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An Austrian Critique of Passive Investing

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Abstract: This article reviews numerous arguments Austrian scholars have made against the efficient market hypothesis and asserts that these arguments are sufficient grounds for dismissal of many of the theoretical justifications which have been advanced in favor of passive investing, and in favor of the traditional value-weighted index fund in particular. In the absence of theoretical justification, empirical test results are the primary evidence to substantiate passive investing's claim to superiority relative to alternative investment strategies—results which, this article contends, are insufficient grounds for acceptance of the claim. Finally, it is argued that the much-emphasized contradistinction between *active* and *passive* investing is lacking in substance. The passive portfolio's construction is the product of subjective human judgment just as the actively managed portfolio is; passive investing merely involves a different kind of judgment.

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INTRODUCTION

The passive investing strategy, brought to market in the 1970s, was directly inspired by the work of neoclassical economists in the 1960s, especially the efficient market hypothesis (EMH) (Bogle 2013; Wigglesworth 2018). Over time, passive investing has become something of a dogma among members of the economics and financial professions, and it has recently attained an unprecedented level of popularity: "Passive funds made up 48 percent of the assets under management in equity funds and 30 percent for bond funds as of March 2020, whereas both shares were less than 5 percent in 1995" (Anadu et al. 2020, 2).

Austrian economists have dealt at length with the EMH and the ways in which it contradicts Austrian theory (Campos Dias de Sousa and Howden 2015; Foss and Klein 2010; Mises 2003; Pasour 1989; Rothbard 2011; Shostak 1997), but there has been relatively little application of this analysis to the passive investing paradigm. This article fills this gap by critically analyzing passive investing from an Austrian perspective, drawing on previous critiques of the EMH.

One must certainly admit that the EMH is a truism—within its theoretical constraints. Yet given that the EMH is used to justify particular investment methods or strategies *in practice*, an appropriate assessment of it through a causal-realist lens must be conducted, for despite being logically consistent internally, the EMH suffers from massive flaws when applied in the real world. The critique, then, primarily addresses the EMH's application in practice—that is, its domain rather than its internal logic.

Beyond the aforementioned theoretical disagreements between neoclassical and Austrian economists, there are also methodological differences. Neoclassical economists have proposed empirical tests as sufficient means for validating the EMH, whereas the Austrian praxeological method would require the theory to be logically consistent with or deducible from the action axiom (Mises 1998). While even neoclassical economists have long acknowledged that there are fundamental problems with empirical tests of the EMH (Roll 1977), it seems that this insight has subsequently fallen by the wayside and that not all of its implications have yet been fully appreciated.

This article also takes on the much-emphasized distinction between *passive* and *active* investing. In the case of passive investing, the index creators are agents who exercise judgment to make investment allocation decisions—(proxy) entrepreneurial decisions—on behalf of clients. In the case of active investing, judgment is also at play but in a different fashion. Thus, both passive and active investing result from judgmental decision-making under conditions of uncertainty (Foss and Klein 2012) and are far more closely related to one another—that is, far less distinct—than is often claimed.

BACKGROUND

The following sections will briefly review seminal works on the EMH as well as the history and development of the passive investing phenomenon.

Efficient Market Hypothesis

John Muth (1961) first proposed the rational expectations hypothesis, which holds that individuals and markets form expectations about conditions in the future and that these expectations generally turn out to be correct, in 1961. A few years later, using the rational expectations hypothesis as a causal and an explanatory mechanism, Eugene Fama (1965) published a landmark paper on the random walk theory. The term *random walk* refers to the idea that stock market price series are random—that is, that future prices are independent of past prices and therefore impossible to reliably predict.

According to the random walk theory, a company's stock is always in an equilibrium state wherein its market price is equal to the market's rational expectations of its discounted future cash flows—what proponents refer to as its *intrinsic value*. In this equilibrium framework, only unanticipated changes in conditions or unexpected news can disrupt the equilibrium and cause market participants to adjust their forecasts of intrinsic value, thereby adjusting the market price. It is such unexpected changes in conditions or news and the market's instantaneous adjustment to

the new equilibrium that cause subsequent prices to be independent of previous prices and therefore unpredictable.

