

Calling the Turns: Why Market Timing Is So Hard

by Philip Lawton, Ph.D., CFA

The stock market is cyclical, and any investor who could call the turns—buying when prices are lowest and selling when they are highest—would make a fortune. But only a fortuneteller would say, “The peak will arrive next Tuesday morning,” and like the rest of us, she’d be guessing (and almost certainly guessing wrong). The facts are clear—most actively managed equity mutual funds underperform the market.¹ Even worse, most individual investors underperform the funds they invest in: their money-weighted returns—the rates of return they actually earn—are preponderantly lower than the time-weighted returns that the funds report (Hsu and Viswanathan, 2015).

Investment managers’ underperformance relative to their benchmark generally results from unfortunate decisions in one or more of three areas: market timing, sector weighting or factor exposures, and stock selection.² The practical reality is that timing is integral to all aspects of investment decision making. Allocating funds across sectors, setting factor exposure targets, and identifying attractively priced stocks *all* have an element of market timing. Mutual fund investors’ underperformance relative to the active funds they hold is simply the result of their own inopportune purchases and redemptions.

If it’s all in the timing, why is it so hard to get the timing right?

The Market in Theory

The standard model of investment management equips portfolio managers and traders reasonably well to determine if an individual stock is fairly valued. Most investment professionals use discounted cash flow (DCF) analysis to estimate a stock’s inherent worth,³ and so to judge whether it is mispriced. With a handle on a stock’s true value, an investment professional can also observe the extent to which the

market may have mispriced it. Similarly, by comparing the market’s current cap-weighted price/earnings to the long-term average, analysts can judge whether, and by how much, the market as a whole is misvalued.

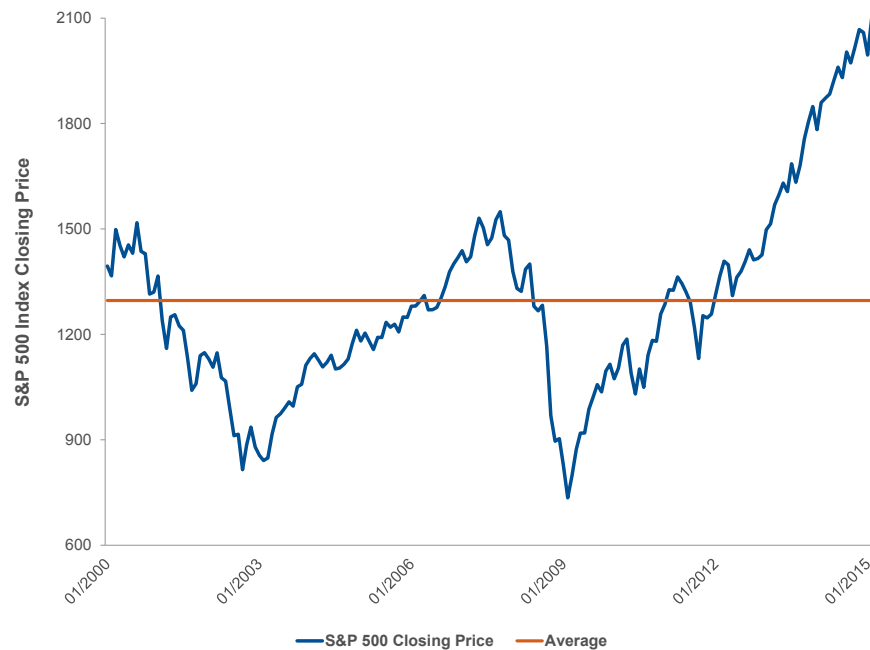
But DCF analysis, P/E multiples, and other theoretically sound valuation measures cannot tell us how much *more* misvalued the market will get nor can they explain the wild swings we’ve experienced in the two equity market cycles in the last 15 years.⁴ As **Figure 1** illustrates, the stock market seems to go too far in both directions—up and down—and the amplitude of these movements cannot be satisfactorily explained within the cool analytical framework of the standard model.

Empirical research has established that sooner or later stock prices revert toward their long-term averages. There is also strong evidence that the value premium is mean reverting (Hsu, 2014). If the market rises or falls to an extreme level despite a natural tendency to self-correct, then countervailing forces must be at work.

One hypothesis is that many market participants view mental effort as an avoidable transaction cost. Disinclined to gather and analyze solid information about the stocks that interest them, they are carried along by the crowd, trading on momentum and noise.

In addition to this kind of indolence or inertia, Daniel Kahneman (2011) and others have described a number of cognitive biases and patterns of emotionally charged behavior that affect individuals’ choices under uncertainty—the selling and buying of securities being an excellent example of such an activity. They include overconfidence and the illusion of control,⁵ mental accounts, availability cascades, loss aversion, overreacting to news, and herding, among others.

Figure 1. S&P 500 Index Monthly Price Levels (January 2000–March 2015)



Source: Research Affiliates using data from FactSet.

The field of neuroeconomics has also contributed much to our understanding of the autonomous brain, the old lizard brain, which leaps to conclusions while our conscious minds are still deliberating. The process of reasoning, it appears, is often rationalizing choices we may not know we've already made (Zweig, 2007). The insights into decision making that we've gained from behavioral finance and neuroeconomics go a long way toward explaining investors' actions and reactions when the outcome is in doubt.

Beyond Behavioral Finance

Given the behavioral view of investors' practical decision-making processes, two promising ways of thinking about how markets really work are Vernon Smith's concept of ecological rationality and Andrew Lo's adaptive markets hypothesis.

