

Global Market Report

The Relative Strength of Industries and Countries in Emerging Markets

A Case Study Using the Barra Emerging Markets Equity Model (EMM1)

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Introduction

Many portfolio managers follow an allocation-based investment process. In this approach, stocks are first segmented into groupings. The portfolio manager then aims to identify the outperforming and underperforming groupings, and weights them accordingly. The second step in this investment process entails security selection within the groupings.

A basic question facing such portfolio managers is *how* to segment the stocks into groupings. For an international portfolio, industries and countries represent the two most widely used schemes. If country effects dominate, then primary consideration should be given to the country allocation decision. If the reverse is true, an industry-first approach would be warranted.

It is widely believed that emerging markets form a heterogeneous and weakly integrated subset of global markets. These properties are reflected in the relative strength of industries and countries for emerging markets. Menchero and Morozov (2012) used the Barra Global Equity Model (GEM2) to study the relative strength of industries versus countries in emerging markets, finding that countries have consistently dominated industries.

In this Global Market Report, we examine the latest developments in emerging markets through the lens of the Barra Emerging Markets Equity Model (EMM1), a risk model that is tailored to this specific investment universe. We examine whether there has been a change recently in the strength of industries and countries. We are also able to gauge how the inclusion of style factors modified the overall picture.

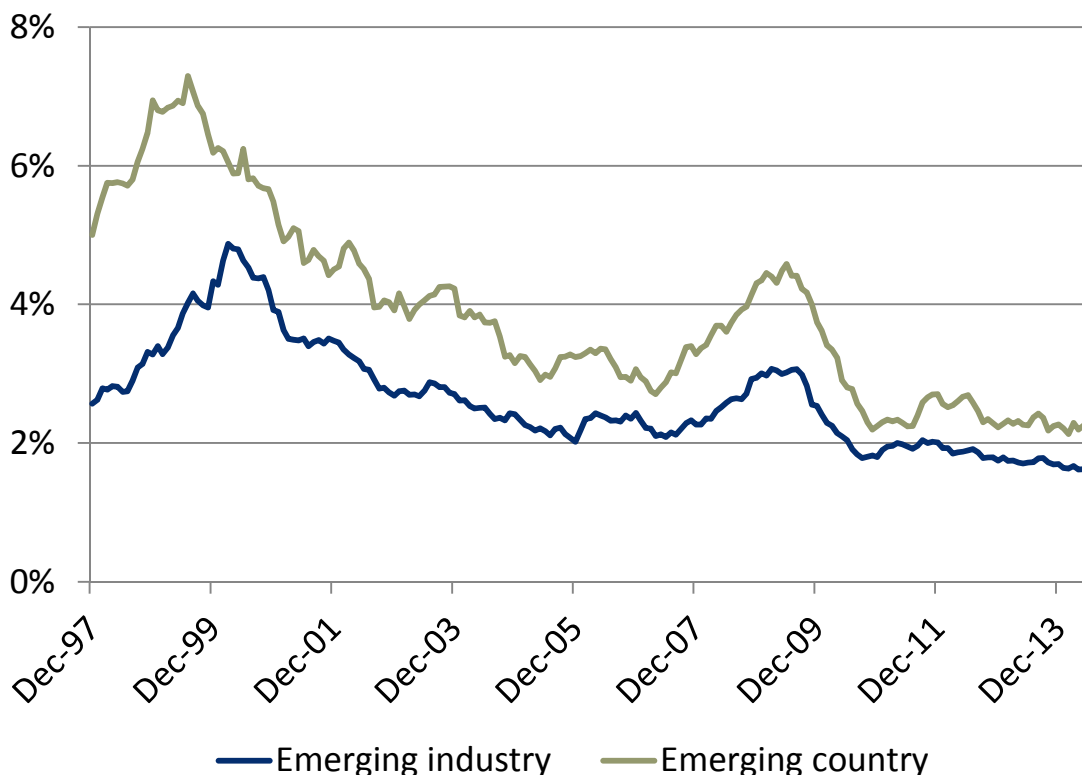
Measuring Industry and Country Effects

A basic problem to address when investigating the relative strength of industries and countries is how to disentangle the two effects. For instance, Korean stocks are heavily over-represented in the global semiconductor industry, while gold mining stocks comprise a disproportionate share of the South African equity market. How can one disentangle the gold mining industry from the South Africa country return, or the Korean country return from the effect of the semiconductor industry? Factor models are designed for this purpose. In particular, they provide a means of constructing portfolios that are exposed to a single factor, while being neutral to all other systematic drivers of equity returns.

The first measure that we examine to evaluate the relative strength of industries versus countries is given by the *mean absolute deviation* of factor returns (MAD), as described by Menchero and Morozov (2012). The MAD is defined as the cap-weighted average of the absolute value of country or industry factor returns. This measure represents the return of a hypothetical “perfect foresight” investment strategy that takes long positions in factors that will earn a positive return over the next month, while taking short positions in those factors with negative returns.

In Figure 1, we plot the MAD for the industry factors and the country factors of the EMM1 model. Our study shows that countries have consistently dominated industries in emerging markets over the full sample period, consistent with the earlier findings by Menchero and Morozov (2012). Country MAD increased sharply to its historic maximum in 1997-98 when a series of crises struck emerging markets (Asian crisis, Russian default). The global financial crisis of 2008 also led to a simultaneous increase in country and industry MAD. Furthermore, Figure 1 also shows that the gap between the MAD of the two factor groups has tended to narrow during the sample period.

Figure 1: Mean absolute deviation for countries and industries, December 1997 to June 2014, EMM1 model.

