

Europe Market Report

The Relative Importance of Industries and Countries in Developed Europe

A Case Study Using the EUE4 Model

Jose Menchero

Zoltán Nagy

May 2013

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.

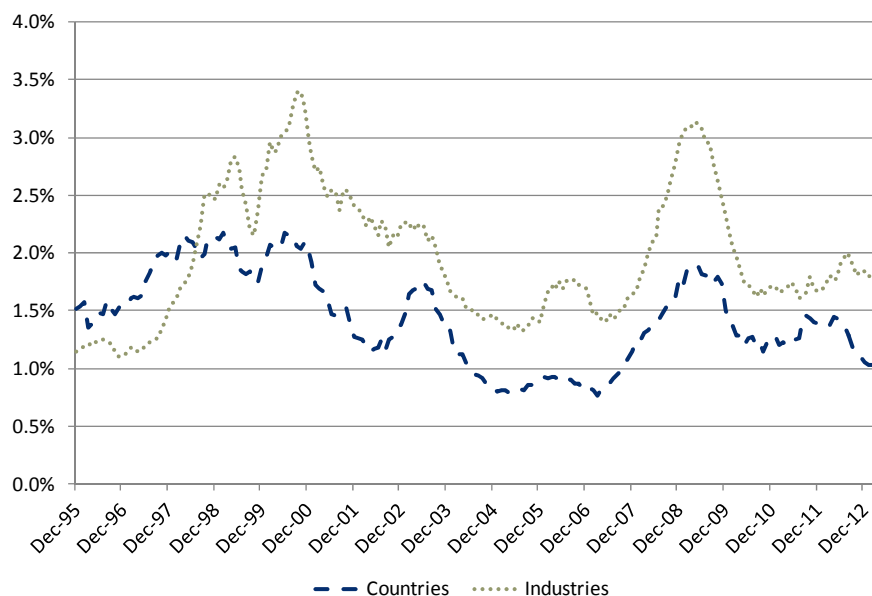
Measuring Industry and Country Effects

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.



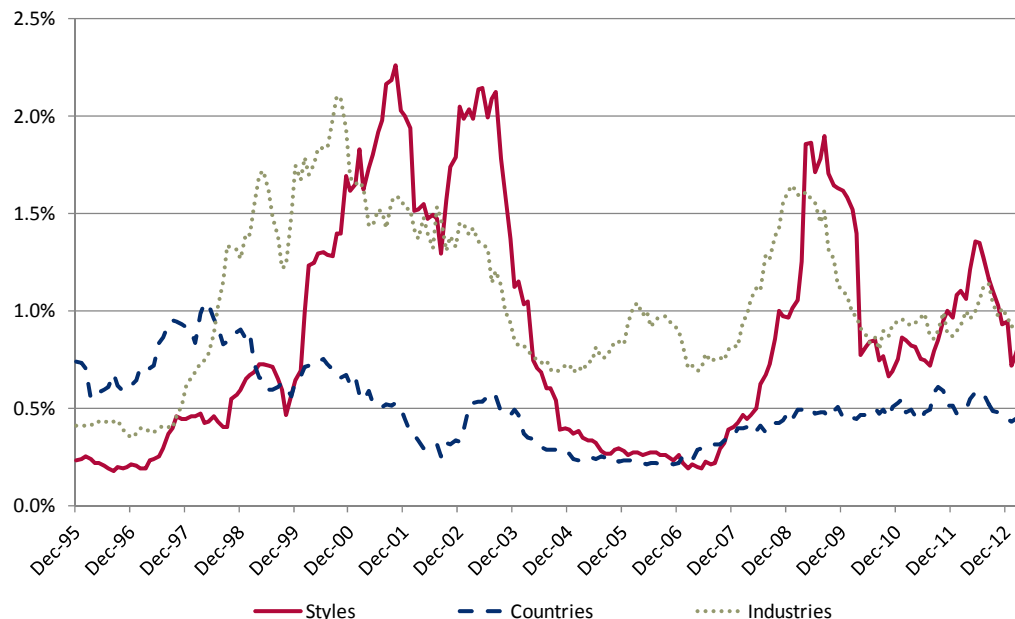
Note: Lines were smoothed by using a 12-month moving average.

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

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

Menchero, Jose and Andrei Morozov (2012). *The Relative Strength of Industries Versus Countries in Global Equity Markets*. Journal of Investment Management, Volume 10, Number 3, pp. 75-87.

