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SRI Funds:
Nomen est omen

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Abstract

We test the frequently made claim that SRI funds are conventional funds in disguise. For this purpose, we compare the portfolio holdings of SRI funds to conventional funds concerning their social and environmental standards. Our empirical study of US equity funds shows that SRI funds have a significantly higher ethical ranking than standard funds, i.e., they are not conventional funds in disguise. This result holds for all ethical criteria we investigate. It is stable over time and holds after controlling for several fund characteristics. Finally, we find no evidence that our result is generated by window dressing strategies of SRI funds.

JEL Classification: G11, G20, M14

Keywords: Socially Responsible Mutual Funds, Socially Responsible Investing, Ethical Investment

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1 Introduction

We study whether SRI funds do what investors expect them to do: invest according to social and environmental standards. Public press as well as academic studies cast doubts on the assumption that the investment strategy of SRI funds differs from the strategy of conventional funds.[1] These doubts are based on two empirical observations: (i) The financial performance of SRI funds is not worse than the performance of conventional funds, although social and environmental standards restrict the investment universe of SRI funds.[2] (ii) The financial performance of SRI funds can be better explained by conventional stock indices than by indices where the stocks included are chosen based on social and environmental criteria.[3] Although these studies are consistent with the view that SRI funds are conventional funds in disguise, they do not provide a rigorous test of this hypothesis. We are the first to provide such a test.

We compare the portfolio holdings of SRI mutual funds to conventional mutual funds concerning their social and environmental standards.[4] For this purpose, we match portfolio holdings information obtained from the Thomson Financial and the CRSP mutual fund database with ethical stock ratings information obtained from KLD. Based on the ethical rating of their stock portfolio we rank all funds in our sample. The sample consists of US equity

[1] Glassmann (1999) argues that "... the recent success of many SR funds could be that they own what conventional funds own." Goetz (1997) and Hawken (2004) argue in a similar way. Bauer et al. (2004) raise the question of whether SRI mutual funds are "conventional funds in disguise."

[2] See, e.g., Hamilton et al. (1993), Sauer (1997), Statman (2000), Bauer et al. (2005), Bello (2005), Kreander et al. (2005), and Gregory and Whittaker (2007). For our sample, we also find that there is no significant difference in performance between SRI funds and conventional funds. See Table 1.

[3] See Bauer et al. (2005).

[4] In a related work Statman (2006) compares the composition of ethical stock indices to the composition of the S&P 500 index.

funds which we analyze for the time period from 1991 to 2004.

We find that SRI funds have a significantly higher ethical ranking than conventional funds, i.e., they are not conventional funds in disguise. This result holds for all ethical criteria we investigate. It is stable over time and holds after controlling for several fund characteristics. Finally, we find no evidence that our result is generated by window dressing strategies of SRI funds.

We proceed as follows: in Section 2 we describe the data and detail how we construct the ethical rankings of funds. In Section 3 we present the main empirical results. Section 4 concludes.

2 Data

Our analysis is based on five data sets. We use the Thomson Financial and the CRSP mutual fund database to retrieve information about the stock holdings of funds.[5] Furthermore, the CRSP mutual fund database is used to retrieve fund characteristics such as loads, age, expense ratio, size, and turnover. We classify the funds as SRI and conventional funds based on the Morningstar Principia database. The prices of the stocks held are taken from the CRSP stocks database. To evaluate the social responsibility of the stocks, we use the KLD ratings database.

Our sample consists of equity mutual funds for the time period from 1991 to

[5]The Thomson Financial database is commonly known as the CDA database.

2004. We look at funds with the investment objectives "Small Company Growth," "Other Aggressive Growth," "Growth," "Growth and Income," "Income," "Maximum Capital Gains," "Balanced," and "Sector Funds."[6] For these funds we have holdings information on a semi-annual basis. For 2004, this information is taken from the CRSP mutual fund database, and before 2004 we use data from the Thomson Financial database. We match both databases as in Gaspar et al. (2005). We then aggregate the different share classes like Wermers (2000).

We use the Morningstar Principia data to separate the funds into two groups: SRI mutual funds and conventional funds. In our sample, there are 489 fund year observations for SRI funds and 23,802 fund year observations for conventional funds. Table 1 provides descriptive statistics on the characteristics of the sample funds. SRI mutual funds are on average younger, smaller in size, and charge smaller loads than their conventional counterparts. However, the expense ratio is slightly higher for SRI funds than for conventional funds. The turnover of SRI funds is lower, suggesting that SRI funds do not trade as much as conventional funds. Table 1 also shows that SRI funds and conventional funds both have a negative average performance which is measured by the Carhart (1997) four-factor alpha. The level of the negative performance corresponds to the expense ratio of the funds, i.e., the funds have a nearly zero performance before costs. Most importantly, SRI funds do not differ significantly from conventional funds with respect to their performance. This confirms the results of earlier studies such as Hamilton et al. (1993), Sauer (1997), Statman (2000), Bauer et al. (2005), Bello (2005), Kreander et al. (2005), and Gregory and Whittaker (2007).

