WHY DO NOT SPANISH INVESTORS LIKE SRI FUNDS?

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Abstract

In this paper we aim to analyze the drivers of the ratio between SR investment and total investment in funds. SRI vs. non-SRI comparative performance, SRI offer and SRI demand, and the general economic conditions are the proposed explanatory factors. The general conclusion is that neither the comparative performance nor the SRI offer or the SRI demand explain the ratio, whereas the general economic conditions and the existence of other ways of "doing good" do in times of crisis.

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1. Introduction

Responsible or sustainable investment (also called Socially Responsible Investment, SRI) has lately become a common term in the investors and companies´ speeches[1]. According to the United Nations-supported Principles for Responsible Investment (PRI)[2] Initiative, "Responsible investment is an approach to investment that explicitly acknowledges the relevance to the investor of environmental, social and governance factors, and of the long-term health and stability of the market as a whole". Thus, SRI is committed to Sustainability and seeks to promote Corporate Social Responsibility (CSR) and other related practices by the businesses. As of April 2013, over 1,200 institutions worldwide representing USD 34 trillion assets under management have signed up to the Principles. Similarly, the Global Sustainable Investment Alliance (GSIA)[3] defines sustainable investing as "an investment approach making reference to environmental, social and governance (ESG) factors in the selection and management of investments." In other words, SRI is an investment that considers both financial and extra-financial criteria (the so-called ESG criteria) in the analysis and the investment decision making process, and also in the exercise of active property, not having, because of that, lower profitability (Spainsif, 2013a).

Following GSIA (2012), an inclusive definition of sustainable investing covers the next investment strategies:

1 It derives from the idea of Sustainability and Sustainable Development, which, as stated by the Brundtland Commission in 1987, is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

2 The United Nations-supported Principles for Responsible Investment (PRI) Initiative is an international network of investors working together to put the six Principles for Responsible Investment into practice.

3 The Global Sustainable Investment Alliance (GSIA) is a strategic collaboration of Sustainable Investment Forums (SIFs), around the world with the mission to deepen the impact and visibility of sustainable investment organizations at the global level. It includes Europe, the US, Canada, Asia, Japan, Australia and Africa.

1. Screening of investments:
    a. Negative/exclusionary screening: Excludes investing in companies whose income or profit, in part or in its entirety, comes from activities that contradict the investor's SRI ideology (based on specific ESG criteria).
    b. Positive/best-in-class screening: Supports investment in companies that contribute positively to the development of the investor's SRI ideology. Investment is made in the companies that, once passed the financial test, have a higher ESG performance than other companies.
    c. Norms-based screening: Investment is made in companies that have not violated worldwide accepted norms such as human rights.
2. Integration of ESG factors: ESG criteria are included in the traditional financial analysis.
3. Sustainability themed investing: Invests in assets related to sustainability.
4. Impact/community investing: Investments are focused on giving a solution to social or environmental problems.
5. Corporate engagement and shareholder action: Seeks to improve the companies' ESG performance through dialog processes.

According to this definition, global SRI market estimates in GSIA (2012) accounted for USD 13.6 trillion at the year-end 2011, representing 21.8% of the total assets managed in the regions covered by the report. Therefore, SRI must be seen as a well-established and mature industry, offering a variety of specialized and standardized products to both retail and institutional investors. In addition to that, the most prevalent view between the professional participants in the financial markets worldwide is that investors and portfolio managers will likely give more consideration to ESG factors in the selection and management of investments in the future.

Although SRI originated in the early 1970's in the USA, a geographic analysis allows us to conclude that this market seems to be driven by Europe, which represents almost two-thirds of total assets (USD 8.7 trillion), being the USA second (USD 3.740 trillion). The historic commitment of the European politicians and society to sustainable growth initiatives explains the progress of the European SRI industry.

Focusing in the European market place, Eurosif (the European Sustainable Investment Forum[4]), publishes periodically (2003, 2006, 2008, 2010, and the last one in 2012) its European Study on Sustainable and Responsible Investment. The reports, based on a comprehensive self-reporting survey[5], offer both quantitative and qualitative information such as practices, means used by fund managers, trends, and assets under management according to different strategies used, to investment vehicles, and to allocations and customer segmentation (institutional and retail).

Table 1 shows the evolution of the asset volume managed in each of the European countries covered by the survey in Eurosif. The main conclusion that can be drawn from this table is that the development of this kind of investment is very different across the European countries. In fact, the figures of assets under management (henceforth AuM) go at the year-end 2011 from EUR 1,884,000 million managed in France to EUR 1,174 million in Poland. The cultural and historical diversity across the European countries seems to be also reflected in this specific sector.

In the particular case of the Spanish delegated portfolio management industry, the last report of the Spanish SIF, Spainsif (2012), estimates a total EUR 284,720 million of AuM at the close of 2011, with only EUR 57,091 million of them (20%) being considered SRI. In spite of a considerable 71% increase from the EUR 33,327 million managed in 2009, the Eurosif report (2012) points out that the Spanish SRI market remains considerably less developed than many of its Northern European neighbors[6]. These figures noticeably contrast with the broader Spanish asset management industry, which is seen as the sixth biggest European country in terms of AuM, as stated in EFAMA (2012).

As an additional evidence of the difference among European countries, SR investment in terms of the size of each particular delegated management domestic market is shown in Figure 1[7]. Spain can be seen as one of the countries where the ratio between SRI AuM and total AuM is smaller, and where the growth of the ratio is slower.

4 Eurosif acts as a partnership of the national SIFs within the EU and with the support and involvement of Member Affiliates. The five initial SIF that founded Eurosif in 2001 are from France, Germany, Italy, The Netherlands and the UK. The Belgian, Spanish and Swedish SIFs have joined later as members. Eurosif's Member Affiliates include institutional investors, financial service providers, academic institutes, trade unions and NGOs.

5 Eurosif generally defines a national market by the country where the SRI assets are being managed (i.e. where the SRI asset management team is located). As a consequence, the Study measures the size of the SRI asset management markets, rather than the SRI markets (supply not demand).

6 Note that the SRI fund market developed later in Spain. In fact, the first Spanish SRI mutual fund was created in 1997 (Lozano *et al.*, 2006).

7 Due to the data being based in surveys with different criteria of classification, this data should be examined prudently.

One relevant characteristic of the SRI sector is that, as stated by Eurosif in its reports, the institutional segment market (pension plans and insurance companies, especially) accounts for more than 90% of the total SRI volume, being almost residual the SRI retail volume. GSIA (2012) points out that apparent limitations in communication and education are negatively affecting the expansion of the SRI in the European retail investors. The Spanish SRI market is no exception, being overwhelmingly dominated by large institutional investors (mainly large occupational pension funds), who account for 97% of total AuM. Consequently, retail specific SRI funds remain very marginal in Spain (even more than in the rest of Europe). The very conservative risk profile and the awareness of SRI issues among average Spanish retail investors could explain this specific fact.

With this evidence as the starting point, this study aims to analyze more in depth the retail SRI sector in Spain. In order to achieve that goal, we have obtained from Lipper by Thomson Reuters the catalog of SRI funds domiciled in Spain during the period 2002-2014[8].

Monthly information regarding AuM at the fund level is reported by INVERCO (Spanish Asset Management Association, *Asociación de Instituciones de Inversión Colectiva y Fondos de Pensiones*). With INVERCO's and Lipper's data we are able to compute the ratio between SRI fund AuM over the total fund AuM, which could be interpreted as the significance of the retail SRI sector in the Spanish industry. The temporal evolution of this ratio along the 2002-2014 period is our variable of interest. Thus, the main objective of this paper is to analyze the determinants of the share of SRI funds over the total fund industry in Spain.

In this study, cultural and economic variables, in addition to financial ones, are supposed to be the main drivers of the relative share of SRI funds in Spain. Therefore, we will empirically check, in a time series setting, the effect on this ratio of some potentially explanatory variables. These include the relative performance of SRI versus non-SRI funds, proxies for the SRI fund supply (measured as the number of SRI funds available and the number of management companies offering SRI funds), the number of SR investors as a proxy for the SRI investment fund demand, a proxy for the so-called green sentiment (measured as renewable energy consumption over total energy consumption) and the Industrial Production Index (IPI).

To the best of our knowledge this is the first paper analyzing the share of the SRI funds over the total market. Some papers in literature have focused on the behavior of flows in and out of SRI

8 Note the difference regarding the way Eurosif measures a national market.

funds (Renneboog *et al*. (2011), Bollen (2007), and Benson and Humphrey (2008)). Others (Sholtens and Sievänen, 2013) try to explain the reasons why SRI funds are low developed in a concrete geographical area, but we try to find the causes of the share of our ratio changing over time.

Our contribution is analyzing the drivers for the evolution of SRI funds in Spain, which has not been done before as far as we can tell.

The main findings of the paper can be summarized as follows. SRI offer and demand and the comparative performance of the funds have not been found as good explanations for the evolution of SRI fund investment in Spain. However, the general economic conditions and the existence of other ways of being socially responsible are drivers of the SRI in Spain.

The rest of the paper is organized as follows: section two refers to the related literature; section three describes the data and variables employed in the analysis; the empirical model estimated and the results obtained regarding the Spanish SRI funds' growth are discussed in section four; and, finally, section five concludes.

2. Literature review

The rising interest of academic research on SRI issues has followed a path very similar to the society´s interests'. The profuse related literature focuses in an ample range of issues, going from the study of the psychological individual motives to invest in SRI assets, to the assessment and measurement of the performance of these particular investments. As stated previously, the present study is related to both of them. Accordingly, in this section a short review of the main pieces of research related with SRI is referred.

A considerable number of papers concentrate on the relative performance of SR stocks or companies versus the non-SR ones. The articles of Margolis *et al*. (2009), Derwall *et al*. (2011), or Dorfleitner *et al*. (2013), among others, are representative examples of this branch of the literature. Using the SR scores to individual companies or stocks reported by specialized rating enterprises, these papers analyze the performance of a portfolio long in stocks with a high SR score or component, and short in stocks with a low SR component. The finding of a positive (negative) and significant abnormal return in such a long/short portfolio is understood as evidence of better (worse) financial performance of the SR companies or stocks analyzed.

