Exposure to Socially Responsible Investing of Mutual Funds in the Euronext Stock Markets

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SOM-theme E: Financial markets and institutions

Abstract

This paper analyses fund management and exposure on the Euronext stock exchanges. Especially, we investigate to what extent mutual funds are engaged in socially responsible investing (SRI). In order to accomplish this goal, we use regression analysis to measure the exposure of mutual funds to stock market indices based on a selection of companies that satisfy criteria of SRI. We measure the exposure in Belgium, France, and the Netherlands for almost 800 investment funds during the 1990s. We conclude that most funds have a significant exposure to the SRI index. Furthermore, we find a home bias in SRI as the exposure to the SRI index for Europe is much higher than that for America (JEL G11, G24, Z13).

1 Introduction

The preferences of society, as revealed by regulations and market choices, inevitably affect corporate financial performance, if only indirectly. Likewise, most decisions by a firm have at least some impact on its financial condition. The idea that social responsible behavior of a firm might have a significant - in other words, material - effect on financial performance, however, is not widely accepted yet. However, a fast growing number of mutual funds use screens to select or to omit firms on the basis of them undertaking particular activities with basically social, non-economic, characteristics. Examples are funds that exclude firms involved in the production and/or distribution of tobacco, alcoholics, and weapons. Gambling, animal testing, labor relations, human rights, environmental issues, and community relations also are used as negative or positive screens. In late 1999, more than 12 per cent of all investment in the US was socially screened in one way or another (see www.socialinvest.org). Socially Responsible Investing (SRI) is the integration of personal values and societal concerns with investment decisions. SRI considers both the investor's financial needs and an investment's impact on society. Putting up positive or negative screens for fund selection in this respect effects SRI. An important issue here is whether the social responsible investor foregoes returns from using socially responsible screens. The basic idea behind such reasoning is that by putting up screens, the universe of investment objects is reduced. As such, you might not be able to construct an

optimal portfolio. However, there is some evidence that the actual financial cost of SRI in terms of opportunity costs is not substantial. For example, Guerard (1997) concludes that there was no statistically significant difference between the performance of a screened universe of 950 common stocks and an unscreened universe of 1,300 stocks for the period 1987-1996. D'Antonio et al. (1997) study the returns of bonds from firms represented in the Domini 400 (an index for SRI) and compare these with the return of the Lehman Brothers Corporate Bond Index. They find no significant differences in average portfolio performance. Diltz (1995) concludes that there is no statistically significant difference in returns for 14 socially screened stock portfolios versus 14 unscreened stock portfolios generated from a universe of 159 securities during the 1989-1991 period. Given the outcomes of these studies, the conclusion seems justified that the returns of socially responsible investment portfolio are not much different from those of comparable investments.

The objective of this study is to investigate to what extent mutual funds are involved in socially responsible investing. In particular, we are interested in the current social responsible investment behavior of *all* mutual funds, not only in that of those funds that have stated objectives claiming that they select social responsible investments. The effect of socially responsible investing on the financial performance of a firm is likely to be revealed through the firm's equity return. Therefore, we limit our study to mutual funds that concentrate on equity investments.

In contrast with the studies D'Antonio et al. (1997), Diltz (1995), and Guerard (1997), who focus on the US financial markets, we study the European market. In particular, we investigate the three markets that make up "Euronext", i.e. the stock markets of Amsterdam, Brussels, and Paris.[1] We opt for these three markets because of data availability and because we wondered about their homogeneity with respect to SRI investment. We analyze a recent period, namely 1994-2000. As far as we are aware, no previous quantitative research on European SRI has appeared in academic journals.

The structure of this paper is as follows. In section 2, we explore the data on mutual funds in the Euronext markets and we analyze the explanatory variables. In section 3 we discuss the research methodology and analyze the data. Furthermore, we present summary statistics of the estimate of the funds' exposure to social responsible investing. Our conclusion is in section 4.