[6]CRSP does not provide general investment objectives for the whole time period. Therefore, we combine different investment objectives (Wiesenberger, ICDI, and SI_OBJ) from CRSP to obtain uniform investment objectives. The procedure is similar to the one used by Pastor and Stambaugh (2002).

- insert TABLE 1 about here -

We measure the social responsibility of the stocks held by funds using KLD ratings data. KLD provides this data on a yearly basis since 1991. Their data is free of survivorship bias. The data set covers all the S&P 500 and Domini 400 Social Index stocks for the whole time period (on average about 650 stocks per year). From 2001 onwards the ratings are also available for all Russell 1000 stocks and from 2003 onwards for all Russell 3000 stocks. KLD uses a range of qualitative criteria (community, diversity, employee relations, environment, human rights, and product) which are needed for positive screening.[7] For each qualitative criterion KLD provides multiple sub-criteria which have a binary score. We average the ratings of these sub-criteria (like Kempf and Osthoff (2007)) to obtain an aggregated rating for each criterion. To obtain an overall qualitative rating (which we call positive rating), we average all ratings obtained for the qualitative criteria. The higher the social responsibility of a company, the higher is the rating of the stock. KLD also provides a list of controversial business areas (alcohol, tobacco, gambling, military, and nuclear power). In a negative screening process, companies belonging to controversial business areas are classified as sin stocks. Funds using a negative screening approach exclude these stocks from their portfolios. We use a binary variable to measure whether a stock is a sin stock (rating = 0) or not (rating = 1) according to an exclusionary criterion. To obtain an overall exclusionary rating (which we call negative rating), we classify a stock as a sin stock if it belongs to any controversial busi-

[7] In addition, KLD uses the criterion "corporate governance." We do not use this criterion in our study as it differs in many respects from the corporate governance criteria used for the corporate governance index by Gompers et al. (2003). For more detailed information about the KLD ratings criteria see http://www.kld.com/research/stats/indicators.html.

ness area. In this case, the stock obtains the rating zero, otherwise the rating one.

To obtain ethical rankings for the funds, we combine the fund holdings information with the stock ratings information. For each mutual fund, we first compute the portfolio weights at the end of each year for those stocks for which rating data is available.[8] We then normalize these portfolio weights so that they sum up to one, i.e., we implicitly assume that the assets which are not rated behave like the ones rated. Using these normalized weights, we then calculate the weighted sum of the stock ratings. Based on these aggregated stock ratings we rank all funds. The ranking is normalized so that the ranks are equally distributed between zero and one. The fund with the highest aggregated portfolio rating obtains rank one, the fund with the lowest rating obtains rank zero. Thus, we hypothesize that SRI funds have higher ethical ranks than conventional funds.

3 Empirical Results

3.1 Ethical ranks of SRI funds and conventional funds

In this section we compare the ethical ranks of SRI funds and conventional funds. To get a first impression, we sort the SRI funds and the conventional funds into quintiles according to their rankings. We then calculate the percentage of funds in each quintile. The results are provided in Table 2. We report results based on the positive rating (Panel A) and the negative rating (Panel B).

[8]For funds which do not publish their holdings at the end of the year, we take the latest holdings information available in the year. In Section 3.3 we also analyze fund rankings based on midyear portfolio holdings.

- insert TABLE 2 about here -

Table 2 shows that SRI funds are primarily ranked in the high quintiles. The lower the quintile, the fewer SRI funds are in it. In contrast, conventional funds are evenly distributed across the quintiles. This result clearly indicates that SRI funds have higher ethical ranks than conventional funds. To illustrate this result, we calculate the probability that an investor who randomly chooses a SRI fund gets a higher ranked fund than an investor who randomly chooses a conventional fund. We randomly draw 1,000,000 pairs of SRI funds and conventional funds. Based on the positive rating, SRI funds have a higher ranking in 73.55% of all cases. The respective number for the negative rating is 63.93%.

For the whole time period, the average rank based on the positive rating is 0.7144 for SRI funds and 0.4956 for conventional funds. The respective numbers for ranks based on the negative rating are 0.6429 (SRI funds) and 0.4971 (conventional funds). Figure 1 shows that SRI funds are not only higher ranked on average, but also in every single year. Again, this holds for ranks based on positive ratings as well as on negative ratings.