More closely related to our research objective, the mutual fund industry has been one of the most analyzed sectors regarding socially responsible investments in the literature. Two essential reasons, at least, are behind this fact in our opinion. First, as SRI funds are offered to the public, the attention investors devote to these financial products can be considered an excellent proxy of the interest to socially and responsible issues in general. According to that, the increasing figures of AuM in the SRI fund industry worldwide are a simple reflection of the society's increasing concern in sustainability and social responsibility issues. In fact, the AuM in the SRI sector, being real investments by investors, is a very interesting testing ground for the SR sentiment. Second, the huge data availability in the mutual fund industry in general has fired up the academic research on this area. SRI funds have not been an exception; thus, the ease of access to very complete and detailed quantitative information about SRI funds could be another reason explaining the increasing scholar' interest in recent years[9].

From the financial point of view, one of the most relevant questions is whether SRI investment strategies are competitive with non-SRI strategies from a performance standpoint. In other words, the research question is whether SRI investors have to sacrifice financial performance in order to include sustainable issues in their portfolios. The number of academic research papers devoted to analyze the relative performance of the SRI funds versus the conventional ones is enormous[10]. Excellent reviews of the literature on SRI fund performance according to sources of data, countries analyzed, period considered, etc. are Renneboog *et al*. (2008), Capelle-Blancard and Monjon (2012b), and Chegut *et al.* (2011), among others. As an additional evidence of the significance of these topics, also non-academic reports such as the United Nations Environment Programme Finance Initiative (2007), Mercer (2009), and GMI Ratings (2011) review the main influential pieces of academic studies on SRI performance.

In regard to SRI fund performance, a disadvantage of SRI fund management could be argued from the portfolio theory. As the portfolio choice of SRI fund managers is based on a more limited number of assets, the diversification benefits can be thought to be lessened. However, an opposing view can be posted taking into account the gains in terms of better timing and asset allocation that a

9 However, some papers are more focused on the individual behavior of investors. They usually rely on experiments (Webley *et al*. (2001), Pasewark and Riley (2010), Barreda *et al*. (2011)) and individual surveys (McLachlan and Gardner (2004), Nilsson (2008), Williams (2007), or Säve-Söderbergh (2010)).

10 In fact, some authors consider that academic research on SRI fund performance could be explained by the so-called *Looking for the keys under the lamppost syndrome*. See Capelle-Blancard and Monjon (2012b).

smaller investment universe would imply to the portfolio management of SRI funds[11]. All in all, the assessment of the relative performance of SRI funds must be seen as an empirical research question.

The general conclusion from the literature is that SRI mutual funds perform comparably to conventional non-SRI funds[12]. Therefore, SRI investors do not seem to have paid a premium price to align their investments with their sustainable and responsible values. This evidence is in line with the growth in AuM by SRI funds in recent years. At the same time, according to Derwall *et al.* (2011), this predominant result could be understood as a consequence of the aggregation of both aforementioned positive and negative effects of SR considerations in the performance of these particular mutual funds. Different conclusions are found, for instance, by Chong *et al*. (2006), who find that the *irresponsible* funds are better off than the socially responsible funds; or by Gil-Bazo *et al.* (2010), who obtain that in the period 1997-2005, US SRI funds had better performance than conventional funds with similar characteristics.

Further specific analysis of SRI fund performance are carried out in Brière *et al.* (2014), who split up performance into market movements, asset allocation, active management and SR screening; Climent and Soriano (2011), mainly focused on one of the dimensions of SRI; Capelle-Blancard and Monjon (2012a), who explain risk-adjusted performance according to the SRI fund screening characteristics; or Becchetti *et al.* (2014), who check the relative performance of SRI funds before and after the financial crisis.

Also very closely related to our research question are the papers that study the motives on which the investors base their decisions to select SRI funds. Of course, a direct way to answer the previous question is to investigate the variables that empirically explain the net flows to SRI funds. Financial and non-financial fund attributes should be considered in such an analysis. After all, variables which are found to have an unambiguous effect on the amount of flows into or out of SRI funds should be considered drivers of the investors´ choices. Accordingly, Bollen (2007), comparing the flow-performance relationship of US SRI funds to non-SRI funds, finds that US SRI fund flows seem to be less sensitive to past negative returns than conventional funds', while being more sensitive to past positive returns. In a similar line, Renneboog *et al*. (2011) focus on the flow-performance

11 See Derwall *et al.* (2011) for an excellent discussion regarding the *pros* and *cons* of the SRI portfolio management.

12 Regarding methodological aspects, in order to assess the relative performance of SRI funds, academic papers usually are based on the CAPM (Capital Asset Pricing Model) or a multifactor model (3 factor model of Fama and French (1993) or the 4 factor model of Carhart (2007)) to estimate their risk-adjusted return. The comparative sample of conventional funds is mainly built according with a matched methodology based on size, age, investment objective, etc.

relationship in an international setting of SRI funds, but considering separately the alternative types of SRI fund screens, and the intensity of screening activity.

In Spain, academic literature on SRI mutual fund performance is very scarce. In opposition to the case of the conventional mutual funds, the imperfect development of the Spanish SRI fund industry has caused a very limited attention of academic researchers to this specific market. A relevant and interesting piece of information regarding the SRI in Spain comes from the Institute for Social Innovation, ESADE, which publishes annually a descriptive report on the position of the SRI sector in Spain (see Albareda *et al*. (2012)). From an academic point of view, the most recent contribution is Fernández and Matallín (2008), who analyze the performance of a sample of 13 Spanish SRI mutual funds from 30 June 1998 to 30 June 2001. Their main finding is that the Spanish SRI funds in the sample and period considered outperformed the conventional or non-SRI funds. Previous additional references focused on the Spanish SRI fund industry are Muñoz *et al*. (2004), Lozano *et al.* (2006), Balaguer (2007), Balaguer and Albareda (2007), and Balaguer *et al.* (2008).

3. Data and variables

A. Data

The regulation of SRI mutual funds in Spain was set up in 1999 by the INVERCO Ethical Committee, INVERCO (1999). This SRI Funds Rule basically presents in a nonspecific way the main legal requirements for the SRI funds. Since then, only very recently, in April 2014 (INVERCO (2014)), Spanish law has incorporated updated criteria for mutual funds to be considered and marketable as SRI funds[13]. Therefore, there have not been any common criteria in order to discern between SRI and conventional funds in Spain until very recently. However, international criteria did exist and international databases have incorporated this feature (being SRI or not) in their data. Therefore, information from one of them, Lipper by Thomson Reuters, about SRI funds in Spain has been used. Lipper's catalog of SRI funds includes both "funds using a best-in-class or engagement approach" and "funds using an exclusion or normative approach" (Lipper (2010)). Additionally, it is remarkable that in June 2014, Spainsif has presented a new catalogue of SRI

13 Renneboog *et al*. (2011) review the most relevant regulations passed by the National governments in Europe affecting social and environmental investments and savings. Its view is that these governmental rules would have had a positive impact on the growth of the European SRI mutual fund industry. Another regulation review that, although non-academic, is worth mentioning is Spainsif's report about European Comparative Norms and Retail SRI Regulation (Spainsif, 2013b).

funds in Spain (both domiciled and managed), which will be a perfect tool for identifying SRI funds in the future and that is continually growing.

For our analysis, monthly information at the fund level reported by INVERCO has been used. This data include, for all investment funds domiciled in Spain, returns (both monthly, yearly, 3-yearly, 5-yearly, etc.), asset volume, number of investors, the name of the company that manages the fund and the fund's investment objective.

The period of time of the data available to us goes from January 2002 to February 2014. However, due to methodology issues explained later in this paper, most part of the analysis has been restricted to the period December 2002-December 2013.

Tables 2 and 3 describe the main characteristics about the Spanish SRI funds obtained from Lipper by Thomson Reuters and INVERCO. Table 2 shows that the total number of SRI funds in Spain in the whole period is 35, a little figure if we compare it, for example, to the 204 funds in Belgium only in 2013, 238 in France or 87 in Germany the same year; a total of 922 in Europe that year (Vigeo, 2013). Nowadays there are only 12 Spanish SRI funds active. It is worth mentioning that the average time these funds have been active is six and a half years and that the fund that was the shortest time active was only active for nearly five months. There are 5 funds that have been active during the whole sample period, being still active at end February 2014. Also, the average monthly return for the SRI funds, calculated for the whole sample period, is -0.5% (for non-SRI funds it is 0.066%), being the minimum average return for one of the funds -4.61% and the maximum 0.31% (the range for non-SRI funds goes from -10.92% to 49.13%). From January 2002 to February 2014, these funds have had an average asset volume of EUR 11.53 million, (for non-SRI funds it is EUR 55.99 million) being the biggest average for one fund EUR 82.76 million (for non-SRI funds, the biggest average asset volume is EUR 3.227,497 million). The average number of investors during this period for each SRI fund ranges from 1 to 9,329 (the biggest non-SRI fund's average number of investors is 173,596), and the average for all funds is 828 (for non-SRI funds it is 1,917). Lastly, out of more than 100 companies, only 19 have had SRI funds in their portfolios. The company that has managed most SRI funds in Spain is *Santander*, with 6 funds, followed by *Ahorro Corporación* and *BBVA*, each with 3. Nowadays, the company with the most SRI funds active is also *Santander* with 3 funds, followed again by *BBVA*, with 2. The present number of companies managing SRI funds is 9 (out of a total of 75). All the other companies have either one

or none (*Ahorro Corporación* is the most remarkable case, having at present no SRI fund in its portfolio).

Table 3 shows the SRI fund investment objective and the main 10 investment holdings at the last report (as of February 2014) of each fund. According to the Spanish classification, there have been 18 Equity funds (funds that invest more than 30% in equities); 12 Fixed Income funds (funds that invest more than 70% in fixed income assets); and 5 Global funds (funds whose investment policy is not precisely defined and that do not belong to any other category)[14]. Currently, there are 4 Equity funds, 6 Fixed Income funds and 2 Global funds active. The main positions for SRI Equity funds are companies' (some of them specifically "green") equity; for SRI Fixed Income funds they are governments' and companies' debt; and for SRI Global Funds the main positions vary from fund to fund (some resemble Equity funds, some Bond funds).

Moreover, Figure 2 shows the main data from INVERCO about SRI funds, and also for the entirety of the funds (SRI and non-SRI). All 4 graphs (asset volume, number of investors, number of funds and number of management companies) show a peak for SRI around 2007, followed by a clear decline during the financial and economic crisis in Spain (2008-present). Only in the last months a slight recovery can be sensed in the first two graphs (asset volume and number of investors). Before 2007, and following a decline in 2002, SRI investment seemed to have stabilized, at least measured in asset volume. Since the crisis started, both SRI and total investment have followed similar paths. Table 4 summarizes the data used for Figure 2, showing the figures for the month of December of each year between 2002 and 2013.