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[1] The size of the Euronext stock market (market capitalization of shares of domestic companies, main & parallel markets) at year-end 2000 is US $ 2,269 billion. The size of the London stock exchange is US 2,612 bn, and that of the German Deutsche Börse is US $ 1,270 bn. For comparison, the size of the NYSE is US$ 11,535 bn, that of the Nasdaq US $ 3,597 bn, and that of the Tokyo Stock Exchange US $ 3,157 bn (source: WWW.FIBV.COM).

2 Data

The data on mutual funds was obtained from the Standard & Poor's Micropal database on European mutual funds. From this database we derived information on the monthly returns of mutual funds in Belgium, France, and the Netherlands from January 1994 until January 2000. For each fund, we obtained 72 monthly observations of total rate of return.

Table 1 gives the key characteristics of the funds. From the 4,438 funds in the database, we selected only those funds that have as a stated objective that they invest in equity. As such, we are left with 784 mutual funds with a return history starting from January 1994 up to and including December 1999. The returns and the standard deviations in these returns are given in table 1 too. The average monthly returns are highest in Belgium and lowest in France. The volatility in the returns is highest in the Netherlands. Note that in France two general types of mutual funds exist: SICAVs and FCPs. This is a legal distinction. SICAV stands for "Société d'Investissement à Capital Variable", meaning that it is an investment company with variable share capital. A mutual fund that has a SICAV structure has its own set of articles of incorporation and its own Board of Directors. Each share in the SICAV entitles the shareholder to a voting right at any shareholders meeting of the SICAV. FCP stands for "Fonds Commun de Placement". An FCP is not an

independent legal entity. A management company manages it. The unit holders have no vote and therefore cannot take control of the company. The decisions lie with the board and the shareholders of the management company.

Table 1: Sample of mutual funds

		Number of funds	Number of funds with equity	Mean return*	Cross-sectional standard deviation in average fund returns	Mean of standard deviation of fund returns
Belgium		759	110	0.97%	0.39%	4.74%
France	FCP	2,292	339	0.68%	0.54%	4.88%
	SICAV	940	225	0.88%	0.49%	4.82%
Netherlands		447	80	0.97%	0.58%	6.47%
All Funds		4,438	784	0.81%	0.53%	4.90%

* Statistics are calculated based on the monthly observations of returns over the period January 1994 - January 2000 measured in terms of Euro returns using a synthetic Euro rate until 31/12/1998 and real Euro rates starting from 1/1/1999.

In our study, we consider six different factors or asset classes for explaining the returns of mutual funds. The return of each factor is represented by a (market capitalization weighted) index of the returns on a large number of securities. We have three indices representing a particular world region. As a result, we cover virtually all of the world's major stock markets. Furthermore, we have two SRI indices as an ingredient for our procedure to measure SRI exposure, and a bond index as a control variable. We consider the following set of explanatory variables (indices):

Asset type	**Index**
Bonds:	Salomon Brothers World Government Bond Index
Stocks, Pacific:	Dow Jones Pacific
Stocks, Europe:	Dow Jones Europe
Stocks, US:	Dow Jones America
Sustainable Stocks, Europe:	Dow Jones Sustainable Growth (DJSG) Europe
Sustainable Stocks, Americas:	Dow Jones Sustainable Growth (DJSG) Americas

Our data on mutual funds consists of funds claiming to invest in equities. Nevertheless, it is still possible that some of the funds extent to some invest in bonds, or money market instruments. This could be a meaningful tactic for a fund manager who wants to lower the systematic risk of his portfolio or who wants to engage in market timing. Portfolio managers could also create synthetic positions in bonds by using derivative instruments such as futures and options. Therefore, we use the Salomon Brothers World Government Bond index (WGBI) in our model to control for any economic exposure to money market investments or bonds. The second, third, and fourth indices are regular Dow Jones equity indices for the regions Asia, Europe, and America. These indices serve as proxies for non-SRI investments, although some of the funds represented in these indexes are also used in the DJSG indexes. It would have been preferable if the indices in our model resulted in a mutual exclusive classification over SRI and non-SRI stocks. However, such indices are not

