Performance and Performance Persistence of Socially Responsible Investment Funds in Europe and North America

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Abstract

We analyze, and compare, performance and performance persistence of Socially Responsible Investment (SRI) funds in Europe and North America. We use a broad sample of 500 European and 248 North American SRI funds for the period January 2001 - December 2011. We find that SRI funds outperform the market benchmark in Europe and North America over this period and that North American SRI funds perform better than European SRI funds. We find little evidence of performance persistence in either region using a ranked portfolio approach; however, there is more evidence of performance persistence in European SRI funds than in their North American counterparts using a non-parametric ranked portfolio approach.

Keywords: Performance Persistence, Socially Responsible Investment Funds, Carhart, Fama-French, Ranked Portfolio Approach, Contingency Table

Introduction

Socially responsible investment (SRI) is not a new investment concept. According to Berry and Junkus (2013), both SRI and non-SRI investors consider environmental factors to be important when deciding how to invest. The uniqueness of SRI is that it allows investors to manage their funds in a sustainable way that satisfies their concerns with environment, social and governance factors in a manner consistent with what Hamilton et al. (1993) describe as 'doing well while doing good'.

The major potential problem with SRI is that it contradicts the central tenants of modern portfolio theory. Modern portfolio theory suggests that an efficient portfolio should consist of diversified, non-correlated, stocks, in order to maximize the expected return of the portfolio by spreading risk. However, an SRI portfolio represents a less diversified portfolio due to the screening process during portfolio formation. Therefore, an SRI portfolio is deemed to be a risky investment portfolio (Chegut et al. 2011).

This study examines performance and performance persistence of European and North American SRI funds. The study has two objectives. The first is to compare the relative performance of SRI funds in both regions with market benchmarks. The second is to ascertain whether performance persistence exists in SRI funds for both regions.

Much research has considered whether lack of diversification in SRI funds affects performance by comparing the performance of SRI funds with the market benchmark. Empirical evidence has been mixed. On the one hand, Jones et al. (2008) and Renneboorg et al. (2008a) found that an SRI portfolio underperformed relative to a conventional portfolio. Gil-Bazo et al. (2010), Climent and Soriano (2011) and Humphrey and Lee (2011) found that SRI funds performed on a par with conventional

portfolios. Alam and Rajjaque (2010), Gil-Bazo et al. (2010) and Lyn and Zychowicz (2010) found that an SRI portfolio outperformed the conventional portfolio.

Few studies have examined performance persistence of SRI funds and those which exist are for SRI funds in Europe (Gregory and Whittaker, 2007; Leite and Cortez, 2013) and the Asia Pacific (Lean et al., 2014). This paper is the first to examine performance persistence in North American SRI funds, the first to examine performance persistence in European SRI funds as a whole (as opposed to studies for individual countries) and the first to compare performance persistence of SRI funds across regions.

The issue of whether SRI funds are persistent has important theoretical and practical implications. From a theoretical perspective, if performance is persistent, this will challenge the validity of the weak form of the efficient market hypothesis (EMH) (Fama, 1970). The EMH states that if the market is efficient, then no investor will have the opportunity to gain from abnormal returns. This, in turn, has important practical relevance. If performance is persistent over time, past performance will serve as an important guide for future investment decisions. Alternatively, if there is no persistence in performance, investors can opt to apply passive asset management strategies in making investment decisions, subject to mitigating agency problems.

The existence, or otherwise, of performance persistence in SRI funds is also important given that investors are increasingly taking ethical and social considerations into account when deciding where, and how, to invest. To make informed choices, investors need evidence on performance of SRI funds over time (Gregory & Whittaker, 2007). A natural extension of investors becoming increasingly concerned with ethical and social issues in deciding where to invest is that firms can make strategic decisions along these lines to make their stocks more attractive to ethically minded investors. Thus,

the evolution of positive screening makes performance persistence of SRI funds relevant for company strategy in terms of investment decisions (Gregory & Whittaker, 2007).

