

THE EVOLUTION OF VALUE

DECEMBER 2018

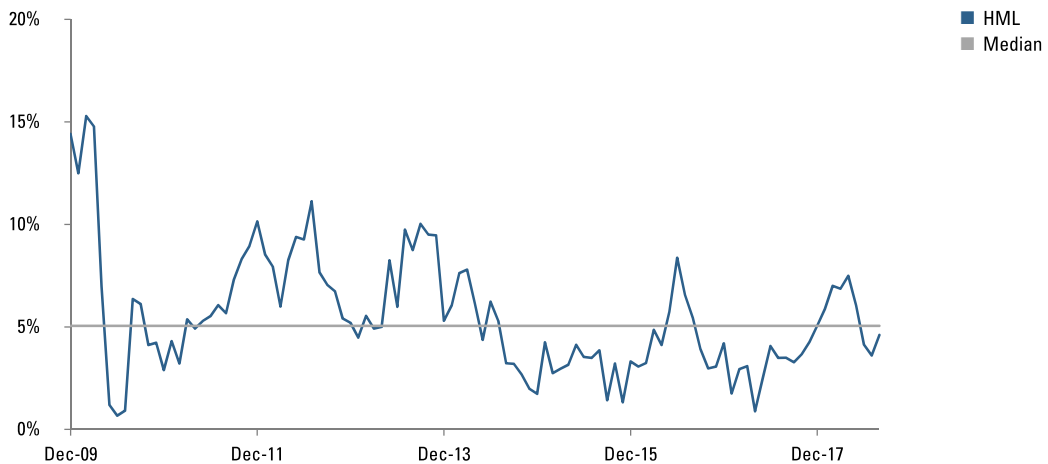
- **“Value” is a term that encompasses multiple economic concepts; it is implemented through a variety of formulations that may induce meaningfully different exposures and, in turn, heterogeneity in performance.**
- **Discussions of value’s performance would benefit from greater clarity regarding how value is being defined.**
- **Value signals shouldn’t be thought of as immutable; they should evolve with changes in industry structures, management practices, and financial reporting.**

Value performance has been a recurrent topic of discussion in the financial media, with some stories even questioning the relevance of value as an investment approach. Many accounts implicitly treat value as a one-dimensional concept that is easily measured by ratios straightforwardly derived from balance sheet and income statement information. In our view, this represents a meaningful oversimplification that muddles discussion and confuses perceptions about value performance.

To start with, widely used value metrics reflect multiple economic concepts. For example, a high book-to-price ratio, in isolation, might reflect a relative

underpricing attributable to overextrapolation of a growth stock’s fundamentals or indicate a company in distress. Sensibly, numerous value factor constructions have been developed in hopes of distinguishing companies with desirable characteristics and avoiding so-called “value traps.” These varying constructions can translate into materially different risk and return profiles. Figure 1 illustrates this point by depicting the post-GFC dispersion in performance between four different MSCI value benchmarks. There is typically a 5% differential in best-versus-worst returns among even just these four indexes.

FIGURE 1: MSCI VALUE RETURN SPREADS



Return differentials between the best and worst performing of four MSCI value indices using rolling 12-month returns. Median shown in gray. Indices used are MSCI World Value, MSCI World Value-weighted, MSCI World Enhanced Value and MSCI Prime Value. It is not possible to invest directly in any index. Every investment program has an opportunity for loss as well as profit.

