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Does Value Have Beta?

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Not necessarily. We study Developed Markets since 1998 and show that generic value implementations do indeed exhibit active beta. However, we also show that more sophisticated multi-factor implementations of value are beta-neutral and a lot more efficacious. Finally, we consider an event study of market drawdowns and find no evidence that value tends to struggle during periods of extreme market stress.

Introduction

The precipitous drop in markets this year has refocused asset owners on the beta implications of their active tilts. In addition to health concerns, Covid-19 has brought on an unprecedented shock to the global supply chain, which has been accompanied by a sharp increase in investor risk aversion. Unfortunately, monetary and fiscal policies have limited direct effectiveness against supply chain disorganization and can only help offset the risk aversion domino effects. While the ultimate impact on corporate profitability is still uncertain and very much dependent on governmental responses, investors are rightfully concerned that recent asset price moves may not be overblown but may be correctly incorporating a persistent deterioration of corporate fundamentals. In light of current events, we examine how active value tilts affect portfolio beta.

Estimation of the beta tilt of value

In previous work, we showed how industry shifts induce beta shifts in generic implementations of value in the U.S. Here we extend our analysis by considering how more sophisticated implementations of value can help eliminate its beta tilt while improving its efficacy. We also extend our universe beyond the U.S. by including all Developed Markets going back to the late 1990s. Our analysis should help to reassure our investors that Acadian's value implementation is beta-neutral.

First, a word on our methodology. Our analysis evaluates different value signals based on the historical performance of hypothetical long/short portfolios built from these signals. Our chosen methodology is very similar to the one used by the ubiquitous Fama-French HML value portfolio. On any given day, we split the universe of developed markets stocks into small-, mid-, and large-cap buckets and we form three

long/short portfolios for each of the three buckets by going long the most attractive stocks and short the least attractive stocks within each bucket. The return of the value signal under consideration for that particular day is simply the average of the three long/short portfolios. These hypothetical portfolios do not, of course, incorporate important real-world considerations such as trading costs and should not be used as a benchmark for performance expectations. However, specifically because they abstract from other considerations, they are fresh daily-rebalanced portfolios ideally suited for estimating the effects of value factor construction choices on beta as precisely as possible.

We start with what we consider a generic but sensible implementation of value, and we gradually build on this concept by incorporating aspects of Acadian's proprietary alpha model. We consider three candidate value signals:

- *Generic Value*, which we define as the cross-sectional rank of each company's price-to-earnings and book-to-earnings ratios relative to the rest of developed-market stocks in our universe.
- *Acadian Value*, which incorporates more sophisticated and more granular valuation metrics while also adjusting for peer-relative risk effects.
- *Acadian Value-Quality Intersection*, which additionally focuses on the subset of the attractively valued stocks that also have attractive quality characteristics.

The third value signal is the one that is closest to our diversified multi-factor alpha model. We believe that value payoffs originate in inefficiencies rooted in human psychology and the resulting behavioral mistakes of investors. An attractively valued stock is more likely to have a strong payoff if it also benefits from other attractive fundamental characteristics, such as the quality of its balance sheet.

Table 1 examines the historical performance in Developed Markets of each of the three value signals under consideration:

Table 1

Value factor portfolio raw returns, Developed Markets, 12/31/1998-3/10/2020

	Average Annualized Return	Annualized Volatility	Sharpe Ratio	Beta to MSCI World Index
Generic Value	1.2%	10.2%	0.11	0.13
Acadian Value	2.3%	9.6%	0.23	0.04
Acadian Value-Quality Intersection	4.7%	8.2%	0.58	-0.01
MSCI World Index minus Risk-free Rate	3.7%	15.4%	0.24	

Source: Acadian, MSCI. This is meant to be an educational illustrative example and is not intended to represent investment returns generated by an actual portfolio. They do not represent actual trading or an actual and results do not reflect transaction costs, other implementation costs and do not reflect advisory fees or their potential impact. Hypothetical results are not indicative of actual future results. Every investment program has the opportunity for loss as well as profit. Index Source: MSCI Copyright MSCI 2020. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI. It is not possible to invest directly in an index.