We focus on European and North American SRI funds for two reasons. First, SRI as a concept originated in Europe and North America. For example, Belgium, Italy, Sweden and United Kingdom were the first countries in Europe that required their pension funds to disclose levels of participation in social, ethical and environmental aspects of investment (Renneboog et al., 2008a). Second, there is growing interest in SRI in both regions, reflected in the size of SRI assets in both regions. SRI has become big business in both regions. As at the end of 2012, total global SRI funds were $US 13.6 trillion; of which Europe accounted for two-thirds of global SRI funds and Europe and North America combined, 96 per cent of global SRI funds (KMPG, 2013).

Brief Overview of Existing Studies

The first analysis of SRI fund performance was conducted by Moskowitz (1970). Since then, numerous studies of SRI portfolio performance have been published. However, according to Rathner (2012), there is still inconclusive evidence on whether SRI funds underperform relative to a market benchmark. Of 517 funds examined in 25 studies reviewed by Rathner (2012), 73 underperformed, 68 outperformed and 376 showed no significant performance difference relative to the market benchmark.

Compared to the sizeable literature on SRI fund performance, the literature on performance persistence of SRI funds is scant. To the best of our knowledge, there are just three studies that examine performance persistence of SRI funds. The findings from these studies are inconclusive. Gregory and Whittaker (2007) compare performance

persistence of 32 SRI funds with 160 conventional funds in the United Kingdom from 1989 to 2002. The findings support the existence of performance persistence at 6, 12 and 36-month horizons. Leite and Cortez (2013) compare performance persistence of 50 SRI funds with conventional funds in France for the period 2000 to 2008. In contrast to Gregory and Whittaker (2007), no evidence of performance persistence is found in SRI funds at 6, 12 and 36-month horizons. Lean et al. (2014) analyze the performance persistence of 37 Asia Pacific SRI funds against the market benchmark for January 2001 to December 2011. Lean et al. (2014) found little evidence of performance persistence over a 12-month horizon, which is consistent with Leite and Cortez (2013).

Data

We employ a sample of 500 SRI funds from Europe and 248 SRI funds from North America respectively. Our database is sourced from Eurekahedge database, which is widely used in hedge funds/SRI funds studies (Hakamada et al., 2007; Weng and Truck, 2011; Ang and Lean, 2013a, 2013b; Lean et al., 2014). The sample period that we use is January 2001 to December 2011 because of the high percentage of active SRI funds. We follow Jiang et al. (2007) in including funds with at least 24 months of return series in order to provide a long enough return to ensure reliable regression estimates. We include dead funds to avoid the problem of survivorship bias. According to Hassan et al. (2010), the United States T-bill is the best riskless asset, so it is used as a proxy for the risk free rate. The one-month United States T-bill is obtained from Datastream. The Eurekahedge SRI Funds Index (ESFI) is used as the market benchmark,[1] while the size, value/growth and momentum factors are obtained from Style Research.

[1] http://www.eurekahedge.com

{Insert Figures 1 & 2}

The domicile of SRI funds are summarized in Figures 1 and 2. Figure 1 displays the domicile of North American SRI funds; of which, most are from the United States (almost three quarters) and Canada (just over one quarter). Figure 2 depicts the domicile of European SRI funds with 37.6 per cent from Luxembourg, 22.2 per cent from France, 8.6 per cent from the United Kingdom and 31.6 per cent from others.[2]

M**ethodology**

We employ the Fama-French (1993) model to investigate the performance of SRI funds.

$$R_{it} - R_{ft} = \alpha + \beta_0\left(R_{mt} - R_{ft}\right) + \beta_1 SMB_t + \beta_2 HML_t + \varepsilon_{it}$$

where
R_{it} = return of fund *i* at time *t*
R_{ft} = risk-free rate
R_{mt} = return of market benchmark
SMB_t = the difference in return between small size and large size portfolios
HML_t = the difference in return between value and growth portfolios