Source: MSCI. Copyright MSCI 2018. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

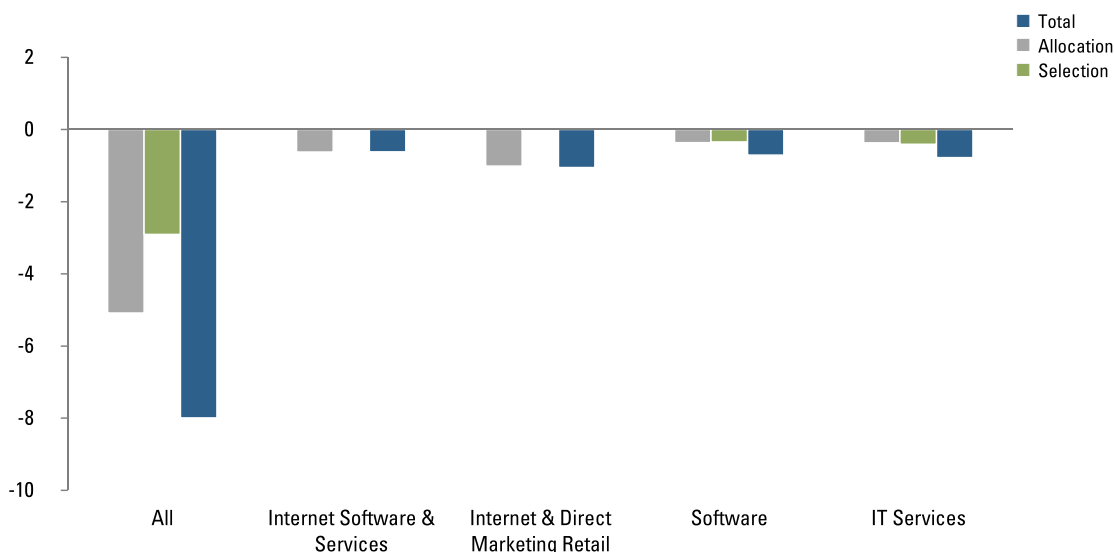
But while some variation between value approaches reflects deliberate attempts to capture different aspects of fundamentals, substantial variation also arises from shortcomings in the construction of simplistic implementations. First, many commonplace value formulations incur exposures to uncompensated risk factors that materially affect their performance and its interpretation. For example, common investible value products generally don't distinguish between peer-relative valuation and sector- or country-level valuation even though empirical studies suggest that the bulk of value's return premium is derived from stock selection rather than allocation (e.g., Golubov and Konstantinidi 2016). Allocation effects can introduce significant variation into performance. Figure 2, for example, displays sector attribution for the MSCI World Value index compared to the MSCI World index from 2017 through mid-2018. Of the 8% underperformance over the period, more than 5% (nearly two-thirds) was due to allocation effects.

Simplistic value formulations suffer from a second, related drawback that induces variation in performance and muddles interpretation: they don't adjust for differences in the economics that underlie financial

statement data. One such issue relates to industries marked by high levels of intangible assets, an issue that has even drawn media attention.¹ Technology companies, as an example, often exhibit deflated book values due to large amounts of intangible assets developed in-house, the cost of which is expensed and charged against firm equity per GAAP accounting principles. As a result, P/B-based factors that aren't industry (and perhaps geography) aware will tend to underweight companies characterized by intangibles, potentially forgoing attractive investment opportunities. Figure 3 provides a sense of the materiality of the phenomenon by illustrating the difference between P/B and R&D expense as a percent of sales for FAANG stocks versus the broader U.S. equity market.²

We deal with such complications in several ways. One is via peer-relative valuation metrics as inputs into stock selection. Doing so helps to avoid uncompensated allocation exposures. It also adjusts for structural and episodic variations in financial statement data across industries and geographies that confound comparisons across stocks and obscure mispricings.

FIGURE 2: MSCI WORLD VALUE INDEX ATTRIBUTION (ALLOCATION VS. SELECTION)