Smith, the experimental economist who shared the 2002 Nobel Prize in Economic Science with Kahneman, distinguishes between constructivist and ecological rationality. The former involves the intentional use of reason to analyze the given and to advocate a course of action. (The standard model of investment management is a sterling product of constructivist rationality.) Ecological rationality, in contrast, emerges in institutions, such as markets, through human interaction rather than by human design.

"Predominantly," Smith (2009, p. 157) writes, "both economists and psychologists are reluctant to allow that naïve and unsophisticated agents can achieve socially optimal ends without a comprehensive understanding of the whole, as well as their individual parts, implemented by deliberate action." But in Smith's account, personal exchanges gave rise to impersonal markets which serve to facilitate the specialization that creates wealth. Smith demonstrates that in a diverse set of circumstances, such as the airlines' response to deregulation, FCC spectrum auctions, and a variety of trust games, the interaction of individuals with partial knowledge leads in due time to near-equilibrium solutions.

Lo (2004, 2005) invokes pertinent findings of behavioral finance and neuroeconomics in his effort to develop a more realistic framework than the standard model. He also introduces key concepts from evolutionary psychology—competition, adaptation, and natural selection—and reintroduces the classic notion of bounded or approximate rationality proposed by Herbert Simon. Simon's idea crucially takes into account "the simplifications the choosing organism may deliberately introduce into its model of the situation in order to bring the model within the range of its computing capacity" (Simon, 1955, p. 100). For example, attempting to maximize the expected payoff from an

action is a computationally intensive exercise. One of the simplifications Simon describes is “satisficing,” more modestly requiring only that the benefit exceed some threshold.

Thanks to Kahneman, Smith, Lo, and many others, our understanding of the ways investors think and markets function is richer and more sensible than it was when the best minds of the time constructed the standard investment model. But these theoretical advances still don’t solve the active investor’s conundrum: when to buy and sell in strongly trending markets.

Blue Sky Solutions

So, where will the solution come from? Let’s think blue sky.

Among the unfettered solutions that come to mind, one approach might be modeling the actions and reactions of distinct groups (Lo’s “species”) whose members generally employ specifiable decision rules, but are subject to social influences and cognitive biases. Alternately, the industry might train its immense technological firepower on the markets themselves in a search for deep structures or path-dependent vectors that signal a change in direction: technical analysis with Cray supercomputers.

In either case, the analytical techniques that ultimately crack the code of market timing may originate in fields far removed from finance and economics—information theory, for example, or the study of complex networks. Recall that “Brownian Motion in the Stock Market,” an article written by the physicist M.F.M. Osborne (1959) and published in a nonfinancial journal, contributed to

the random walk theory of prices (Bernstein 2005, p. 103, and Fox, 2009, pp. 64–67).

And Back to Earth

The stock market’s turning points, as well as the valuation peaks and troughs of individual stocks, increasingly appear to be driven more by mass psychology than by sober professional judgment based on disciplined valuation techniques. In fact, the active investor’s conundrum is such a challenge that many investors have chosen passive investing—simply removing timing decisions from their purview. But there is strong evidence that the popularity of passive investing tied to prominent cap-weighted indices is actually associated with higher return correlations among stocks and, therefore, higher systematic equity market risk (Sullivan and Xiong, 2012).

At this juncture, we must acknowledge that financial theory does not provide clear and timely trading signals. Calling the turns is hard because we don’t have a mechanics of mean reversion. Our best theories—including behavioral finance, neuroeconomics, experimental economics, and evolutionary psychology—do not enable us to foresee the sudden exogenous shock that will trigger a reversal, or to sense when a gradual change in investors’ attitudes will reach the tipping point. Not even the most skilled and experienced asset allocators can pinpoint in advance the onset of a reversal. Most of us are well advised not to attempt market timing. The soundest plan is to choose a strategy that suits our investment objectives and risk tolerance—potentially including a disciplined smart beta strategy that systematically rebalances over time—and to stick with that choice for the long term.

Endnotes

1. According to the SPIVA Scorecard compiled by S&P Dow Jones Indices, for periods ended December 31, 2014, 76.25% of actively managed U.S. large-cap equity funds underperformed the S&P 500 for 3 years, 88.65% for 5 years, and 82.07% for 10 years.
2. For an approach to performance attribution analysis that isolates the impact of tactical asset allocation in factor investing (i.e., timing the cyclicity of risk premiums), see Hsu, Kalesnik, and Myers (2010) and Hsu and Shakeria (2013).
3. Cornell and Hsu (2015) hold that the investment professionals to whom end investors delegate decision-making authority use DCF analysis so prevalently that their discount models are likely both to drive prices and to determine the cross-section of expected returns.
4. Nor does the standard model account for the sheer volume of non-algorithmic stock market trades.
5. The novelist Italo Svevo satirized the illusion of control when he described a fictional character’s apparently successful effort to regulate the stock exchange on behalf of a late friend’s family: “I don’t know anyone who has ever been able to tolerate similar exertion for fifty hours. Every shift in price I recorded, brooded over, and then (why not say it?) mentally urged shares forward, or held them back, as best suited me, or rather my poor friend. Even my nights were sleepless.” (Svevo 2003, p. 388.)
6. Lo (2004) gives examples of “species” in the economy, including pension funds, retail investors, market makers, and hedge fund managers.

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