available (yet). The fifth and the sixth indices may require a short explanation. These are indices put together by a joint venture of the Dow Jones Indexes and the SAM Sustainability Group. They selected the leading companies in 68 industries with respect to sustainability. Sustainability was analyzed on the basis of 229 attributes ranging from corporate governance to child labor and from risk control to remuneration. We use sustainability as a proxy for SRI. Firms within the DJSG indices are subject to ongoing review. We selected two of their regional indices that match regular Dow Jones indices. The countries included in the DJSG indices are equal to those included in the regular Dow Jones indices.

Table 2 gives the mean and the standard deviation for the monthly returns of the indices to be used in our regression analysis for January 1994 to January 2000. Recall that these six indices are to be regarded as the explaining factors in our model. In the period under review, the average returns are highest in America and lowest in the Pacific region. The Pacific witnesses most volatility, and bonds show the least.

Table 2: Mean and standard deviation of stock market indexes

	Mean	Standard deviation
Salomon Brothers WGBI	0.87%	3.72%
Dow Jones Pacific	0.19%	6.61%
Dow Jones Europe	0.90%	4.62%
Dow Jones America	1.01%	3.96%
Dow Jones Sustainable Growth Index Europe	1.19%	4.69%
Dow Jones Sustainable Growth Index Americas	1.13%	5.22%

The cross-correlation among the monthly returns of our indices is given in table 3. These data reveal that there is substantial correlation. Especially, the correlation coefficient between the Dow Jones Europe and the DJSG Europe is high. The correlation between the Dow Jones North America and the DJSG America is slightly lower. Note that the cross-correlation between the sustainable indices of Europe and America is lower than that of the general market indices of these two regions. A comparison of the DJSG indices with their Dow Jones geographical counterparts shows that there are differences between the return distributions in terms of means and standard deviations. However, using a t-test on the equality of the means, we did not find significant differences[2]. A study of the quantile-quantile plots also showed that

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[2] To check whether the DJSG return distributions are equal to their regular counterparts, we performed a Kolmogorov-Smirnoff goodness-of-fit test. This shows that both distributions are virtually identical.

the return distributions of the sustainable indices and their geographical counterparts are similar[3]. This is consistent with the studies of Diltz (1995) and Guerard (1997).

Table 3: Correlation matrix of stock market returns

	Salomon Brothers	Dow Jones Pacific	Dow Jones Europe	Dow Jones Americas	DJSG Europe	DJSG Americas
Salomon Brothers	1.0000	0.3787	0.5181	0.3803	0.5269	0.3269
Dow Jones Pacific	0.3787	1.0000	0.5710	0.5901	0.4677	0.3509
Dow Jones Europe	0.5181	0.5710	1.0000	0.7918	0.9004	0.6018
Dow Jones Americas	0.3803	0.5901	0.7918	1.0000	0.7528	0.7991
DJSG Europe	0.5269	0.4677	0.9004	0.7528	1.0000	0.6763
DJSG Americas	0.3269	0.3509	0.6018	0.7991	0.6763	1.0000

From these observations, we conclude that sustainable investing according to the Dow Jones definition does not lead to a return distribution that is different from a regular investment strategy. Theoretically, the application of any selection screen reduces the mean-variance efficiency of the portfolios as

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[3] The quantile-quantile plots are presented in appendix A.

compared to those constructed from an unrestricted universe. In this case, the reduction of the efficiency of the portfolios is not measurable. A positive implication of this result is that investors can pursue a strategy of sustainable investing without having to make a significant sacrifice in terms of return. The next section goes into the question to what extent mutual funds are involved in SRI.