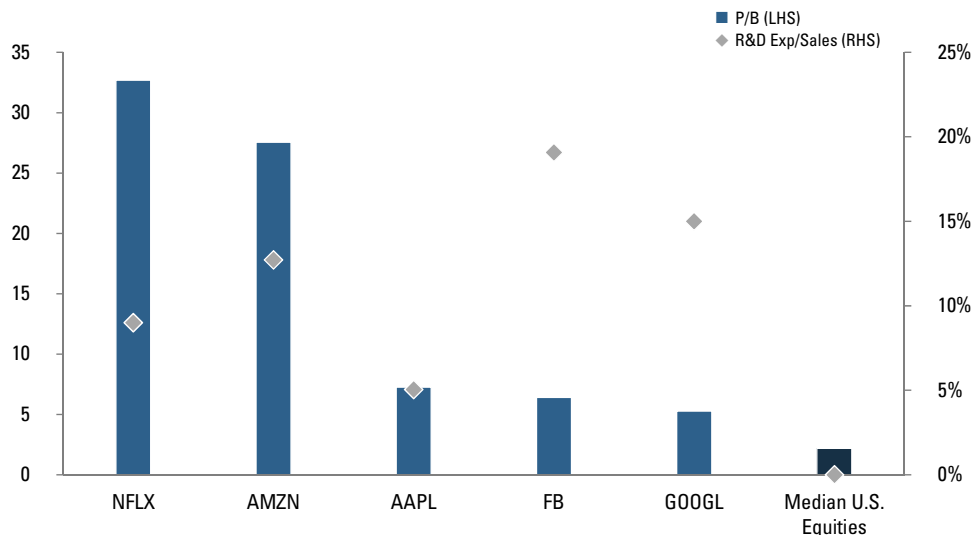
Performance attribution of MSCI World Value relative to MSCI World for selected industries for the period Jan 1, 2017 – June 30, 2018. It is not possible to invest directly in any index. Every investment program has an opportunity for loss as well as profit. For illustrative purposes only.

Source: Acadian, MSCI. Copyright MSCI 2018. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

¹ Hulbert, Mark, "Why the Traditional Way of Measuring Value Stocks May Be History," *The Wall Street Journal*, Sept. 9, 2018.

² This is not to suggest that all FAANG stocks represent overlooked value opportunities, but rather that the nature of their industry complicates interpretation of common multiples.

FIGURE 3: PRICE/BOOK AND R&D EXPENSE/SALES



Price-to-book for FAANG stocks and median U.S. equities with market cap over \$100mm as of Dec 29, 2017. Total research and development expense for FAANG stocks during the 5-year period 2012-2017; median for the U.S. is 0 for the same period. Every investment program has an opportunity for loss as well as profit. For illustrative purposes only. This should not be considered a recommendation to buy or sell any specific security.

Source: Capital IQ.

Peer-relative isn't a panacea, though. In the context of our multifactor approach, we address certain complications in the interpretation of valuation metrics through other classes of signals. One example involves accounting for companies with significant contributed capital. Recent academic literature has found that contributed capital has little to no predictive value as compared to retained earnings, even though both are included in a firm's equity.³ Another example would be brand value, which financial statements don't accurately or consistently capture.

Beyond peer-relative signals and a multifactor approach, an important focus of our research agenda is further increasing the precision of our valuation signals themselves. This includes additional adjustments for intangibles, to ensure that the valuation-based elements of our alpha forecasts keep pace with changes in industry structures, management practices,

and financial reporting. In addition to forecasting benefits, developing cleaner value factors will help us to better parse out and articulate how different aspects of value are behaving.

The utility of such refinements highlights a recurring theme in quantitative investing, which is that underlying economics evolve and so does the relevance of particular accounting measures. We shouldn't think of factors as crude and immutable archetypes immune to the dynamism of markets. Rather, we should expect that systematic signals require careful formulation and ongoing refinement if they are to maintain effective in identifying mispricings. We can only have meaningful discussions about the performance of value (and other factors) if we have clarity regarding underlying definitions and constructions.

³ Ball, Ray, Joseph Gerakos, Juhani Linnainmaa, and Valeri Nikolaev, "Earnings, Retained Earnings, and Book-to-Market in the Cross Section of Expected Returns," Working paper.

