



The Risks of Value: Examining the Risk Budget Impact of an International Value Style

In general, a "value" investment style is defined by a focus on low stock prices relative to valuation fundamentals, such as book value or earnings per share. A "growth" style is defined by an emphasis on expected earnings growth and higher price-to-fundamental levels.

A lengthy body of research has focused on uncovering the relevance of value and growth attributes for individual stock returns in the U.S. market. For example, studies of the effective use of a dividend-discount model as an indicator of value go back almost a half-century in the United States, as seen in the classic work by John Burr Williams.¹ More recent research on stock selection factors that can add value in the United States has occasionally been in a multi-factor context, generally looking at two factors taken together. Fama and French² found that excess stock returns in the U.S. were captured best by capitalization size and book-to-price ratio.

There has been a growing body of research published on value and growth as key investment issues in international equity markets outside the U.S. as well. A 1991 piece by Bergstrom, Frashure and Chisholm explored several stock return anomalies in non-U.S. markets that have been associated with excess returns, such as book/price and earnings/price measures.³ Another research endeavor in the international markets was Capaul, Rowley and Sharpe's "International Value and Growth Stock Returns."⁴ These researchers focused on the single factor of book/price ratio as a determinant of what constitutes a "value" stock in the international markets. Low price-to-book stocks were considered "value" stocks, and high-P/B equities were categorized as "growth" stocks. Capaul, Rowley and Sharpe found over the period that they investigated that value dominated growth in investment returns in the largest international equity markets based on this simple single-factor categorization of value and growth stocks:

VALUE VS. GROWTH IN INTERNATIONAL EQUITY MARKETS
FROM CAPAUL, ROWLEY AND SHARPE ANALYSIS

	Value Outperformance Over Growth (1981 – 1992)	Significance Level
Japan	69.5%	88%
Europe	31.9%	78%
United States	15.6%	50%
Global	39.5%	96%

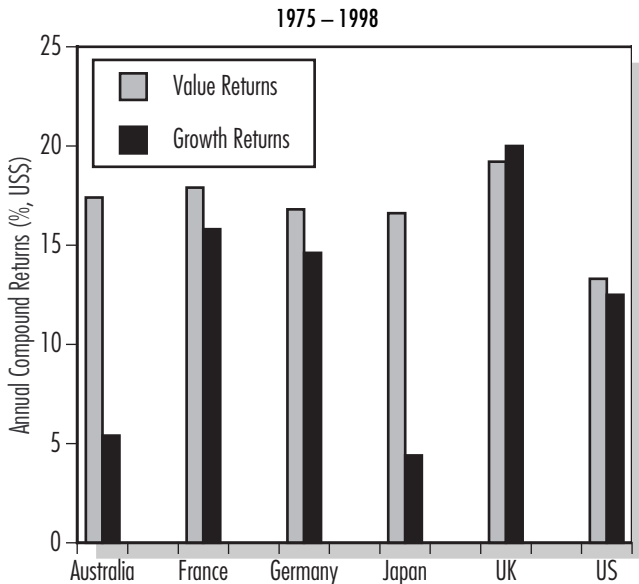
❖ John
Chisholm

Executive
Vice
President

Acadian
Asset
Management

John Chisholm has a B.S. from the Massachusetts Institute of Technology, and an M.S. from the Sloan School of Management at the Massachusetts Institute of Technology.

Exhibit 1. LOW PRICE/BOOK EFFECT IN MAJOR WORLD EQUITY MARKETS QUINTILE RETURNS



Relatively straightforward single-factor results from our database corroborate the findings of Capaul, Rowley and Sharpe over a more extended period. Exhibit 1 shows the annual returns across six of the major global equity markets of low-price/book versus high-price/book quintiles for the period 1975–1998.

