AlphaQuant
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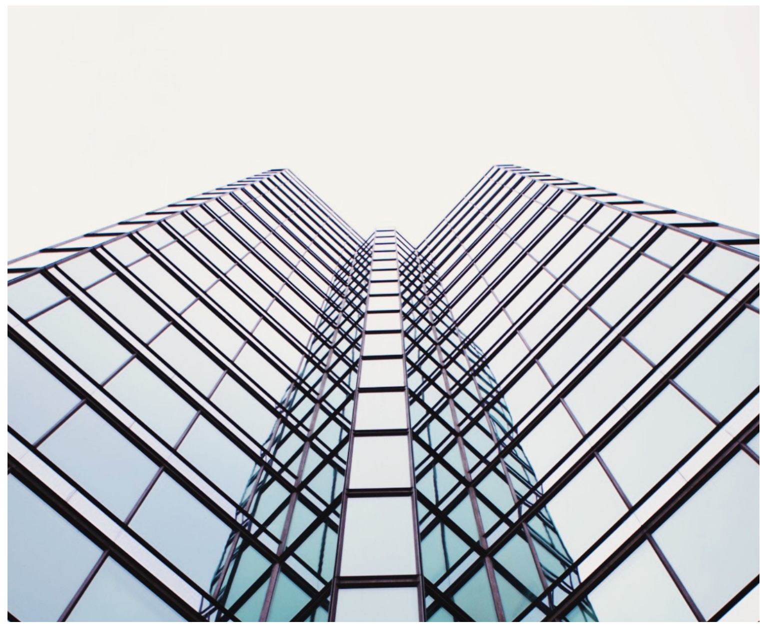
Our Equity Investment Philosophy

Executive Summary

- An investment philosophy is a set of guiding principles that inform and shape an individual's investment decision-making process. It should reflect a coherent way of thinking about markets, how they work and the types of mistakes consistently underlying investor behavior.
- We believe equity markets are inefficient. Extensive empirical evidence demonstrates that excess returns can be earned through disciplined investment strategies.
- There are two main reasons for the persistence of market inefficiencies: investors' biases and the institutional model followed by large investment firms.
- From a behavioral finance perspective, most people tend to make decisions based on emotions rather than logic or rationality. Such biases sway both individual and professional investors.
- An active manager can only add value by deviating from the benchmark index. However, the evidence shows that managers, on average, build portfolios not significantly different from their benchmarks due to institutional factors encouraging over-diversification.
- We believe investors' behavioral biases and the dominance of large institutions are permanent, structural phenomena that can be exploited to earn excess returns over the long term.
- Our investment principles are built upon the concepts of empirical research, disciplined process, risk management and transparency.



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Investment Philosophy

An accepted definition of investment philosophy is "a set of guiding principles that inform and shape an individual's investment decision-making process."

A more insightful and relevant definition is "an investment philosophy is a coherent way of thinking about markets, how they work, and the types of mistakes that you believe consistently underlie investor behavior."[1]

This definition implies that investors' behavior and their aggregate actions determine market fluctuations. More importantly, if investor behavior is biased and somewhat predictable, then there is an opportunity to exploit such recurring mistakes to earn excess returns. This belief is in contrast with the efficient-market hypothesis (EMH) – a cornerstone of modern financial theory that states it is impossible to "beat the market" because share prices always incorporate and reflect all relevant information. According to EMH, stocks always trade at their fair value, making it impossible for investors to either purchase undervalued stocks or sell stocks for inflated prices. As such, it should be impossible to outperform the overall market, and the only way an investor can possibly obtain higher returns is by purchasing riskier investments.

We disagree with such a theory and believe equity markets are inefficient. Extensive empirical evidence demonstrates excess returns can be earned through disciplined and systematic investment strategies. For example, a number of papers have documented the value effect – excess returns to buying stocks with low valuation multiples such as price-to-earnings, price-to-book and price-to-cash-flow ratios. There is also extensive evidence on price momentum – excess return to buying stocks that have strongly appreciated. Another well-documented inefficiency is the "accruals anomaly" – stocks with positive (negative) accruals significantly under(out)-perform the market.[2]

How do we explain the presence and persistence of these excess returns in a market supposed to be fully efficient and rational? We believe there are two main reasons: investors' biases and the institutional model followed by large investment firms.

Let's start with investors' biases. Over the last two decades, a new field of finance has developed called *behavioral investing*. According to this view, most individuals tend to make decisions based on emotions rather than logic or rationality. This is particularly true when the problem is complex with incomplete, ambiguous, shifting or competing information, and when stress is high and decisions rely upon interaction with others.[3] These are often the circumstances surrounding investment decisions.

This emotional bias manifests itself in several ways such as over-reaction to market events, over-optimism, overconfidence and confirmatory bias.[4] Such biases ultimately result in investors' making costly mistakes. For example, the DALBAR study shows that mutual fund investors have significantly underperformed the S&P 500 over the past three, five, 10 and 20 years. The average stock fund investors lagged the index by nearly 4 percent per year from 1993 to 2012. DALBAR found that more than half of the gap in returns can be attributed to performance chasing and other bad investing habits. The lesson: "Investment results are more dependent on investor behavior than on fund performance. Mutual fund investors who hold on to their investment are more successful than those who time the market."[5]

Ultimately, investors' biases and resulting mistakes originate from how our brain works. The emotional side (X-system) tends to dominate the logical side (C-system), even in investment decisions. It is important to understand these limits to rational decision-making influence institutional (professional) and individual investors alike.