- insert FIGURE 1 about here -

To provide a first impression, we reported all results so far only for ranks based on positive and negative ratings. We now conduct a formal test of whether the differences in rankings between SRI funds and conventional funds are significant. We perform this test not only for the positive and negative rating, but for all qualitative and exclusionary criteria. As a test we use the approach of Fama and

MacBeth (1973).[9] In the first step we run the following cross-sectional regression for each year separately:

$$Rank_{it} = \beta_{0t} + \beta_{1t} D_{it} + \varepsilon_{it}, \tag{1}$$

where $Rank_{it}$ denotes the ethical rank of fund i in year t. D_{it} is a dummy variable which takes on the value one for a SRI fund and zero otherwise. β_{0t} measures the average ethical rank of the conventional funds in year t. β_{1t} measures the rank difference between SRI funds and conventional funds. In the second step we take the time series of the annual estimates of β_{0t} and β_{1t} and test whether the time series averages, β_0 and β_1, are significantly different from zero. A significantly positive estimate of β_1 indicates that SRI funds have higher ethical rankings than conventional funds. Table 3 summarizes the results.

- insert TABLE 3 about here -

The table shows that the average rank of conventional funds, β_0, is around 0.5. The parameter of interest, β_1, is significantly positive at the 1% level. This holds true not only for ranks based on the positive and negative ratings, but for each single qualitative and exclusionary criterion used. From Table 3 we conclude that SRI funds have higher ethical ranks than conventional funds, i.e., SRI funds are not conventional funds in disguise.

We know from Table 1 that SRI funds and conventional funds differ with respect to their fund characteristics. To control for the possible impact of these differences on the results, we augment Equation (1) by adding several control

[9] We also estimate pooled regressions which lead to very similar results. The results (not reported here) can be obtained from the authors upon request.

variables. We control for fund size, age, expense ratio, total loads, and turnover ratio for which we provided descriptive information in Table 1. We again adopt the Fama/MacBeth approach and estimate - as the first step - the following regression for each year separately:

$$\begin{aligned} Rank_{it} &= \beta_{0t} + \beta_{1t} D_{it} + \beta_{2t} \log(Size) + \beta_{3t} \log(Age) \\ &\quad + \beta_{4t} Expenses + \beta_{5t} Loads + \beta_{6t} Turnover + \varepsilon_{it}. \end{aligned} \tag{2}$$

The fund's assets under management are measured in million US-Dollar and denoted by $Size$. As additional controls we have the fund's age in years, Age, its expense ratio, $Expenses$, its total loads, $Loads$, and its turnover ratio, $Turnover$.[10] All other variables are defined as in Equation (1). In the second step we estimate whether the time series averages of β_{0t}, ..., β_{6t} are significantly different from zero. The results are presented in Table 4.

- insert TABLE 4 about here -

Table 4 shows that the impact of the SRI dummy, D, remains significantly positive even after controlling for differences in fund characteristics: SRI funds have higher ethical ranks than conventional funds. The control variables often have a statistically significant influence on the ranks, but the direction of the impact is not the same across the different criteria.

[10] In accordance with the literature, we use the logarithm of the size and age of the fund. See, e.g., Sirri and Tufano (1998).

3.2 Temporal stability

In this section, we examine whether our results are stable over time. Figure 1 in Section 3.1 provides a first impression about stability of our results across different years. To test this stability, we begin with forming two sub-periods. The first period starts in 1991 and ends in 1997, the second period starts in 1998 and ends in 2004. We conduct our analysis for both sub-periods using the Fama/MacBeth approach based on Equation (1). The results are presented in Table 5.

- insert TABLE 5 about here -

Table 5 shows that during both sub-periods, the parameter estimates for the SRI dummy, D, are almost all significantly positive. This indicates that SRI mutual funds have persistently higher ethical rankings than their conventional counterparts.

To get a more distinct impression of how stable this result is, we now study each sample year separately. For each year we estimate the regression as stated in Equation (1).

- insert TABLE 6 about here -

Table 6 summarizes the results. To keep the table tractable, we show only results for ranks based on positive rating and negative rating (as we did in Table 2 and Figure 1). The table shows a remarkable stability over time. The parameter estimates for the SRI dummy, D, are in each year significantly positive for the positive rating. For the negative rating most estimates are significantly

positive. These results strengthen our conclusion drawn before. SRI mutual funds have higher ethical rankings than their conventional counterparts.

3.3 Window Dressing of SRI funds

The results presented so far are based on the portfolio holdings of funds at the end of the year. As investors typically decide about their next year's investments at the end of a year, SRI mutual funds might shift their portfolios towards stocks with high ethical ratings just before the end of the year.[11] SRI funds might pursue such a window-dressing strategy to convey a more ethical image to investors.[12] If SRI funds behave this way, the results shown earlier might reflect window dressing of SRI funds. To rule out this explanation for our results, we conduct two tests.

