Factor Performance in **Emerging Markets**

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Factors can be defined as underlying exposures in financial assets that drive risk and return, and certain factors have generated long-term premiums over the broad market. Emerging markets equities and, in particular, the value factor offer fascinating case studies for historical performance analysis. Emerging markets equities have significantly lagged developed stocks in recent years. Notably the value factor—which has been closely followed by investors and widely studied by academics—has underperformed as well. Factor analysis can provide insight into the exposures that have been in and out of favor in equity markets. This analysis helps investors in quantitative approaches but also, we argue, stock pickers as well.

In this paper, we analyze over a decade of factor returns in the emerging markets and discuss the long- and short-term patterns of performance. We then compare the data with that of developed regions, as well as provide a more detailed look at the value factor. Our results help clarify part of why varied stock-selection styles have recently struggled in emerging markets. For quantitative investors, the difficulty in predicting factor performance leadership and the cyclicality of factor returns support the benefit of incorporating a multi-factor approach.

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Introduction

Factor investing is not a new concept—though it became increasingly well known in the years after the global financial crisis through increased investor awareness and asset growth in single factor portfolios (so-called "smart beta"). For at least three decades, academics and practitioners have known that certain characteristics can explain the risk–return pattern of a given asset. These characteristics, or *factors*, can be defined as underlying exposures in financial assets and some of these exposures have generated a long-term premium over the broad market. Factor performance is measured by constructing factor portfolios, which are typically built by sorting an investment universe on a specific characteristic, and then calculating the return difference between the highest-ranked securities and the lowest-ranked securities. The exact cause of factor premiums is an extensive and unresolved debate—as premiums can be attributed to risk or behavioral drivers—that is beyond the scope of our discussion. Regardless of the reason for the existence of factor premiums, we believe it is crucial to understand factor exposures.

Emerging markets equities are a compelling case study for historical factor performance. Over the last five years, emerging markets equities have struggled to keep pace with other equity markets—significantly lagging developed markets. By examining factor returns, we can gain insights into the investment styles that have been rewarded (and penalized) and develop a better understanding of their performance drivers. However, timing factor performance is challenging, at best. In this paper, we: 1) discuss the historical factor/style results in emerging markets, 2) compare these with developed regions, and 3) closely examine the value factor.

Our data sample covers the period from December 1999 to September 2015 and is based on the company universe from S&P BMI indices, for companies over $200 million in market cap, using Worldscope financial data, and relying on the MSCI Emerging Markets Index country classification (in certain cases we used the S&P PMI universe, which is a subset of BMI).

Historical Factor Performance

We begin by analyzing raw factors, which are then combined (through averaging) into groups we call "investment styles," or "styles" (Exhibit 1).[1] Of course, generic (or so-called naïve) factor definitions can vary, as other researchers can adjust some of the parameters, but the basic ideas are the same and these generic factors set up an appropriate baseline comparison.

Since December 1999, the P/E and dividend yield factors were the highest performers in emerging markets (Exhibit 2). Beta and volatility were the worst, but keep in mind that based on the factor definitions this means low-beta, low-volatility stocks performed more favorably than high-risk stocks (i.e., high risk was out of favor). Quality, growth, and momentum underlying factors had mixed performance, with some of these factors in the top and bottom halves.