A stock with a low book-to-market ratio is a growth stock, while a stock with a high book-to-market ratio is a value stock. A positive alpha ($\alpha > 0$) indicates that the fund outperforms the market benchmark, whereas a negative alpha ($\alpha < 0$) indicates that the fund underperforms the market benchmark. We also employ the Carhart (1997) model as a robustness check, given it's common acceptance in the literature (Climent and Soriano, 2011; Derwall et al., 2011). The Carhart (1997) model is defined as:

$$R_{it} - R_{ft} = \alpha + \beta_0\left(R_{mt} - R_{ft}\right) + \beta_1 SMB_t + \beta_2 HML_t + \beta_3 MOM_t + \varepsilon_{it}$$

[2] The other category represents Austria, Belgium, British Virgin Island, Cayman Island, Denmark, Germany, Guernsey, Ireland, Isle of Man, Italy, Liechtenstein, Netherlands, Spain, Sweden and Switzerland.

where MOM_t is the difference in return between past winner and past loser portfolios.

For performance persistence, we follow the approach in Gregory and Whittaker (2007) and Lean et al. (2014) and use lagged 12-, 36- and 60-month returns for portfolio formation. Next, we follow Lean et al. (2014) and sort the funds into three new portfolios on January 1st of each year. The funds with the highest 30 per cent annual return are assigned to the Top (T) portfolio. The next 40 per cent are assigned to the Middle (M) portfolio and the remaining bottom 30 per cent are assigned to the Bottom (B) portfolio. We also form a differenced portfolio called Top minus Bottom (TMB). Before being rebalanced the following year, all portfolios are held for 12-months. This process is continued until we obtain a concatenated time series of equally weighted monthly returns, in which the ranking and holding periods are of equal length of time. In those cases in which a fund dies during the holding period, its returns are included up until the point at which the fund dies and then the portfolio weights are adjusted.

The performance of the portfolio is evaluated based on Carhart (1997). A positive and significant value for alpha ($\alpha > 0$) indicates that performance persistence exists, whereas a negative and significant value for alpha ($\alpha < 0$) indicates reversal. However, according to DeBondt and Thaler (1985) and Humphrey and O'Brien (2010), a significant negative value of alpha could be interpreted as supporting overreaction – i.e. past losers (winners) become future winners (losers). If we observe positive coefficients on *SMB, HML* and *MOM*, it indicates that the funds predominantly hold small stocks, value stocks or past winning stocks (Humphrey & O'Brien, 2010).

We also employ the contingency table approach proposed by Goetzmann et al. (1994) in evaluating performance persistence. The contingency table approach permits

us to examine whether funds which are winners or losers, remain in the same portfolio subset for consecutive periods. With this approach, funds are sorted into being either a winner or loser in each year. Being a winner or loser is defined according to a fund's mean return, relative to the median return of all funds in a particular year.

There are four outcomes: Winner-Winner (WW), Winner-Loser (WL), Loser-Winner (LW) and Loser-Loser (LL). Winner-Winner (WW) represents a fund in which its mean return is above, or equal to, the median return of all funds for two consecutive years. Winner-Loser (WL) represents a fund in which the mean return of the fund is above the median return of all funds in the prior year and lower than the median return in the subsequent year. Loser-Winner (LW) denotes that the mean return of the fund is below the median return of all funds in the prior year and larger than the median return in the subsequent year. Loser-Loser (LL) denotes that the mean return of the fund is lower than the median return of all funds for two consecutive years. Performance persistence exists if there is a significantly larger number of observation in the WW/LL categories than the other two categories (WL or LW) (Grinblantt & Titman, 1992).

The significance of performance persistence is examined using statistical tests. We use several tests to establish the robustness of performance persistence. The first is the cross product ratio (CPR) developed by Brown and Goetzmann (1995):[3]

$$CPR = \frac{(WW \times LL)}{(WL \times LW)}$$

Under the null hypothesis of no persistence, the CPR is equal to 1. When CPR > 1 persistence exists. If CPR < 1 this implies reversal. The significance of the CPR is

[3] The CPR is also known as the odds ratio.

determined by a Z-statistic. If the z-statistic is greater than the critical value, the null hypothesis is rejected, indicating that performance persistence exists.