[1] Damodaran, A. (2012). "Investment Philosophies," John Wiley & Sons, Inc.

[2] Zacks, L. (2011). "The Handbook of Equity Market Anomalies," Wiley Finance.

[3] Klein, G. (1999). "Sources of Power: How People Make Decisions," MIT Press.

[4] Montier, J. (2007). "Behavioural Investing: A Practitioners Guide to Applying Behavioral Finance," Wiley Finance.

[5] "Quantitative Analysis of Investor Behavior." (2013). DALBAR, Inc.

Let's now turn our attention to the other driver of market inefficiencies: the institutional investment firm's business model.

A number of academics and practitioners have analyzed the performance of mutual-fund managers over long periods and found that, on average, fund managers underperform the market quite consistently.[6] What is the cause of such persistent underperformance? It is obvious an active manager can only add value by deviating from the benchmark index. However, the evidence shows that managers, on average, build portfolios not significantly different from their benchmarks.[6] Thus, managers' poor performance is not due to a lack of stock-picking ability, but rather to institutional factors encouraging them to over-diversify: (a) the style-box system widely employed by investment consultants and pension funds limits managers' opportunity set by forcing them to select stocks from a narrow sub-set; and (b) quarterly performance reviews against peers and benchmark results in managers focusing on short-term performance and herding.[7]

As an investment-management firm grows, its focus shifts from investment performance (risk) to business performance (risk). At the beginning, investment performance is very important to attract investors. However, as the assets under management grow, economies of scale result in increasing profitability. This favorable business dynamic results in an emphasis on mitigating the risk of losing mandates. This is accomplished by minimizing tracking error (i.e., managing a portfolio to closely follow the index to which it is benchmarked).

There is also evidence that institutions on aggregate show little tendency to bet on any of the main characteristics known to predict stock returns, such as book-to-market, momentum or accruals.[8]

We believe investors' behavioral biases and the dominance of the institutional model are not transitory phenomena but structural in nature. Their pervasive character offers aware and unconstrained investors the opportunity to earn excess returns over the long term.

Our Investment Tenets

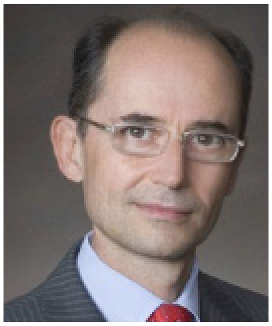
The empirical evidence on rule-based strategies and their explanation based on the predictable behavioral bias of individual and institutional investors shape-up our investment philosophy.

1. **Equity markets are inefficient:** Markets are far from being efficient as they do not fully reflect all available information.
2. **Empirical evidence:** Investment decisions and portfolio management rules should be based on empirical analysis of fundamental data over extensive periods and varying market conditions.
3. **Process is key:** A rule-based portfolio management process mitigates behavioral biases and contributes to long-term performance.
4. **Transparency:** Our beliefs and research process are clearly and consistently reflected in portfolio structure. Investment decisions are driven by the systematic application of buy and sell rules.
5. **Risk is permanent loss of capital not tracking error:** Our strategies are designed to maintain consistent exposure to predictive fundamental factors – not to belong to a specific "style box." While strict adherence to benchmarking reduces tracking error, it limits managers' ability to exploit market inefficiencies and can paradoxically increase portfolio risk.

[6] For examples see: Wermers, R. (2000). "Mutual fund performance: An empirical decomposition into stock-picking, talent, style, transactions costs, and expenses," Journal of Finance 55, 1655-1695; and the "S&P Indices Versus Active report by S&P Dow Jones Indexes," an annual comprehensive study on mutual funds' performance by style, available via us.spindices.com.

[7] Dasgupta, A., Prat, A., & Verardo, M. (2011). "Institutional Trade Persistence and Long-Term Equity Returns," Journal of Finance, Vol. LXVI, No. 2.

[8] For examples see: Petajisto, A. (2013). "Active share and mutual fund performance," available onssrn.com.; and Lewellen, J., (2011). "Institutional investors and the limits of arbitrage," Journal of Financial Economics.



Massimo Santicchia is a co-founder and chief investment officer of Alpha Quant Advisors, LLC. Mr. Santicchia develops and manages equity strategies and funds and oversees all aspects of Alpha Quant's investment process. Previously, he also served as chief investment officer of Cypress Capital Group and Cypress Trust Co. He has more than 18 years of investment experience, including at S&P Investment Advisory Services LLC as developer and portfolio manager of the four JNL/S&P funds. He also co-managed the JNL/S&P Managed and Disciplined funds. Prior positions include: consultant with the investment banking divisions of Goldman Sachs and Credit Suisse First Boston and international equity analyst at Nicholas-Applegate Capital Management. Mr. Santicchia holds a B.A. in Economics and Political Science from the University of Perugia, Italy; an MBA from the U.S. International University, San Diego; and an M.S., Investment Management, from Pace University, New York.

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