As a start we test whether SRI funds are ranked higher when ranks are based on end-of-year holdings than when based on mid-year rankings. Therefore, we now calculate ranks for the SRI mutual funds based on the midyear portfolio holdings. As before we use the Fama/MacBeth approach based on Equation (1). Columns 2 - 4 of Table 7 show the results based on end-of-year holdings (as already presented in Table 3) and Columns 5 - 7 the results for ranks based on midyear holdings. Column 8 shows the average difference between the

[11] The performance-flow literature shows that the end-of-year performance determines where the money flows in the next year. See, e.g., Sirri and Tufano (1998).

[12] The window dressing tests in the literature typically focus on window dressing with respect to performance: stocks with bad past performance are sold and stocks with good past performance are bought before disclosure dates to present a better performing portfolio to investors (see, e.g., Meier and Schaumburg (2004), Lakonishok et al. (1991), and Musto (1997)). In contrast, we study window dressing with respect to the ethical standards of the portfolio: stocks with low ethical standards are sold before disclosure dates, stocks with high ethical standards are bought.

end-of-year and the midyear ranks of SRI funds.

- insert TABLE 7 about here -

Table 7 shows that SRI funds have significantly higher ethical rankings than their conventional counterparts - no matter whether one calculates ranks based on end-of-year or midyear holdings. The parameter estimates for the SRI dummy, D, do not differ much between midyear and end-of-year rankings. To test whether the SRI funds are ranked higher at the end of the year than at midyear, we calculate the difference between end-of-year and midyear ranks for each fund in each year. We then estimate whether the average difference is significantly different from zero. The results are reported in the last column of Table 7. The average differences are small and in all but one case not significant. Thus, we find no indication for ethical window dressing.

As we have no private information about the portfolio holdings of SRI funds at non-disclosure dates, we cannot directly compare the holdings of SRI funds at disclosure and non-disclosure dates. We therefore base our second test for window dressing on the patterns of fund returns around disclosure dates.[13] If SRI funds apply a window dressing strategy and consequently buy (sell) stocks with high (low) ethical standards just before disclosure dates, we expect the sensitivity of fund returns to an ethical stock index to be higher around disclosure dates than during the rest of the year.[14] We take the daily return data from the CRSP

[13] A similar test is used by Morey and O'Neal (2006) to detect window dressing with respect to performance.

[14] In a pre-test we find that the returns of stocks with high ethical standards depend more on the return of an ethical stock index than the returns of stock with low ethical standards. As a test we first regressed the return of every rated stock onto an ethical index return (DS 400 index). Then we repeated the regression, but now on a standard index return (CRSP

mutual fund database which limits our research period to the years 2001 to 2004. Overall, we have daily returns for 69 SRI funds. For all of these funds, we use the two disclosure dates which are available for each year. For each SRI fund we separately run the regression (3):

$$\begin{aligned} R_{it} - R_{ft} &= \alpha_i + \beta_{1i}\left(R_{St} - R_{ft}\right) + \beta_{2i}\left(R_{Et} - R_{ft}\right) \\ &\quad + \beta_{3i} D_{it}\left(R_{St} - R_{ft}\right) + \beta_{4i} D_{it}\left(R_{Et} - R_{ft}\right) \\ &\quad + \varepsilon_{it} \end{aligned} \tag{3}$$

The dependent variable is the return of the SRI fund i in excess of the risk-free rate on day t. $R_{St} - R_{ft}$ denotes the excess return of the standard index (CRSP index) over the risk-free rate and R_{Et} is the return of the ethical index (DS 400 index) that has been made orthogonal to the standard index.[15] D_{it} is a dummy variable which takes on the value one if day t is within the event period and zero otherwise. As event periods we use 10, 20, 30, and 40 days surrounding the disclosure date. We apply different event periods since we do not know how much time fund managers take to adjust their portfolio for window dressing reasons. If SRI mutual funds implement window dressing strategies, SRI funds have significantly higher loading on the ethical index around disclosure dates, i.e., β_{4i} is significantly positive.

- insert TABLE 8 about here -

Table 8 shows the percentage of significantly positive loadings on the ethical

index). We took the difference between the respective R^2 and regressed the difference on the ethical rating of the stock. We found a significantly positive relation, i.e., the higher the ethical standard of a stock is, the more sensitive is the stock towards the ethical index.

[15] The orthogonalization is done as in Elton et al. (1993).

index around disclosure dates. The percentages are reported separately for the different event periods (shown in Column 1) and alpha-significance levels (shown in Row 2). For example, the value 11.59% means that β_{4i} is significantly positive in 11.59% of all cases. By chance, we expect 10% of the β_{4i} estimates to be significantly positive at the 10%-alpha-significance level. To test whether 11.59% is statistically different from 10%, we employ a binomial test.[16] The critical value at the 10% level is 14.50% for Column 2, i.e., 11.59% is not statistically different from 10%. The critical value at the 10% level is 8.60% for Column 3 and 2.90% for Column 4. All values reported are below the critical values. Thus, we again find no indication of window dressing by SRI mutual funds.