We employ a second Z-statistic, proposed by Malkiel (1995). If Malkiel's Z-statistic is significant, there is evidence that the winner will have a 50% chance or more of remaining a winner in the subsequent period (Chu, 2008) where performance persistence exists. Malkiel's (1995) Z-statistic has been widely used in studies of performance persistence in mutual funds (Carpenter & Lynch, 1999; Agarwal & Naik, 2000). We also test for performance persistence based on the chi-square statistic suggested by Kahn and Rudd (1995). The null hypothesis is no performance persistence. Carpenter and Lynch (1999) and Agarwal and Naik (2000) use the chi-square statistic to examine performance persistence in mutual funds. Implementation of the CPR and chi-square statistic usually suggests the same conclusion, but the chi-square test has the disadvantage of not being able to test for performance reversal, since its value is always positive (Chu, 2008).

Results

Table 1 represents the descriptive statistic of European SRI funds, North American SRI funds, the US T-bill and ESFI. The US T-bill has the largest mean (0.1461%) whereas the ESFI has the lowest (-0.0119%). This implies that investing in riskless assets is more profitable than other assets. Moreover, employing a passive investment strategy that buys index funds that tracked the performance of the market index is the least profitable. European and North American SRI funds both have a positive mean return, but the mean returns are less than the US T-bill. We measured the risk by the standard deviation of the return. As expected, the US T-bill has the lowest risk and the SRI funds the highest. European and North American SRI funds have almost equal risk with North American

SRI funds having a slightly higher standard deviation of return. The risk associated with the market benchmark sits between the US T-bill and both SRI funds.

{Insert Table 1}

Table 2 considers the performance of European and North American SRI funds using the Fama-French (1993) and Carhart (1997) models. Based in the Fama–French (1993) model, European and North American SRI funds are found to outperform the ESFI. The result for European SRI funds is consistent with Mallin et al. (1995) and Otten and Bams (2002), both of which found that SRI funds in the United Kingdom outperformed the conventional benchmark. However, the finding for North American SRI funds differs from most existing studies of SRI funds in the United States, in which no significant difference in performance between SRI funds and conventional funds have been found (see, eg. Kempf & Osthoff, 2007; Gil-Bazo et al., 2010; Chang & Witte, 2010). Bauer et al. (2007) also found no significant difference in performance between SRI funds and the market benchmark in Canada. That our sample spans the global financial crisis in 2008, coupled with the limited investment opportunities of SRI funds themselves, suggests that the SRI fund managers from both regions have been sufficiently skilled to include more undervalued aggressive stocks in their portfolio so as to ensure that their portfolios were able to recover losses incurred during the crisis.

We find a value effect in North American SRI funds and growth effect in European SRI funds. The growth effect in European SRI funds is consistent with Bauer et al. (2005), who found that growth effects exist in Germany and the United Kingdom, and Otten and Bams (2002), who found evidence that a growth effect exists in France. Employing the Carhart (1997) model as a robustness check, the same conclusion can be drawn regarding performance, size and value/growth effects across regions. Evidence of

a momentum effect is found in North America, while a contrarian strategy is found to add value to SRI funds in Europe. This result is consistent with Cortez et al. (2012), who found that there is a momentum effect in United States SRI funds. In terms of the Carhart-α value, North American SRI funds perform better than European SRI funds.

{Insert Table 2}

Tables 3 and 4 shows the result for performance persistence in European and North American SRI funds at 12-, 36- and 60-month holding periods using a ranked portfolio approach. The ranked portfolio approach does not suggest performance persistence except in two cases (at the 5 per cent level) in Europe and North America respectively. The two cases are: European SRI funds for the Middle (M) at 12-months and Top (T) at 60-months; and North American SRI funds for the Top (T) and Top minus Bottom (TMB), both at 12-months. The latter result is consistent with Bollen and Busse (2005), who found that persistence exists in the Top (T) decile in which United States fund managers are able to generate statistically significant abnormal returns at 12-months. Moreover, Carhart et al. (2002) and Huij and Verbeek (2007) also found that persistence exists in Top (T) decile portfolios at 12-months. The existence of performance persistence in the Top minus Bottom (TMB) decile of North American SRI funds is consistent with Gruber's (1996) finding for United States mutual funds and Deaves' (2004) finding for Canadian mutual funds at 12-month holding periods.

