock analysis. These actions may include: (1) spreading risk through diversification (2) placing limits on the amount of funds invested in a single position and (3) providing order entry instructions to brokers that curtail losses before predetermined limits are breached. Similar methods are commonly employed by successful serial entrepreneurs as ways of dealing with the risk involved in starting new ventures.[5]

Speculation necessitates making the best choices possible given the uncertainties of the future. The choices individuals make encompass our abilities to develop insights into the possible actions of others based upon the logical structure of our minds and reason. They are also influenced by our experiences, perceptions and interpretations of events both past and present. The dynamics and level of complexity also makes it difficult to make choices that depend on our ability to anticipate the future actions of others. In order to study how choices are made within the context of speculative activities, a framework is needed for evaluating the merits of the various means available.

THYMOLOGY AND THE CATEGORY OF UNDERSTANDING

Thymology is an Austrian methodology applicable to the analysis of speculative activities. It is a category of action dealing with the mental or cognitive aspects that lead to the choices individuals make. Thymology is the knowledge of human valuations

---

[4] *Ibid.*, p. 29.

[5] Sarasvathy (2008), p. 34, and Kiefer, et. al. (2010), pp. 72–84.

and volitions.[6] It is what everybody learns from interactions with his fellows. It is what a man knows about the way in which people value different conditions, about their wishes and desires and their plans to realize these wishes and desires.[7]

Common stock selection methods can be viewed as different processes for arriving at investment decisions. These processes involve understanding as a precursor to choice. Understanding is a category of thymology that deals with judgment of value, choice of ends, and of the means resorted to for the attainment of ends.[8] It explores the motives for selecting one means over another. It involves a study of past events in order to gain insights as to how and why they occurred. Understanding helps us anticipate how individuals may react given similar circumstances.

There are several ways in which understanding can be applied, depending on the complexity of the situation. For the purposes of this study, it may be helpful to delineate two phases of understanding: a *research* and an *entrepreneurial* phase. The research phase is focused on understanding the past. The level of understanding gained during the research phase forms a basis of understanding applied during the entrepreneurial phase. The entrepreneurial phase is focused on anticipating the future and ultimately determining a specific course of action to take.

The research phase involves a study of past events. The beginning part of the phase is basically an investigation to uncover sources of information that can be used later in the process. Events of interest are identified based on their perceived relevance to understanding a current situation or potential use in helping accomplish a particular end in view. The researcher will attempt to understand the motivations for past actions that culminated in specific outcomes. Introspection is used to provide insights as to how and why actors arrived at certain choices and engaged in particular courses of action. Once the researcher determines that an adequate level of understanding has been acquired, the research phase ends and the entrepreneurial phase begins.

---

[6] Mises (1957), p. 265.

[7] *Ibid*., p. 266.

[8] Mises (1962), p. 49.

The entrepreneurial phase addresses the problem of understanding and anticipating the future. The knowledge and information acquired from the research phase is selectively applied to assess current circumstances as a precursor to anticipating future outcomes. During the entrepreneurial phase, the primary tool for anticipating the future is scenario analysis. This thymologic application is similar to the mental experiment (*Gedanken*) used in praxeology. In application, a number of scenarios are formulated along with an assessment of which alternative is most likely to occur. This process is similar to a popular view of entrepreneurial decision making outlined by Frank Knight (1965, pp. 227–228), who suggests that entrepreneurial choice culminates in a large number of scenarios and outcomes that forms a subjective probability distribution with the ultimate choice based upon the expected outcome. G. L. S. Shackle may provide a better representation of an Austrian application of entrepreneurial scenario analysis because he does not assume the formation of a probability distribution. Shackle suggests (1956, pp. 159–162) that entrepreneurs create a number of mental scenarios and then choose a particular scenario to act upon based on their individual value scales.