Admittedly, this has been a difficult period for value, and especially so for the generic implementation. Still, the increase in sophistication has been rewarded by superior risk-adjusted returns, as shown in the first three columns of Table 1. As the construction of the value factor shifts from generic value to Acadian value and to Acadian value-quality intersection, becoming progressively more sophisticated along each step, the average return of the corresponding hypothetical portfolio increases. At the same time, the volatility decreases, which means that the Sharpe ratio improves. While this improved efficacy is highly desirable for active investors, the benefit to increased sophistication does not end there.

As we can see from the fourth column of Table 1, generic value has an active beta tilt of 0.13, which we estimate to be statistically significant at the 99% level of confidence. This developed-markets estimate is very

similar to our 0.10 estimate, not shown here, that we obtain for the market beta of the Fama-French HML portfolio in the U.S. going back to 1927.

The estimated generic beta tilt of 0.13 from Table 1 is reduced by more than two thirds to 0.04 when we shift to the more sophisticated Acadian value construction. And it is then eliminated, estimated at -0.01, when we shift to our most sophisticated Acadian value-quality intersection approach. Both beta tilt reductions are as expected. Our proprietary Acadian value factor corrects for risk biases, including industry effects. And our proprietary Acadian value-quality intersection further builds on our value factor by focusing on attractively valued stocks that also enjoy attractive balance sheets. Thus, our intersection benefits from the defensive nature of quality to eliminate the slight 0.04 beta tilt of our Acadian value factor.

Finally, using our beta estimates, Table 2 shows beta-hedged returns for each of the three factor portfolios:

Table 2

Value factor portfolio beta-hedged returns, Developed Markets, 12/31/1998 - 3/10/2020

	Average Annualized Return	Annualized Volatility	Sharpe Ratio
Generic Value	0.7%	10.0%	0.07
Acadian Value	2.1%	9.6%	0.22
Acadian Value-Quality Intersection	4.8%	8.2%	0.58

Source: Acadian. This is meant to be an educational illustrative example and is not intended to represent investment returns generated by an actual portfolio. They do not represent actual trading or an actual and results do not reflect transaction costs, other implementation costs and do not reflect advisory fees or their potential impact. Hypothetical results are not indicative of actual future results. Every investment program has the opportunity for loss as well as profit.

Not surprisingly, the Sharpe ratio of the generic value factor portfolio is reduced most significantly, further highlighting the recent struggles of generic value.

Value behavior during stock market drawdowns

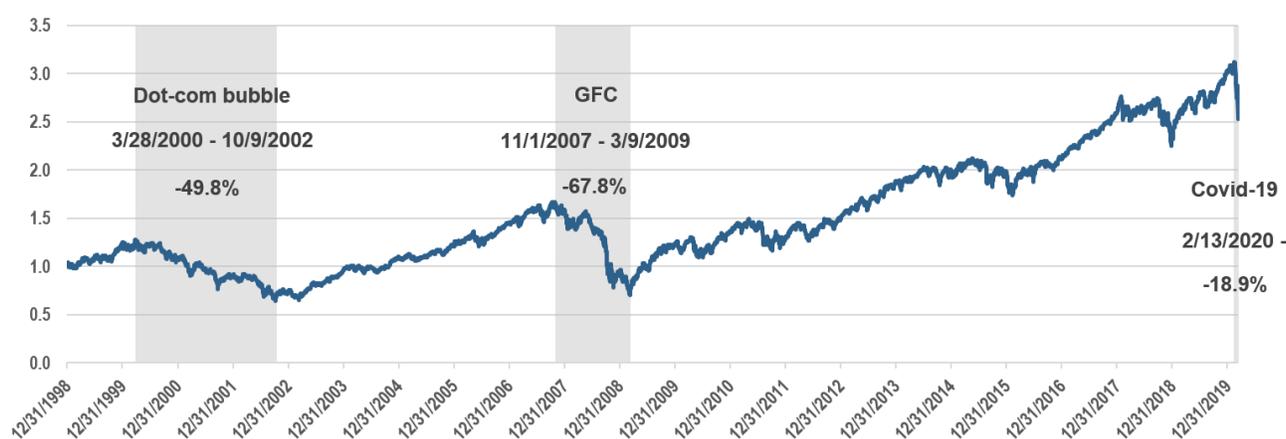
The above analysis established that it is possible to implement sophisticated value factors with improved efficacy and without a beta bias. While the elimination of the beta bias removes the systematic component of risk, value investing remains risky and inherently uncomfortable. This is consistent with our belief that value payoffs arise as a result of investors' behavioral errors, and thus vary across market cycles depending on prevailing investor sentiment.