4 Conclusion

Public press as well as academic studies question whether the investment strategy of SRI funds differs from the strategy of conventional funds. They suspect that SRI funds are conventional funds in disguise. We are the first to provide a test of this hypothesis.

We analyze the portfolio holdings of SRI mutual funds and conventional funds with respect to social and environmental standards. We match portfolio holdings information with ethical stock ratings information and construct an ethical ranking of funds. Our sample consists of US equity funds which we analyze for the time period from 1991 to 2004.

[16] For a more detailed description of the test see Morey and O'Neal (2006).

Our main findings are as follows: (i) SRI funds have a significantly higher ethical ranking than conventional funds, i.e., they are not conventional funds in disguise. (ii) SRI funds are higher ranked with respect to each and every qualitative and exclusionary criterion we base the ranking on. (iii) Our main result is very robust. It is stable over time and holds after controlling for several fund characteristics. (iv) There is no indication that the higher ethical ranking of SRI funds is generated by window dressing strategies.

Overall our findings indicate that SRI mutual funds behave in line with the promise inherent in their name. Therefore, investors acquire a more ethically balanced portfolio by buying a SRI mutual fund.

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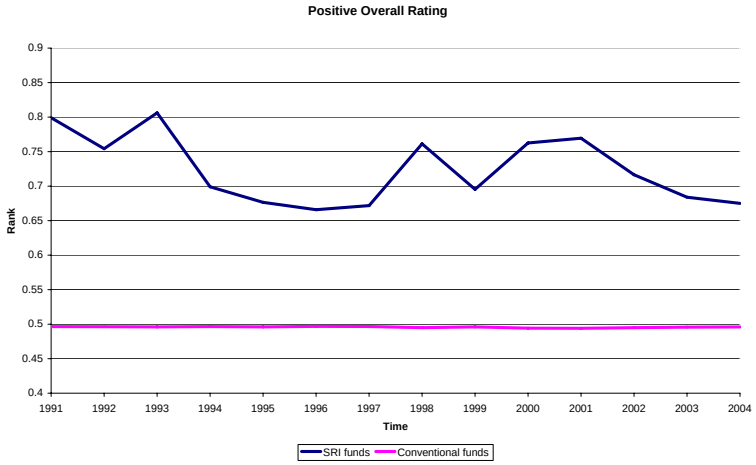
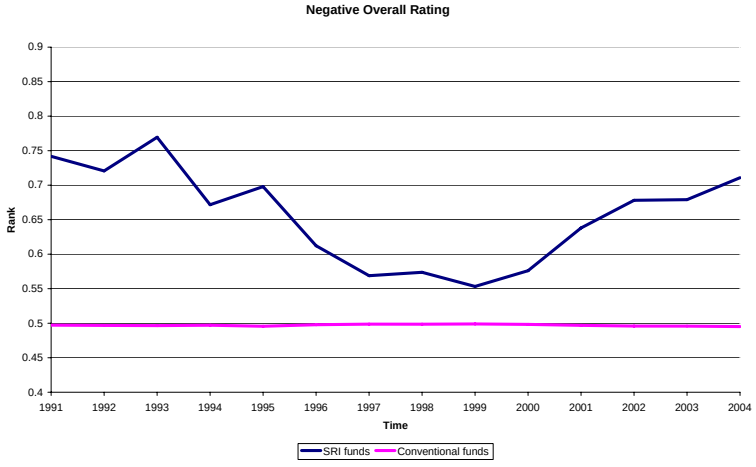
Figure 1: Ethical ranks over time



(a) Positive Rating



(b) Negative Rating

Notes: The figure (a) shows the average ranking of SRI funds and conventional funds over time for the positive rating. The figure (b) shows the average ranking of SRI funds and conventional funds over time for the negative rating. The ranks are calculated on end-of-year portfolio holdings of the funds. The best ranked fund obtains the rank one, the worst ranked fund obtains the rank zero.