Those adhering to traditional Austrian views consider the human mind the primary tool for analyzing speculative activities. Computer software programs may be useful for processing large data sets in the social sciences, but are no substitute for the individual's ability to understand and anticipate future conditions. The thymological method is a process everyone utilizes for making plans and arriving at choices. Although this method may appear superficial and lacking in sophistication to advocates of positivistic methods, "...they are the only available approach to the problems concerned and indispensible for any action to be accomplished in a social environment."[9] Our familiarity with the process does not imply that all choices are easily made, accurate or optimal. In general, the more complex and dynamic the situation evaluated, the more difficult it becomes to anticipate the most likely outcome.

To summarize, speculative activities are often complex and encompasses a great deal of uncertainty. The analysis of such

[9] *Ibid.*, p. 51.

endeavors requires the application of a framework that is descriptive of how we formulate our choices; this represents a hallmark feature of a traditional Austrian view. The thymological framework was derived from an Austrian view and is applicable to the evaluation of all speculative activities, including methods for common stock selection. This framework is applied to a study of fundamental analysis in order to determine its alignment with a traditional Austrian view.

AN OVERVIEW OF FUNDAMENTAL ANALYSIS

Fundamental analysis describes a category of stock selection methods that involves extensive analysis of publicly available information to assess a firm's past performance and anticipate its future prospects. This method was first popularized by the text *Security Analysis*, written by Benjamin Graham and David Dodd and published by McGraw-Hill in 1934.[10] The extraordinary investment performance of Graham's most famous pupil, billionaire Warren Buffett, has likely drawn further attention to this method of stock selection.

The original purpose of security analysis was to identify securities for investment with an emphasis on capital preservation.[11] Following the stock market crash of 1929, in what Graham and Dodd described as "The New- Era Theory," they apply security analysis to the more speculative purpose of identifying undervalued common stocks.[12] Their approach requires the estimation of a stock's intrinsic value based on rigorous analysis of financial statements. A stock whose intrinsic value exceeds its current market price by a wide enough margin is determined to have a "margin of

[10] Graham and Dodd published a second edition of *Security Analysis* in 1940 that reflected significant changes in the regulatory environment occurring over the remainder of the 1930s as well as changes in investment policies that reflected an emphasis on trends. Many, including Warren Buffett, consider the second edition to be a superior work.

[11] In *Security Analysis: The Classic 1940 Edition*, p. 351, Graham and Dodd provide an outline of the early criteria for investment based on a "Threefold Concept" that included (1) a suitable and established dividend record, (2) a stable and adequate earnings record and (3) a satisfactory backing of tangible assets.

[12] Graham and Dodd (1940), pp. 368–372.

safety" against downside loss. These stocks are "undervalued" and can be considered a suitable choice for investment. If the current market price is selling close to or at a premium to intrinsic value, investment in the stock is disregarded.

Graham and Dodd distinguish between three general approaches to common stock investing under "The New-Era Theory."[13] The first technique, based on the work of Edgar Lawrence Smith, emphasized diversification and long-term holding. This became the basis for more contemporary approaches that advocate passive investing in index funds. The second approach evolved from the practices of institutional investors and emphasized forecasting growth in earnings. Many of today's brokerage firm stock analysts engage in this application. The approach favored by Graham and Dodd was purchasing individual stocks based on rigorous analysis to determine a satisfactory margin of safety. In modern applications, most stock investors and brokerage firm analysts are not strict adherents to Graham and Dodd's approach. Although they apply similar analytic processes and may adhere to the margin of safety concept, their primary objective is to forecast earnings growth and use these forecasts for future valuations.[14]

In applications, fundamental security analysis is typically performed in one of two ways; bottom-up or top-down.[15] The bottom up method focuses on an analysis of the firm as a standalone entity. This procedure does not involve extensive analysis of economic, market, or industry conditions but instead focuses on firm-specific attributes such as management quality, product or service characteristics, input costs, operational efficiency, and other business fundamentals. The top-down method is the most comprehensive form of fundamental analysis. This method begins with an analysis of the global economy followed by an assessment of market, industry, and individual firm conditions. The choice between the two methods depends on the preferences and training of the analysts or investor. Graham, Dodd, and Buffett use

[13] *Ibid*., pp. 362–371.