Much as it has in recent years, sentiment may at times favor a prolonged and unsustainable one-factor bet on growth to the detriment of good nights' sleep for value investors. At other times, it may instead shy away from over-confidence and favor sound fundamentals. Overall, we do not expect to see a specific pattern in value payoffs related to market performance.

We provide supporting anecdotal evidence by examining value payoffs during bear markets in our historical sample of developed countries. In Figure 1, we identify two drawdowns where peak-to-trough losses of the MSCI World Index exceeded 20%, namely the dot-com bubble in the early 2000s and the GFC in the late 2000s. And we analyze them alongside the coronavirus drawdown that is still unfolding and, similarly, has reached losses of roughly 20% since mid-February:

Figure 1

MSCI World Total Return Index (12/31/1998 = 1.0)



MSCI Daily Total Return Net World USD. Morgan Stanley Capital International Equity Indices in US Dollars. Indices with net dividends reinvested use the same dividend minus-tax-credit calculations, but subtract withholding taxes retained at the source for foreigners who do not benefit from a double taxation treaty.

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For each of these three episodes, Table 3 reports the payoffs to the three value signals we have been analyzing:

Table 3

Value factor portfolio raw returns, Developed Markets, Selected episodes

	Dot-com bubble	GFC	Covid-19
	3/8/2000 - 10/9/2002	11/1/2007 - 3/9/2009	2/13/2020 - 3/11/2020
Generic Value	82.5%	-17.8%	-6.7%
Acadian Value	7.5%	11.7%	-2.5%
Acadian Value-Quality Intersection	9.4%	38.8%	2.0%
MSCI World Index minus Risk-free Rate	-49.8%	-67.8%	-18.9%

Source: Acadian, MSCI. This is meant to be an educational illustrative example and is not intended to represent investment returns generated by an actual portfolio. They do not represent actual trading or an actual and results do not reflect transaction costs, other implementation costs and do not reflect advisory fees or their potential impact. Hypothetical results are not indicative of actual future results. Every investment program has the opportunity for loss as well as profit. Index Source: MSCI Copyright MSCI 2020. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI. It is not possible to invest directly in an index.

The evidence from Table 3 shows that even generic value does not necessarily struggle during periods of extreme market stress. It also shows considerable differences between the payoffs of generic value and Acadian value. Finally, it shows that our preferred implementation at the intersection of value and quality has enjoyed positive payoffs during all three episodes.

Overall, this event study has offered further support for our behavioral multi-factor approach to value based on our nuanced, sophisticated, and evolving implementation.

BIOGRAPHY

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Harry joined Acadian in 2014 and serves as lead portfolio manager for Core strategies. Prior to joining Acadian, Harry worked as a senior quantitative strategist at Loomis Sayles, where he founded the firm's quantitative Strategy Lab and co-managed a U.S. equity long/short strategy. Prior to his work at Loomis Sayles, he was senior vice president, fixed income quantitative risk and relative value specialist at Putnam Investments. In this role, Harry built and managed a book of systematic alpha strategies in domestic investment-grade and high-yield credit. He earned a Ph.D. in economics from MIT and holds an A.B. in economics from Harvard University.

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