A particular fund is worth mentioning: *BBVA Extra 5 II Garantizado, FI*. This fund has been considered by many studies a SRI, although it did have "more commercial value as a guaranteed mutual fund than as an ethical mutual fund" (Lozano *et al.* (2006)). Thomson Reuters does not include it in its catalog and, thus, we have not labeled it as SRI (therefore, it cannot be seen in Tables 2 and 3). Due to this fund having a large net worth, the total SRI asset volume in our study is much smaller than it was in previous studies mentioned in the Literature Review. Figure 3 shows this difference.

14 Guaranteed and Partial Guarantee funds, Monetary funds, Free Investment funds and funds of funds, and Real-Estate funds are excluded from the study, because their investment objectives are not aligned with the SRI's. In fact, there is no such SRI fund in the sample (see Table 3).

From this point on, the variables in the model are presented: first, the dependent variable and, next, the independent variables. The variable to be explained (*SRIRatio*) has been calculated as the natural logarithm of the ratio between SRI fund asset volume (including only the SRI funds from the list from Lipper by Thomson Reuters) and total fund asset volume[15].

Next, the possible explanatory variables are introduced. First, the relative performance of SRI versus non-SRI funds has been used as an explanatory variable. We hypothesize that, if SRI has better returns, SRI should soar, and, in the opposite case, SRI should be reduced.

To measure this variable the *matching nearest-neighbor bias-corrected estimators'* technique by Abadie and Imbens (2006) has been used, a technique that gives a solution to the problem of finding 'partners' for the observations when the matching is done by various variables at the same time. We obtain monthly estimators in order to have a time series.

The idea is that, for each SRI fund, partners (we apply the technique with one and four partners), which are similar to the SRI fund in some characteristics (*matching variables*), are found. Afterwards, the effect (*estimator*) on another variable (*treated variable*) of the fund being SRI or not is calculated. In this study, fund type (Equity, Fixed Income or Global), asset volume and number of investors have been used as matching variables, in the three following combinations: type and asset volume; type and number of investors; and type, asset volume and number of investors. As for the treated variable, monthly returns have been used. The estimators of the matched difference in returns (*MR*) can be understood as the excess or shortage of monthly returns of the SRI funds in relation to the conventional funds'. Using this technique, we assure that they have been calculated for comparable funds.

To make our analysis more complete, we have also considered as treated variable both the standard deviation of monthly returns (being the estimator *MD*) as a proxy of the risk level of the funds and the Sharpe ratio (being the estimator *MS*) as a performance measure[16] (both calculated *ad hoc*). The Sharpe ratio is a risk-adjusted return measure defined as the ratio between the excess fund

15 The logarithm of the ratio has been taken, due to the ratio being bounded between 0 and 1. This kind of transformation is useful, because both numerator and denominator are treated symmetrically.

16 The reason to use the Sharpe ratio instead of the Jensen alpha (as is usual in scholar research) as the performance measure is that our sample would end up being too little to draw any robust conclusions from it, because there are only 35 SRI funds and many of them do not appear in the whole sample (some started later than the sample's beginning and/or were merged or liquidated before the sample's end) and, at the same time, moving windows of 36 data are usual for the calculation of the Jensen alpha.

return and the standard deviation of the fund returns. As the risk-free rate, we have chosen the 1-month Euribor, obtained from the European Central Bank Statistical Data Warehouse. As mentioned before, we need a time series of both Sharpe ratios and standard deviations and, in order to fulfill this requirement, standard deviations have been calculated using moving windows of 12 data, causing the loss of the 11 first monthly data. Thus, as aforementioned, the analyzed data series starts December 2002 instead of January 2002.

We have obtained estimator series for three different treated variables, because we consider that either of them could be an explanatory variable for the evolution of the share of SRI investment over the total investment. This is so, because SRI investors could be sensitive to higher returns and not to a higher risk level, just the opposite or they could be sensitive to both, being that way sensitive to the performance of the funds. Thus, according to the portfolio theory, we hypothesize that if the risk level of SRI funds is higher than that of comparable conventional funds, SRI should be reduced. In the case of performance, if it is better, then SRI should increase. All in all, we end up with 18 estimator time series (one for each combination of treated variable, matching variables and number of matches).

Secondly, we formulate the hypothesis that the share of SRI funds' asset volume over the total funds should increase if the SRI fund supply is broader, that is, if there are more SRI funds available for the investor and/or if there are more companies offering this products. The number of SRI funds (*SRIIF*) active and the number of companies managing at least one SRI fund each month (*SRIMC*) are the proxy variables selected for SRI fund supply.

Thirdly, the SRI fund demand seems also important for the evolution of our ratio (*SRIRatio*). If the demand is higher, the ratio should increase. We have approximated this driver with two very different variables. The first one, probably more obvious than the second, is the number of SRI investors (*SRIInvestors*), which approximates the number of investors willing to make SR investments. We consider that, being SRI a special type of investment, whoever is willing to make such an investment, she will make it without hesitation, because the demand is not very price-sensitive.

The second proxy for the SRI demand is the so-called 'green sentiment'. Our hypothesis is that, when the 'green sentiment' is higher, SR investment should also be higher in relation to conventional investment. From the data available to us, final and internal energy consumption

classified by the origin of the energy consumed, seemed to be a good proxy for the 'green sentiment'.

With the data obtained from the INE (Spanish National Statistics Institute), ratios have been constructed following the scheme: '*Green* energy/Total energy'. As Herzog *et al*. (2001) list on their study, hydropower, wind and solar energy, and biomass (and residues) energy have been considered as 'green' or renewable energy sources for the Internal Energy Consumption Ratio (*IECRatio*). For the Final Energy Consumption Ratio (*FECRatio*) there is already a renewable energy category in the INE data. It is important to note that this data were only available until December 2013 when we obtained them and, therefore, the sample data are restricted up until this date, as we mentioned at the beginning of the section.

Lastly, the *general economic conditions* has been selected as a driver, because, although SRI is viewed as positive for the society, it is also considered a dispensable thing in times of crisis. This is so, because there is the belief that being socially responsible is costly for the companies and the investors and, therefore, when the economic situation is not good, investors are not willing to give up any of the returns they can receive and decide to disinvest from SRI. The Industrial Production Index (*IPI*) has been selected as the proxy variable. As the *IPI* is a seasonal variable and the dependent variable is not, the seasonal effect has been removed from the former, taking its first seasonal difference, following Novales (1993).

Table 5 summarizes the main drivers and proxy variables used.

B. Descriptive analysis of the variables

In this subsection, we aim to describe the time series behavior of the different variables considered in the study, whose main descriptive statistics and correlation matrix can be found in Tables 6 and 7, respectively. Furthermore, in the cases where there is more than one proxy variable for the same driver we need to select one of them to avoid multicollinearity problems in the model estimation.

First, we have to remember that we compute 18 variables for relative performance of the SRI funds, 6 for returns, 6 for standard deviations and 6 for Sharpe ratios. Each of the 6 variables in each group are highly correlated with each other; neither of the correlation coefficients is smaller than 0.6. Thus, we need to select one of each type: returns (*MR*), standard deviations (*MD*) and

Sharpe ratios (*MS*). The decision we have taken is to select the variables that we consider are more complete, that is, the ones that take the most information into account. These are the ones that include asset volume and number of investors as well as the type, and that search for four matches instead of only one.

It is interesting to note that the mean of the matching estimator for differences in returns (*MR*) is negative (-0.14%), which could be understood as the SRI funds having lower net (after fees) returns than conventional funds, while the mean of the matching estimator for Sharpe ratios (*MS*) is positive (0.05), which could mean that SRI funds tend to have a better risk-adjusted performance than the conventional ones. Furthermore, for the estimator for standard deviations (*MD*) the mean is positive (0.23%), which means that SRI funds tend to be riskier than their conventional equivalents[17]. This is contradictory, and could only be explained if the estimators are not significant (more on this later).

Going back to the statistical significance of the monthly matching estimators, there are more negative (80 negative versus 64 positive out of 146 monthly observations) and significantly negative (14 negative versus 3 positive) estimators when returns are used as the treated variable. Regarding the time series of the standard deviation matching estimator, according to the positive average value in Table 6, we find 85 positive versus 43 negative out of 135 data, and 19 significantly positive versus none significantly negative. Finally, for the Sharpe ratio matching estimator, 69 positive versus 65 negative out of 135 data, and 6 significantly positive versus 5 significantly negative are found. However, as can be seen, most of the matching estimators are not statistically significant, which leads to the conclusion that SRI funds are not statistically different to conventional funds regarding neither their returns nor their standard deviations and Sharpe ratios. As a proof of the robustness of the matching estimator values, we can add that, for the ruled out variables, a very similar conclusion can be drawn[18]. This result is coherent with many international past SRI fund performance studies. However, this contrasts with Fernández and Matallín (2008), who conclude that, in Spain, ethical funds outperform conventional funds. However, their study was done when the SRI fund market in Spain was still very young (1998-2001) and we can consider that the market has matured since then, making the SRI investment more similar to the conventional

17 Further analysis of the time series shows that this was only true during the financial crisis (early 2008-mid 2010), as can be seen in Figure 4.

18 These figures are not shown in Table 6, but they are available upon request.

market regarding returns, risk and performance. It is also to note that the methodology used for the analysis is not the same, which could also be a cause for the different results.

As an additional comment, due to these variable series having been calculated for end of month returns, it is more reasonable to include these variables delayed one period, to have the value of the variable previous to each period. Therefore, in the model explaining the time series of the (natural logarithm of the) ratio between SRI fund asset volume and total fund asset volume, the first lag of each performance comparison variable will appear instead of the contemporary value of the variables.

Secondly, the variables considered for SRI fund supply, *SRIIF* and *SRIMC*, follow very similar paths, having a correlation coefficient of 0.8586. However, the number of SRI funds is always higher, meaning that some of the companies have managed more than one SRI fund during the sample period. The mean for *SRIIF* is 20, whereas for *SRIMC* it is 14. Due to them being that highly correlated, we also need to select one of them. We have decided to keep the number of companies managing at least one SRI fund (*SRIMC*) as one of the explanatory variables, because, in our opinion, the effect of an increase in the number of SRI funds (*SRIIF*) would be smaller than the effect of an increase in the number of companies managing SRI funds. After all, increasing the number of companies managing SRI funds means spreading the SRI to a wider target audience, whereas increasing the number of SRI funds, in our opinion, does not necessarily widen the set of possible SRI investors and asset volume.