Client Service Information is Available 24 Hours a Day

clientservice@msci.com

Americas

Americas	1.888.588.4567 (toll free)
Atlanta	+ 1.404.551.3212
Boston	+ 1.617.532.0920
Chicago	+ 1.312.675.0545
Montreal	+ 1.514.847.7506
Monterrey	+ 52.81.1253.4020
New York	+ 1.212.804.3901
San Francisco	+ 1.415.836.8800
Sao Paulo	+ 55.11.3706.1360
Stamford	+ 1.203.325.5630
Toronto	+ 1.416.628.1007

Europe, Middle East & Africa

Cape Town	+ 27.21.673.0100
Frankfurt	+ 49.69.133.859.00
Geneva	+ 41.22.817.9777
London	+ 44.20.7618.2222
Milan	+ 39.02.5849.0415
Paris	0800.91.59.17 (toll free)

Asia Pacific

China North	10800.852.1032 (toll free)
China South	10800.152.1032 (toll free)
Hong Kong	+ 852.2844.9333
Seoul	798.8521.3392 (toll free)
Singapore	800.852.3749 (toll free)
Sydney	+ 61.2.9033.9333
Tokyo	+ 81.3.5226.8222

Notice and Disclaimer

- This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the "Information") is the property of MSCI Inc. or its subsidiaries (collectively, "MSCI"), or MSCI's licensors, direct or indirect suppliers or any third party involved in making or compiling any Information (collectively, with MSCI, the "Information Providers") and is provided for informational purposes only. The Information may not be reproduced or disseminated in whole or in part without prior written permission from MSCI.
- The Information may not be used to create derivative works or to verify or correct other data or information. For example (but without limitation), the Information may not be used to create indices, databases, risk models, analytics, software, or in connection with the issuing, offering, sponsoring, managing or marketing of any securities, portfolios, financial products or other investment vehicles utilizing or based on, linked to, tracking or otherwise derived from the Information or any other MSCI data, information, products or services.
- The user of the Information assumes the entire risk of any use it may make or permit to be made of the Information. NONE OF THE INFORMATION PROVIDERS MAKES ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION (OR THE RESULTS TO BE OBTAINED BY THE USE THEREOF), AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, EACH INFORMATION PROVIDER EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES (INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF ORIGINALITY, ACCURACY, TIMELINESS, NON-INFRINGEMENT, COMPLETENESS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY OF THE INFORMATION.
- Without limiting any of the foregoing and to the maximum extent permitted by applicable law, in no event shall any Information Provider have any liability regarding any of the Information for any direct, indirect, special, punitive, consequential (including lost profits) or any other damages even if notified of the possibility of such damages. The foregoing shall not exclude or limit any liability that may not by applicable law be excluded or limited, including without limitation (as applicable), any liability for death or personal injury to the extent that such injury results from the negligence or wilful default of itself, its servants, agents or sub-contractors.
- Information containing any historical information, data or analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. Past performance does not guarantee future results.
- None of the Information constitutes an offer to sell (or a solicitation of an offer to buy), any security, financial product or other investment vehicle or any trading strategy. You cannot invest in an index.
- MSCI's indirect wholly-owned subsidiary Institutional Shareholder Services, Inc. ("ISS") is a Registered Investment Adviser under the Investment Advisers Act of 1940. Except with respect to any applicable products or services from ISS (including applicable products or services from MSCI ESG Research Information, which are provided by ISS), neither MSCI nor any of its products or services recommends, endorses, approves or otherwise expresses any opinion regarding any issuer, securities, financial products or instruments or trading strategies and neither MSCI nor any of its products or services is intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such.
- The MSCI ESG Indices use ratings and other data, analysis and information from MSCI ESG Research. MSCI ESG Research is produced by ISS or its subsidiaries. Issuers mentioned or included in any MSCI ESG Research materials may be a client of MSCI, ISS, or another MSCI subsidiary, or the parent of, or affiliated with, a client of MSCI, ISS, or another MSCI subsidiary, including ISS Corporate Services, Inc., which provides tools and services to issuers. MSCI ESG Research materials, including materials utilized in any MSCI ESG Indices or other products, have not been submitted to, nor received approval from, the United States Securities and Exchange Commission or any other regulatory body.
- Any use of or access to products, services or information of MSCI requires a license from MSCI. MSCI, Barra, RiskMetrics, ISS, CFRA, FEA, and other MSCI brands and product names are the trademarks, service marks, or registered trademarks of MSCI or its subsidiaries in the United States and other jurisdictions. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and Standard & Poor's. "Global Industry Classification Standard (GICS)" is a service mark of MSCI and Standard & Poor's.

About MSCI

MSCI Inc. is a leading provider of investment decision support tools to investors globally, including asset managers, banks, hedge funds and pension funds. MSCI products and services include indices, portfolio risk and performance analytics, and governance tools.

The company's flagship product offerings are: the MSCI indices with close to USD 7 trillion estimated to be benchmarked to them on a worldwide basis¹; Barra multi-asset class factor models, portfolio risk and performance analytics; RiskMetrics multi-asset class market and credit risk analytics; IPD real estate information, indices and analytics; MSCI ESG (environmental, social and governance) Research screening, analysis and ratings; ISS governance research and outsourced proxy voting and reporting services; FEA valuation models and risk management software for the energy and commodities markets; and CFRA forensic accounting risk research, legal/regulatory risk assessment, and due-diligence. MSCI is headquartered in New York, with research and commercial offices around the world.

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