At a 12-month holding period, a size effect is found in the Top (T) and Top minus Bottom (TMB) portfolios for both European and North American SRI funds. However, a large size portfolio is found to contribute a higher return than a small size portfolio for the Middle (M) and Bottom (B) portfolios for North American SRI funds.

This result is consistent with Vidal-Garcia et al. (2013), who found that the top-ranked portfolios in European countries tend to have more small stocks. At 36-month and 60-month holding periods, there is generally no size effect in European SRI funds at the 5 per cent level, while in North American SRI funds a large size portfolio is found to contribute a higher return than a small size portfolio for Top, Middle and Bottom at 36-months and for Middle and Bottom at a 60-month holding period.

At 12-months a value effect is found in the Top (T) and Top minus Bottom (TMB) portfolios for European SRI funds and the Middle (M) and Bottom (B) portfolios for North American SRI funds. A growth effect is found in the Middle (M) and Bottom (B) portfolios for European SRI funds and the Top minus Bottom (TMB) portfolio for North American SRI funds. There is little evidence of a value or growth effect in either region at longer holding periods at the 5 per cent level. There is no evidence of a momentum effect in European or North American funds. For Europe, there is more evidence that buying past loser and selling past winner produces higher returns.

{Insert Tables 3 & 4}

Tables 5 and 6 report a nonparametric contingency table of performance persistence of SRI winners and losers. The table reports results for the CPR z-statistic, Malkiel z-statistic and chi-square distribution for 12-, 36-month and 60-month holding periods. For Europe there is evidence of performance persistence at 12, 36 and 60 months for most years. Our results for European SRI funds are consistent with Gregory and Whittaker's (2007) findings for SRI funds in the United Kingdom, but differ from Leite and Cortez's (2013) finding that there was no performance persistence in French

SRI funds. For North American SRI funds there is less evidence of performance persistence, particularly at 12-months and 60-months at 5 per cent or better.

{Insert Tables 5 & 6}

What explains the difference in results for performance persistence between European and North American SRI funds? Malkiel (2003) notes that if the EMH does not hold, this should be reflected in professional fund managers outperforming the market. One possible explanation for the nonparametric results is that the market-timing skill of fund managers in Europe and North America is linked to ability to make abnormal returns. Evidence on market timing skills of European versus North American SRI fund managers vary (see Ang et al. 2014). Our results are consistent with studies suggesting that the market-timing skills of European SRI managers are better than their North American counterparts (see eg Ang & Lean, 2013b; Furruz, 2012; Hayat & Kraeussl, 2011; Renneboog et al., 2008b; Schroder, 2004).

Another possible explanation relates to the demand for SRI funds in Europe versus North America. As discussed earlier, Europe accounts for about two-thirds of global SRI funds under management, while North America has about 30 per cent of global SRI funds (KMPG, 2013). In addition, Europe has the most signatories to the United Nations Principles for Responsible Investment (PRI) - Europe had 53 per cent of all the signatories as of April 2013. The PRI was launched in 2006 by the UNEP Finance Initiative and the United Nations Global Compact to promote Responsible Investment. By signing up to the PRI, companies agree to apply SRI in their business operations. (KMPG, 2013). SRI funds are more likely to exhibit persistence in markets in which

there is more demand because shocks will generate larger movements from the long-run equilibrium path, resulting in greater degrees of persistence.

Finally, based on the coefficient of variation as in Table 1, SRI funds in Europe have a higher risk per unit of return than the North America. The volatility in North America is lower than Europe, suggesting that any deviations from the trend growth due to shocks (that create volatility in the first place) are smoother in North America.

Conclusion

This paper presents the results of the first study to examine and compare the performance, and performance persistence, of SRI funds in European and North American SRI funds. The paper employs a total of 500 Europe SRI funds and 248 North American SRI funds for the period January 2001 to December 2011. Evidence on performance, and performance persistence, in large SRI markets, such as Europe and North America, is important given the increasing attention investors are attaching to ethical issues when making investment decisions and the opportunities it offers companies to hone firm strategy to address these concerns (Gregory & Whittaker, 2007).