Table 1: Characteristics of SRI and conventional mutual funds

	SRI funds	Conventional funds
Age	7.10	10.86
Size	217.70	959.50
Loads	1.55	2.06
Expenses	1.41	1.33
Turnover	0.57	0.69
4-factor alpha	−1.33	−1.26

Notes: In this table the fund characteristics of socially responsible mutual funds are compared to the fund characteristics of conventional mutual funds. The fund characteristics encompass average age (in years), average size (in million US dollars), average loads (percentage total of all maximum front, deferred, and redemption fees), average expense ratio (percentage of assets invested), and average turnover (minimum of aggregate purchases of securities or aggregate sales of securities, divided by the average total net assets of the fund) from 1991 to 2004. The 4-factor-alpha is based on the following regression:

$$R_{it} - R_{ft} = \alpha_i + \beta_{1i}\left(R_{St} - R_{ft}\right) + \beta_{2i}SMB_t + \beta_{3i}HML_t + \beta_{4i}MOM_t + \varepsilon_{it} \tag{4}$$

The dependent variable is the monthly equally-weighted return of portfolio i minus the risk-free rate in month t. The independent variables are four zero-investment factor portfolios. $R_{St} - R_{ft}$ denotes the excess return of the market portfolio over the risk-free rate. SMB_t denotes the return difference between a small and a large capitalization portfolio in month t. HML_t denotes the return difference between a high and a low book-to-market portfolio in month t. MOM_t denotes the return difference between portfolios of stocks with high and low returns over the past twelve months. The excess return of the market portfolio (CRSP index), the size, and the value factor are from the Kenneth R. French data library. The momentum factor was kindly provided by Mark M. Carhart.

Table 2: Funds sorted in quintiles

Panel A: Positive Rating

	SRI funds	Conventional funds
0.0 - 0.2	8.38%	20.24%
0.2 - 0.4	9.20%	20.22%
0.4 - 0.6	10.63%	20.19%
0.6 - 0.8	19.02%	20.00%
0.8 - 1.0	52.76%	19.35%

Panel B: Negative Rating

	SRI funds	Conventional funds
0.0 - 0.2	8.59%	20.24%
0.2 - 0.4	10.63%	20.19%
0.4 - 0.6	16.56%	20.07%
0.6 - 0.8	29.04%	19.77%
0.8 - 1.0	35.17%	19.73%

Notes: This table shows the distribution of funds in quintiles. The first column shows the quintiles which are based on the ethical ranks of funds. The ranks are calculated on end-of-year portfolio holdings of the funds. The best ranked fund obtains the rank one, the worst ranked fund obtains the rank zero. The second and third column provide the percentage of SRI funds (Column 2) and conventional funds (Column 3) in the respective quintile. The ranks are based on the positive rating (Panel A) and the negative rating (Panel B).

Table 3: Ethical ranks of SRI funds and conventional funds

	Constant	D	R^2
Positive Rating	0.4958^{***}	0.2283^{***}	0.0115
Negative Rating	0.4971^{***}	0.1595^{***}	0.0062
Qualitative Criteria			
Community	0.4985^{***}	0.0734^{***}	0.0019
Diversity	0.4989^{***}	0.0526^{***}	0.0014
Employee Relations	0.4978^{***}	0.1175^{***}	0.0033
Environment	0.4963^{***}	0.1981^{***}	0.0086
Human Rights	0.4978^{***}	0.1202^{***}	0.0034
Product	0.4980^{***}	0.1188^{***}	0.0036
Exclusionary Criteria			
Alcohol	0.4977^{***}	0.1287^{***}	0.0045
Gambling	0.4991^{***}	0.0476^{***}	0.0014
Military	0.4979^{***}	0.1116^{***}	0.0034
Nuclear Power	0.4979^{***}	0.1185^{***}	0.0037
Tobacco	0.4975^{***}	0.1353^{***}	0.0053

Notes: This table summarizes the results for the Fama/MacBeth approach based on Equation (1). The first column shows the criteria on which the rankings are based. The ranks are calculated on end-of-year portfolio holdings of the funds. The best ranked fund obtains the rank one, the worst ranked fund obtains the rank zero. The second column shows the estimated constant β_0 and the third column the estimated coefficient β_1 for the dummy variable D. D takes the value one if a fund is a SRI fund and the value zero otherwise. The last column shows the average R^2 of the yearly regressions. *** indicates significance at the 1% level.

Table 4: Impact of fund characteristics on ethical ranks of SRI funds and conventional funds

