Causeway

The Case For A Quantitative Approach to Emerging Markets

This material expresses the views of Causeway's quantitative research team as of the date hereof and should not be relied on as research or investment advice. The views and quantitative methodologies discussed herein are subject to change. There is no guarantee that any forecasts made will come to pass. In addition to the normal risks associated with equity investing, international investing may involve risk of capital loss from unfavorable fluctuations in currency values, from differences in generally accepted accounting principles, or from economic or political instability in other nations. Emerging markets involve heightened risks related to the same factors as well as increased volatility and lower trading volume.

The Case For A Quantitative Approach to Emerging Markets

Since inception in 2001, we have managed international and global value equity strategies in our disciplined, "bottom-up," fundamental research process, enhanced by proprietary quantitative risk management tools. In the developed markets, where companies are more mature and data is relatively transparent and reliable, this strategy has proven well-suited to identify stocks likely to outperform the benchmark index over full market cycles. Conversely, we believe that a deep value investment process is not as effective in emerging markets. This is because emerging markets are less transparent, more inefficient, and less politically stable, making top-down information critical to the investment process. The added complexity of emerging markets requires capabilities in both country and sector selection and careful diversification to mitigate political risk. From earlier this decade, our experience with quantitative investing (we managed a developed markets, quantitative market-neutral equity strategy for 5 years), persuaded us that a multi-factor quantitative approach could be effective in exploiting pricing inefficiencies in emerging markets equities. A quantitative approach seamlessly combines different sources of alpha (performance over the benchmark index). With the expertise and quantitative investing skills of portfolio managers, Arjun Jayaraman and MacDuff Kuhnert (Joe Gubler promoted to PM in 2014), we launched our emerging markets strategy in 2007. In our investment process, we combine proprietary bottom-up value, growth, and momentum characteristics. We complement the bottom-up information with top-down sector, country, and macroeconomic data. Our research and extensive testing supports our view that this approach should generate more consistent returns over the course of the investment cycle.

We began researching quantitative emerging markets investing after studying a number of prominent academic papers that confirm the efficacy of using multiple bottom-up factors. For instance, one study found that value and momentum strategies generated significant excess returns in emerging markets (van der Hart, Slagter, and van Dijk, 2002). The researchers introduced real world constraints, such as liquidity, restrictions on foreign ownership, and transaction costs. Even with these constraints, alpha opportunities remained abundant, as evidenced by our own actual results. Another frequently cited study (Rouwenhorst, 1999) also validated our theory that value and momentum investing is effective in emerging markets. The authors additionally determined that there is no return to beta (sensitivity to the benchmark index) as a stock selection strategy in the emerging markets equity asset class, consistent with Causeway's quantitative approach of minimizing portfolio active beta. Another study by van der Hart, Slagter, and van Dijk (2005) concludes that both value and sell-side analyst revision factors are effective in emerging markets. The growth factor in the Causeway model relies significantly on sell-side analyst revisions.

The Case For A Quantitative Approach to Emerging Markets (continued)

Compelling academic research and our own successful track record support the use of top-down factors in addition to bottom-up criteria in Causeway's emerging markets model. By design, our emerging markets model assesses the relative attractiveness of countries and sectors. This allows us to determine the direction and magnitude of position overweights (and underweights) compared to our benchmark, the MSCI Emerging Markets Index. A number of researchers corroborate our belief that top-down approaches work well in emerging markets. For example, one study (Heckman, Gendreau, 1998) finds that factors such as valuation ratios, real interest rates, and gross domestic product growth rates are important in differentiating outperforming countries versus those that underperform. After testing, we included all of these factors in Causeway's top-down models.

Another hallmark of Causeway's emerging markets model is a sophisticated weighting scheme. Simple quantitative approaches use the same factor weights for all stocks in the universe. Such an approach ignores the fact that different types of investors use different criteria to select stocks. For example, value investors typically employ valuation ratios, which often characterize companies at the lower end of the growth spectrum. Growth investors, on other hand, are not as concerned about valuation ratios, since future growth prospects represent much of the value in the companies they find attractive. In our approach to modeling emerging market stocks, we recognize that different types of companies should be evaluated using different metrics. This approach is known as a "contextual" weighting scheme in the quantitative literature. A number of papers confirm that a contextual weighting scheme adds value, including one written by a group of principals at Panagora Asset Management (Sorensen, Hua, and Qian, 2005). During his tenure at Panagora, Arjun Jayaraman employed contextual weightings in a successful quantitative strategy for several equity portfolios before joining Causeway.

Beyond alpha generation, quantitative strategies also offer breadth of coverage. In our process, we calculate alphas daily for all stocks in our investable emerging markets universe of 1,200 stocks. It would take a sizable team of conscientious fundamental analysts to cover such a large set of stocks effectively and undertake the labor-intensive task of updating forecasts on a daily basis to incorporate new data and information. In some cases, analysts employ screens to reduce a large universe to a more manageable subset, but these typically do not employ the breadth of sophisticated factors and weights used in our model.