Fama (1970) then incorporated the rational expectations hypothesis and the random walk theory along with other ideas into a formal theory of efficient capital markets. He established three conditions for market efficiency: (1) all information is freely available to at least a sufficient number of market participants; (2) they generally agree about the significance or implications of this information for intrinsic values; and (3) there are no transaction costs or frictions. In an efficient market, all of the previously established conditions would hold: asset prices would fully reflect all presently available information and the market's rational expectations about the stock's intrinsic value—that is, its discounted future cash flows—and these expectations would generally turn out to be correct.

From the very beginning, Fama (1970, 387) (and later others such as Grossman and Stiglitz (1980) as well) acknowledged that the conditions for market efficiency do not obtain in real markets: "A frictionless market in which all information is freely available and investors agree on its implications is, of course, not descriptive of markets met in practice." Yet he and others conducted empirical research throughout the 1960s and 1970s in order to test and validate the hypothesis as if market efficiency thus defined were actually real.

For instance, Jensen (1968) compared the performance of many leading, professionally managed mutual funds against the performance of the S&P 500 and concluded that mutual funds "on average" were not able to outperform the index, and further that "there is very little evidence that any individual fund was able to do significantly better than that which we expected from mere chance" (415). This line of inquiry comparing actively managed funds' performance against stock market indices has persisted. Numerous similar studies (e.g., Chang and Lewellen 1984; Henriksson 1984) undertaken since Jensen's have come to a similar conclusion that "mutual funds have been unable collectively to outperform a passive investment strategy" (Chang and Lewellen 1984, 67).

Additional studies have tested the market's efficiency in alternative ways. For example, Ball and Brown (1968) looked at price movements immediately preceding and following company earnings announcements and concluded that markets generally

correctly anticipate the information contained within such earnings announcements. Waud (1970) did a comparable analysis of price movements around policy announcements by the Federal Reserve and arrived at a similar conclusion.

However, even some neoclassical economists have identified a significant flaw in empirical tests of asset pricing models such as these, namely that there is no observable *market portfolio* (Roll 1977). Because one must select a proxy for the market portfolio, attempts at testing the market's asset pricing abilities are subject to a joint hypothesis problem, in light of which the test results might indicate what the research data suggest or might indicate a problem with the proxy or model. Therefore, "market efficiency per se is not testable" (Fama 1991, 1575). One implication of this problem for a test such as Jensen's is that, while the test can compare particular investment portfolios (e.g., the portfolios of professional fund managers or of individual investors) against a proxy for the market portfolio (generally a stock market index), it cannot test against the market portfolio per se.

Passive Investing

The *passive* investment strategy entails the selection of a stock market index, such as the S&P 500, to be used as a benchmark and then the creation of a fund that makes capital allocation decisions which seek to track the benchmark as closely as possible at all times. This strategy is often presented in contrast to an *active* investment strategy, in which individuals or professional money managers proactively exercise judgment in attempts to identify and select investments which will yield profits in the future.

In the first half of the 1970s, a few passive index funds were created at firms like Wells Fargo (Wigglesworth 2018), but they were only available for institutional investors (i.e., banks, endowments, pension funds, etc.). In 1973, Burton Malkiel (1973) published his *New York Times* bestseller *A Random Walk down Wall Street*, in which he popularized the ideas of the EMH and advocated the creation of passive index funds for retail investors. In fact, Malkiel (2003, 59) later famously argued that "a blindfolded chimpanzee throwing darts at the *Wall Street Journal* could select a portfolio that would do as well as the experts."