In terms of styles, value was the best performer for the period under review, which is consistent with empirical findings on the consistency of the value premium (Exhibit 3). As mentioned, P/E and dividend yield were the two top-performing factors and these two compose the value style along with P/B, which did not perform as favorably. This highlights the fact that a "deep value" strategy based on P/B has not
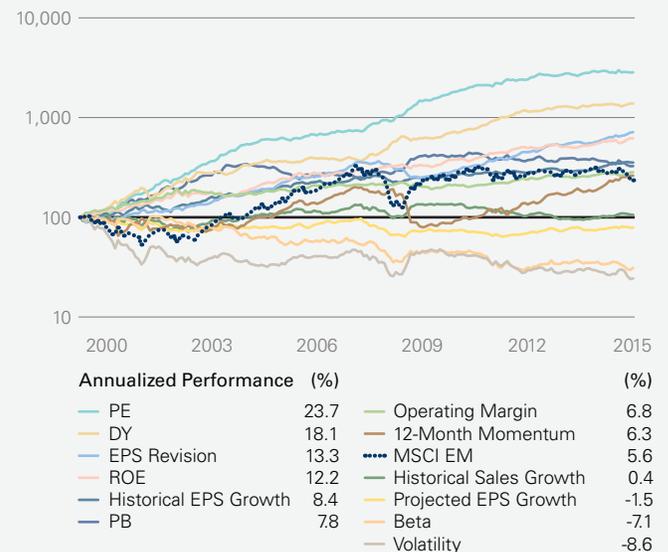
Exhibit 1
Factors and Definitions

Factor returns reflect the return differential, computed monthly, for an equal-weighted composite of stocks ranked in the top/bottom 20% (quintile) for each measure. P/E and P/B are calculated from the differential of lowest versus highest quintile, all other measures are high minus low.

Style	Factor	Definition
Value	P/E	Current market price divided by 1-year trailing earnings.
	P/B	Current market price divided by book value.
	Dividend Yield	Most recent dividend divided by current market price.
Growth	Historical EPS Growth	Five-year trailing earnings per share growth.
	Projected EPS Growth	I/B/E/S analyst forecast for 3–5 year earnings per share growth.
	Historical Sales Growth	Five-year trailing sales growth.
Momentum	Price Momentum	12-month change in USD price.
	EPS Revision (3-month Analyst up/down)	Change in the average EPS estimate over the past three months.
Quality	Operating Margin	Net operating income divided by total revenue.
	ROE	Net income divided by shareholder's equity.
Risk	Beta	36-month beta calculated against local market indices.
	Volatility	270-day standard deviation of USD-based price returns.

Exhibit 2
Factor Performance in Emerging Markets, 1999–2015

Index, December 1999=100, Log Scale

Annualized Performance	(%)		(%)
PE	23.7	Operating Margin	6.8
DY	18.1	12-Month Momentum	6.3
EPS Revision	13.3	MSCI EM	5.6
ROE	12.2	Historical Sales Growth	0.4
Historical EPS Growth	8.4	Projected EPS Growth	-1.5
PB	7.8	Beta	-7.1
		Volatility	-8.6

As of 30 September 2015

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Source: I/B/E/S, Lazard, Standard & Poor's, Worldscope

Exhibit 3
Style Performance in Emerging Markets, 1999–2015

Index, December 1999=100, Log Scale

As of 30 September 2015

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Source: I/B/E/S, Lazard, Standard & Poor's, Worldscope

Exhibit 4
Style Correlations and Sub-Periods, 1999–2015

Correlation January 2000 to September 2015

	Value	Growth	Momentum	Quality	Risk	MSCI EM
Value	1.00					
Growth	-0.07	1.00				
Momentum	-0.34	-0.09	1.00			
Quality	-0.12	0.14	0.28	1.00		
Risk	0.03	0.37	-0.48	-0.43	1.00	
MSCI EM	0.08	0.56	-0.25	-0.29	0.68	1.00

Correlation September 2005 to September 2015

	Value	Growth	Momentum	Quality	Risk	MSCI EM
Value	1.00					
Growth	-0.15	1.00				
Momentum	-0.65	-0.09	1.00			
Quality	-0.25	0.19	0.40	1.00		
Risk	0.20	0.57	-0.45	-0.48	1.00	
MSCI EM	0.15	0.66	-0.26	-0.25	0.75	1.00

Correlation September 2012 to September 2015

	Value	Growth	Momentum	Quality	Risk	MSCI EM
Value	1.00					
Growth	-0.37	1.00				
Momentum	-0.73	0.41	1.00			
Quality	-0.33	0.25	0.44	1.00		
Risk	0.10	0.24	-0.24	-0.60	1.00	
MSCI EM	0.45	0.13	-0.44	-0.39	0.52	1.00

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been rewarded by the market; however, the combination of all three value metrics obtained favorable results.