	Constant	D	Size	Age	Expenses	Loads	Turnover	R^2
Positive Rating	0.5112***	0.2352***	−0.0004	0.0054	0.1982	−0.0941	−0.0348**	0.0284
Negative Rating	0.4104***	0.1418***	0.0009	−0.0126**	7.4010***	−1.0344***	0.0440***	0.0506
Qualitative Criteria								
Community	0.5580***	0.0852***	0.0032*	0.0181***	−4.6210***	0.3889**	−0.0836***	0.0503
Diversity	0.5348***	0.0630***	0.0054**	0.0185***	−4.7131***	0.6250***	−0.0754***	0.0510
Employee Relations	0.5685***	0.1175***	−0.0075***	0.0124**	−2.2842***	0.1846	−0.0496***	0.0264
Environment	0.4064***	0.1872***	0.0016	−0.0168***	7.0995***	−0.8836***	0.0552***	0.0552
Human Rights	0.4677***	0.1170***	−0.0008	−0.0272***	5.3500***	−0.6527***	0.0483***	0.0460
Product	0.4393***	0.0939***	−0.0038*	−0.0141**	5.8726***	−0.7429***	0.0596***	0.0481
Exclusionary Criteria								
Alcohol	0.4684***	0.1134***	−0.0097***	−0.0040	5.2679***	−0.1858	0.0329***	0.0476
Gambling	0.5399***	0.0287	−0.0156***	0.0032	3.5729***	−0.2295**	−0.0118	0.0407
Military	0.3781***	0.1018***	−0.0039*	0.0046	8.4441***	−0.8711***	0.0485***	0.0584
Nuclear Power	0.4188***	0.1012***	0.0051**	−0.0193***	6.9685***	−0.7737***	0.0256*	0.0408
Tobacco	0.4838***	0.1206***	−0.0122***	−0.0008	5.2241***	−0.4263***	0.0277***	0.0531

Notes: This table summarizes the results for the Fama/MacBeth approach based on Equation (2). The first column shows the criteria on which the rankings are based. The ranks are calculated on end-of-year portfolio holdings of the funds. The best ranked fund obtains the rank one, the worst ranked fund obtains the rank zero. The second column shows the estimated constant β_0 and the third column the estimated coefficient β_1 for the dummy variable D. D takes the value one if a fund is a SRI fund and the value zero otherwise. The following columns show the estimated coefficients for the control variables total net assets in million US-Dollar, $\log(Size)$, age in years, $\log(Age)$, expense ratio, $Expenses$, total loads, $Loads$, and turnover ratio, $Turnover$. The last column shows the average R^2 of the yearly regressions. ***, **, and * indicate significance at the 1%, 5%, and 10% level.

Table 5: Ethical ranks of SRI funds and conventional funds for sub-periods

	1991-1997			1998-2004		
	Constant	D	R^2	Constant	D	R^2
Positive Rating	0.4964***	0.2282***	0.0096	0.4951***	0.2283***	0.0134
Negative Rating	0.4971***	0.1861***	0.0069	0.4971***	0.1328***	0.0055
Qualitative Criteria						
Community	0.4992***	0.0485*	0.0010	0.4979***	0.0983***	0.0027
Diversity	0.4997***	0.0110	0.0005	0.4980***	0.0941***	0.0024
Employee Relations	0.4979***	0.1277***	0.0033	0.4977***	0.1073***	0.0032
Environment	0.4968***	0.2042***	0.0078	0.4959***	0.1920***	0.0095
Human Rights	0.4980***	0.1314***	0.0035	0.4977***	0.1090***	0.0033
Product	0.4977***	0.1548***	0.0048	0.4983***	0.0827**	0.0023
Exclusionary Criteria						
Alcohol	0.4976***	0.1513***	0.0054	0.4977***	0.1061***	0.0036
Gambling	0.4991***	0.0502**	0.0013	0.4990***	0.0450*	0.0015
Military	0.4983***	0.0998***	0.0022	0.4974***	0.1234***	0.0046
Nuclear Power	0.4978***	0.1477***	0.0046	0.4980***	0.0892***	0.0029
Tobacco	0.4976***	0.1491***	0.0053	0.4974***	0.1216***	0.0053

Notes: This table summarizes the results for the Fama/MacBeth approach based on Equation (1) for two sub-periods: 1991 - 1997 (Column 2 - 4) and 1998 - 2004 (Column 5 - 7). The first column shows the criteria on which the rankings are based. The ranks are calculated on end-of-year portfolio holdings of the funds. The best ranked fund obtains the rank one, the worst ranked fund obtains the rank zero. The second (fifth) column shows the estimated constant β_0 and the third (sixth) column the estimated coefficient β_1 for the dummy variable D. D takes the value one if a fund is a SRI fund and the value zero otherwise. The fourth (seventh) column shows the average R^2 of the yearly regressions. ***, **, and * indicate significance at the 1%, 5%, and 10% level.