In 1974, Paul Samuelson (1974, 17) published in the *Journal of Portfolio Management* an article entitled "Challenge to Judgment," in which he strongly questioned the value and performance of professional portfolio management and recommended the development of passive (value-weighted) index funds:

> What is at issue is not whether, as a matter of logic or brute fact, there could exist a subset of the decision makers in the market capable of doing better than the averages on a repeatable sustainable basis. . . . The crucial point is that when investigators . . . look to identify those minority groups or methods endowed with sustainable superior investment prowess, they are quite unable to find them. The only honest conclusion is to agree that a loose version of the "efficient market" or "random walk" hypothesis accords with the facts of life.

Inspired by Samuelson's challenge, John "Jack" Bogle launched what would become the Vanguard Group in 1975, with the aim of establishing low-cost stock market index funds and making them available to retail investors (Bogle 2013). Vanguard's S&P 500 index fund launched in 1976 with $11 million in assets under management (AUM). By 1988, this S&P 500 fund had over $1 billion, and as of April 2023, it had over $774 billion in AUM.

As of 2019, the five largest passive investment management firms (Vanguard, BlackRock, State Street, Fidelity, and Charles Schwab) collectively held over $7.5 trillion in passive funds (Anadu et al. 2020). Moreover, and as mentioned earlier, in the United States "passive funds made up 48 percent of the assets under management in equity funds and 30 percent for bond funds as of March 2020, whereas both shares were less than 5 percent in 1995" (Anadu et al. 2020, 2).

Index Construction and Index Funds

In the financial context, an index is a proxy that seeks to track the performance or price movements of a basket of securities, just as the Consumer Price Index (CPI) is a statistical measure that strives to track the price movements of a basket of consumer goods. A broad-market index such as the S&P 500 is generally used as a proxy for the entire U.S. stock market.

The S&P 500 was created by Standard and Poor's in 1957 and is today managed by S&P Global. The firm makes all the decisions regarding eligibility criteria for the index and indeed selects all the methods employed in the index's construction. A summarized list of eligibility criteria for inclusion in the index is as follows (S&P Dow Jones Indices 2023): the company must be based in the U.S. and be publicly traded on a U.S. stock exchange; the company's stock must be sufficiently "liquid"—that is, it must be traded at a volume that exceeds a certain dollar threshold established by S&P Global; the company must be "financially viable"—that is, it must meet certain earnings and profitability criteria established by S&P Global; and the market capitalization of the company must be in excess of roughly $12.7 billion, as of April 2023, to place the company among the five hundred largest firms in the U.S. by market capitalization (S&P Dow Jones Indices 2023).

Next, the index applies a weighting mechanism (a weighted average of the market capitalization) to each of its constituent members. As of April 2023, the index's largest constituent (Apple) has a roughly 6 percent weighting in the index, while the ten largest constituents collectively have a roughly 24 percent weighting. The index is then maintained over time via *rebalancing*, which adjusts the relative weights in proportion to changes in market capitalization, and by *reconstitution*, which is the entire portfolio construction process described above.

An *index fund* is simply an investment fund which selects a stock market index to serve as its benchmark and thereafter makes investment allocations to match or track the index as closely as possible across time. An index fund is typically evaluated on the basis of two criteria: its accuracy in tracking its benchmark index, and the fees and expenses that are borne by the fund's investors. This is precisely the product and the framework which were prescribed by the EMH and its advocates.

AUSTRIAN CRITIQUE

Given that passive investing is deeply rooted in the EMH, this section first reviews core Austrian criticisms of the EMH and outlines their mediate relevance for the critique of passive investing

and subsequently provides some additional thoughts directly related to issues surrounding passive investing as such and its alleged superiority.

Efficient Market Hypothesis

Rationality. In mainstream economics, the terms *rational* and *irrational* seem to be attributed to human action or human actors in relation to their conformity with some chosen criterion (Marschak 1950; Thaler 2016). In the context of the EMH, the criterion for rationality is the correctness of market participants' forecasts of future developments (Muth 1961). *Efficiency*, in mainstream economics, relates to the rapidity with which new developments or information is reflected in the prices of assets (Ball and Brown 1968; Fama 1970; Fama et al. 1969; Waud 1970).