Momentum was the second-best style, and in a shorter time frame it has been the lead performer (more on this later). We have included the MSCI Emerging Markets Index for comparison and one can loosely think of this cap-weighted benchmark as a form of momentum—as stocks rise in price they command a higher weight. Quality performed closely in line with momentum, and notably the growth style significantly lagged the other styles and the index. In a later section we will come back to the notable performance of quality across emerging markets and other regions. As noted, the risk style shows negative performance, which means positive results for a low volatility approach.

Correlations among the different styles, for the most part, were not meaningful (Exhibit 4), highlighting the distinct investment approaches. The exceptions are the negative correlation between value and momentum—a well-known feature in factor investing—and a somewhat high correlation between risk and growth, which seems to highlight the "high-beta" nature of growth factors. Importantly, the correlations are not completely static. The most recent three-year time period illustrates what may be an important change on the value style given its relatively more elevated correlation with the market.

Emerging markets equity performance has struggled in recent years. In light of this performance, results show that since 2012 momentum has been the only style that has "worked," significantly outperforming all other styles and the MSCI Emerging Markets Index (Exhibit 5). When examining the underlying factors, not surprisingly, the two momentum components were the best performers, displacing the two value factors—P/E and dividend yield—that had the best performance in the longer period shown in Exhibit 2. However, over the shorter time frame value was significantly dragged down again by P/B, highlighting that difficult times persist for those pursuing a deep value strategy. Quality gained significant traction in the six months up to September 2015.

Momentum is also often called "sentiment," and this name is apt at explaining its recent success. We believe stocks that have been past

Exhibit 5
Style Performance in Emerging Markets, 2012–2015

Index, September 2012=100

As of 30 September 2015

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Source: I/B/E/S, Lazard, Standard & Poor's, Worldscope

"winners," as measured by 6–12 month performance, have continued uninterrupted as investors search for stability in a few high-quality names. Global accommodative monetary policies have contributed, in our view, to a lack of differentiation from investors as they look at fundamental stock characteristics, thereby rewarding price-based metrics like 12-month momentum.

To conclude this section, we can draw two key takeaways from historical performance. First, the variability of performance across factors indicates that a multi-factor approach is sensible, as predicting a single factor's leadership is challenging. Second, for fundamental investors, the short-term factor data can help explain why stock picking has proven substantially challenging in recent times for emerging markets investors. Both value and growth exposures have been significantly outpaced by momentum and quality.

Comparing Emerging Markets with Other Regions

We extended our analysis to Europe, Japan, and the United States, as we think it is instructive to see if any factor or style performance has been particular to emerging markets or applies more broadly. Over the past ten years, value was positive globally—which again seems consistent with findings related to the value premium. (left chart in Exhibit 6). In a similar way, low risk equities have also done favorably, as is supported by recent studies explaining that low risk has done better than high risk, contrary to theory.

Growth, momentum, and quality show mixed results. The positive effect of momentum is notable in Europe (in addition to emerging markets). The performance of quality factors in the five-year period 2010–2015 is notable in emerging markets and Europe, indicating the increase of risk aversion and flight to quality in these equity markets since the financial crisis (right chart in Exhibit 6). Overall, long-term factor preferences in emerging markets are generally consistent with developed regions. However, in the more recent period the momentum performance surge has been especially strong there.

## Sector and Country Bias from Factor Construction

The selection method for building factor portfolios may lead to sector and country concentration. Since a universe of stocks is filtered based on a factor's definition, the process can end up selecting stocks from a few sectors. For example, if we select the highest quintile of dividend-yielding stocks we could be concentrated only in the utilities and telecommunications sectors. With this in mind, one can control the sector exposure of factors by looking at the top–bottom 20% by sector and then averaging. From our analysis, we do not see sectors biasing the overall results. Similarly, one can also construct country factors by, for example, buying the cheapest countries and selling the most expensive. However, this does not lead to favorable results, highlighting that underlying fundamentals are more important than country membership of a given set of stocks.