3 An analysis of the exposure of mutual funds to the SRI-factor

In this section we aim to measure the exposure of mutual funds to SRI-factors. A straightforward way to attain this goal is to estimate a multi-factor model and to interpret the regression coefficients as indicators of the exposure to the factors. For example, the style analysis model developed by Sharpe (1992) facilitates explicitly such an interpretation. However, given the high correlation between the DJSG indices and the regular indices, this approach could result in serious problems of multicollinearity. Therefore, we develop an alternative method. This alternative develops a proxy for SRI investing. It especially focuses on the differences between the DJSGI and the regular Dow Jones indices.

Before we develop this proxy, we first estimate simple linear regression coefficients for each independent variable and each individual mutual fund separately with:

$$r_{i,t} - r_{f,t} = \alpha_i + \beta_{sri,i}\left(r_{sri,t} - r_{f,t}\right) + \varepsilon_t \quad (1)$$

$$r_{i,t} - r_{f,t} = \alpha_i + \beta_{reg,i}\left(r_{reg,t} - r_{f,t}\right) + \varepsilon_t \quad (2) \quad ,$$

where $r_{i,t}$ is the return of mutual fund i in month t, $r_{f,t}$ is the return on one-month interbank paper, α_i is the intercept for fund i, $\beta_{sri,i}$ is the regression

coefficient for the SRI index, $\beta_{reg,i}$ is the regression coefficient for the regular index, $r_{sri,t}$ is the return on the SRI index in month t, $r_{reg,t}$ is the return on the regular index in month t, and ε_t is the residual return in month t. The return on regular or non-SRI investments is based on the Dow Jones Europe and Americas indices, the return on the SRI indices is based on the corresponding DJSG indices.

The regression equations (1) and (2) correspond to those used for estimating Jensen's alpha, which is a risk-adjusted indicator of the performance of a portfolio such as a mutual fund. Usually, Jensen's alpha is estimated using a broad market index as the explanatory variable. The slope of the regression coefficient is interpreted as the exposure of the portfolio to the risk of the market index. The outcomes of this analysis are summarized in panel A of table 4.

In panel A of table 4, we observe that the average outcome of the regression coefficient for the DJSG Europe index is hardly different from the regular index. This result also holds on an individual fund level, as can be seen in panel B. In panel B we present the percentage of funds for which the coefficient for the DJSG index exceeds the coefficient of the regular index. As can be observed from panel B, we see that almost half of the funds (47.32%) have a larger exposure to the SRI Europe index, which implies that the remaining half of the funds have a smaller exposure.

There are also some notable differences between the sub samples. The relative number of funds with a significant exposure to the DJSG indices seems to be substantially larger in Belgium and the Netherlands than that in France.

For the exposure to the indexes for the Americas, we make some opposite observations. The regression coefficient for the regular index is considerably higher than that for the SRI index. At the individual fund level, almost all funds have a higher regression coefficient for the regular index than for the SRI index. Only in the French FCP subsample, a few exceptions do exist.

Table 4: Outcomes of simple regression models

Panel A: Average exposure to regular and SRI indices

	Europe		**Americas**	
	β_{reg}	β_{sri}	β_{reg}	β_{sri}
All funds	0.7112	0.7011	0.6909	0.4012
	(50.5%)	(50.5%)	(34.3%)	(21.1%)
Belgium	0.7521	0.7600	0.7533	0.4980
France FCP	0.6742	0.6610	0.6190	0.3511
France SICAV	0.7416	0.7219	0.7273	0.4076
Netherlands	0.7153	0.7237	0.7937	0.4596

* The average R^2 is presented between brackets.

