

Do Style Benchmarks Differ?

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Abstract

Styles have become an essential concept in the development, analysis and performance evaluation of investment strategies. We analyze if there are major differences in the behavior of the commonly used Stoxx and MSCI European style indices. We report minor differences. As the Dow Jones Stoxx does not charge for basic data required one may suggest that DJ Stoxx Value and Growth indices provide a reasonable benchmark for pension fund managers and mutual investors. The remaining issue is whether these indices behave differently enough.

1. Introduction

Styles have become an essential concept in the development, analysis and performance evaluation of investment strategies. Style classification is widely used in pension fund industry and is quickly becoming a norm in the mutual fund industry. Specifically, the style categories are based on two dimensions; market capitalization and value-growth orientation (see e.g. Chan et al., 2002 and Barberis & Schleifer, 2003).

In recent years style investing has finally gained foothold also in Europe. This has led to born of more sophisticated benchmarks for style investors. Ross (2003) notes the slow development of style indices in Europe. Both FTSE and MSCI launched European indices in 1997, but they were both simplistically constructed, using just one variable – price-to-book – to capture growth and value characteristics. For example, Morgan Stanley Capital International (MSCI) suggested that price-to-book value ‘is the most stable, consistent valuation ratio across the markets’ when introducing international growth and value indices in 1997 (Blake, 1997).

Amenc et al. (2003) suggest that style indices can provide a confusing picture of the market returns. Using data from six US style data providers, Amenc et al. (2003) report significant heterogeneity in the index construction methods. As a result, style indices perform differently. For example, the monthly return of S&P 500 BARRA Large Cap Growth Index was 11.75% in February 2001 while the return of the counterpart Dow Jones Index was -18.36. As Amenc et al (2003) note, in that month, a growth manager would clearly prefer to be benchmarked against the Dow Jones Growth than the S&P BARRA Growth index.

In recent years, all index providers have launched more sophisticated generation of style indices. Instead of using just one price-to-book variable they use several variables in defining growth and value. The more 'black box' like the index is the more difficult it is to replicate the index. Therefore it is important to understand how different indices perform. The purpose of this paper is to analyze if there are major differences in the behavior of the commonly used Stoxx and MSCI indices.

2. Empirical findings

Currently the most well known European style indices are those of Dow Jones Stoxx, MSCI and FTSE. Of these three, Stoxx indices are the most transparent and all data can be accessed free of charge. Everyone can get the current index composition, for example, from the company web pages (www.stoxx.com). Company also provides some basic descriptive statistics of the indices and historical values.

The index data provided by MSCI can be accessed mainly on subscription basis. For example, one can not get the current index composition of the style indices without a proper subscription. Historical values are available to some extent through their web pages, but they are fully available from databases subject to charge like Bloomberg.

Style indices of FTSE are the most non-transparent. One can not get an access to the index structure without a subscription and also one has to order special packages in order to get the historical values of these indices through, for example Thomson's Datastream.

Dow Jones Stoxx launched its new European style indices in 2001. The basis of Stoxx style indices is DJ Stoxx TMI index which covers approximately 95% of European free float market capitalization. Six factors are used to determine company's style characteristics. The same factors are applied to both value and growth categories (Stoxx, 2001). Correspondingly, MSCI launched multi-factor versions of their style indices in 2003. Three factors are used for defining value and five factors for defining growth companies.

Table 1 reports the basic descriptive statistics for the Stoxx and MSCI indices over a 5 year period 2000-2005. Value and Growth indices of both index vendors express similar characteristic within a style class even though value indices performed much better (2.9% and 2.4% p.a.) than growth indices (-6.8% and -4.9% p.a.). Annual volatilities of value indices are very close to each other, 19.15% for Dow Jones and 20.25% for MSCI. Also the distributional characteristics are pretty close to each another.