[14] Hooke (1999), p. 80; English (2001), p. 16.

[15] Hooke (1999) provides a detailed overview of the top down and bottom up approaches in ch. 5.

a bottom-up approach. Research analysts working for securities brokerage firms typically employ the top-down approach.[16]

Fundamental analysis can differ in terms of the analytic techniques employed. Some applications may not conform to a traditional Austrian view. The content of many stock analysts' reports typically includes results from quantitative models that are used to arrive at valuations or to support or lend credence to qualitative estimates and recommendations.[17] Analysts often utilize discounted cash flow models or relative valuation models to help estimate stock valuations.[18] Many valuation models also require the input of required return estimates that are derived from financial models such as the capital asset pricing model or similar risk-based asset pricing models.

The integration of quantitative analysis with fundamental analysis is pervasive. The use of such procedures is promoted in academic texts and influential organizations such as the CFA Institute.[19] The problems associated with scientism and the mechanistic treatment of humans have been thoroughly addressed by Austrian economists such as Rothbard (1960) and Mises (1949, pp. 107–113).

Applications of positivistic methods to fundamental analysis may be problematic to those adhering to traditional Austrian views, but employment of such methods usually constitutes a small part of a comprehensive analysis. Perhaps the greatest value in performing fundamental analysis is the understanding gained from engaging in the entire process. The analyst/investor's understanding of the firm evolves through investigation and evaluation of a firm's history. Insights are acquired to make the qualitative assessments that ultimately influence future courses of action. In the case of stock analysts, their understanding and insights are

---

[16] *Ibid*., pp. 71–73.

[17] For a comprehensive review of quantitative models used by stock analysts, see *Applied Equity Analysis* (English [2001]).

[18] Block (1999).

[19] The Chartered Financial Analyst Institute is the accrediting body for the Chartered Financial Analyst (CFA) designation. CFA candidates must pass three examinations based on the Candidate Body of Knowledge (CBOK) and meet other criteria before they can receive the designation. Information on CBOK content can be viewed at www.cfainstitute.org.

projected in their reports and recommendations. Commentaries on revenue growth, profit margins, cost reductions, and new innovations in addition to qualitative investment recommendations reflect the analyst's overall understanding of the firm and its likely future performance.

The employment of valid stock selection methods has economic implications. Fundamental analysis may play an important role in allocating capital to the most deserving entrepreneurs. The typical investor who employs fundamental analysis for common stock selection does not typically engage in frequent trading. Many can be appropriately described as "buy and hold" investors. Due to their long-term orientation, these investors have greater incentives to select common stocks for investment that reflect solid business principles and compelling prospects. The combination of rigorous analysis and propensity for longer-term investment should favor investments in firms whose entrepreneurs display skill in serving their customers while earning a profit or creating positive cash flows. This should also deter investment in businesses that lack evidence of entrepreneurial skill. In general, businesses operated by successful entrepreneurs should enjoy lower financing costs and find it easier to raise additional capital thus, enabling them to expand production and/or deliver more innovative products and/or services in the future.

FUNDAMENTAL ANALYSIS: THE BASIC PROCESS

> "Analysis connotes the careful study of available facts with the attempt to draw conclusions therefrom based on established principles and sound logic."
>
> —Benjamin Graham and David Dodd, *Security Analysis* (1940) p. 17.

In this section, a generalized example of fundamental analysis is presented in order to help clarify how the process works and identify basic tenets relative to a thymologic process. This example is based on English (2001, pp. 10–16) who provides a general overview of the approach used by stock analysts in formulating earnings forecasts and investment recommendations. By examining the procedures and processes involved, fundamental analysis' applicability as a method for common stock selection within the context of traditional Austrian views can be established.