In this analysis, two capitalization-weighted portfolios have been formed at the beginning of each year consisting of the least expensive value quintile as defined by price-to-book ratios and the most expensive quintile based on the same measure. As can be seen, there have been major differentials in these markets favoring a value approach, defined as cheapness on the price/book measure. For example, in Japan, the differential between the low-P/B and the high-P/B quintile has been 12.6% per year over the time frame of over two decades shown. However, one market where a simple low-P/B strategy did not work particularly well during this period was the U.K. Similar analysis based on price/earnings ratios also leads to the conclusion that value wins out over the long run, or that low-P/E “worked” in every market but Germany over this period.

Possible Explanations for Value and Growth Style Factors in International Markets

The pervasiveness of higher returns to value-based strategies across several major equity markets makes it unlikely that such a phenomenon is merely a chance event. An underlying rationale

for why value and growth factors impact stock prices would clearly be important in appraising whether these effects are likely to continue. Research in the field of behavioral finance may provide some insights into the basic forces connecting the stock or portfolio attributes we have discussed and returns.

A paper by my colleague Ron Frashure went into some detail on behavioral finance implications for investment style attributes that are likely to lead to outperformance.⁵ In this piece, he discussed a range of behavioral explanations for market anomalies, including the following:

EXHIBIT 2.

Behavioral Error(s)	Error as Applied to Security Selection	Reference
Representativeness and aversion to regret	Good companies make good stocks	Shefrin and Statman ⁶
Extrapolation of recent past	Past growth rates are likely to continue into the future	Lakonishok, Shleifer and Vishny ⁷
Overreaction	Short-term overreactions to changes in fundamentals	DeBondt and Thaler ⁸

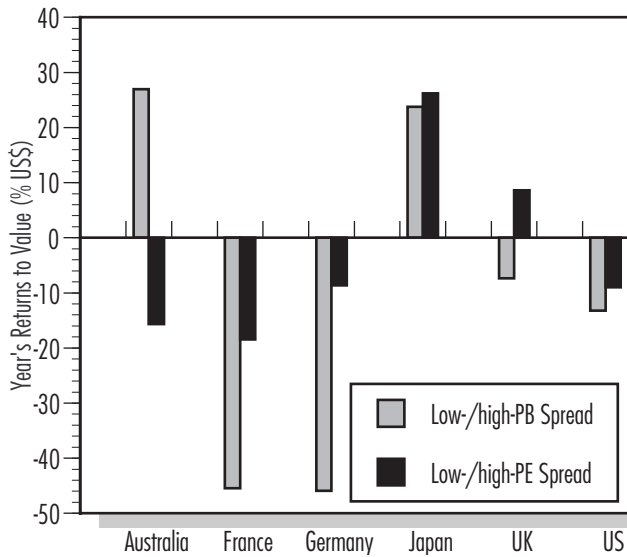
There are also some non-behavioral reasons why value stocks may outperform over time.

Non-Behavioral Error(s)	Impact on Value Stocks	Reference
Compensation for risk	Value is a proxy for systematic risk; therefore returns are higher on value stocks	Fama and French ⁹
Tax effects	Value stocks tend to have higher dividends and must offer higher pre-tax returns to equalize after-tax returns	Capaul, Rowley and Sharpe ¹⁰

These include:

Explaining some of the returns to value and growth attributes at least partly in terms of behavioral finance findings does not necessarily