Next we look at the variables consider for the SRI demand. On the one hand, the Energy Consumption ratios (*IECRatio* and *FECRatio*) averages are 7% and 3%, respectively, meaning that, on average, 7% of the internal energy consumed (with a standard deviation of 5%) and 3% of the final energy consumed (with a standard deviation of 3%) have had a renewable origin between end 2002 and end 2013. Both series are, again, very related, showing a high correlation coefficient of 0.9484. We select the Final Energy Consumption ratio (*FECRatio*) as the explanatory variable for the empirical model, because we think that this variable reflects better the 'green sentiment' of final consumers, who are the ones that will decide on making an investment or another. On the other hand, the average number of SRI investors (*SRIInvestors*) is 21,421 with a standard deviation of 6,380.2. *SRIInvestors* is highly (negatively) correlated with *FECRatio*, being the correlation coefficient -0.9207. As both variables are of very different nature, we do not select only one of

them. However, they will not appear in the models estimated at the same time to avoid multicollinearity.

Lastly, the average seasonally adjusted *IPI* during the sample period is -2.32 and its standard deviation 8.94. In our opinion, the hypothesized effects of this particular variable in the investors' willingness to make investment decisions in the fund industry and, consequently, in our dependent variable *SRIRatio*, are not immediate. We believe that a delay of 12 months is coherent in our model.

As a last step before we estimate the model, we have calculated the correlation matrix for all selected seven variables and for *SRIIF* and *IECRatio*, although they have been ruled out (see Table 7). Regarding the selected variables, and apart from the already mentioned high correlation between *FECRatio* and *SRIInvestors*, the correlation of *MD* with *SRIMC* and *IPI* is slightly high. However, being the variables proxies of very different drivers, we do not expect multicollinearity problems.

4. Results

As stated before, the main objective of this study is to explain the evolution of the Spanish investment in SRI funds with the variables discussed in the Data and variables section and summarized in Tables 5, 6 and 7.

The model we test is expressed in Equation 1:

$$SRIRatio_t = \alpha + \beta_1 MR_{t-1} + \beta_2 MD_{t-1} + \beta_3 MS_{t-1} + \beta_4 SRIMC_t + \beta_5 SRIInvestors_t + \beta_6 FECRatio_t + \beta_7 IPI_{t-12} + \varepsilon_t \quad (1)$$

$$t = [2002{:}12;\ 2013{:}12]$$

where $SRIRatio_t$ is the natural logarithm of the monthly ratio between SRI fund asset volume and total fund asset volume in period *t*; MR_{t-1} is the monthly matching estimator with 4 matches for monthly returns with investment objective, asset volume and number of investors as treatment variables in period *t-1*; MD_{t-1} and MS_{t-1} are the similar monthly matching estimator for standard deviations of monthly returns and Sharpe ratios in period *t-1*; $SRIMC_t$ is the number of management companies managing at least one SRI fund in period *t*; $SRIInvestors_t$ is the number of investors investing in SRI funds in period *t*; $FECRatio_t$ is the monthly ratio between final consumption of renewable energies and total final energy consumption in Spain in period *t*; and IPI_{t-12} is the first seasonal difference of the Industrial Production Index of Spain in period *t-12*.

For the model estimations, we have forced at least one of the coefficients of the explanatory variables to be equal to zero (*FECRatio* and *SRIInvestors* cannot be in the model at the same time due to high correlation). All the regressions done for this paper have been estimated by OLS (Ordinary Least Squares). However, in some cases, where heterokedasticity exists, the use of White's variance and covariance matrix has been necessary in order to have consistent estimations of the parameters.

From the model estimations we have done, the first conclusion that we can draw is that the number of companies offering SRI funds (*SRIMC*) is not a good explanatory variable for the *SRIRatio*. Although it results statistically significant in every regression where it appears, its negative coefficient is not coherent (see Table 8). We blame the low figures in the variable for this. Thus, in the estimations in Table 9 we omit the models with this variable.

As for the rest of the variables, we can see in Table 8 that, individually, all of them are statistically significant except for *MR*. From the statistically significant coefficients, all but one take the signs we had hypothesized: negative for *MD* and positive for *MS*, *SRIInvestors* and *IPI*. However, there is an exception, *FECRatio*, which takes a negative sign, meaning that when the "green sentiment" grows, SR investment is reduced in terms of total investment. When other variables are included in the models, the coefficient for this variable continues to be negative. This makes no sense and, therefore, we admit that *FECRatio* is probably not a good proxy for the "green sentiment" as we intended it to be, and just reflects another way to be ethical, which is more accessible for the common public than SR investment. This is coherent with the fact that, in the last years, some energy companies in Spain have given the customers the choice to pay more for energy to make sure that is comes from renewable sources. That way, SR investment in funds ends up being less relevant relative to total investment, as renewable energy appears and spreads as a new form of SR "investment".

From the models estimated and included in Table 9, we can draw some interesting conclusions. First, the SRI funds' matched performance measured as the Sharpe ratio is not statistically significant in most of the models, which is coherent with the previously presented result from the performance comparison, where *MS* was the variable where the number (significantly) negative and (significantly) positive estimators were more equalized (65 vs. 69 and 5 vs. 6). If the variable is statistically equal to zero it should have no effect on another variable.

Second, the variable *MD* is the matched performance variable that is most statistically significant of the three, although in some models its coefficient results statistically not different from zero. The idea of this variable's coefficient being significantly different from zero (at least in some cases) is coherent with our previous results, since from the three matched performance variables it is the one with the biggest difference in the number (significantly) negative and (significantly) positive estimators (85 vs. 43 and 14 vs. 0). If one of these variables should be statistically different from zero, it is *MD*. Moreover, the coefficient's negative sign is coherent with the hypothesis that if SRI funds are riskier than non-SRI funds, SR investment should be reduced. Graphically we can appreciate in Figure 4 that there was an enormous increase in volatility difference (*MD*) between SRI and non-SRI funds in 2008 (when the financial crisis started), which started to decrease in 2009 and that is also reflected in the reduction of the share of SRI funds (*SRIRatio*) during the crisis period.

Third, *MR* is our surprise variable. In spite of our expectation of its coefficient being positive, in our estimations it is negative. However, in most of the models, it is not significantly different from zero which leads to the conclusion that SRI investors are not driven by SRI fund's return, and this is coherent with our conclusion about the statistical significance of the estimator series for *MR*.

In the cases of MR's, MD's and MS's contemporary values (instead of the first lag) being taken, we obtain very similar results.

Next, the number of investors, *SRIInvestors*, results significant in the estimations where its coefficient is not forced to be zero. The positive sign of the coefficient is coherent which the hypothesis that *SRIRatio* increases when *SRIInvestors* increases.

Last, *IPI* is statistically significant in every model where it appears. The coefficient is positive, which confirms the hypothesis that, when the general economic conditions are good, more SR investment is made whereas when the general economic conditions are bad, SR investment is rapidly reduced. When the models are estimated with the contemporary values of the variable instead of the 1-year lag, the results obtained are very different, which leads to the conclusion that our hypothesis about the not-immediate effect of the general economic conditions on the *SRIRatio* are correct.

All in all, with the most complete models (Model 10 and 12), we obtain an adjusted R squared of approximately 0.59. Due to *SRIInvestors* being, as stated before, a more obvious (maybe too obvious) proxy for SRI demand and due to it losing explanatory capacity when *FECRatio* is included in the model (and not the other way round), we sum up our conclusions from Model 12, where only 2 variables are statistically significant at 95% confidence. First, *FECRatio*'s coefficient is negative, which leads to the conclusion that other more accessible types of SR efforts are preferred over investment in SRI funds. Second, the general economic conditions seem to have a delayed effect on SRI fund relative investment, which moves in the same direction as the *IPI* about 12 months later of the latter's movement. Last, from the fact that none of the matched performance variables are statistically significant, we draw the conclusion that SRI investors are not driven by past performance of SRI funds (measured in returns, standard deviations or Sharpe ratios).

Additionally, Tables 10 and 11 show the models estimated for the sample period divided in two sub-periods (December 2002-August 2008 and September 2008-December 2009). The point of division coincides with the start of the financial crisis, so we have a Pre-crisis (where almost all values of *FECRatio* are equal to zero and, therefore, the variable is not included in the estimations) and a Crisis and Post-crisis period (Spain is just starting to come out of the crisis). The estimations show that the explanatory variables found in this study can only explain the *SRIRatio* in times of financial turbulence. Especially remarkable is the enormous effect of the delayed IPI, which confirms once again our hypothesis about the effect of the general economic conditions in SRI investment.

5. Conclusions

The objective of this paper is to analyze the drivers of the ratio between SR investment and total investment in funds. Drivers such as SRI comparative performance, SRI offer and SRI demand, and the general economic conditions have been taken into account, measured by different proxies.

The main conclusions from this study are summed up as follows. First, the SRI offer seems to not play an important role in the evolution of our ratio. SR investment is not determined by the number of companies that offer SRI funds. In fact, although the financial entities made an effort in creating SRI funds, it did not have any effect on the relative investment made in SRI funds. Second, SR investment in funds relative to total investment in funds is not determined by SRI funds performance (measured in returns or Sharpe ratios). Nevertheless, its risk performance may play a

role in times of high volatility. Third, other more accessible ways of being socially responsible such as paying for renewable energy are preferred over investing in SRI funds. Last, as expected, the general economic conditions have a delayed effect over the ratio between SR investment and total investment in funds. This effect relates to the common belief that "doing good" is dispensable during periods of recession.

Despite all that has been stated, we also have to say that it is difficult to explain something that depends on many subjective factors as is the ratio between SR investment and total investment in funds with quantitative variables. There are drivers for the SR investment as the "green sentiment" that have not been correctly approximated in this paper. Further research can continue this line of investigation.

Another variable that is surely affecting our ratio is the kind of advertisement given to SRI funds and its intensity. Therefore, although it is difficult to measure and obtain data about this driver, we encourage future studies to follow this line of research.

Moreover, looking at the effect of a similar ratio about pension funds in our ratio about mutual funds could be interesting, since SRI is known to be a more long-term investment as are pension funds, and this may favor the investment in SRI pension funds instead of SRI mutual funds.

Another interesting line of research is analyzing the characteristics of the Spanish SRI retail market as Benijts (2010) does in his paper for the Dutch and Belgian markets. An overtime analysis of these characteristics could possibly explain the evolution of the SRI fund market in Spain in relation to the total market.

Last, as Spainsif (2013b) states in its conclusions, SRI retail/individual demand is not spontaneous in any country and, therefore, if we want the SRI retail market in Spain to boost, more information about it must be given to potential investors. Maybe the biggest reason for the lack of development of this market in Spain is the lack of awareness about it.