Austrians, on the other hand, hold that all human action is rational because each individual possesses subjective values and preferences and acts purposefully in attempts to satisfy his wants. In so doing, the individual employs the available means which he believes will be the most efficient for the attainment of his ends and the satisfaction of his wants. In that sense, "human action is necessarily always rational" (Mises 1998, 18). Meanwhile,

> the terms *irrational* and *irrationality* are mostly used for censuring concrete modes of action. An action is called irrational either because the censor disapproves of the end (i.e., of the way in which the acting individual wants to attain satisfaction) or because the censor believes that the means employed were not fit to produce the immediate effect aimed at. (Mises 1990, 23–24)

Given its causal-realist approach (Menger 2007; Salerno 2010), the Austrian framework makes no assumption that individuals are in possession of near-perfect knowledge about the past, present, or future (Lachmann 1943) or that the individual is capable of calculating the probability distributions of various future outcomes (Hoppe 1997). Therefore, Austrian theory would not lead one to the assumption, or the conclusion, that the market price of an asset is "correct" relative to its future cash flows, nor even that it is "as correct as possible" given all presently available information. Certainly,

given the Austrian definition of rationality, markets and individual actions do not need to meet the aforementioned conditions to be considered rational. Yet the assumption of these conditions is foundational to the EMH, and one which is advanced in support of the value-weighted index fund, the flagship investment vehicle of the passive investing strategy.

Equilibrium and efficiency. In the equilibrium model maintained by the EMH, observed profits in excess of those attained by the market portfolio are usually accounted for either as random and unpredictable phenomena (random walks) or by reclassifying profits as compensation for risk, the famous *risk premium* (Fama and MacBeth 1973; Hülsmann 2017).

Against the former proposition, Austrians would argue that a profit return must necessarily follow from a preceding judgment and purposeful action on the part of an individual and is therefore, while uncertain, not random (Foss and Klein 2012). Further, Austrian theory is perfectly accepting of the idea that in capital markets, as in all other areas, "there will be systematically—and hence enduringly—different success rates" among entrepreneurs, who are each endowed with "strikingly-different talents," and it should therefore be unsurprising to observe that "the degree of success among different individuals is strikingly different" (Hoppe 1997, 76–77).

Against the latter proposition, Austrians have argued that differences in rates of return "cannot be explained as compensations for risk, but do result from different subjective appreciation of available investment opportunities" (Hülsmann 2017, 144). In other words, differences in entrepreneurial judgment rather than differences in mere risk-taking produce differences in returns.

The EMH defines a market as *efficient* if it quickly and correctly adjusts 'its' expectations and prices in response to changes in conditions or new information (Fama 1970), whereas the Austrian conception of efficiency is radically different:

> In Mises's system, neither consumer goods nor factor prices "converge," in real time, to efficient, long-run equilibrium values, because the adjustment processes set in motion by profit-seeking entrepreneurs are frustrated, moment by moment, by exogenous changes in consumer preferences, technological knowledge, resource availabilities, and so

> on. The efficiency of the market, for Mises, results simply from the fact that prices are determined by the voluntary interactions of buyers and sellers according to their preferences over marginal units of goods and services. (Foss and Klein 2012, 64)

For Austrians, the conditions for market efficiency are simply (1) a free—that is, unhampered—market and (2) the discipline of profit and loss. In such a market, entrepreneurs are free to decide which goods and services they produce with their resources, and consumers are free to decide which goods and services they buy with their resources, in turn informing entrepreneurs' judgment about how to best employ their resources in production. Those entrepreneurs who correctly identify the most urgent wants of their fellow men, devise appropriate means by which to satisfy them, and execute their plans successfully will ultimately win control over additional resources. Those who are unsuccessful in these entrepreneurial tasks will ultimately lose control over their resources. Foss and Klein (2010, 4) explain:

> For Mises, the critical "market process" is not the convergence to equilibrium, but rather the selection mechanism in which unsuccessful entrepreneurs—those who systematically overbid for factors [of production], relative to eventual consumer demands—are eliminated from the market. It is this process that ensures that real-world, day-to-day prices are as "efficient" as they can be—in other words, that consumer sovereignty obtains at all times on the market.