Table 6: Ethical ranks for the positive and negative rating in each year

	Positive Rating			Negative Rating		
Year	Constant	D	R^2	Constant	D	R^2
1991	0.4965***	0.3026**	0.0125	0.4972***	0.2446*	0.0081
1992	0.4964***	0.2579***	0.0111	0.4968***	0.2238**	0.0083
1993	0.4961***	0.3101***	0.0144	0.4965***	0.2729***	0.0112
1994	0.4966***	0.2024***	0.0082	0.4970***	0.1746***	0.0061
1995	0.4961***	0.1804***	0.0082	0.4956***	0.2023***	0.0104
1996	0.4968***	0.1691***	0.0063	0.4979***	0.1144**	0.0029
1997	0.4966***	0.1752***	0.0069	0.4987***	0.0702	0.0011
1998	0.4950***	0.2663***	0.0158	0.4986***	0.0752	0.0013
1999	0.4961***	0.1993***	0.0092	0.4989***	0.0544	0.0007
2000	0.4942***	0.2683***	0.0182	0.4983***	0.0778*	0.0015
2001	0.4940***	0.2754***	0.0194	0.4969***	0.1411***	0.0051
2002	0.4949***	0.2216***	0.0131	0.4958***	0.1822***	0.0089
2003	0.4957***	0.1883***	0.0094	0.4958***	0.1832***	0.0090
2004	0.4959***	0.1791***	0.0085	0.4951***	0.2158***	0.0124

Notes: This table summarizes the results of the estimation on Equation (1) for each year from 1991 to 2004. The ranks are calculated on end-of-year portfolio holdings of the funds. The best ranked fund obtains the rank one, the worst ranked fund obtains the rank zero. The first column shows the years. The second to fourth columns report the results for the positive rating and the fifth to seventh columns report the results for the negative rating. The second (fifth) column shows the estimated constant β_0 and the third (sixth) column the estimated coefficient β_1 for the dummy variable D. D takes the value one if a fund is a SRI fund and the value zero otherwise. The fourth (seventh) column shows the R^2. ***, **, and * indicate significance at the 1%, 5%, and 10%.

Table 7: Ethical ranks of SRI funds and conventional funds based on end-of-year and midyear portfolio holdings

	End-of-year ranks			Midyear ranks			
	Constant	D	R^2	Constant	D	R^2	Difference
Positive Rating	0.4958***	0.2283***	0.0115	0.4960***	0.2222***	0.0109	0.0088
Negative Rating	0.4971***	0.1595***	0.0062	0.4971***	0.1622***	0.0065	0.0067
Qualitative Criteria							
Community	0.4985***	0.0734***	0.0019	0.4987***	0.0648***	0.0018	0.0058
Diversity	0.4989***	0.0526***	0.0014	0.4988***	0.0518**	0.0016	−0.0042
Employee Relations	0.4978***	0.1175***	0.0033	0.4981***	0.1059***	0.0026	0.0073
Environment	0.4963***	0.1981***	0.0086	0.4963***	0.2030***	0.0089	−0.0005
Human Rights	0.4978***	0.1202***	0.0034	0.4979***	0.1182***	0.0032	0.0087
Product	0.4980***	0.1188***	0.0036	0.4983***	0.1031***	0.0027	0.0124***
Exclusionary Criteria							
Alcohol	0.4977***	0.1287***	0.0045	0.4978***	0.1223***	0.0040	0.0059
Gambling	0.4991***	0.0476***	0.0014	0.4992***	0.0418**	0.0016	0.0109
Military	0.4979***	0.1116***	0.0034	0.4979***	0.1132***	0.0032	0.0088
Nuclear Power	0.4979***	0.1185***	0.0037	0.4979***	0.1218***	0.0041	0.0004
Tobacco	0.4975***	0.1353***	0.0053	0.4977***	0.1299***	0.0048	0.0065

Notes: This table summarizes the results for the Fama/MacBeth approach based on Equation (1) for two dates: end-of-year (Column 2 - 4) and midyear (Column 5 - 7). The first column shows the criteria on which the rankings are based. The ranks are calculated on end-of-year and midyear portfolio holdings of the funds. The best ranked fund obtains the rank one, the worst ranked fund obtains the rank zero. The second (fifth) column shows the estimated constant β_0 and the third (sixth) column the estimated coefficient β_1 for the dummy variable D. D takes the value one if a fund is a SRI fund and the value zero otherwise. The fourth (seventh) column shows the average R^2 of the yearly regressions. The eighth column reports the average difference between end-of-year and midyear ranks for all SRI funds and for all years. ***, **, and * indicate significance at the 1%, 5%, and 10% level.

Table 8: Window dressing of SRI funds

	Alpha-significance level		
Event period	10%	5%	1%
-5,+5	8.70%	7.25%	1.45%
-10,+10	11.59%	7.25%	1.45%
-15,+15	8.70%	4.35%	0.00%
-20,+20	7.25%	4.35%	1.45%

Notes: This table summarizes the percentage of significantly positive loadings on the orthogonalized ethical stock index (β_{4i} of Equation (3)) around disclosure dates for different event periods and different alpha-significance levels. The event period is the number of days surrounding the disclosure dates. A binomial test for the difference between the significant percentage and the different alpha-significance levels is employed. The values of the second to fourth columns would be significant at the 10% level if at least 14.50%, 8.69%, or 2.90% of the funds had significantly positive loadings.

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