All in all, SRI is still an area where plenty of research can be conducted, especially in Spain, where the literature is still scarce.

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7. Tables

Table 1: SRI in Europe by country

The table shows the SRI AuM in different countries of Europe measured in million EUR, for the year-end 2005, 2007, 2009 and 2011, as reported by Eurosif (2006, 2008, 2010 and 2012). NDA stands for Not Data Available.

Country	2005	2007	2009	2011
Austria	1,200	1,170	2,100	8,251
Belgium	149,000	283,800	193,700	96,905
Denmark	NDA	114,500	242,200	244,227
Finland	NDA	67,400	89,400	107,600
France	13,800	87,800	1,850,700	1,884,000
Germany	5,300	11,100	12,900	621,020
Italy	2,890	243,400	312,400	447,592
Netherlands	47,000	289,100	395,900	666,248
Norway	NDA	208,800	410,600	574,100
Poland	NDA	NDA	1,100	1,174
Spain	25,050	30,740	33,300	57,091
Sweden	NDA	191,100	305,500	378,300
Switzerland	7,450	21,100	23,000	441,637
UK	781,000	959,000	1,043,300	1,235,201

Table 2: SRI funds in Spain (2002-2014)

The table shows the present status (as in 02/2014) of the SRI funds domiciled in Spain, as well as the period of the sample where it was active, their average monthly return, standard deviation, asset volume, and number of investors for the period when they were active, and the last management companies listed. Data marked with (*) have been obtained from Lipper by Thomson Reuters and data marked with (**) have been obtained from INVERCO.

Name of the SRI fund (*)	*Fund Status (*)*	*First Month in Database (**)*	*Closed Date (*)*	*Average Monthly Return (**)*	*Standard Deviation Monthly Return (**)*	*Average Net Worth (million EUR) (**)*	*Average Number of Investors (**)*	*Management Company (last) (**)*
AC Arco Iris, FIM	Merged	01/2002	19/11/2003	-1,24%	6,21%	3.21	527	Ahorro Corporación
Ahorro Corporacion Responsable 30, FI	Merged	01/2002	24/09/2012	-0,32%	2,71%	6.12	920	Ahorro Corporación
Bankia Pro Unicef, FI	Merged	01/2002	06/03/2013	0,05%	1,23%	4.16	562	Bankia
Bankinter Sostenibilidad, FI	Active	11/2003		0,26%	0,89%	4.68	711	Bankinter
BBVA Bolsa Biofarma, FI	Merged	01/2002	22/01/2010	-0,19%	3,45%	11.51	2,18	BBVA
BBVA Bolsa Desarrollo Sostenible, FI	Active	01/2002		0,15%	4,01%	39.9	9,329	BBVA
BBVA Solidaridad, FI	Active	01/2002		0,14%	1,34%	15.42	486	BBVA
Biogen Investigación II, FIMS	Merged	01/2002	16/01/2003	-2,41%	3,99%	2.17	71	Banco Popular
BNP Paribas Fondo Solidaridad, FI	Merged	01/2002	06/06/2012	0,00%	1,30%	6.25	118	BNP España
Caja Ingenieros Mundial ISR, FI	Merged	01/2002	10/06/2009	-0,42%	2,80%	6.42	259	Caja Ingenieros
CAM Fondo Energias Renovables, FI	Merged	03/2007	25/03/2009	-2,09%	8,72%	5.67	250	Caja Mediterráneo
CAM Fondo Solidaridad, FI	Merged	09/2005	29/12/2009	-0,23%	2,04%	4.24	159	Caja Mediterráneo
Compromiso Fondo Etico, FI	Active	02/2006		-0,03%	1,53%	8.13	129	BNP Paribas España
El Monte Fondo Solidario, FI	Merged	01/2002	10/04/2008	0,00%	1,01%	3.6	118	Ahorro Corporación
ESAF Global Solidario, FI	Active	09/2009		0,14%	2,05%	3.39	87	B. Espirito Santo
Foncaixa Cooperacion Social Responsable Europa, FI	Merged	09/2005	19/11/2010	-0,49%	4,70%	5.16	652	La Caixa
Foncaixa Cooperacion, FI	Merged	01/2002	22/01/2008	0,02%	2,08%	7.81	525	La Caixa
FondEspaña Catedrales, FI	Merged	01/2002	08/04/2010	0,13%	0,85%	2.89	179	Caja España
Fondo Valencia Energias Renovables, FI	Merged	05/2007	18/09/2012	-0,52%	6,43%	4.18	976	Nordkapp
Fonengin ISR, FI	Active	01/2002		0,09%	1,14%	22.82	1,107	Caja Ingenieros
Fonpastor Energias Renovables, FI	Merged	06/2007	16/01/2009	-4,16%	9,37%	2.7	167	Banco Pastor
Iber Fondo 2020 Internacional, FIM	Merged	01/2002	10/02/2004	-0,59%	3,39%	45.49	2,261	Santander Central Hispano
Ibercaja H2O & Renovables A, FI	Merged	03/2007	30/07/2012	-1,24%	6,38%	12.47	2,118	Ibercaja
Ibercaja H2O & Renovables B, FI	Merged	03/2012	30/07/2012	-2,56%	4,85%	0	1	Ibercaja
Inveractivo Confianza, FI	Active	01/2002		0,24%	0,99%	82.76	2,759	Santander
Kutxabank Fondo Solidario, FI	Active	06/2005		0,21%	1,21%	5.05	367	Kutxabank
Microbank Fondo Etico, FI	Active	01/2002		0,12%	1,53%	9.19	413	La Caixa
Privado Inversion Socialmente Responsable, FI	Liquidated	10/2008	21/01/2010	0,31%	3,55%	0.3	1	Banca Privada de Andorra
Renta 4 Siglo XXI, FI	Merged	01/2002	07/03/2005	-0,35%	4,73%	1.77	132	Renta 4
Sabadell Etico y Solidario, FI	Merged	02/2009	08/01/2014	0,16%	3,24%	1.25	85	Banco Sabadell
Sabadell Inversion Etica Y Solidaria, FI	Active	12/2003		0,21%	1,87%	18.18	380	Banco Sabadell
Santander Responsabilidad Bolsa, FI	Merged	06/2007	16/04/2009	-2,66%	4,61%	1.49	12	Santander
Santander Responsabilidad Conservador, FI	Active	06/2003		0,24%	0,77%	31.48	228	Santander
Santander Solidario	Merged	01/2002	10/09/2002	-0,52%	0,97%	4.11	96	Santander Central Hispano
Santander Solidario Dividendo Europa, FI	Active	01/2002		0,20%	3,53%	19.71	617	Santander

Table 3: SR funds in Spain (2002-2014), investment objective and top 10 holdings

The table shows, for each SRI fund domiciled in Spain, the investment objective (Asset Type) and the top 10 holdings of each of them as in February 2014. Data marked with (**) have been obtained from INVERCO. The rest have been obtained from Lipper by Thomson Reuters.

a) Asset type and Top 4:

		4 Top Holdings at Closing/Merging or last date reported and percentage of the Net Worth invested							
Name of the SRI fund	*Asset Type (**)*	*Asset*	*Percentage of Asset Volume*	*Asset*	*Percentage of Asset Volume*	*Asset*	*Percentage of Asset Volume*	*Asset*	*Percentage of Asset Volume*
AC Arco Iris, FIM	Global	DANAHER ORDINARIAS	8.43	WASTE MANA ORDINARIAS	8.4	PALL C. ORDINARIAS	6.37	REPUB.SERV ORDINARIAS	5.51
Ahorro Corporacion Responsable 30, FI	International Mixed Fixed Income	UNION FENO PREF PERP	8.37	SPAIN (GOVERNMENT OF) REPO	7.4	SHELL INTL FINAN 3.000% 14-MAY-2013	7.07	BARCLAYS BANK PLC 5.250% 27-MAY-2014	4.94
Bankia Pro Unicef, FI	International Mixed Fixed Income	SPAIN (GOVERNMENT OF) REPO	18.99	ITALY 3.750% 01-AUG-2015	17.87	SPAIN 4.400% 31-JAN-2015	9.39	FIDELITY FUNDS - US DOLLAR CASH A-USD	9.14
Bankinter Sostenibilidad, FI	International Equity (Rest)	BANCO BILBAO VIZCAYA ARGENTARIA S.A. ORD	7.59	ALLIANZ SE ORD	6.78	TELEFONICA SA ORD	6.02	AT&T INC ORD	5.88
BBVA Bolsa Biofarma, FI	International Equity (Rest)	Johnson & Johnson -Usd-	8.48	Futuro Dj Stox 600 Health 1209	7.25	Pfizer Inc. -Usd-	7.18	Amgen Inc -Usd-	5.46
BBVA Bolsa Desarrollo Sostenible, FI	International Equity (Rest)	APPLE INC ORD	5.04	GOOGLE INC ORD	3.51	MICROSOFT CORP ORD	2.87	JOHNSON & JOHNSON ORD	2.66
BBVA Solidaridad, FI	Euro Mixed Fixed Income	ITALY 3.750% 01-AUG-2015	13.35	ITALY 4.250% 01-AUG-2014	10.24	BANCO BILBAO VIZCAYA ARGENTARIA SA REPO	9.81	SPAIN 4.250% 31-JAN-2014	9.74
Biogen Investigación II, FIMS	International Equity (Rest)	IBERAGENTES BIOGEN INVESTIGACI	100						
BNP Paribas Fondo Solidaridad, FI	Euro Mixed Fixed Income	SPAIN (GOVERNMENT OF) REPO	18	PARVEST SHORT TERM USD I C	13.28	FONDO DE AM 5.000% 17-JUN-2015	7.73	BANKINTER 2.625% 09-APR-2013	4.6
Caja Ingenieros Mundial ISR, FI	International Mixed Equity	DS11827 REINO DE ESPA¥A	12.5	NOVARTIS NOVARTIS	4.17	BAYER AG BAYER AG	3.72	B.BANKAME11 BANK OF AMERICA FL	3.6
CAM Fondo Energias Renovables, FI	International Equity (Rest)	AC UNITED UTILITIES GROUP PLC	6	AC Q-CELLS AG	5.89	AC SEVERN TRENT PLC	5.6	AC VEOLIA ENRONNEMENT	5.46
CAM Fondo Solidaridad, FI	Global	PAGARE CAIXA D´ESTALVIS TARRAG	9.56	CEDULAS CAJA MEDITERRANEO 6,12	7.44	PAGARE BANCO GUIPUZCOANO 21010	7.12	PA CAJA CASTILLA LA MANCHA 240	6.95
Compromiso Fondo Etico, FI	Global	BNP PARIBAS SA REPO	19.84	BMW FINANCE 5.000% 06-AUG-2018	5.4	BANKINTER SA 4.125% 22-MAR-2017	5.05	SPAIN 4.100% 30-JUL-2018	5.01
El Monte Fondo Solidario, FI	International Mixed Fixed Income	U.FEN.PREF E/06-05 PFD. I	9.48	TELEF.EMIS E/07-06 FLOAT	8.22	CITIGROUP E/02-06 FLOAT	7.33	ENDESA CAP E/09-06 FLOAT	4.99
ESAF Global Solidario, FI	Global	BANCO ESPIRITO SANTO SA REPO	40.71	EDM INVERSION R, FI	16.24	2002 GLOBAL FLECHA, SICAV, S.A.	8.92	M&G OPTIMAL INCOME EUR A-H GROSS ACC (HEDGED)	6.29
Foncaixa Cooperacion Social Responsable Europa, FI	European Equity	ROYAL DUTCH SHELL PLC A ORD	6.29	HSBC HOLDINGS PLC ORD	5.78	ROCHE HOLDING AG ORD	4.32	NOVARTIS AG ORD	4.06
Foncaixa Cooperacion, FI	International Mixed Equity	BN. DEL ESTADO 5,75% 30.07.32	7.22	BN.FRANCE OAT 3.75% 25.04.21	5.43	AC.TOTAL FINA ELF	4.94	BN.BELGIUM RETAIL 4.25% 28.09.	4.8
FondEspaña Catedrales, FI	Euro Mixed Fixed Income	SPAIN 5.350% 31-OCT-2011	9.71	GERMANY 3.750% 04-JAN-2017	7.42	SPAIN 4.000% 31-JAN-2010	5.9	TOTAL SA	0.68
Fondo Valencia Energias Renovables, FI	International Equity (Rest)	COPEL COMPANHIA PARANAENSE DE ENERGIA DR	5	COMPANHIA ENERGETICA DE MINAS GERAIS CEMIG DR	4.24	EMPRESA NACIONAL DE ELECTRICIDAD SA DR	3.87	GT ADVANCED TECHNOLOGIES INC ORD	3.71
Fonengin ISR, FI	International Mixed Fixed Income	CAJA INGENIEROS REPO	4.46	BARCLAYS BANK PLC 4.875% 13-AUG-2019	1.45	ALLIANZ FIN II 4.750% 22-JUL-2019	1.44	LVMH MOET HENNESSY LOUIS VUITTON SA 4.000% 06-APR-	1.38
Fonpastor Energias Renovables, FI	International Equity (Rest)	GAMESA	8.24	Q-CELL AG	7.81	VESTAS WIND SYSTEMS A/S	6.57	FIRST SOLAR	5.96
Iber Fondo 2020 Internacional, FIM	International Mixed Equity	TESORO DE ITALIA	18.93	TESORO DE ALEMANIA	11.41	iShares Trust	9.06	TESORO DE ESPAÑA	8.72
Ibercaja H2O & Renovables A, FI	International Equity (Rest)	WASTE MANAGEMENT INC ORD	9.81	REPUBLIC SERVICES INC ORD	9.65	GDF SUEZ SA ORD	6.7	NEXTERA ENERGY INC ORD	5.4
Ibercaja H2O & Renovables B, FI	International Equity (Rest)	WASTE MANAGEMENT INC ORD	9.81	REPUBLIC SERVICES INC ORD	9.65	GDF SUEZ SA ORD	6.7	NEXTERA ENERGY INC ORD	5.4
Inveractivo Confianza, FI	Euro Mixed Fixed Income	SPAIN (GOVERNMENT OF) REPO	6.25	SPAIN 0.000% 22-AUG-2014	5.69	CAJA DE AHORROS Y PENSIONES DE BARCELONA TIME/TERM	5.34	BANCO SANTANDER SA 0.000% 27-NOV-2014	4.11
Kutxabank Fondo Solidario, FI	Euro Mixed Fixed Income	KUTXABANK SA REPO	10.07	SPAIN 3.300% 31-OCT-2014	5.91	FONDO DE AM 2.250% 17-DEC-2016	5.78	INST CR OFICIAL 2.375% 31-OCT-2015	5.47
Microbank Fondo Etico, FI	International Mixed Equity	SPAIN (GOVERNMENT OF) REPO	6.65	BAYER AG ORD	3.04	GLAXOSMITHKLINE PLC ORD	2.85	BNP PARIBAS SA ORD	2.82
Privado Inversion Socialmente Responsable, FI	Global	SAM SUSTAINABLE GLOBAL FUND B	35.93	BGF NEW ENERGY FUND A2 EUR	33.19	PF(LUX)-EUR SHORT MID-TERM BONDS-P CAP	17.58		
Renta 4 Siglo XXI, FI	International Equity (Rest)								
Sabadell Etico y Solidario, FI	Euro Mixed Equity	ACA SA SOCIEDAD DE VALORES REPO	80.26						
Sabadell Inversion Etica Y Solidaria, FI	Euro Mixed Fixed Income	SPAIN 4.000% 30-JUL-2015	12.97	SPAIN 3.750% 31-OCT-2015	9.81	BANCO POPULAR ESPANOL SA TIME/TERM DEPOSIT	7.38	SPAIN 3.150% 31-JAN-2016	5.74
Santander Responsabilidad Bolsa, FI	European Equity	UKT TRESURY	18.16	TESORO DE ESPAÑA	12.24	BNP PARIBAS	2.89	HSBC HOLDINGS	2.89
Santander Responsabilidad Conservador, FI	Euro Mixed Fixed Income	SPAIN (GOVERNMENT OF) REPO	24.32	SPAIN 4.250% 31-OCT-2016	10.15	SPAIN 3.750% 31-OCT-2018	6.34	SPAIN 0.000% 22-AUG-2014	4.51
Santander Solidario	Mixed Fixed Income	TESORO DE ESPAÑA	40.27	TESORO DE FRANCIA	25.05	TESORO DE ITALIA	13.57	TESORO DE ALEMANIA	9.89
Santander Solidario Dividendo Europa, FI	European Equity	TELENOR ASA ORD	3.05	ROCHE HOLDING G PAR	2.98	SES SA DR	2.97	SPAIN (GOVERNMENT OF) REPO	2.73

b) Next Top 6:

	Next 6 Top Holdings at Closing/Merging or last date reported and percentage of the Net Worth invested											
Name of the SRI fund	*Asset*	*Percentage of Asset Volume*	*Asset*	*Percentage of Asset Volume*	*Asset*	*Percentage of Asset Volume*	*Asset*	*Percentage of Asset Volume*	*Asset*	*Percentage of Asset Volume*	*Asset*	*Percentage of Asset Volume*
AC Arco Iris, FIM	DONALSON ORDINARIAS	4.84	GAMESA ORDINARIAS	4.72	AGU.BARNA ORDINARIAS	4.61	KURITA WAT ORDINARIAS	4.27	METHANEX C ORD. S/N	3.97	NIPPON SHO ORDINARIAS	3.79
Ahorro Corporacion Responsable 30, FI	ROYAL BANK OF SCOTLAND PLC 5.750% 21-MAY-2014	4.63	BBVA FINANCE 2.750% 10-SEP-2012	4.56	ING GROEP 4.125% 11-APR-2016	4.52	SOCIETE GENERALE 1.641% 20-JUL-2013	4.51	MERRILL LYNCH & CO INC 0.968% 09-AUG-2013	4.2	INTESA SANPAOLO 0.782% 19-MAR-2014	4.06
Bankia Pro Unicef, FI	BBVA FINANCE 3.625% 14-MAY-2012	6.13	CAJA DE AHOR Y 3.375% 03-FEB-2012	6.11	ANDALUCIA 4.300% 10-OCT-2013	6.07	TOTAL SA ORD	1.01	BANCO SANTANDER SA ORD	0.57	BANCO BILBAO VIZCAYA ARGENTARIA S.A. ORD	0.56
Bankinter Sostenibilidad, FI	SANOFI SA ORD	5.75	JOHNSON & JOHNSON ORD	5.66	ING GROEP NV DR	4.79	TOTAL SA ORD	4.53	THE COCA-COLA CO ORD	4.43	POSTNL NV ORD	4.34
BBVA Bolsa Biofarma, FI	Merck And Co.Inc. - Usd-	5.36	Novartis Ag -Chf-	4.47	Abbott Laboratories - Usd-	4.28	Roche Holding Ag Nom -Chf-	4.09	Glaxosmithkline Plc -Gbp-	3.85	Sanofi-Aventis -Eur-	2.65
BBVA Bolsa Desarrollo Sostenible, FI	NESTLE SA ORD	2.65	WELLS FARGO & CO ORD	2.26	PROCTER & GAMBLE CO ORD	2.13	NOVARTIS AG ORD	2.1	HSBC HOLDINGS PLC ORD	2.07	VODAFONE GROUP PLC ORD	1.99
BBVA Solidaridad, FI	FRANCE 3.500% 25-APR-2015	7.48	FRANCE 3.000% 12-JUL-2014	7.25	FRANCE 4.000% 25-APR-2014	6.25	SPAIN 2.100% 30-APR-2017	5.86	NETHERLANDS 3.250% 15-JUL-2015	5.24	BELGIUM 2.750% 28-MAR-2016	5.18
Biogen Investigación II, FIMS												
BNP Paribas Fondo Solidaridad, FI	RTE EDF TRNSPORT 4.875% 06-MAY-2015	4.11	ELECTRICITE DE FRANCE SA 5.625% 23-JAN-2013	4.01	CJ AHRR GPZKP SN 5.125% 08-APR-2015	3.82	MERRILL LYNCH & CO INC 4.200% 31-OCT-2011	3.11	SPAIN 4.250% 31-OCT-2016	2.99	DEUTSCHE TELEKOM INTERNATIONAL FINANCE BV 5.750% 1	2.93
Caja Ingenieros Mundial ISR, FI	VODAFONE VODAFONE	3.19	B.MERR05/14 BONO MERRILL LYNCH	3.08	DEU.TELEKOM DEUTSCHE TELEKOM A	3	ENI2SPA ENI SPA	3	GOLDMAF2/15 GOLDMAN SACH FLOAT	3	TELEFONICA TELEFONICA	2.93
CAM Fondo Energias Renovables, FI	AC VESTAS WIND SYSTEMS A/S	5.46	AC GEBERIT AG-REG	5.24	AC SOLARWORLD AG	4.62	AC RENEWABLE ENERGY CORP AS	4.51	AC PENNON GROUP PLC	4.44	AC FIRST SOLAR INC	3.97
CAM Fondo Solidaridad, FI	BANCAJA FLOTANTE 101108	4.85	PAGARE CAJA AHORROS MP BALEARE	4.8	PAGARE CAJA INSULAR DE CANARIA	4.8	PAGARE CAJA SANTANDER Y CANTAB	4.78	PA CAJA RURAL DEL MEDITERRANEO	4.76	AC TOTAL FINA ELF SA	2.66
Compromiso Fondo Etico, FI	BANCO SANTANDER SA 3.625% 06-APR-2017	5.01	SPAIN 3.750% 31-OCT-2018	4.82	SOCIETE GENERALE 4.000% 20-APR-2016	3.82	BANKINTER SA TIME/TERM DEPOSIT	3.75	CAIXABANK SA 4.750% 18-MAR-2015	3.68	SPAIN 5.400% 31-JAN-2023	3.51
El Monte Fondo Solidario, FI	GOLDMAN E/10-03 FLOAT	4.95	BBVA SUB. E/10-05 VAR.	4.89	SAN.CONSUM OS. 09/06 FLOAT	4.89	HBOS PLC E/10-03 FLOAT	4.59	MERRILL L, E/06-05 FLOAT	4.32	HSBC BANK E/09-05 FLOAT	4.16
ESAF Global Solidario, FI	CARMIGNAC PATRIMOINE A EUR ACC	6	CARMIGNAC SECURITE	5.85	UNIDEUTSCHLAND XS	3.08	CATALUNYA BANC SA TIME/TERM DEPOSIT	2.84				
Foncaixa Cooperacion Social Responsable Europa, FI	VODAFONE GROUP PLC ORD	3.66	BP PLC ORD	3.28	GLAXOSMITHKLINE PLC ORD	3.26	TELEFONICA SA ORD	3.2	SAP AKTIENGESELLSCHAFT ORD	3.18	DIAGEO PLC ORD	2.71
Foncaixa Cooperacion, FI	AC.BP PLC	4.06	AC.HSBC HOLDINGS PLC (75P)	3.28	AC.ROYAL DUTCH SHELL PLC-A SHS	3.12	AC.NOKIA	2.95	AC.VODAFONE PLC	2.74	AC.BANCO SANTANDER CENTRAL HIS	2.61
FondEspaña Catedrales, FI	BANCO SANTANDER SA	0.64	TELEFONICA SA	0.62	E.ON AG	0.41	SANOFI-AVENTIS SA	0.34	ENI	0.33	SIEMENS AG	0.33
Fondo Valencia Energias Renovables, FI	EDP ENERGIAS DE PORTUGAL SA ORD	3.69	DANAHER CORP ORD	3.36	VERBUND AG ORD	3.2	UNITED UTILITIES GROUP PLC ORD	3.18	INTERNATIONAL POWER PLC ORD	3.12	ANDRITZ AG ORD	2.97
Fonengin ISR, FI	SHELL INTL FINAN 4.500% 09-FEB-2016	1.38	AUSTRALIA AND NEW ZEALAND BANKING GROUP LTD 3.750%	1.35	BANCO BILBAO VIZCAYA ARGENTARIA S.A. 4.250% 18-JAN	1.34	TELSTRA CORPORATION LTD 3.875% 24-JUL-2015	1.33	BG ENERGY CAP 3.000% 16-NOV-2018	1.31	SPAIN 4.100% 30-JUL-2018	1.31
Fonpastor Energias Renovables, FI	REPOWER SYSTEMS AG-REG	5.53	IBERDROLA RENOVABLES	4.57	EDF ENERGIES NOUVELLES SA	4.14	EDP RENOVAVEIS	3.81	NORDEX AG	3.57	SUNWAYS AG	3.43
Iber Fondo 2020 Internacional, FIM	TESORO DE ESTADOS UNIDOS	7.91	TESORO DE FRANCIA	6.44	DAIWA ETF - TOPIX	2.53	BP PLC	2.03	HSBC HOLDINGS	1.93	VODAFONE GROUP	1.92
Ibercaja H2O & Renovables A, FI	EDP RENOVAVEIS SA ORD	5.02	SIEMENS AG ORD	4.83	SCHNEIDER ELECTRIC SA ORD	4.55	STERICYCLE INC ORD	4.39	VEOLIA ENVIRONNEMENT VE SA ORD	4.21	SUEZ ENVIRONNEMENT COMPANY SA ORD	3.89
Ibercaja H2O & Renovables B, FI	EDP RENOVAVEIS SA ORD	5.02	SIEMENS AG ORD	4.83	SCHNEIDER ELECTRIC SA ORD	4.55	STERICYCLE INC ORD	4.39	VEOLIA ENVIRONNEMENT VE SA ORD	4.21	SUEZ ENVIRONNEMENT COMPANY SA ORD	3.89
Inveractivo Confianza, FI	SPAIN 5.400% 31-JAN-2023	3.96	SPAIN 3.300% 31-OCT-2014	3.88	SPAIN 0.000% 19-SEP-2014	3.79	BANCO ESPANOL DE CREDITO SA TIME/TERM DEPOSIT	3.72	SPAIN 3.750% 31-OCT-2018	3.24	BANKINTER SA 4.125% 22-MAR-2017	3.08
Kutxabank Fondo Solidario, FI	SPAIN 0.000% 21-FEB-2014	4.26	INST CR OFICIAL 5.125% 25-JAN-2016	3.3	BANCO FINAN 5.250% 07-APR-2016	3.08	INST CR OFICIAL 4.500% 17-MAR-2016	3.05	FONDO DE AM 4.000% 17-DEC-2015	3.02	FONDO DE AM 4.800% 17-MAR-2014	2.97
Microbank Fondo Etico, FI	ROYAL DUTCH SHELL PLC ORD	2.8	BANCO DE SABADELL SA TIME/TERM DEPOSIT	2.57	ITALY 5.500% 01-NOV-2022	2.32	UNICREDIT SPA 3.375% 31-OCT-2017	2.2	CEDULAS BANCO 3 4.250% 26-APR-2017	2.16	TELECOM ITALIA SPA 4.750% 25-MAY-2018	2.16
Privado Inversion Socialmente Responsable, FI												
Renta 4 Siglo XXI, FI												
Sabadell Etico y Solidario, FI												
Sabadell Inversion Etica Y Solidaria, FI	SPAIN 4.250% 31-OCT-2016	5.44	SPAIN 3.000% 30-APR-2015	5.27	SPAIN 3.300% 30-JUL-2016	4.86	SPAIN 4.500% 31-JAN-2018	3.68	SPAIN 3.250% 30-APR-2016	3.54	SPAIN 4.400% 31-JAN-2015	3.14
Santander Responsabilidad Bolsa, FI	ZURICH FINANCIAL SERVICES	2.85	NOVARTIS	2.48	TESCO	2.48	AVIVA PLC	2.34	DEUTSCHE TELEKOM	2.34	WPP GROUP PLC	2.34
Santander Responsabilidad Conservador, FI	BANCO SANTANDER SA 0.000% 27-NOV-2014	4.17	BANCO SANTANDER SA TIME/TERM DEPOSIT	4.03	SPAIN 5.400% 31-JAN-2023	3.39	UNICREDIT SPA 4.375% 11-SEP-2015	2.81	BANKINTER SA 2.750% 26-JUL-2016	2.46	CAJAS RURALES 3.38% 05/16/16 SR:	2.39
Santander Solidario	NOKIA	1.01	BNP PARIBAS	0.91	AVENTIS SA	0.88	ING GROEP NV	0.88	SIEMENS	0.85	DEUTSCHE BANK	0.8
Santander Solidario Dividendo Europa, FI	WPP PLC ORD	2.66	UNILEVER NV DR	2.52	REED ELSEVIER NV ORD	2.52	SANOFI SA ORD	2.48	COMPASS GROUP PLC ORD	2.34	MONDI PLC ORD	2.25

Table 4: Evolution of SRI funds in Spain in figures

The table shows the evolution overtime of SRI asset volume, number of SR investors, number of SRI funds and number of companies managing SRI funds in comparison to the figures for the same variables for the whole fund market, as measured by INVERCO. Data are given for the month of December for the years 2002-2013.

Date	*SRI Asset Volume (thousand EUR)*	*Total Asset Volume (thousand EUR)*	*Number of SRI Investors*	*Total number of Investors*	*Number of SR funds*	*Total number of funds*	*Number of companies managing SRI funds*	*Total number of management companies*
December 2002	355,080	81,133,390	28,177	3,717,709	18	1,688	11	110
December 2003	324,176	92,796,163	24,977	3,696,795	19	1,676	12	104
December 2004	328,080	108,338,794	30,980	3,991,021	19	1,755	12	103
December 2005	373,071	130,551,174	26,117	4,128,741	21	1,803	14	102
December 2006	507,780	193,412,484	29,926	6,447,926	21	2,010	15	106
December 2007	464,993	178,595,815	29,495	5,940,335	26	2,103	17	92
December 2008	213,276	81,836,155	20,398	2,999,273	26	2,043	17	96
December 2009	224,481	102,340,641	17,617	3,427,329	26	1,946	18	94
December 2010	196,011	81,477,833	15,743	3,167,293	20	1,723	15	96
December 2011	173,217	66,379,098	14,937	2,703,509	18	1,704	14	92
December 2012	146,492	62,781,519	11,192	2,377,852	18	1,645	14	83
December 2013	297,358	100,845,089	13,288	3,225,013	14	1,686	10	76

Table 5: Drivers and proxy variables

The table shows the proposed drivers for SRI investment in Spain and the proxy variables selected.

Driver	Proxy variable	Name of the variable in the paper
SRI returns in comparison to conventional returns	Relative performance: Return	MR
SRI risk in comparison to conventional risk	Relative performance: Risk	MD
SRI performance in comparison to conventional performance	Relative performance: Risk-adjusted return	MS
SRI demand: Investors	Number of SRI investors	SRIInvestors
SRI demand: 'Green' sentiment	'Green' energy consumption in relation with total energy consumption	FECRatio and IECRatio
SRI supply	Number of SRI funds and number of management companies managing SRI funds	SRIIF and SRIMC
General economic conditions	IPI, GDP	IPI

Table 6: Descriptive statistics December 2002-December 2013

The table shows the main descriptive statistics of the dependent variable and of possible explanatory variables (*MR*, *MD*, *MS*, *SRIIF*, *SRIMC*, *SRIInvestors*, *FECRatio*, *IECRatio* and *IPI*) for the sample period December 2002-December 2013. *MR* and, consequently, *MS* are given as a fraction of unity; *FECRatio* and *IECRatio* are measured in percentage.