A slightly greater difference can be found in the two growth indices. The annual volatility of Dow Jones Growth Index under review is 21.03% and 19.71% for the MSCI Growth Index. Distributional figures, kurtosis and skewness, are 3.49 and -0.14 for Dow Jones and 3.06 and -0.20 for MSCI.

Table 1. Descriptive Statistics 1.11.2000 – 1.11.2005.

Index	Annual Return	St. Dev (Yearly)	Min (Daily Return)	Max (Daily Return)	Kurtosis	Skewness	Jarque-Bera
Dow Jones Stoxx TMI Value Return	2,93 %	19,15 %	-6,32 %	5,72 %	3,49	-0,14	16,97
Dow Jones Stoxx TMI Return	-1,82 %	19,55 %	-6,31 %	5,55 %	2,93	-0,10	2,37
Dow Jones Stoxx TMI Growth Return	-6,79 %	21,03 %	-6,42 %	5,54 %	2,41	-0,06	19,55
MSCI Value Europe Net Return	2,04 %	20,28 %	-5,57 %	6,43 %	3,38	-0,07	8,53
MSCI Europe Net Return	-1,34 %	19,71 %	-6,35 %	5,56 %	3,10	-0,14	4,66
MSCI Growth Europe Net Return	-4,92 %	19,71 %	-7,26 %	5,31 %	3,06	-0,20	8,65

99% significance level for Jarque-Bera test statistics is 9.21

Table 2 shows the betas of each index against the Dow Jones European Total Market Index (TMI) and the corresponding MSCI Index. Differences between the indices of the two index vendors are quite small. One may note, however, that Dow Jones Value indices have lower betas than the corresponding Growth indices. For MSCI value and growth indices ranking is the opposite. This is also reflected in a slightly higher volatility for the MSCI value index relative to growth index reported in Table 1. Correspondingly, Dow Jones Value index had lower volatility than the Dow Jones Growth index. However, the differences are relatively small.

Table 2. Betas of each index relative to Dow Jones European Total Market Index (TMI) and Morgan Stanley Capital Index (MSCI)

Index	Beta (Dow Jones Stoxx TMI)	Beta (MSCI Europe)
Dow Jones Stoxx TMI Value Return	0.96	0.93
Dow Jones Stoxx TMI Return	1.00	0.98
Dow Jones Stoxx TMI Growth Return	1.06	1.04
MSCI Value Europe Net Return	1.01	1.02
MSCI Europe Net Return	0.99	1.00
MSCI Growth Europe Net Return	0.97	0.99

All style indices behave quite similarly if one examines also the return plots and 95% VaR measures shown in Figure 1.