Value—A Deeper Dive

Long-term data on the value premium illustrate its favorable track record.[2] The first academic studies on the value premium were published more than three decades ago, but Benjamin Graham advocated this approach as far back as the 1930s. However, over the years several different "tribes" of value investors have emerged, using different definitions for stock valuation. With this in mind we explored the value factors beyond emerging markets, to see how global exposures behave and thus how investors can harvest the value premium. Over the last decade the P/E factor worked in every region and extremely well in

Exhibit 6
Style Performance Globally

2005–2015
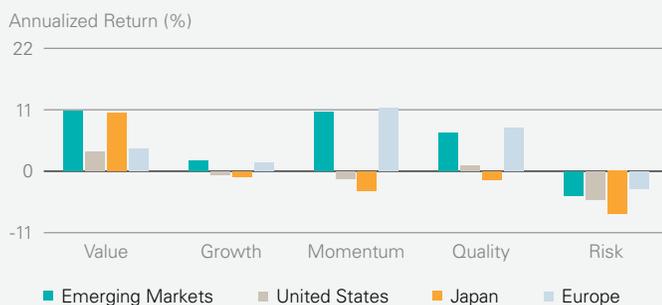
Annualized Return (%)

2010–2015

Annualized Return (%)

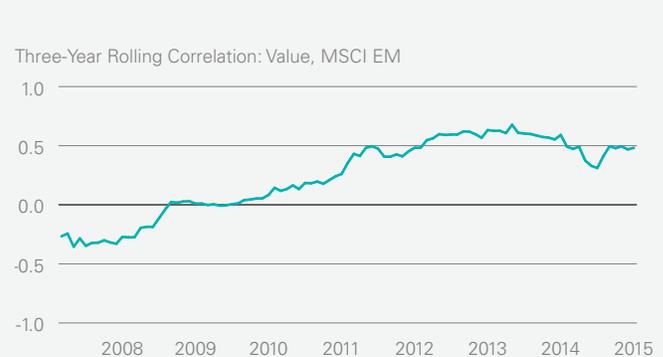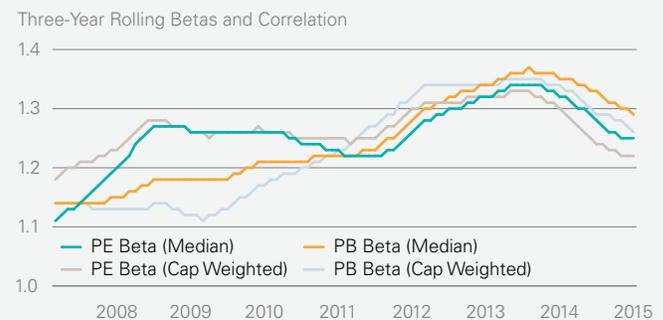■ Emerging Markets   ■ United States   ■ Japan   ■ Europe

As of 30 September 2015

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Source: I/B/E/S, Lazard, Standard & Poor's, Worldscope
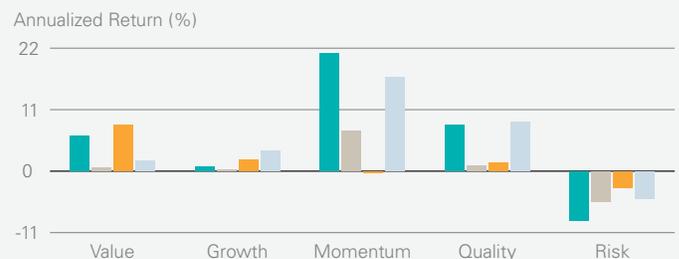
emerging markets. P/B—associated with "deep value"—worked in Japan but not in other areas. Cash flow to price performed favorably across all regions.