There would seem to be little need, then, for Austrians to look to price movements and investment returns in the stock market as key indicators of market efficiency.

Prices and information. To review, the three originally formulated conditions for capital market efficiency were that all information is freely available to all market participants (subsequently relaxed to that at least a sufficient number of investors must share the same information), that market participants agree about the significance or implications of this information for intrinsic values, and that there are no transaction costs or frictions (Fama 1970).

Given that these conditions do not obtain in real markets, some Austrians have concluded that such equilibrium models and their admittedly unrealistic assumptions are "useless" to explain

"rational resource allocation in a dynamic economy," and that therefore "finding an application in a dynamic reality is unlikely" (Olbrich, Quill, and Rapp 2015, 12). Some have even argued that such equilibrium conditions *cannot* obtain in real markets—that they are logically inconsistent and therefore impossible (Campos Dias de Sousa and Howden 2015; Herbener and Rapp 2016).

Austrians hold that exchange or trade can only take place, and therefore prices can only emerge, when two parties disagree about the value of the goods being exchanged (Menger 2007; Rothbard 2009). In the case of a stock market transaction, the seller must believe that the money price he is receiving in the exchange is of greater value to him than is the stock which he is giving up (e.g., Matschke 1972; Olbrich, Rapp, and Follert 2022), while the buyer must believe the opposite. If this were not true, then the trade could not take place and the market price could not emerge (Follert et al. 2018; Olbrich, Quill, and Rapp 2015; Herbener and Rapp 2016). It cannot be the case, then, that all market participants have consumed the same information and come to the same conclusion as to its meaning or significance for the value of the stock, since this would prevent exchange from taking place (Campos Dias de Sousa and Howden 2015; Herbener and Rapp 2016; Rapp, Olbrich, and Venitz 2018; Shostak 1997). Likewise, it cannot be the case that the market price is somehow a collective *market* appraisal of the stock's (intrinsic) value, since the price only emerges at the moment of exchange, which was just described as taking place between two parties.

Empiricism. While proponents of the EMH have acknowledged from the very beginning that the conditions for market efficiency do not obtain in real markets (Fama 1970), they have consistently conducted empirical research to allegedly validate the hypothesis nonetheless. Then, when empirical studies yield unfavorable results, these can be attributed to a measurement problem in the model, justified on the basis of the model's failure to accurately account for risk, and so on. Indeed, problems with testing asset pricing models have long been known (Roll 1977).

Austrians object to this kind of use of the empirical method in economic science (e.g., Bylund, Packard, and Rapp 2023; Rothbard 2011). The Austrian praxeological method begins with the simple truth that man acts purposefully in attempts to satisfy his own ends,

and then deduces logical conclusions from this truth (Mises 1998). The edifice of knowledge derived from this method is logically consistent and may also be observed empirically.

Some of the early empirical research which was used to allegedly substantiate the EMH and ultimately inspired the passive investing phenomenon compared the investment returns of the S&P 500 and other indices against professionally managed mutual funds (e.g., Jensen 1968). The results of this empirical work indicated that, on average, professional management did not produce returns in excess of those attained by index portfolios such as the S&P 500. The relevant conclusion drawn was that the index, or the then-hypothetical index fund, constituted a superior investment strategy.

If the primary evidence to substantiate the EMH's claims is observations about the past, then Austrians should regard these as insufficient grounds for acceptance of the hypothesis. The same applies to the passive investing strategy. For Austrians, there is no theoretical reason to assume that empirical observations about the historical returns of particular investment strategies during particular periods of time—or about their relative merits or defects in comparison to one another—should hold true in the future or remain constant through time. To quote from Rothbard (2011, 37), "If empirical success is the test, it is surely noteworthy that all the determined efforts of quantitative economists, econometricians, and social scientists have not been able to find one single quantitative constant in human affairs."