Figure 1. 95% VaR measures for Dow Jones and MSCI style indices

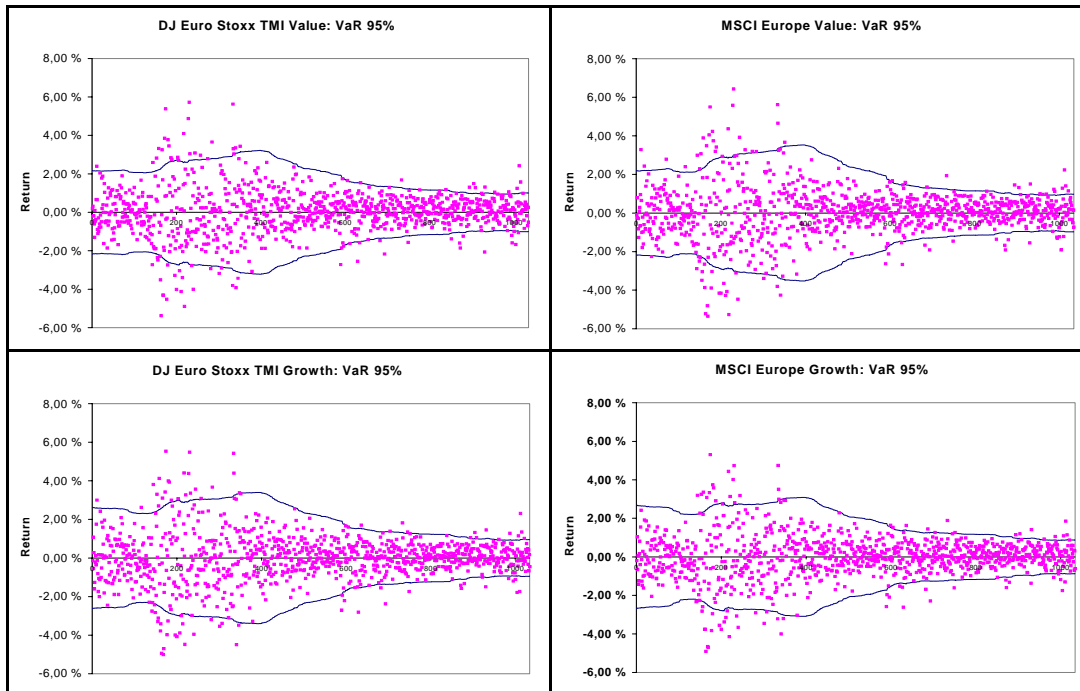


Table 3. Correlation matrix for indices

	Dow Jones Stoxx TMI Value Return	Dow Jones Stoxx TMI Return	Dow Jones Stoxx TMI Growth Return	MSCI Value Europe Net Return	MSCI Europe Net Return	MSCI Growth Europe Net Return
Dow Jones Stoxx TMI Value Return	1,00	0,99	0,95	0,98	0,97	0,96
Dow Jones Stoxx TMI Return		1,00	0,99	0,98	0,99	0,98
Dow Jones Stoxx TMI Growth Return			1,00	0,97	0,98	0,98
MSCI Value Europe Net Return				1,00	0,99	0,97
MSCI Europe Net Return					1,00	0,99
MSCI Growth Europe Net Return						1,00

Correlations between all indices are high. For example, correlation between the two Value indices is 0.98 and between the two Growth indices also 0.98. T-test for equality of means cannot be rejected for value indices (T-statistics 0.07, p-value 0.45) nor for growth indices (T-statistics -0.15, p-value 0.44). The value and growth indices daily returns also perform relatively similar pattern during the years. This is a clear signal of the similarity of the style indices of the two companies.

Because the component data of Dow Jones Stoxx indices is publicly available, we can examine more carefully the properties of DJ Stoxx Growth and Value indices on a component i.e., company level. Value stocks are traditionally characterized by low price to book values. Table 4 shows that P/B values of the Dow Jones Stoxx Value Index vary from 0.6 to 84.6. The range of P/B values of the corresponding Growth Index is also wide (0.1% to 83.8%). T-test for equality of means cannot be rejected at 10% level (t-value 1.27). One can thus conclude that the Dow Jones style classification methodology leads to index composition which does not follow the traditional definition for a value (growth) style i.e. low (high) price-to-book.

Table 4. The composition of Dow Jones Stoxx Value and Growth indices at the end of 2005.

Price-to-book ratios	<u>Growth Index</u>	<u>Value Index</u>
Average	4.2	3.2
Median	2.9	1.9
Market weighted average	3.7	2.4
Minimum	0.1	0.6
Maximum	83.8	84.6
Number of observations	180	169

Conclusions

Our findings suggest that European style indices differ much less than what Amenc et al (2003) report in the US markets. The Dow Jones Stoxx and MSCI indices perform close to each other. The composition of Stoxx value and growth indices reflects how the multi factor modeling leads to different classification of value vs growth companies than what pure price-to-book would do. In fact, the current modeling seems to lead to style indices that behave close to each other. As the DJ Stoxx does not charge for basic data required one may suggest that DJ Stoxx Value and Growth indices provide a reasonable benchmark for pension fund managers and mutual investors. The remaining issue is whether these indices behave differently enough.

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