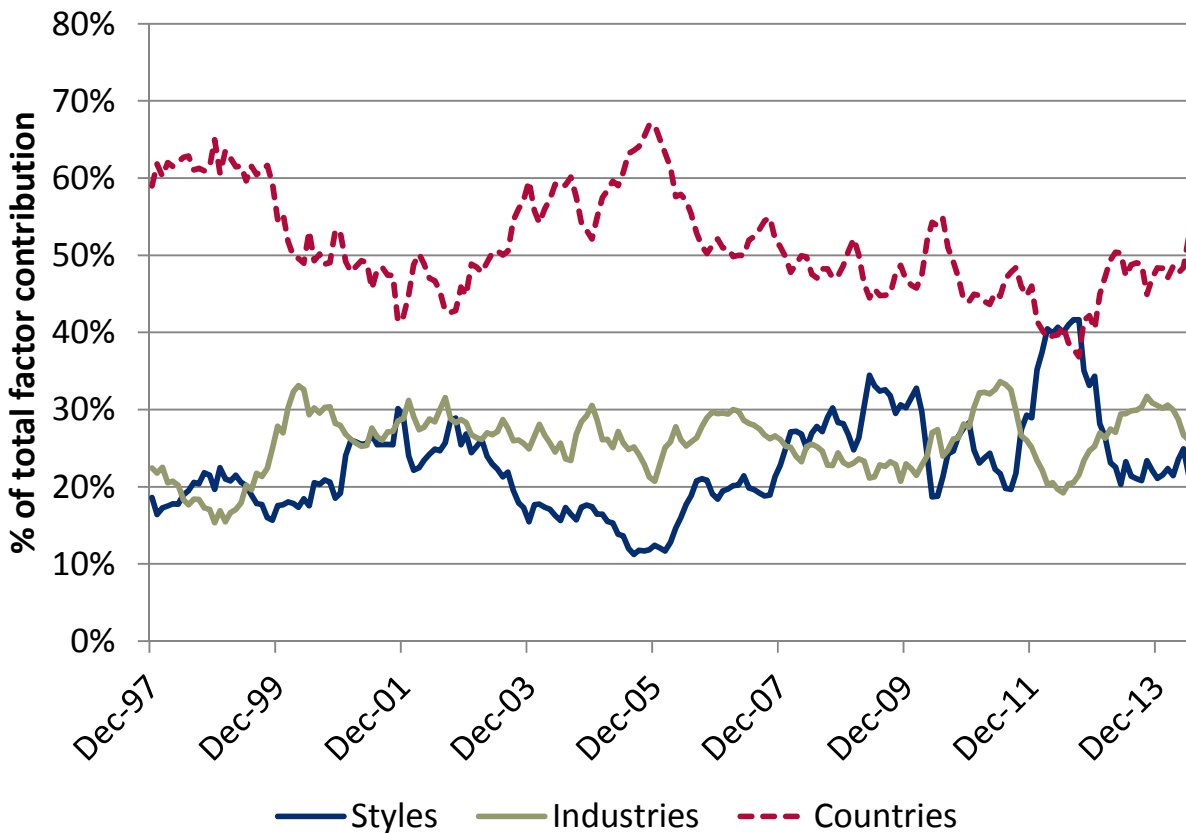


Note: Lines were smoothed by using 12-month moving average.

Another measure that we use to study the relative importance of industries versus countries is based on *cross-sectional volatility* (CSV), which characterizes the dispersion of stock returns at a particular point in time. More specifically, we follow the approach of Menchero and Morozov (2011) to decompose CSV into contributions coming from various factors. One advantage of CSV is that it incorporates only recent information, so that it can quickly signal structural changes in the equity markets. Another advantage is that it allows style factors to be compared with industry/country factors in an apples-to-apples fashion.

The evolution through time of these CSV contributions provides information about the relative strength of factor groups. In particular, we can compare country factor contributions with industry factor contributions to assess the relative strength of these two factor groups.

Figure 2: Decomposition of total factor contributions of monthly cross-sectional volatility, December 1997 to June 2014, EMM1 model.



Note: Lines were smoothed by using 12-month moving average.

In Figure 2 we use the EMM1 model to decompose the CSV of monthly local stock returns in emerging markets. More precisely, we look at the contribution of each factor group as the percentage of the total CSV contribution from all factors. Again, we find that countries have dominated industry factors over the whole sample period, and we can also find a slight narrowing of the gap between countries and industries. The effect of the Asian crisis and the Russian default is hardly visible in this framework indicating that industries, countries and styles were affected in similar proportions.