**Exhibit 3. 1998 VALUE/GROWTH QUINTILE SPREADS
LOW MINUS HIGH P/B AND LOW MINUS HIGH P/E**



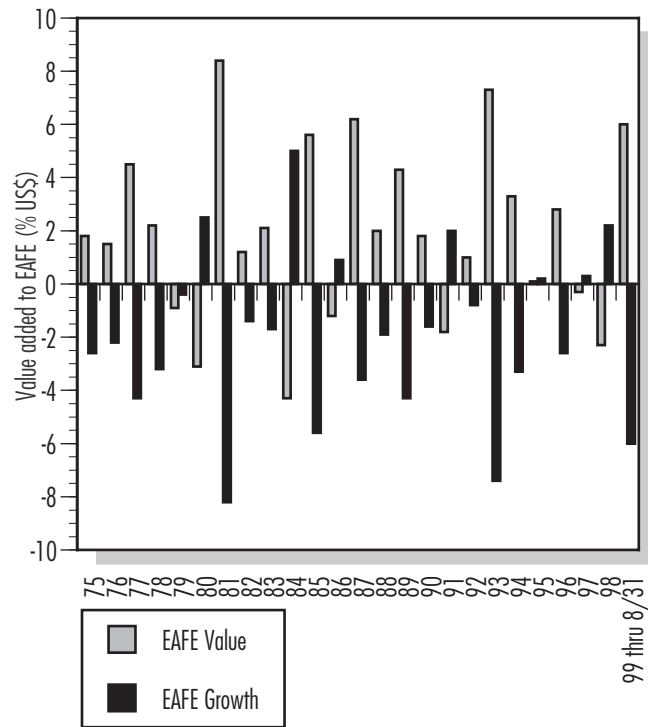
mean that investors are irrational, but that there are enduring influences of individual and group psychology on investment decisions. To the extent that human behavior has certain predictable aspects and appears to evolve only slowly, there is long-term support for stock selection factors based on behavioral patterns.

Risks of Global Value- and Growth-Style Investing

Examinations of the long-term impact of price/book ratios and other value measures on returns can provide some insights into the generation of excess returns above a passive benchmark in international markets, as well as suggest useful investment approaches for fund sponsors. However, single valuation factors can be highly variable in their impact from year to year. Such variability, both in absolute and index-relative terms, introduces style risk into a portfolio.

As an example of shorter-term style risk, Exhibit 3 shows the spreads in returns between low- and high- P/B and P/E styles for 1998. Though these value factors have generally worked well over the longer term, they have markedly underperformed in many of these markets during this year. In France, Germany and the U.S., both low-P/B and low-P/E quintiles underperformed growth quintiles. Only in Japan were there consistently positive returns to value. In Australia and the U.K., there were mixed results for value investing, with one value factor outperforming and the other underperforming. This also sug-

Exhibit 4. VALUE-ADDED OF MSCI EAFE VALUE AND GROWTH INDICES RELATIVE TO MSCI EAFE



gests that returns to value can vary significantly depending on the definition of value used.

Exhibit 4 highlights the variability of the spread in returns over time between Morgan Stanley Capital International EAFE value and growth indices. This chart shows the year-by-year EAFE-relative returns of growth versus value indices. In most of the last 24 years, international value outperformed growth. However, there are years when the value index underperforms growth and the MSCI EAFE index benchmark. Any deviation from the EAFE index's return represents style risk for portfolios with this benchmark. Despite the long-term pattern of value outperformance, there have been multi-year periods of international underperformance of value, such as 1979-1980, and, most recently, 1997-1998.

It is also useful to measure the return benefits of both value and growth styles adjusted for their respective risks. Exhibit 5 shows returns and risks in both absolute and index-relative terms for the international growth and value styles for 1975 through 1999 year to date.

The top half of Exhibit 5 provides in absolute value terms the annual returns and standard deviation of returns since 1975. The lower half measures returns and risks relative to the EAFE index.