Panel B: Percentage of funds with $\beta_{sri} > \beta_{reg}$

	Europe	**Americas**
All funds	47.32%	0.13%
Belgium	73.64%	0.00%
France FCP	43.36%	0.29%
France SICAV	35.29%	0.00%
Netherlands	66.25%	0.00%

Based on the outcomes from the simple linear regression models we can conclude that we find some notable differences in exposure. However, before we can draw conclusions on the statistical significance of the outcomes, further analysis is required. The high correlation between the DJSG index and the regular index (see table 3) prevents us from constructing a multiple regression model. Apparently, the Dow Jones indices and the DJSG indices share a large source of common variance in returns. Without further data, it will be very difficult to determine precisely what part of this common variance in returns is due to SRI and what part is not. Therefore, we will assume that the common variance is *not* due to social responsible investing, and that the specific variance of the DJSGI is due to social responsible investing. In order to separate the common variance from the specific variance in the DJSG indices, we assume a linear relation. We separate the two influences on the DJSG indices by estimating the following linear regression equation:

$$r_{sri,t} - r_f = \alpha + \beta\left(r_{reg,t} - r_f\right) + \varepsilon_{sri,t}\,, \qquad (3)$$

where $r_{sri,t}$ is the return on the SRI index in month t, α is the intercept, β is the sensitivity of the SRI index for the return of the regular index, and $\varepsilon_{sri,t}$ is the residual term due to variance of the SRI index that is unrelated to the regular index. For our further analysis of the exposure of mutual funds to SRI factors, we use the residuals $\varepsilon_{sri,t}$ as a proxy for the influence of social responsible investing. Estimation of this equation using OLS for both the sustainable

Europe and the sustainable America index results in the following outcomes (table 5):

Table 5: An analysis of the DJSG indices

	DJSG Europe	**(t-value)**	**DJSG Americas**	**(t-value)**
A	-0.30%	(-1.21)	-0.12%	(-0.31)
B	0.9139	(17.32)	1.054	(11.12)
R^2	81.08%		63.86%	

Based on this analysis, we find that a large degree of the variance of the DJSG indices can be explained by the regular index. Furthermore, we conclude that the outperformance as measured by α is negative although not significant at a reasonable confidence level. Before we proceed to the estimation of the exposure to our adjusted index, we elaborate on the potential shortfall of this method. The use of the residuals as a proxy for social responsible investing creates the risk of either underestimating or overestimating the true SRI exposure. Potential underestimation can arise from the possibility that the regular Dow Jones indices contain sustainable stocks. Potential overestimation can arise from the possibility that part of this residual variance of equation (3) is not related to SRI.

The next step in our analysis is to use our proxy for socially responsible investing in a simple regression model. To this extent, we estimate for each mutual fund two simple linear regression models based on the SRI proxies for Europe and the Americas, using the following regression equation:

$$R_{i,t} - r_{f,t} = \alpha_i + \beta_{sri,i}\varepsilon_{sri,t} + e_{i,t} \quad (4)$$

The regression coefficient in this equation can be interpreted as the exposure of mutual fund *i* to a long-short strategy. A long-short strategy can be described as a strategy that attempts to remove the market as a source of portfolio volatility (See for example Brush, 1997). Traditional portfolio strategies do not allow managers to take short positions, which prevents them to profit from negative news. This reasoning also applies to socially responsible investing. A portfolio manager selecting stocks based on the criterion of SRI might want to take short positions in stocks with a low SRI score. An interesting statement by Hoffman (1935), underlines the relevance of our approach:

> *One of the most essential functions of organized markets is to reflect the composite opinion of all competent interests. To admit only opinion looking to higher prices is to provide a one-sided market. To bring together an opinion of both long and short positions is to provide a two-sided market and .... a better reflection of prevailing conditions will be shown in the price structure. (pp. 398-399)*

In our regression analysis, we basically assume that short selling is costless. In addition to the borrowing fee, and the margin requirement, short selling incurs several potential costs[4]. In the context of the multiple regression model that is presented in equation (4), we consider these issues to be of lesser importance. In the context of this multi-factor model, portfolio managers can finance short positions due to the SRI proxy by borrowing stocks from the regular index.

By estimating these two models for each mutual fund individually, we end up with estimators for 1568 models. As we are interested in the exposure to our SRI proxy, we focus on the estimation of β. The outcomes of these models are summarized in table 6. As such, table 6 presents the average outcomes for the regression coefficient as well as the percentage of the models with a significant exposure to the SRI proxy.