BIOGRAPHY

PHILIP OWRUTSKY, PH.D., CFA

VICE PRESIDENT, INVESTMENT STRATEGIST, CLIENT ADVISORY



Philip joined Acadian in 2016 and is an investment strategist on the Client Advisory Team, aligned closely with Acadian's Global Client Group and Investment Teams. Prior to joining Acadian, Philip was an associate trader at Potamus Trading and was previously a vice president at State Street Bank where, working within enterprise risk management, he was responsible for developing and maintaining regulatory and economic capital models for the securities lending and stable value wrap business units. Philip also worked in a consultant role for various hedge funds while doing his post-graduate academic work. Philip holds a Ph.D. in applied mathematics from Harvard University; an M.S. in engineering sciences and an M.A. in statistics also from Harvard; as well as a B.A. in mathematics and a B.S. in engineering physics from Cornell University. He is a CFA charterholder and a member of CFA Society Boston.

GENERAL LEGAL DISCLAIMER

Acadian provides this material as a general overview of the firm, our processes and our investment capabilities. It has been provided for informational purposes only. It does not constitute or form part of any offer to issue or sell, or any solicitation of any offer to subscribe or to purchase, shares, units or other interests in investments that may be referred to herein and must not be construed as investment or financial product advice. Acadian has not considered any reader's financial situation, objective or needs in providing the relevant information.

The value of investments may fall as well as rise and you may not get back your original investment. Past performance is not necessarily a guide to future performance or returns. Acadian has taken all reasonable care to ensure that the information contained in this material is accurate at the time of its distribution, no representation or warranty, express or implied, is made as to the accuracy, reliability or completeness of such information.

This material contains privileged and confidential information and is intended only for the recipient/s. Any distribution, reproduction or other use of this presentation by recipients is strictly prohibited. If you are not the intended recipient and this presentation has been sent or passed on to you in error, please contact us immediately. Confidentiality and privilege are not lost by this presentation having been sent or passed on to you in error.

Acadian's quantitative investment process is supported by extensive proprietary computer code. Acadian's researchers, software developers, and IT teams follow a structured design, development, testing, change control, and review processes during the development of its systems and the implementation within our investment process. These controls and their effectiveness are subject to regular internal reviews, at least annual independent review by our SOC1 auditor. However, despite these extensive controls it is possible that errors may occur in coding and within the investment process, as is the case with any complex software or data-driven model, and no guarantee or warranty can be provided that any quantitative investment model is completely free of errors. Any such errors could have a

negative impact on investment results. We have in place control systems and processes which are intended to identify in a timely manner any such errors which would have a material impact on the investment process.

Acadian Asset Management LLC has wholly owned affiliates located in London, Singapore, Sydney, and Tokyo. Pursuant to the terms of service level agreements with each affiliate, employees of Acadian Asset Management LLC may provide certain services on behalf of each affiliate and employees of each affiliate may provide certain administrative services, including marketing and client service, on behalf of Acadian Asset Management LLC.

Acadian Asset Management LLC is registered as an investment adviser with the U.S. Securities and Exchange Commission. Registration of an investment adviser does not imply any level of skill or training.

Acadian Asset Management (Japan) is a Financial Instrument Operator (Discretionary Investment Management Business). Register Number Director-General Kanto Local Financial Bureau (Kinsho) Number 2814. Member of Japan Investment Advisers Association.

Acadian Asset Management (Singapore) Pte Ltd, (Registration Number: 199902125D) is licensed by the Monetary Authority of Singapore.

Acadian Asset Management (Australia) Limited (ABN 41 114 200 127) is the holder of Australian financial services license number 291872 ("AFSL"). Under the terms of its AFSL, Acadian Asset Management (Australia) Limited is limited to providing the financial services under its license to wholesale clients only. This marketing material is not to be provided to retail clients.

Acadian Asset Management (UK) Limited is authorized and regulated by the Financial Conduct Authority ("the FCA") and is a limited liability company incorporated in England and Wales with company number 05644066. Acadian Asset Management (UK) Limited will only make this material available to Professional Clients and Eligible Counterparties as defined by the FCA under the Markets in Financial Instruments Directive.



BOSTON LONDON SINGAPORE TOKYO SYDNEY

ACADIAN-ASSET.COM