Our first finding is that European and North American SRI funds outperform the market benchmark (ESFI). This finding implies that investors in Europe and North America do not need to sacrifice financial performance in order to satisfy their environmental, ethical, and social concerns. The finding also suggests that lack of diversification in SRI funds does not hinder financial performance.

Our second finding is that in terms of the Carhart-α value, North American SRI funds perform better than European SRI funds. Our third finding is that based on the

ranked portfolio approach there is little evidence of performance persistence, but the results for the contingency tables suggest that there is more evidence of performance persistence in European SRIs than their North American counterparts.

The existence of performance persistence in European SRIs indicates that the market is not efficient and that the weak form of the EMH is rejected. From a practical investment viewpoint, this result implies that managers can possess informational advantages for most portfolios over holding periods of 12-, 36- and 60- months and implement active asset management strategies to trade SRI stocks based on all past publicly available information to gain abnormal returns.

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Table 1: Descriptive Statistics

	Europe	North America	US T-bill	ESFI
Mean	0.0335	0.1358	0.1461	-0.0119
Standard deviation	4.3951	4.9388	0.1368	3.2400
Coefficient of variation	131.1970	36.3682	0.9363	-272.2689

Table 2: Europe and North America SRI Performance based on the Fama-French and Carhart models

Region	Europe	North America
Panel A: Fama-French		
A	0.0523***	0.1001***
β_0	1.0409***	0.9711***
β_1	0.06590***	-0.1234***
β_2	-0.0231***	0.0929***
Panel B: Carhart		
A	0.0900***	0.1785***
β_0	1.0471***	0.9637***
β_1	0.0454***	-0.1086***
β_2	-0.0615***	0.1109***
β_3	-0.0472***	0.0158***

Note: *** denotes significant at 1% level.

Table 3: Performance Persistence of European SRI Funds

Panel A: 12-months	α	β_0	β_1	β_2	β_3
Top (T)	-0.1730	1.2048***	0.2776***	0.1584***	0.3354***
Middle(M)	0.2139**	1.0184***	-0.0618	-0.1277***	-0.1289***
Bottom(B)	0.0978	1.0112***	-0.0583	-0.2480***	-0.3847***
Top minus Bottom (TMB)	-0.3991	0.2004	0.3392**	0.3972***	0.7083***
Panel B: 36-months	α	β_0	β_1	β_2	β_3
Top (T)	0.1416	1.2480***	0.1392	-0.0311	-0.1084**
Middle(M)	0.0471	1.0648***	0.0575*	-0.0354	-0.0407*
Bottom(B)	0.0861	0.6057***	-0.0231	0.0236	0.1374**
Top minus Bottom (TMB)	-0.0744	0.6630***	0.1656	-0.0742	-0.2673**
Panel C: 60-months	α	β_0	β_1	β_2	β_3
Top (T)	0.1372*	1.1890***	0.0440	0.0068	0.0158
Middle(M)	0.0276	0.5555***	-0.0152	-0.0302	-0.0413
Bottom(B)	-0.0619	1.0987***	0.1124**	-0.0175	-0.0125
Top minus Bottom (TMB)	-0.0744	0.6630***	0.1656	-0.0742	-0.2673**

Note: ***, ** and * denote significant at 1%, 5% and 10% levels respectively.

Table 4: Performance Persistence of North American SRI Funds

North America					
Panel A: 12-months	α	β_0	β_1	β_2	β_3
Top(T)	0.5781**	1.2799***	0.1887**	0.0444	0.0882**
Middle(M)	0.1922	0.7921***	-0.2077***	0.1658***	0.0061
Bottom(B)	-0.2696*	0.7684***	-0.2347***	0.1874***	-0.0333*
Top minus Bottom (TMB)	0.6523**	0.5110***	0.4187***	-0.1494**	0.1112***
Panel B: 36-months	α	β_0	β_1	β_2	β_3
Top (T)	-0.1556	1.1519***	-0.1036**	0.0617	-0.0153
Middle(M)	-0.1648	0.9257***	-0.2871***	0.1146***	-0.0232
Bottom(B)	0.0325	1.0336***	-0.1381**	0.0264	0.0009
Top minus Bottom (TMB)	-0.4170	0.1234	0.0224	0.0226	-0.0317
Panel C: 60-months	α	β_0	β_1	β_2	β_3
Top (T)	0.2586	1.1885***	-0.0897	0.0898*	0.0183
Middle(M)	0.1232	0.9296***	-0.1769***	0.0630	-0.0016
Bottom(B)	-0.0049	1.0085***	-0.2028***	0.1114*	0.0043
Top minus Bottom (TMB)	0.0139	0.1875***	0.0979**	-0.0380	-0.0037