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[4] For a discussion of practical issues regarding short sales, see for example Jacobs and Levy (1993).

Table 6: Summary of β estimations from simple linear regressions with SRI proxy

	SRI Europe		SRI Americas	
	average	% significant coefficients at 95% confi-dence level	average	% significant coefficients at 95% confi-dence level
All funds	0.3714	25.77 %	-0.0488	0.38 %
Belgium	0.4940	54.55 %	0.1134	1.82 %
France FCP	0.3321	12.68 %	-0.0665	0.00 %
France SICAV	0.3380	21.18 %	-0.0917	0.39 %
Netherlands	0.4757	56.25 %	-0.0601	0.00 %

Table 6 shows that the Euronext funds on average have a higher exposure to the European SRI proxy than to the American SRI proxy. Furthermore, we find a considerable percentage of funds (25.77%) with a significant exposure to the European SRI proxy. Furthermore, there is hardly any exposure to the SRI proxy for America. Apparently, there is a home bias in socially responsible investing, indicating that investors do not worry too much about the social implications of their overseas investments. Table 6 confirms most of our earlier results regarding the differences between the individual subsamples. We find the highest percentage of funds with significant European SRI exposure in Belgium and the Netherlands.

Finally, we estimate for each individual mutual fund the following model based on all six factors. The model has factors that enable us to capture the effect of major asset allocation decisions. The fifth and the sixth factors are the SRI proxy, which represent the pay-off of a long/short strategy with respect to socially responsible investing. The exposure with respect to the SRI proxy can

be interpreted as the overweighting or underweighting of SRI relative to the regular index. The model is presented in the following equation:

$$R_{i,t} - r_{f,t} = \alpha_i + \beta_{1i}\left(r_{bnds,t} - r_{f,t}\right) + \beta_{2i}\left(r_{pac,t} - r_{f,t}\right) + \beta_{3i}\left(r_{eu,t} - r_{f,t}\right) + \beta_{4i}\left(r_{us,t} - r_{f,t}\right) + \beta_{5i}\varepsilon_{eu,t} + \beta_{6i}\varepsilon_{am} + e_{i,t}, \quad (5)$$

where β_{1i}, β_{2i}, β_{3i}, β_{4i}, β_{5i}, and β_{6i} represent the exposure of mutual fund *i* to resp. the Salomon World Government Bond Index, the Dow Jones Pacific, the Dow Jones Europe, the Dow Jones Americas, the SRI proxy for Europe, and the SRI proxy for the Americas.

Table 7: Summary of β estimations from multiple linear regression model

		β_1	β_2	β_3	β_4	β_5	β_6
All funds	β*	0.267	0.052	0.527	0.041	0.371	-0.094
	t>1.96**	43.8%	14.5%	75.5%	15.6%	60.3%	4.5%
Belgium	β*	0.287	0.036	0.531	0.109	0.379	0.059
	t>1.96**	70.0%	18.2%	80.9%	23.6%	77.3%	30.9%
France	β*	0.393	0.023	0.505	-0.025	0.316	-0.117
FCP	t>1.96**	48.7%	9.4%	72.6%	9.1%	51.3%	0.0%
France	β*	0.1330	0.0581	0.6019	0.0477	0.3930	-0.128
SICAV	t>1.96**	30.2%	14.5%	80.8%	15.3%	60.8%	0.4%
Nether-	β*	0.133	0.178	0.374	0.203	0.526	-0.097
lands	t>1.96**	30.0%	31.3%	63.8%	32.5%	73.8%	0.0%

* Average value of regression coefficient.
** Percentage of estimators significant at 95% confidence level.