A primary objective of a stock analyst is to gain a thorough understanding of the object firm and the environment in which it operates. This requires an assessment of management capabilities, anticipating outside forces that may impact the firm, and anticipating changes in economic, regulatory, natural, and geopolitical environments that could affect a firm's performance. The more complete the analyst's understanding of the firm and its operating and competitive environments, the more effective he should be at anticipating its future prospects.

The analyst begins the analysis by collecting and analyzing relevant historical information on the object firm. This information is gathered from economic, industry, and corporate reports in addition to news releases, and interviews with customers, vendors and suppliers. Historical analysis aids the analyst's understanding of how management, consumers, and external influences such as regulators impacted the firm in the past. This provides clues as to how the current state of the firm evolved and how the firm's future performance may be affected by similar future developments.

The analyst then examines the current environment in which the firms operate. He examines current events that could influence consumer preferences, cost structures, key personnel, and government regulation. Developments that could have immediate material impact on the firm are identified. The analyst develops an intuitive feel for how management is likely to respond to evolving conditions. Data from the firm's financial statements are collected and transformation into various ratios. Financial models may be used to assist in identifying the firm's past strengths and weaknesses by providing objective criteria that may produce additional insights. In total, this information will help the analyst manifest a view of how management may respond to future developments.

Once the analyst is comfortable with his understanding of the firm's past history and current operating environment, his experience, training, and skill are put to the task of forecasting earnings and stock price. At this point the analyst may reflect on his understanding of the firm and contemporary developments. He will attempt to understand how factors such as pending transactions, regulations, and competitive developments may affect financial performance. He may contemplate a number of scenarios in an attempt to understand how the future may play out. Once the analyst attains confidence in his view of how the future is likely to evolve, he translates the effects into the impact on financial performance. He may use spreadsheet analysis and/or similar analytic software programs to integrate his subjective valuations into estimates of cash flow, earnings, and perhaps, the intrinsic value of the stock. The analyst's understanding of the past and future direction of the firm will culminate into an earnings forecast and an overall "valuation" of stock price. His final statement on the prospects for the firm and the actions investors should take are summarized by a recommendation to buy, hold, or sell the stock.

DISCUSSION

In the preceding example, the focus of the analyst is on the firm and the actions of those who are likely to influence its future prospects. This task is speculative in nature and requires understanding of both past and future. In effect, the analyst is engaged in a comprehensive case study that culminates into recommendations for future courses of action. The analyst enters a research phase where the goal is to understand the history of the firm and the forces that influenced past performance. He examines the interplay of the actors involved including management, customers, suppliers, and government officials. He evaluates the effects of past actions on revenues, input costs, growth rates, and earnings. He then enters the entrepreneurial phase where all key factors capable of influencing future performance of both the firm and subsequent stock price are taken into account. The analyst must exercise sound reasoning and judgment to assess the likely impact of current developments on the firm's prospects. Mental scenarios are created to evaluate possible outcomes. A combination of quantitative and qualitative evaluations is used to anticipate future performance relative to changing conditions and evolving market prices. During this process the analyst gains a unique perspective of the firm's prospects and ultimately acquires the level of understanding needed to issue an investment recommendation and suggest an appropriate course of action.

When fundamental analysis is performed in the manner described, it aligns very well with traditional Austrian views by relying on analysis, logic, and sound judgment. The process follows a thymologic method based on the attainment of understanding. It represents an attempt to understand the roles of the individual actors involved and their motivations for engaging in specific courses of action. The implementation of fundamental analysis is not reliant on a positivistic approach that violates traditional Austrian views (even though such applications are routinely employed in contemporary evaluations). In other words, the process can be successfully implemented without: (1) employing a mechanistic view of mankind that reduces the role of the individual to that of an automaton, (2) negating the role of the individual in lieu of an emphasis on collective actions, and (3) solely basing an investment recommendation on forecasts extrapolated from econometric models. Fundamental analysis can easily be employed as an Austrian approach to common stock selection because the method is flexible enough to embrace the dynamics and complexities of human actions and incorporates reality into analysis and projections.