Note: ***, ** and * denote significant at 1%, 5% and 10% levels respectively.

Table 5: Contingency Table of European SRI Funds

Panel A: 12-months									
Initial Year	WW	WL	LW	LL	Total	CPR	Z-statistic	Malkiel Z-statistic	Chi-square
2001	56	21	19	57	153	8.0000	5.6459***	3.9886***	8.5270***
2002	35	65	66	34	200	0.2774	-4.3100***	-3.0000***	4.8100**
2003	90	39	36	94	259	6.0256	6.5508***	4.4903***	11.5164***
2004	98	47	54	88	287	3.3980	4.9378***	4.2353***	6.5531**
2005	125	43	30	136	334	13.1783	9.6136***	6.3264***	26.8892***
2006	121	77	65	140	403	3.3846	5.8272***	3.1269***	9.4113***
2007	93	144	143	91	471	0.6503	-2.2778**	-3.3128***	5.6364***
2008	40	197	198	33	468	0.0338	-13.2376***	-10.1982***	55.4402***
2009	170	58	49	162	439	9.6904	10.1869***	7.4174***	28.9949***
2010	86	122	120	83	411	0.4876	-3.5824***	-2.4962**	3.2573*
Panel B: 36-months									
Year	WW	WL	LW	LL	Total	CPR	Z-statistic	Malkiel Z-statistic	Chi-square
2001	47	79	81	47	254	0.3452	-4.0921***	-2.8508***	4.2953**
2002	71	72	91	53	287	0.5743	-2.3060**	-0.0836	2.5183
2003	67	101	123	34	325	0.1834	-6.7922***	-2.6232	14.0577***
2004	53	149	137	61	400	0.1584	-8.3017***	-6.7545***	18.7500***
2005	130	89	82	137	438	2.4404	4.5514***	2.7705**	5.3721**
2006	75	154	159	79	467	0.2420	-7.2059***	-5.2205***	13.5776***
Panel C: 60- months									
Year	WW	WL	LW	LL	Total	CPR	Z-statistic	Malkiel Z-statistic	Chi-square
2001	99	73	68	96	336	1.9146	2.9365***	2.0000**	2.2202
2002	92	108	106	95	401	0.7635	-1.3480	-1.0763	0.4707

Note: ***, ** and * denote significant at 1%, 5% and 10% levels respectively.

Notes: Panel A shows the result for a 12-month holding period. WW in the initial year 2001 indicates that the fund is a winner in 2001 and 2002. Panel B reports the result for a 36-month holding period. WW in the initial year 2001indicates that the fund is a winner in 2001-2003 and 2004-2006. Panel C reports the results for a 60-month holding period. WW in the initial year 2001 indicates that the fund is a winner in 2001-2005 and 2006-2010.

Table 6: Contingency Table of North American SRI Funds

Panel A: 12-months

Initial Year	WW	WL	LW	LL	Total	CPR	Z-statistic	Malkiel Z-statistic	Chi-square
2001	35	8	11	31	85	12.3296	4.7751***	4.1175***	6.6441***
2002	18	32	32	17	99	0.2988	-2.8720***	-1.9799**	2.1288
2003	39	16	15	41	111	6.6625	4.4801***	3.1013***	5.4302**
2004	30	30	24	39	123	1.6250	1.3264	0.0000	0.9329
2005	46	31	37	39	153	1.5641	1.3696	1.7094	0.7500
2006	48	44	47	44	183	1.0213	0.0711	0.4170	0.0697
2007	41	73	71	41	226	0.3243	-4.0694***	-2.9971***	4.2611***
2008	23	95	95	23	236	0.0586	-8.6316***	-6.6281***	21.9661***
2009	67	45	29	49	190	2.5157	3.0409***	2.0788***	1.9487
2010	50	39	37	50	176	1.7325	1.8053	1.1660	0.8295