Table 7 gives the average scores of the regression coefficients for all 784 mutual funds as well as for the three sub samples that make up the Euronext stock market. As such, it shows the relative importance of screened funds in the respective portfolios. Like the outcomes from the analysis based on the simple linear regressions, table 7 reveals that the average exposure to the European SRI proxy is considerable higher than the exposure to the Americas SRI proxy. Based on the sub samples, the average exposure to the European SRI proxy is the highest for the Netherlands, followed by the French SICAV Funds, and Belgium. The French FCP funds have the lowest exposure to the SRI proxy. The ordering based on the percentage of funds with statistical significant exposure at a 95% confidence level is slightly different. Again, the Netherlands funds have the highest percentage of funds with significant exposure, followed by the Belgium funds, the French SICAV funds and the French FCP funds. The average exposure to the SRI Americas proxy is much

lower than to the SRI Europe proxy. Again, we find that, the European funds have a strong home bias with respect to SRI investing. The only exception is Belgium with 30.9% funds with a significant positive exposure.

4 Conclusion

Social Responsible Investing (SRI) increasingly is becoming more of an issue in portfolio management. In the US, already more than 10% of all funds is being managed on a SRI-basis. In this respect, Europe clearly lags as at most 2% of all funds is formally managed on the basis of SRI-criteria in this region. We analyze how SRI determines the return on investor portfolios in Europe. That is, we analyze the exposure to sustainability indexes of fund managers in Europe. On the basis of our analysis for 784 funds from France, Belgium, and the Netherlands during 1994-2000, it can be concluded that sustainable investing according to the Dow Jones definition does not result in a return distribution that significantly differs from a more conventional or regular investment strategy. This seems to imply that equity investors can pursue a strategy of sustainable investing, without having to make a significant sacrifice in terms of return. As such, our study confirms those of Diltz (1995) and Guerard (1997). However, we analyze a more recent time period. Furthermore, we pay attention to much more funds than was the case in the former study (namely 784 versus 28).

We also investigated the exposure of mutual funds to SRI-factors. To this extent, given the high correlation between SRI indices and non-SRI indices, we developed a proxy for SRI investing. This proxy focuses on the differences between the Dow Jones Sustainable Growth Indices and the more traditional

Dow Jones indices. We find that the average mutual fund exposure to the European SRI proxy is considerable higher than that to the Americas SRI proxy. Furthermore, the relative importance of screened funds in the different portfolios differs. Dutch funds have the highest percentage of funds with significant exposure to the SRI Europe proxy, followed by Belgian funds and French SICAV and FCP funds. As the (average) exposure to the SRI Americas proxy is very much lower that to the SRI Europe proxy, it appears that Euronext funds have a strong home bias with respect to SRI. Here, it is the Belgium mutual funds that are exposed most, closely followed by Dutch funds and, at some distance, by French funds.

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Appendix A: Quantile-quantile plots