In emerging markets, value factors and style have an outstanding long-term record. Given this backdrop, value's unfavorable results over the short term are worth exploring. The first point is that despite a strong cumulative record, performance over rolling periods reveals the cyclicality of returns and as a result the difficulty of timing. The 1-year rolling performance for value and momentum are generally negatively correlated (Exhibit 7), so combining factors in an investment frame-work may improve outcomes through diversification. For fundamental value investors, in general, data show that value outperformance has corresponded to momentum underperformance, which can help investors understand frustrating bouts of underperformance because of this type of market polarization.

One historic characteristic of value stocks has been their generally low systematic risk. However, it would appear that in the post-crisis period, systematic risk as measured by beta was on the rise for value stocks. Measured by P/B or P/E for the cheapest 20% of stocks, beta trended upward for a number of years but an inflection point is visible in 2014 (Exhibit 8, top chart) suggesting this may be subsiding. The performance implication of this phenomenon would suggest that value stocks were not "defending" as expected. In addition, the value style returns have exhibited a rising correlation to the broad market (represented by the MSCI Emerging Markets Index). In similar fashion to beta, correlation has been rising (Exhibit 8, bottom chart). As a result, the value style moved more in tandem with the overall market trend. In our view, these two dynamics can give some clues as it relates to explaining value's recent underperformance.

Conclusion

We believe factors offer an objective view of the underlying building blocks of performance.

We observed value has performed very favorably in emerging markets over long periods. However, when we focused on the most recent three years (2012–2015) we see the dominance of momentum invest-ing, which is even more striking given that momentum is not a global success. It has worked in Europe but not in Japan and the United States, in contrast to value's long-term premium, which is present in all regions reviewed.

Despite the favorable long-term performance of value in emerging markets and elsewhere, or the short-term leadership of momentum in emerging markets, no single factor/style dominates consistently at every point. This highlights the importance of considering a multi-factor approach. For stock pickers, factor performance can provide an additional dimension for explaining a strategy's returns and informing the overall stock-selection processes.

Exhibit 7
Value and Momentum Cycles in Emerging Markets
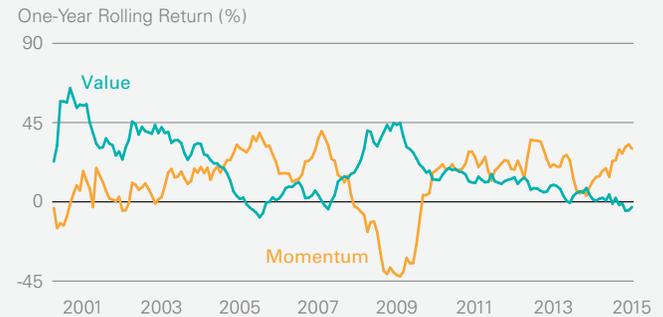
One-Year Rolling Return (%)

As of 30 September 2015

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Source: I/B/E/S, Lazard, Standard & Poor's, Worldscope

Exhibit 8
In Emerging Markets Value Appears to Have More Systematic Risk

Three-Year Rolling Betas and Correlation

— PE Beta (Median) — PB Beta (Median)
— PE Beta (Cap Weighted) — PB Beta (Cap Weighted)

Three-Year Rolling Correlation: Value, MSCI EM

As of 30 September 2015

The performance quoted represents past performance. Past performance is not a reliable indicator of future results. This information is for illustrative purposes only and does not represent any product or strategy managed by Lazard. For beta calculation, on a monthly basis each characteristic is ranked from most attractive to least attrac-tive. The mean and cap-weighted betas are then taken from the top 20% of stocks.

Source: I/B/E/S, Lazard, Standard & Poor's, Worldscope

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Notes

1   To further clarify on nomenclature, outside of this paper "factor" may be used indistinctly to what we call "styles." For example, other publications may refer to the "value factor" which may include one or many underlying exposures. In our case, we chose the word factor for one characteristic (e.g., P/E) and distinguish this from groups of characteristics, which we call style.

2   See Ken French data library which contains US value data since 1926: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

Important Information