

THE JOURNAL OF
**INVESTMENT
CONSULTING**

A reprinted article from Volume 21, Number 1, 2022

ARTICLE REVIEW

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Stock Market Anomalies’

BY NICHOLAS C. BARBERIS, LAWRENCE J. JIN, AND BAOLIAN WANG

Reviewed by James E. McWhinney



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Prospect Theory and Stock Market Anomalies

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Prospect theory “is a highly influential theory of decision-making under risk” (Kahneman and Tversky 1979, 1992). It makes a case that investors evaluate risk through a loss-aversion lens and “overweight the tails of the distribution” rather than via “objective probabilities.” Nicholas C. Barberis, Lawrence J. Jin, and Baolian Wang note that prospect theory “has the potential to shed light on asset prices and investor behavior” but “despite years of efforts, we still do not understand its implications for some basic aspects of asset prices.”

In an effort to develop that understanding, the researchers built a model that incorporates prospect theory’s assertion that investors have a “greater sensitivity to losses than to gains” and the “related concept known as narrow framing” (the tendency for investors to consider risks in isolation) and used the model to evaluate “22 prominent stock market anomalies.” They argue, “Intuition and prior research suggest that, in an economy with prospect theory investors who engage in narrow framing, the price of an asset will depend in part on three asset characteristics: the volatility of the asset’s returns; the skewness of the asset’s returns; and the average prior gain or loss since purchase across investors holding the asset, a quantity known as the asset’s ‘capital gain overhang’ (Grinblatt and Han 2005).”

All else being equal, they believe investors will require “a *higher* average return on more volatile assets” and a “*lower* average return on assets with more positively skewed returns.” To “understand prospect theory’s implications for asset prices,” the researchers built a model “that incorporates *all* the elements of prospect theory *and* accounts for investors’ prior gains and losses in each risky asset.”

RESULTS

To test their hypothesis, the researchers computed the models’ expected returns across the various market anomalies. They found that their models’ predictions were “helpful for thinking about 13 of the 22 anomalies ... momentum, failure probability, idiosyncratic volatility, gross profitability, expected idiosyncratic skewness, return on assets, maximum daily return, O-score, external finance, composite equity issuance, net stock issuance, post-earnings announcement drift, and difference of opinion anomalies.”

The model performed poorly for seven of the anomalies, including “size, value, long-term reversal, short-term reversal, accrual, asset growth, and investment.” It did not make a strong prediction for two anomalies (“net operating assets and organizational capital”). Barberis et al. (2021) address the poor performance by noting that “for some anomalies, the risk attitudes captured by prospect theory are not the primary driver of average returns.” They also note that, “within the prospect theory framework” the assumption that “investors have accurate beliefs about stocks’ return volatility, return skewness, and gain overhang” may not be true. With regard to the two anomalies without strong predictions, alpha predictions showed little differentiation.”

PROGRESS AND AVENUES FOR EXPLORATION

The researchers believe their model is not merely an extension “of prior models, but rather requires an entirely new equilibrium structure and solution method.” They note, “More generally, we advance research theory applications in finance on three dimensions: in terms of theory, in terms of empirics, and in terms of scope.” Advances include “a new model of the cross-section” of returns as well as deriving “quantitative predictions about average returns” through the use of “empirical measures of return volatility, return skewness, and gain overhang.” They also make the case that they are the first to “use a behavioral model to make quantitative predictions about a large number of stock market anomalies.”

The researchers believe their efforts present a variety of paths for additional research efforts focused on prospect theory and anticipate that future research will be “both psychological *and* quantitative.” ●

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