**Exhibit 5. MSCI EAFE AND EAFE STYLE INDICES
ANNUALIZED RETURNS AND STANDARD DEVIATIONS
JANUARY 1975-AUGUST 1999**

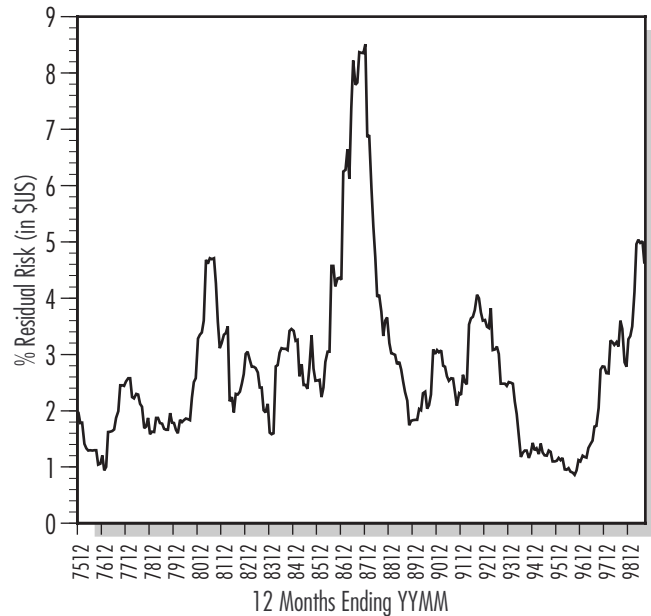
<i>Absolute Values</i>			
	<i>Growth</i>	<i>Value</i>	<i>EAFE</i>
Average Annual Return	13.3	16.6	15.0
Compound Annual Return	12.4	16.3	14.4
Std. Dev. Of Returns	17.8	16.8	17.1
Avg. Return/Std. Dev.	0.75	0.99	0.88
<i>Index-Relative Values</i>			
	<i>Growth</i>	<i>Value</i>	
Average Value-Added	-1.8	1.6	
Compound Value-Added	-2.0	1.9	
Residual Risk	3.3	3.3	
Information Ratio	-0.55	0.48	

In the absolute values section, the higher returns realized by the value style have also been accompanied by lower standard deviations over this time period. In the lower section, the return-to-risk ratio can be interpreted as the information ratio,¹¹ or the ratio of value-added relative to residual risk. Note that the information ratio of a simple value-style index was +0.48, which is quite respectable for an active management strategy. A manager with a similar information ratio over the long term would have ranked in the top quartile of active managers¹².

The relatively modest long-term risk of a value approach has appeared much higher during certain shorter time frames. Exhibit 6 below shows that residual risk has fluctuated significantly over time. A plan sponsor hiring a value-oriented international equity manager should be prepared for occasional significant deviations from an index such as EAFE.

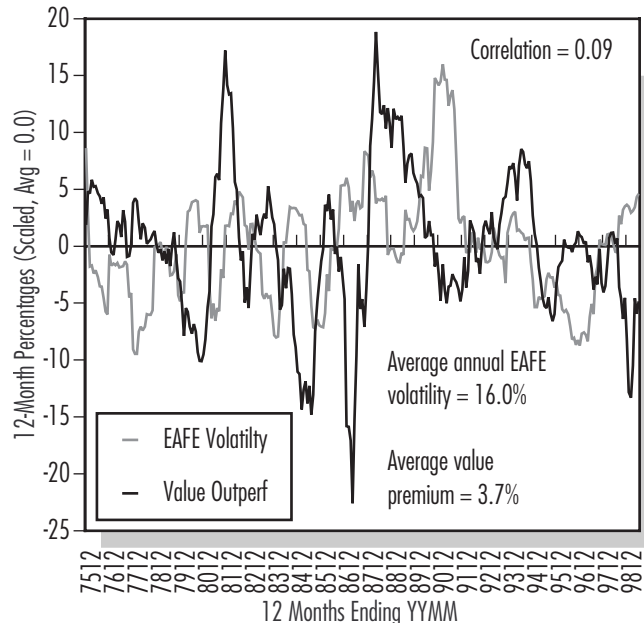
It is useful to analyze under what conditions value or growth styles are most likely to outperform. Earlier, we outlined some possible reasons why, over longer periods, value-based strategies have done better than growth. However, as we have seen, this value outperformance has not been the case for some shorter periods. Exhibit 7 shows the rolling 12-month EAFE value minus growth spread (with positive readings indicating value outperformance) and rolling 12-month EAFE equity volatility. The evidence indicates that when global markets are particularly volatile, value stocks tend to underperform. Numerically,

