Europe Market Report

The Relative Importance of Industries and Countries in Developed Europe

A Case Study Using the EUE4 Model

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Introduction

Many portfolio managers follow an allocation-based investment process where stocks are first segmented into groupings. The portfolio manager aims to identify the outperforming and underperforming groupings, and to weight 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 segmentation schemes. If country effects dominate, then primary consideration may be given to the country allocation decision. By contrast, if the reverse is true, an industry-first investment approach may be warranted.

As described by Menchero and Morozov (2012), within Developed Europe, industry effects began to dominate country effects beginning in the late 1990s. The argument advanced to explain this empirical observation is that increasing economic integration within the Eurozone has diminished the financial distinction between countries.

The sovereign-debt crisis that has plagued Europe over the last several years has called into question the continuing validity of this explanation. In particular, there has been a sharp divergence in government bond yields across the Eurozone. For instance, while government bond yields in Greece, Spain, and Italy skyrocketed in 2011 and 2012, the corresponding rates in Germany and Holland declined sharply during the same period.

In this Market Report, we examine how the European equity markets have reacted to the sovereign-debt crisis. More specifically, we use the Barra Europe Equity Model (EUE4) to study whether countries have significantly increased in strength relative to industries.

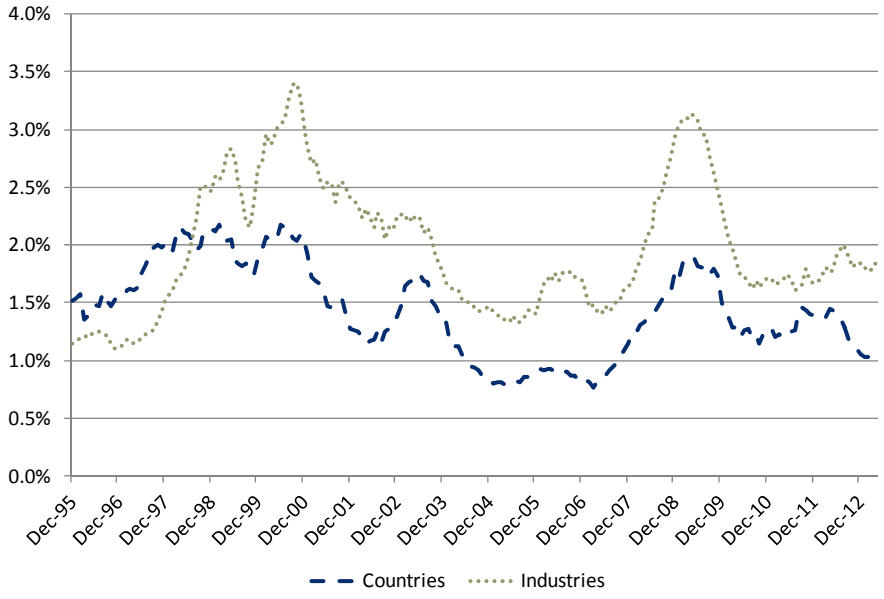
Measuring Industry and Country Effects

A basic problem that must be addressed when investigating the relative importance of industries and countries is how to disentangle the two effects. For instance, Japanese stocks are heavily overrepresented in the global automobile industry. Similarly, energy stocks comprise a disproportionate share of the Norwegian equity market. How can one disentangle the energy effect from the Norway effect, or the Japan effect from the automobile effect? 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 examined to evaluate the relative strength of industries versus countries was 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 16 developed country factors of the EUE4 model. [1] This graph shows that countries dominated industries prior to mid-1998, while industries have dominated ever since. Although the gap between industries and countries *diminished* as the sovereign-debt crisis unfolded (reaching a minimum in 2011), countries never surpassed industries during this time period. Furthermore, since late 2011 we saw that the gap has again widened, with industries reestablishing their long-standing dominance over countries in Developed Europe.

Figure 1: Mean absolute deviation for Countries and Industries, Dec. 1995 to Apr. 2013, EUE4 model.



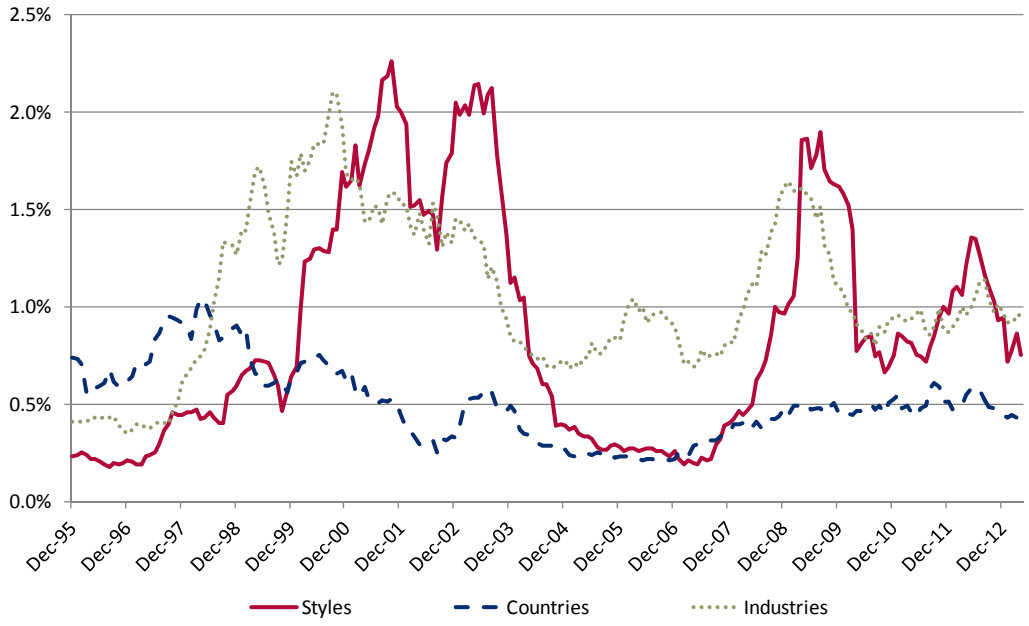
Note: Lines were smoothed by using a 12-month moving average.

[1] As Developed Europe markets, we use the following 16 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK.

Another measure that we used 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 followed 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 importance 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 monthly Cross-Sectional Volatility, Dec. 1995 to Apr. 2013, EUE4 model.



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

In Figure 2, we used the EUE4 model to decompose the CSV of monthly local stock returns in Developed Europe. We see that, according to the CSV decomposition, industries have dominated countries since mid-1998. This is consistent with the previous results in Figure 1 using the MAD measure. Nonetheless, as the sovereign-debt crisis unfolded over the period 2009-2012, the *gap* between industries and countries has diminished. Since late 2011, however, the gap has once again widened as industries reasserted their dominance over countries.

It is also interesting to observe the strength of style effects in Developed Europe. From Figure 2, we see that there were several distinct periods in which style factors were the main driver of cross-sectional volatility. These periods generally coincided with times of elevated market volatility, such as the aftermath of the Internet Bubble, the 2008/2009 financial crisis, and the volatility spike of late 2011.

Conclusion

Ever since the late 1990s, industries have dominated countries as drivers of European stock returns. In this Market Report, we used the EUE4 model to investigate the question of whether the recent sovereign-debt crisis has modified this pattern or not.

We found that industries have continued to dominate countries in Developed Europe up to the present time. Nonetheless, as the sovereign-debt crisis unfolded in 2011, the gap narrowed. Since late 2011, however, industry effects have increased in strength whereas country effects have weakened.

References

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[1]As of March 31, 2012, as published by eVestment, Lipper and Bloomberg in September 2012

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