The Case For A Quantitative Approach to Emerging Markets (continued)

Quantitative strategies are also well-suited for risk management, which is especially important in a volatile asset class such as emerging markets. As is the case with our alpha model, our risk model is proprietary and has multiple factors, which reflect the sources of risk that we deem important in the asset class. Our model gives us ex-ante tracking error and volatility forecasts for our portfolio, as well as marginal contribution to risk forecasts at the stock, country, and sector levels. Risk management at the portfolio level is often not a focus of fundamental investors, who generally combine alpha and risk forecasts at the stock level and do not give much consideration to risk at the portfolio level.

At Causeway, we also control transactions costs, a necessary step in order to generate alpha efficiently while incurring minimal costs. We use a market impact model, based on such factors as trading volume, volatility, and bid-ask spread, which quantifies the implicit cost of trading a stock. This liquidity assessment is very important in emerging markets, where the lack of sufficient trading volume in many stocks prevents investors from exploiting what appear to be attractive alpha opportunities. We also include explicit trading costs such as commissions and stamp tax in our models. Many fundamental investors do not do a thorough job of characterizing transactions costs and, therefore, do not exploit the best alpha opportunities net of transactions costs.

In a final step in our process, we use optimization to construct portfolios. A powerful mathematical tool, optimization considers all the inputs in the process, such as alpha, risk, and transactions costs. Using an optimizer, we can construct a portfolio that maximizes alpha for a given level of risk (our risk target is 5% tracking error to the MSCI Emerging Markets Index) while minimizing costs. We are convinced that the optimization we run is the most effective tool to extract the greatest alpha from our universe of investable emerging markets stocks. We are confident that our quantitative approach in emerging markets, supported by a proven model and the extensive experience of portfolio managers Arjun Jayaraman and MacDuff Kuhnert, is well-constructed to generate consistent returns in rising and falling markets and in periods of high and low volatility.

Causeway Emerging Markets Equity

STRATEGY HIGHLIGHTS

Philosophy

- Actively managed, tracking-error oriented, quantitative emerging markets strategy
- Combines bottom-up and top-down factors in security selection
- Risk control:
  - Constrain country/sector weights versus benchmark
  - Use proprietary quantitative tools

Process Highlights

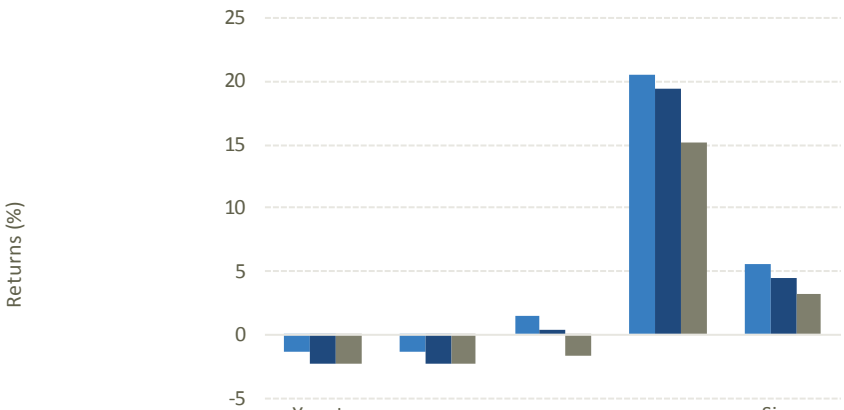
- 25 emerging markets
- 1,200 stock universe
- Employ stock ranking and risk models designed for emerging markets
- Use optimization to maximize expected return per unit of risk

Portfolio Managers

- Arjun Jayaraman, MacDuff Kuhnert, Joe Gubler

COMPOSITE RETURNS *(as of 12/31/13)*

Annualized for periods greater than one year



	Year to Date	1 Year	3 Years	5 Years	Since Inception
Gross of Fees	-1.31	-1.31	1.46	20.56	5.51
Net of Fees	-2.34	-2.34	0.42	19.34	4.45
MSCI Emerging Markets	-2.27	-2.27	-1.74	15.15	3.24

*Inception: April 30, 2007

BIBLIOGRAPHY

1. Heckman, Leila' Gendreau, Brian. 1998. Global Equity Selection Strategies. Chapter 8. "Interest Rates and Country Allocation Strategies. " pages 167-183.

2. Rouwenhorst, K. Geert. 1999. "Local return factors and turnover in emerging stock markets." Journal of Finance, volume 54, pages 1,439-1,464.

3. Sorensen, Eric H.; Hua, Ronald, Qian, Edward. 2005. "Contextual Fundamentals, Models, and Active Management." The Journal of Portfolio Management.

4. van der Hart, Jaap; Slagter, Erica; van Dijk, Dick. 2002. "Stock selection strategies in emerging markets". Journal of Empirical Finance, volume 10, pages 105-132.