**Exhibit 6. MSCI EAFE VALUE INDEX VS. MSCI EAFE INDEX
ROLLING 12 MONTH RESIDUAL RISK
JANUARY 1975 – AUGUST 1999**



this relationship can be summarized by a correlation of -.09. This relationship suggests that value investing has been more likely to outperform when world equity markets are relatively calm and underperform when volatility increases. A partial explanation for this linkage could be a "flight to quality" during volatile markets, where "quality" is perceived in the more predictable and

**Exhibit 7. TRAILING 12-MONTH MSCI EAFE VOLATILITY
AND TRAILING 12-MONTH VALUE OUTPERFORMANCE**



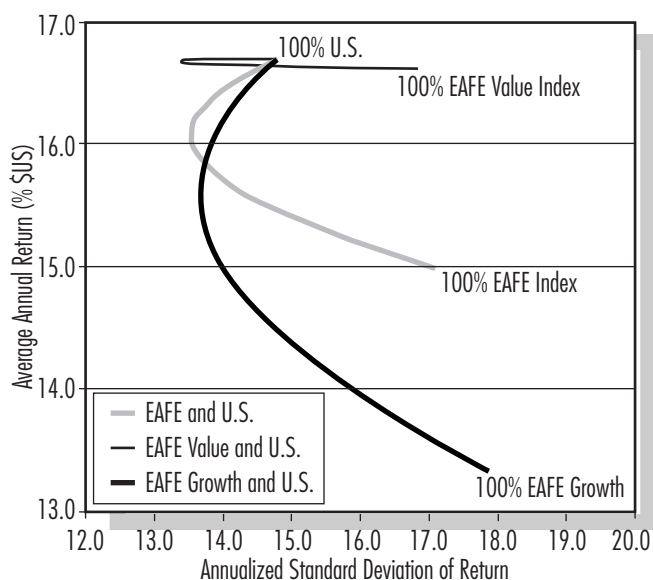
less economically sensitive earnings patterns of growth stocks.

The performance and risk characteristics of a particular investment style can often be usefully analyzed versus those of other styles. One such interesting case has been the relationship between value and small-capitalization styles. This relationship is not altogether surprising since, currently, the average capitalization of a company in the MSCI EAFE growth index is US\$17.2 billion while a company in the EAFE value index averages US\$5.3 billion. The correlation between the two return spread series, value vs. a cap-weighted benchmark and small stocks vs. large, has been +0.68 — indicating that value and small-cap styles have not been strongly diversifying. Put simply, a tilt towards one of these styles has typically brought with it a significant exposure to the risk of the other. As a result, a fund with separate allocations to EAFE small-cap and EAFE value has had a greater combined exposure to both style risks than each allocation individually would have indicated.

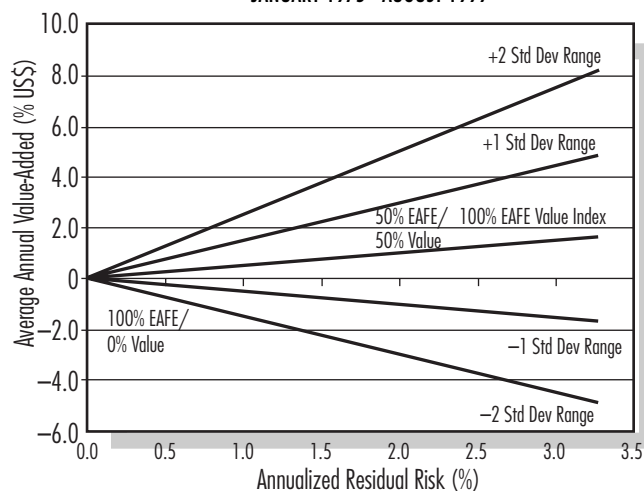
Allocations to Style Investment Strategies

Having examined the returns and risks associated with value and growth investment styles, we turn to the question of what is a sensible style-based allocation approach for a plan sponsor to consider in developing an overall portfolio. Exhibit 8 is

**Exhibit 8. MSCI US, EAFE, AND EAFE STYLE INDICES
EFFICIENT FRONTIER CHART
JANUARY 1975 - AUGUST 1999**



**Exhibit 9. RESIDUAL RISK / VALUE ADDED FRONTIER
WITH ONE- AND TWO-STANDARD DEVIATION RANGES
MSCI EAFE AND EAFE VALUE INDICES
JANUARY 1975 - AUGUST 1999**



an efficient frontier based on the historic performances of U.S. equities, EAFE, EAFE-growth, and EAFE-value equities. From an absolute risk and return perspective, U.S. equities combined with EAFE-value have outperformed combined U.S./EAFE, and U.S./EAFE growth portfolios.