Panel B: 36-months

Year	WW	WL	LW	LL	Total	CPR	Z-statistic	Malkiel Z-statistic	Chi-square
2001	20	36	30	26	112	0.4815	-1.8898*	-2.1381**	1.2143
2002	37	25	28	34	124	1.7971	0.0047	1.5240	0.7258
2003	30	47	61	15	153	0.1570	-0.0121	-1.9373*	7.8611***
2004	31	61	52	38	182	0.3714	-3.2274***	-3.1278***	3.0165*
2005	45	67	62	52	226	0.5633	-0.0025	-2.0788**	1.2965
2006	37	77	80	42	236	0.2523	-0.0058	-3.8139***	6.5169***

Panel C: 60-months

Year	WW	WL	LW	LL	Total	CPR	Z-statistic	Malkiel Z-statistic	Chi-square
2001	46	31	46	29	152	0.9355	-0.2009	1.7094*	1.6974*
2002	46	46	49	41	182	0.8367	-0.5999	0.0000	0.1813

Note: ***, ** and * denote significant at 1%, 5% and 10% levels respectively.

Notes: Panel A shows the result for a 12-month holding period. WW in the initial year 2001 indicates that the fund is a winner in 2001 and 2002. Panel B reports the result for a 36-month holding period. WW in the initial year 2001indicates that the fund is a winner in 2001-2003 and 2004-2006. Panel C reports the results for a 60-month holding period. WW in the initial year 2001 indicates that the fund is a winner in 2001-2005 and 2006-2010.

Figure 1: Distribution of SRI Funds Based on Domicile in North America

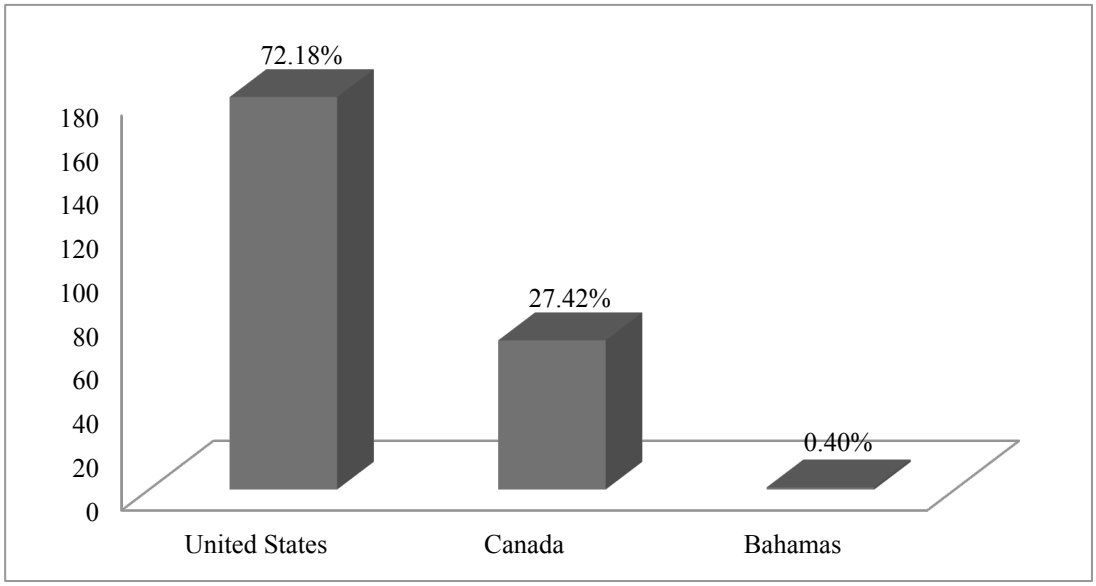

Figure 2: Distribution of SRI Funds Based on Domicile in Europe