However, while past data and observable patterns among them are certainly no definite proof for uncertain future developments, such data can nonetheless be used by entrepreneurs in general and investors in particular as one means to (in)form their future expectations. Mises (1998, 333) notes:

> In drafting their plans, the entrepreneurs look first at the prices of the immediate past. . . . Of course, the entrepreneurs never make these prices enter into their calculations without paying regard to anticipated changes. The prices of the immediate past are for them only the starting point of deliberations leading to forecasts of future prices.

Entrepreneurship. The entrepreneurial function is alluded to in the neoclassical discussion of rational expectations and efficient markets,

namely in the context of pursuit of profits, consumption of information, development of future expectations, and so on. However, Austrian scholars have argued that the EMH framework leaves no room for the role of the entrepreneur: rather than remaining a discrete function performed by real individuals through time, the entrepreneurial function is in fact abstracted away within the EMH (Campos Dias de Sousa and Howden 2015; Pasour 1989; Shostak 1997).

In the original model which inspired the development of the passive investing phenomenon in the 1970s, the market is always in an equilibrium state wherein the price of a stock is equal to its intrinsic value, with instantaneous adjustments to new equilibria after changes in conditions or the emergence of new information. Some proponents of the EMH and the passive investment strategy (e.g., Malkiel 2003) would even seem to discourage individuals from exercising entrepreneurial judgment via speculation in capital markets, arguing that it is futile or irrational (e.g., "You can't beat the market!"). Several studies seem to support that claim by highlighting how individual investors underperform relative to the market (e.g., Odean 1998; 1999). Yet empirical evidence is mixed; other studies suggest that some individuals indeed beat the market (Barber and Odean 2000; Ivković, Sialm, and Weisbenner 2008; Ivković and Weisbenner 2005) and might do so persistently due to superior investment skills (Coval, Hirshleifer, and Shumway 2021).

In the Austrian paradigm, the investor or capitalist-entrepreneur (Klein 1999) is essential to the function of the market economy—he purposefully commits capital in particular production processes oriented toward producing particular goods in the future and ultimately satisfying particular wants. In capital markets, he selects which firms, managers, and lines of production to provision with the necessary capital for their plans and projects to be realized and their goods and services to be brought to market (Kirzner 1973; Klein 2010). Capitalist-entrepreneurs are therefore regarded as the "driving force in shaping the actual structure and patterns of production in the market economy" (Rothbard 2011, 283).

Neoclassical and Austrian positions on the nature of capital markets, and the role of the capitalist-entrepreneur in particular, are thus incompatible. Klein (2010, 109) summarizes:

Contemporary finance theory focuses primarily on equilibrium models of resource allocation under conditions of risk, not Knightian uncertainty, so entrepreneurship theory cannot be simply a reframing of modern finance theory. Instead, a *financiers as entrepreneurs* approach treats investors not as passive suppliers of capital to decision-making firms, but as the locus of economic decision making itself.

Passive Investing

Indexation and judgment. A stock market index does not exist as a natural phenomenon. Instead, each index is the product of human design: the construction of any index necessitates discretionary choices on the part of the individual or group that creates the index.

Austrian economists have identified numerous problems with attempts to measure economic aggregates, such as Gross Domestic Product (GDP) and Gross National Product (GNP), and average price levels, such as the CPI (Rothbard 2009; 2011). The same challenges confront those who would attempt to construct an average stock market portfolio or an aggregate stock market price. Which regions, sectors, or industries ought to be included in the index? Which specific companies' stock from within each sector or industry? Which methods, rules, or criteria should be employed for making each of these decisions? Or for assigning each company's constituent weight in the index? Or for maintaining the portfolio over time? The index creator must decide. He must choose the answer to each of these questions and many more, and thereby abandon the pretense that the proxy—that is, the index—is an objective measure of a real object which exists outside of the proxy itself. The following fact is a great illustration of this point: according to the Index Industry Association, the number of stock market indices in existence today far exceeds the total number of publicly traded companies—by a factor of seventy (Authers 2018).