5. van der Hart, Jaap; Slagter, Erica; van Dijk, Dick. 2005. "The success of stock selection strategies in emerging markets: is it risk or behavioral bias?" Working paper, Erasmus University, Erasmus Research Institute of Management.

Important disclosures

EMERGING MARKETS EQUITY COMPOSITE

CAUSEWAY CAPITAL MANAGEMENT LLC
SCHEDULE OF INVESTMENT PERFORMANCE RESULTS
FOR THE PERIOD FROM APRIL 30, 2007 (Inception) THROUGH DECEMBER 31, 2011
COMPOSITE INCEPTION DATE: April 2007 COMPOSITE CREATION DATE: April 2007

Year	Gross-of-Fees Return (%)	Net-of-Fees Return (%)	Benchmark Return (%)*	Number of Portfolios in Composite at End of Period	Composite Dispersion (%)	Composite 3-Yr St Dev (%)	Benchmark 3-Yr St Dev (%)	Composite Assets at End of Period ($ millions)	Total Firm Assets at End of Period ($ millions)	Percentage of Firm Assets at End of Period
2007**	33.21	32.28	30.51	1	N/M	***	***	30.77	17,599.18	0.17
2008	(57.82)	(58.23)	(53.18)	1	N/M	***	***	21.96	8,645.12	0.25
2009	90.53	88.69	79.02	1	N/M	***	***	26.59	10,192.08	0.26
2010	27.97	26.70	19.20	1	N/M	35.59	32.59	38.03	12,187.57	0.31
2011	(16.98)	(17.85)	(18.17)	1	N/M	27.30	25.76	117.80	11,676.22	1.01
2012	27.48	26.21	18.63	1	N/M	22.28	21.49	160.09	16,189.98	0.99

N/M – Not considered meaningful for 5 portfolios or less for the full year.
** Not covered by the report of independent accountants.*
*** Partial period shown (April 30, 2007 – December 31, 2007).*
**** Not presented because 36 monthly returns are not available.*

Causeway Capital Management LLC ("Causeway") claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Causeway has been independently verified for the periods June 11, 2001 through December 31, 2011.

Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. The Emerging Markets Equity Composite ("EM Composite") has been examined for the periods April 30, 2007 through December 31, 2011. The verification and performance examination reports are available upon request.

The Firm, Causeway, is organized as a Delaware limited liability company and began operations in June 2001. It is registered as an investment adviser with the U.S. Securities and Exchange Commission under the Investment Advisers Act of 1940. Causeway manages international, global, and emerging markets equity assets for corporations, pension plans, public retirement plans, Taft-Hartley pension plans, endowments and foundations, mutual funds, charities, private trusts and funds, wrap fee programs, and other institutions. The firm includes all accounts managed by Causeway.

The EM Composite includes all emerging markets equity, U.S. dollar denominated, discretionary accounts, which contain typically 70 to 120 holdings, and apply a minimum market capitalization requirement of generally $500 million or higher at the time of initial investment. The emerging markets equity strategy seeks long-term growth of capital through investment primarily in equity securities of companies in emerging markets using a quantitative investment approach. New accounts are included in the EM Composite after the first full month under management. Terminated accounts are included in the EM Composite through the last full month under management. A complete list and description of firm composites is available upon request.

Account returns are calculated daily. Monthly account returns are calculated by geometrically linking the daily returns. The return of the EM Composite is calculated monthly by weighting monthly account returns by the beginning market values. Valuations and returns are computed and stated in U.S. dollars. Returns include the reinvestment of interest, dividends and any capital gains. Returns are calculated gross of withholding taxes on dividends, interest income, and capital gains. The firm's policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request. Past performance is no guarantee of future performance. Composite dispersion, if applicable, is calculated using the equal-weighted standard deviation of all portfolios that were included in the EM Composite for the entire year. The three-year annualized ex-post standard deviation quantifies the variability of the composite or benchmark returns over the preceding 36-month period.

The Morgan Stanley Capital International Emerging Markets Index benchmark is a free float-adjusted market capitalization index, designed to measure equity market performance in the global emerging markets. The Index is gross of withholding taxes, assumes reinvestment of dividends and capital gains, and assumes no management, custody, transaction or other expenses.

Gross-of-fee returns are presented before management and custody fees but after trading expenses. Net-of-fee returns are presented after the deduction of actual management fees, performance-based fees, and all trading expenses, but before custody fees. Causeway's basic management fee schedules are described in its firm brochure pursuant to Part 2 of Form ADV. The basic separate account annual fee schedule for emerging markets equity assets under management is 1.00% of the first $100 million, 0.85% of the next $150 million, and 0.75% thereafter. Accounts in the EM Composite may have different fee schedules or pay bundled fees. Bundled fees include management, custody, and fund accounting fees.

MSCI has not approved, reviewed or produced this report, makes no express or implied warranties or representations and is not liable whatsoever for any data in the report. You may not redistribute the MSCI data or use it as a basis for other indices or investment products.