Style factors were typically weaker than country factors. On average, however, they were roughly comparable with industry factors. A notable exception to this rule was observed during the emerging market sell-off in 2012 when style factor contributions spiked and dominated both countries and industries for a short period of time. The rise of style factor strength was mainly due to the Beta factor,

which was explained by the negative performance of the factor during the same window that was coupled with the increasing negative correlation between Beta exposure and stock returns, i.e. a sell-off in high-beta stocks. Indeed, 2012 saw significant outflows from emerging market funds due to increased risk aversion of investors caused by less supportive data in the U.S. and China, and continued weakness in Europe.¹

Conclusion

In this Market Report we used the Barra Emerging Markets Model (EMM1) model to investigate which factors influenced emerging market stock returns the most during the sample period. We found that when only comparing industries and countries, countries had a clear dominance during the sample period, albeit with a narrowing gap over time.

After enlarging the framework to include styles as well, the picture changed slightly. We found that countries were generally the strongest over the sample period, whereas industries and styles had roughly the same, lower importance. In 2012 however, for a short period of time, styles came to dominate both countries and industries due to the exceptional strength of the Beta factor during a risk-off period caused by bleaker global economic outlook.

References

Menchero, Jose and Andrei Morozov (2011). *Decomposing Global Equity Cross-Sectional Volatility*. Financial Analyst Journal, Volume 67, Number 5, pp. 58-68.

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¹See "Emerging Market Sell-off Continues", Forbes, June 2, 2012; <http://www.forbes.com/sites/kenrapoza/2012/06/02/emerging-market-sell-off-continues/>

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¹As of March 31, 2014, as reported on June 25, 2014, by eVestment, Lipper and Bloomberg

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