Therefore, if one purchases shares in an index fund, one has purchased neither an investment allocation spontaneously or collectively determined by *the market* nor the *average* stock market portfolio. Instead, one has purchased shares in an investment portfolio that matches the investment selection criteria and the entrepreneurial judgment of the index creator. Thus, whether one invests in a *passive* index fund or an *actively managed* fund, one has

simply hired an agent to exercise judgment on one's behalf—what entrepreneurship scholars refer to as *derived judgment* (Foss, Foss, and Klein 2007; Foss and Klein 2012; Rapp and Olbrich 2022).

In the case of the actively managed fund, the fund manager is given the contractual authority to construct a portfolio and invest his clients' financial means on their behalf, exercising his own judgment in the pursuit of profits. In the case of the passive index fund, the only meaningful distinction from the actively managed fund is that the rules and criteria for the selection of investments, the execution of trades, and the management of the portfolio—that is, the entrepreneurial decisions—are enumerated and agreed to in advance, and then executed automatically thereafter. In this case, the agent whose entrepreneurial judgment is being hired and retained by the capitalist-entrepreneur is the index creator rather than the fund manager. The distinction between these two arrangements is not a categorical one, then, but rather a matter of the degree of license or discretion afforded to the hired agent.

Aggregation and measurement. There exists a tendency to measure the returns to the owners of capital stock in the aggregate or in the abstract, by simply tracking the changes in the market price of a stock or mutual fund share over time and sometimes factoring in dividend distributions. Yet such returns are merely hypothetical. Though the market price of a stock is observable and the changes in price over time are measurable along with the aggregate dividend distributions paid to shareholders, the actual returns to an individual owner can only be calculated with specific reference to his individual transactions. The real returns are not changes in market prices; they are profits or losses realized by the owners of a stock, and they are accounted for in the owners' own, individual ledgers. Therefore, the returns to the owners of the capital stock must be subjectively measured. This is another manifestation of the same aggregation problem that Austrians most often criticize in GDP or CPI.

There is also an important sense in which the returns to the owners of the capital stock are subjectively *determined*, in addition to being subjectively measured. This article has already argued that, since the future is uncertain, the future returns to the owners of the capital stock must be considered indeterminate in the present. This argument cited the dependency of future returns upon outcomes

that are exogenous the investors themselves—for ease and brevity, *market outcomes*. Still, it must be said that individual investors also exercise considerable influence over their own profits and losses, rather than simply passively realizing the so-called intrinsic value of an asset. This is true first because (some) shareholders exercise authority and control over a number of important decisions for the firm which will affect their subsequent returns. It is also true because each individual investor subjectively determines (chooses) the date and price at which he buys the stock as well as the date and price at which he sells it—the two most important components in the calculation of the individual's profit or loss. This subjectivity is somehow lost in the modeling and analysis of capital markets and their aggregate returns.

CONCLUSION

The theoretical foundations and assumptions which initially led to the development and adoption of passive investing and its flagship investment vehicle, the value-weighted index fund, are incompatible with Austrian economics. In the absence of valid theoretical claims, empirical evidence of particular passive portfolios' outperformance of alternatives has arguably become the most compelling evidence in their favor. This article has argued, echoing Mises, Rothbard, Hoppe, and others, that empirical evidence from the past should not be regarded as a reliable predictor of future outcomes in questions of human action. This principle should be applied to capital investment strategies and portfolio management techniques—after all, there is wisdom contained within the SEC-mandated disclaimer "Past performance is not a guarantee of future results."

Passive investing's proponents market the strategy as categorically different from alternative investment strategies such as individual stock selection or actively managed mutual funds. However, since the stock market index is of human design rather than being a decentralized and spontaneous investment allocation determined by the market, it necessarily reflects the entrepreneurial judgment of its creators just as an actively managed portfolio reflects its manager's judgment. Hence, essentially reflecting two kinds of human judgment, passive and active investing approaches have much stronger ties than is often claimed.

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