In addition to absolute return and risk, most institutional investors are interested in index-relative performance results, especially the distribution of active management results around these averages. Exhibit 9 displays two-standard deviation "confidence" bands around the long-term return and risk relationship between the EAFE and EAFE-value indices. This shows that a 50% allocation to EAFE-value equities has added an average of 75 basis points per year above the EAFE index, with a 95% chance of being between 4.0% above and -2.3% below the index. As the allocation to value grows, the range of likely outcomes widens as well, reflecting the additional index-relative risk that a style focus carries. The greater the allocation away from the benchmark, the greater the possibility of underperforming. For an EAFE manager who looks much like the value index, one year in forty you are likely to see underperformance of more than 4.3%. The offset, of course, is the greater upside potential.

Conclusions

We have reviewed a range of evidence bearing on the importance of value and growth styles in

international equity markets. Our key conclusions are:

- Value investing has dominated growth in non-U.S. equity markets, with value yielding superior returns over the long term.
- From a risk perspective, value has also dominated growth in non-U.S. equity markets, both in absolute and index-relative terms.
- There seems to be some modest predictability of relative performance of value based on the investment environment.
- Period-to-period variability in the returns to single value measures suggests that a multi-factor valuation approach is more likely to work with greater consistency.

¹ Williams, John Burr, "Evaluation by the Rule of Present Worth," *The Theory of Investment Value*, Cambridge, Massachusetts, Harvard University Press, 1938.

² Fama, Eugene F. and Kenneth R. French. "The Cross-Section of Expected Stock Returns." *The Journal of Finance*, June 1992.

³ Bergstrom, Gary L., Ronald D. Frashure and John R. Chisholm, "Stock Return Anomalies in Non-U.S. Markets," Chapter 15 in *Global Portfolios—Quantitative Strategies for Maximum Performance*, edited by Robert Z. Aliber and Brian R. Bruce, Homewood, Illinois: Richard D. Irwin, 1991.

⁴ Capaul, Carlo, Ian Rowley and William F. Sharpe, "International Value and Growth Stock Returns," *Financial Analysts Journal*, January-February 1993.

⁵ Frashure, Ronald D., "Barriers to Meeting Investment Objectives – Ourselves? Impact of Behavioral Finance, Short-Termism, Etc.," paper for the Institute for Fiduciary Education, September 1996.

⁶ H. Shefrin and M. Statman, "A Behavioral Framework for Expected Stock Returns", working paper presented to Q Group, Fall 1993.

⁷ J. Lakonishok, A. Shleifer and R. Vishny, "Contrarian Investment, Extrapolation, and Risk", working paper presented to The Berkeley Program in Finance, Spring 1994, p. 25.

⁸ DeBont, Werner F.M., and Richard H. Thaler, "Does the Stock Market Overreact?" *The Journal of Finance*, July 1986.

⁹ E. Fama and K. French, "The Cross-Section of Expected Stock Returns," *The Journal of Finance*, 47 (1992), p. 451 and 452.

¹⁰ C. Capaul, I. Rowley and W. Sharpe, "International Value and Growth Stock Returns," *Financial Analysts Journal*, January/February 1993, p. 34.

¹¹ Grinold, Richard C., and Ronald N. Kahn, *Active Portfolio Management – Quantitative Theory and Applications*, New York, New York: McGraw-Hill, 1995.

¹² Kahn, Ronald N., "Seven Insights Into Active Management: Insight Two," *BARRA Newsletter*, Fall 1996.