CONCLUSIONS

This study provides evidence that supports the consistency of fundamental analysis with an Austrian view and helps explain its positive affinity with many Austrian authors. As a means for common stock selection, it provides a suitable approach for attaining an investor's end in view and is suitable for those who desire an approach that is amenable to traditional Austrian views. It is a method in which success or failure depends on the skill and ability of the investor as opposed to an artifact of outside forces. In addition, it is likely that those who use fundamental analysis as a means for common stock selection play an instrumental role in allocating capital to its best use in a free market.

Investing in stocks is a difficult endeavor. It is a speculative undertaking that requires analysis, foresight, and judgment. Very few investors, even with the advantage of employing a sound method, will enjoy the success of Warren Buffett. However, to paraphrase and extend the conclusions in Shostak (1997): the investor who masters the basic tenets of Austrian economics, and utilizes fundamental security analysis as a means for stock selection, is likely to gain an edge over those using inferior methods, and thus enhance the likelihood of success.

REFERENCES

Block, Stanley B. 1999. "A Study of Financial Analysts: Practice and Theory." *Financial Analysts Journal* 55, no. 4: 86–95.

Bodie, Zvi, Alex Kane, and Alan J. Marcus. 2009. *Investments*. 8th ed. New York: McGraw-Hill.

English, James R. 2001. *Applied Equity Analysis*. New York: McGraw-Hill.

Graham, Benjamin, and David L. Dodd. 1940. *Security Analysis*. 2nd ed., New York: McGraw-Hill.

Hooke, Jeffrey C. 1999. *Security Analysis on Wall Street: A Comprehensive Guide to Today's Valuation Methods, University Edition*. New York: Wiley.

Howden, David. 2009. "Fama's Efficient Market Hypothesis and Mises's Evenly Rotating Economy: Comparative Constructs." *Quarterly Journal of Austrian Economics* 12, no. 2: 17–26.

Kaza, Greg. 2000. "In Defense of Fundamental Analysis: Securities Arbitrage and the Efficient Market Theory." *Quarterly Journal of Austrian Economics* 3, no. 1: 61–63.

Keifer, Charles F., Leonard A. Schlesinger, and Paul Brown. 2010. *Action Trumps Everything*. Duxbury, Mass.: Black Ink Press.

Knight, Frank H. 1921. *Risk, Uncertainty, and Profit*. New York: Augustus M. Kelly, 1964.

Leithner, Chris. 2005. *Ludwig von Mises Meet Benjamin Graham: Value Investing from an Austrian Point of View*. Working paper. Available at www.mises.org/journals/scholar/Leithner.pdf.

Mises, Ludwig von. 1949. *Human Action*. Auburn, Ala.: Ludwig von Mises Institute, 1999.

——. 1957. *Theory and History*. New Haven and London: Yale Press.

——. 1962. *The Ultimate Foundations of Economic Science*. New York: Van Nostrand.

Pasour, E. C., Jr. 1989. "The Efficient-Markets Hypothesis and Entrepreneurship." *Review of Austrian Economics* 3: 95–107.

Rothbard, Murray N. 1960. *Scientism and Values*. In Helmut Schoeck and James W. Wiggins, eds. Princeton, N.J.: D. Van Nostrand.

Sarasvathy, Saras D. 2008. *Effectuation, Elements of Entrepreneurial Expertise*. Northampton, Mass.: Edward Elgar.

Shackle, G. L. S. 1956. "Expectations and Cardinality." *Economic Journal* 66, no. 262: 159–162.

Shostak, Frank. 1997. "In Defense of Fundamental Security Analysis: A Critique of the Efficient Market Hypothesis." *Review of Austrian Economics* 10, no. 2: 27–45.

Train, John. 1987. *Money Masters*. New York: Harper and Row.

Wood, J. Stuart. 2005. *The Development and Present State of the Theory of Entrepreneurship in Product and Asset Markets by Knight, Hayek, Schumpeter, Mises, Kirzner, Shackle, and Lachmann*. Available at mises.org/journals/scholar/wood.pdf.