Figure A.1

QQ plot of DJSGI Europe vs. Dow Jones Europe

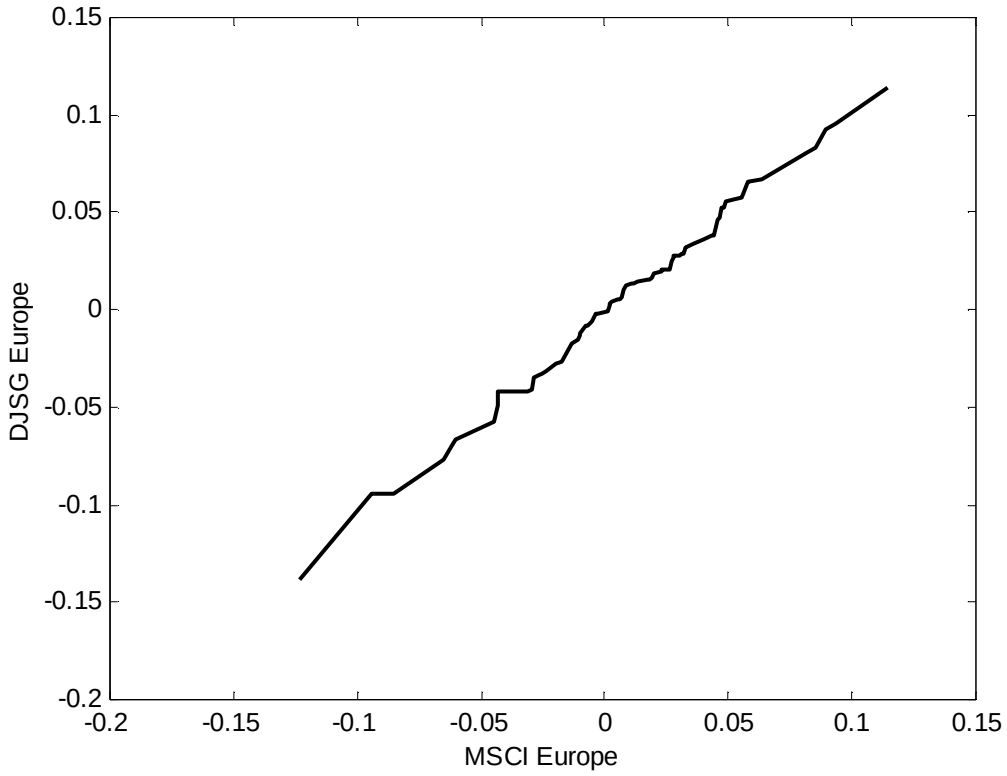
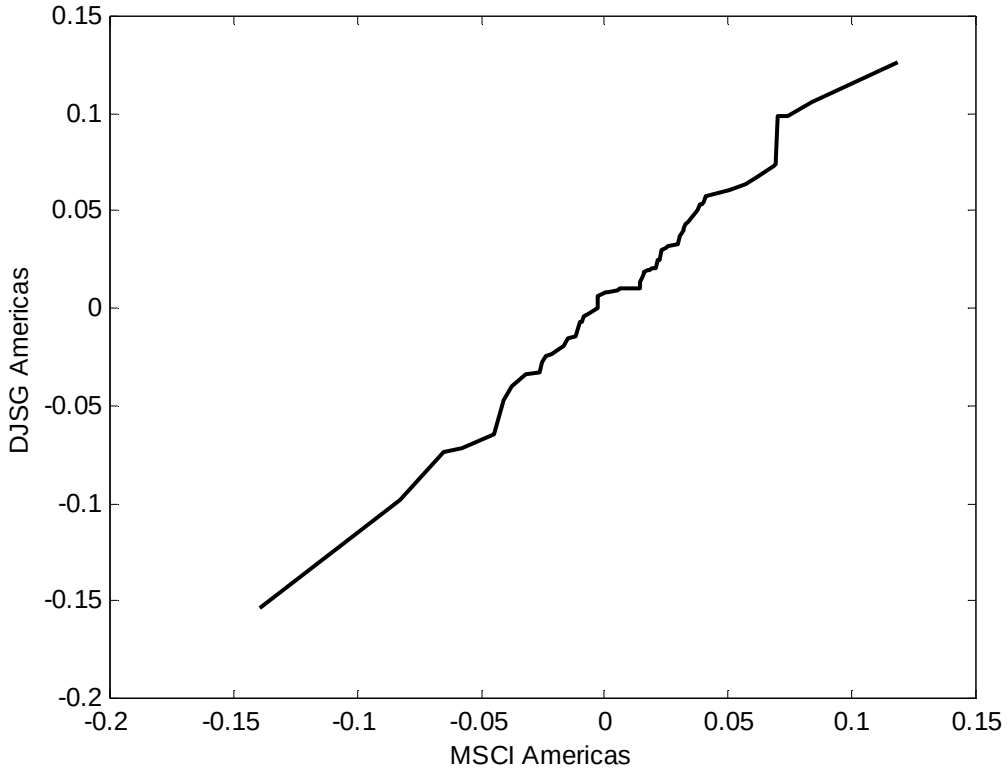


Figure A.2

QQ plot of DJSGI Americas vs. Dow Jones Americas



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