Variable	Mean	Median	Minumum	Maximum	Standard Deviation	Coefficient of variation	Asymmetry	Excess Kurtosis
SRIRatio	-5.92	-5.93	-6.17	-5.43	0.15	0.02	0.76	0.60
MR	-0.14	-0.05	-3.71	1.64	0.72	5.13	-2.12	8.90
MD	0.23	0.05	-0.26	1.52	0.41	1.82	1.51	1.28
MS	0.05	0.01	-0.96	0.81	0.30	5.44	-0.06	0.44
SRIIF	20.14	19.00	14.00	26.00	3.48	0.17	0.26	-0.71
SRIMC	13.95	14.00	10.00	18.00	2.30	0.16	-0.16	-1.02
SRIInvestors	21,421.00	23.16	11,188.00	32,400.00	6,380.20	0.30	-0.06	-1.32
FECRatio	0.03	0.04	0.00	0.08	0.03	0.99	0.08	-1.80
IECRatio	0.07	0.05	0.01	0.17	0.05	0.69	0.24	-1.49
IPI	-2.32	-0.12	-37.91	15.24	8.94	3.85	-1.43	2.73

Table 7: Matrix of correlations

The table shows the correlation matrix of the possible explanatory variables of the model (*MR*, *MD*, *MS*, *SRIIF*, *SRIMC*, *SRIInvestors*, *FECRatio*, *IECRatio* and *IPI*) during the period December 2002-December 2013.

	MR	MD	MS	SRIIF	SRIMC	SRIInvestors	FECRatio	IECRatio	IPI
MR	1	-0.2330	0.5294	-0.1639	-0.1302	-0.0684	0.0293	0.0466	0.1367
MD		1	-0.1125	0.5588	0.6134	-0.2306	0.4240	0.3270	-0.6357
MS			1	0.1631	-0.0094	0.3666	-0.3873	-0.4126	0.2339
SRIIF				1	0.8585	0.4125	-0.1901	-0.2857	-0.3315
SRIMC					1	0.0276	0.2087	0.1269	-0.3601
SRIInvestors						1	-0.9207	-0.9151	0.2903
FECRatio							1	0.9484	-0.3962
IECRatio								1	-0.3180
IPI									1

Table 8: Individual models estimated

The table shows, for each of the individual models estimated, the estimated coefficients for the different explanatory variables, as well as the significance level of the coefficient (*** p<0.01, ** p<0.05, * p<0.1). To help discriminate between models, the table includes 3 measures of goodness-of-fit: adjusted R squared, Akaike criterion and Schwartz criterion.

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
Variables	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance
constant	-5.92648	***	-5.89003	***	-5.92839	***	-5.42780	***	-6.21709	***	-5.81098	***	-5.93666	***
MR (-1)	-0.0194324													
MD (-1)			-0.149415	***										
MS (-1)					0.0830497	***								
SRIMC							-0.0352923	***						
SRIInvestors									1.38672e-05	***				
FECRatio											-3.29879	***		
IPI(-12)													0.00708037	***
Adjusted R squared	0.002454		0.187006		0.023197		0.303479		0.361790		0.459835		0.368463	
Akaike criterion	-142.2667		-169.2704		-145.0374		-180.2828		-191.9111		-214.0946		-248.4438	
Schwartz criterion	-136.5011		-163.5048		-139.2717		-174.5021		-186.1304		-208.3139		-242.8688	

Table 9: Models estimated

The table shows, for each of the models estimated for the full sample, the estimated coefficients for the different explanatory variables, as well as the significance level of the coefficient (*** p<0.01, ** p<0.05, * p<0.1). To help discriminate between models, the table includes 3 measures of goodness-of-fit: adjusted R squared, Akaike criterion and Schwartz criterion.

	Model 8		Model 9		Model 10		Model 11		Model 12	
Variables	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance
constant	−5.90520	***	−6.13437	***	-6.07931	***	−5.82516	***	−5.88641	***
MR (-1)	−0.0751630	***	−0.0347208	**	-0.02489	**	−0.0243684	*	−0.0203061	*
MD (-1)	−0.167615	***	−0.120028	***	-0.05248	***	−0.0710586	***	−0.0260205	
MS (-1)	0.154412	***	0.0209722		0.04209		−0.00850044		0.0288300	
SRIInvestors			1.08387e-05	***	6.81843e-06	***				
FECRatio							−2.79508	***	−1.62321	***
IPI(-12)					0.00390	***			0.00424176	***
Adjusted R squared	0.296534		0.463872		0.588300		0.499651		0.590148	
Akaike criterion	−186.4180		−221.3107		-295.9256		−230.4275		−296.4654	
Schwartz criterion	−174.8868		−206.8967		-279.2006		−216.0135		−279.7405	

Table 10: Models estimated (December 2002-August 2008)

The table shows, for each of the models estimated for the sample period December 2002-August 2008, the estimated coefficients for the different explanatory variables, as well as the significance level of the coefficient (*** p<0.01, ** p<0.05, * p<0.1). To help discriminate between models, the table includes 3 measures of goodness-of-fit: adjusted R squared, Akaike criterion and Schwartz criterion.

	Model 13		Model 14		Model 15		Model 16		Model 17	
Variables	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance
constant	−5.86593	***	−5.87022	***	−5.77035	***	−5.86850	***	−5.77128	***
MR (-1)			−0.0172834		−0.0143475		−0.0166969		−0.0140434	
MD (-1)			0.0269235		0.0156824		0.0275748		0.0163099	
MS (-1)			0.0001565		−0.0100566		−0.00139138		−0.0108100	
SRIInvestors					−3.56121e-06				−3.49004e-06	
IPI(-12)	−0.000475175						−0.000579861		−0.000358683	
Adjusted R squared	-0.017227		-0.006881		-0.002546		-0.024625		-0.021827	
Akaike criterion	−145.9071		−144.5931		−143.9221		−142.7022		−141.9643	
Schwartz criterion	−141.8564		−136.4917		−133.7953		−132.5754		−129.8122	

Table 11: Models estimated (September 2008-December 2013)

The table shows, for each of the models estimated for the sample period September 2008-December 2013, the estimated coefficients for the different explanatory variables, as well as the significance level of the coefficient (*** p<0.01, ** p<0.05, * p<0.1). To help discriminate between models, the table includes 3 measures of goodness-of-fit: adjusted R squared, Akaike criterion and Schwartz criterion.

	Model 17		Model 18		Model 19		Model 20		Model 21		Model 22		Model 23	
Variables	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance
constant	−5.99973	***	−6.00224	***	−5.99252	***	−6.13281	***	−6.06815	***	−5.96781	***	−5.96808	***
MR (-1)			−0.0378964	***	−0.0226037	*	−0.0349871	**	−0.0214491	*	−0.0374361	**	−0.0222988	*
MD (-1)			−0.0638825	***	−0.0249329		−0.114821	***	−0.0556405		−0.0709255	**	−0.0299905	
MS (-1)			0.087366	*	0.0433274		0.0789937		0.040006		0.08416		0.0411170	
SRIInvestors							0.0000098		5.67673e-06					
FECRatio											−0.528408		−0.375249	
IPI(-12)	0.0044866	***			0.0040787	***			0.00393916	***			0.0040728	***
Adjusted R squared	0.357420		0.175026		0.362464		0.119525		0.364001		0.083460		0.352477	
Akaike criterion	−175.8195		−158.7501		−173.4981		−152.8357		−172.7466		−150.2664		−171.5974	
Schwartz criterion	−171.5018		−150.1775		−162.7037		−142.0412		−159.7933		−139.4720		−158.6441	

8. Figures

Figure 1: Percentage of SRI AuM in Europe

The figure shows the evolution of the ratio of SRI Assets under Management (from Eurosif) and Total Assets under Management (from EFAMA) in 2007, 2009 and 2011 in different countries of Europe.

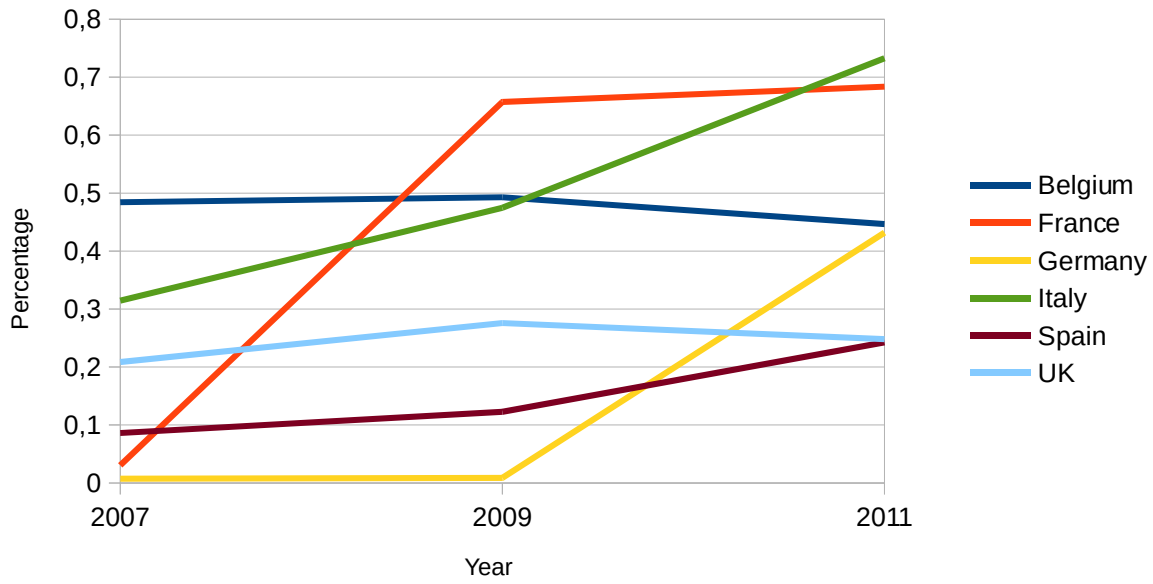


Figure 2: Investment funds' data in Spain (2002/01-2014/02)

The figure shows for SRI funds and for the whole fund market separately the asset volume, number of investors, number of funds active and number of management companies managing investment funds (the data about SRI funds are always measured by the secondary Y-axis), based in data by INVERCO.

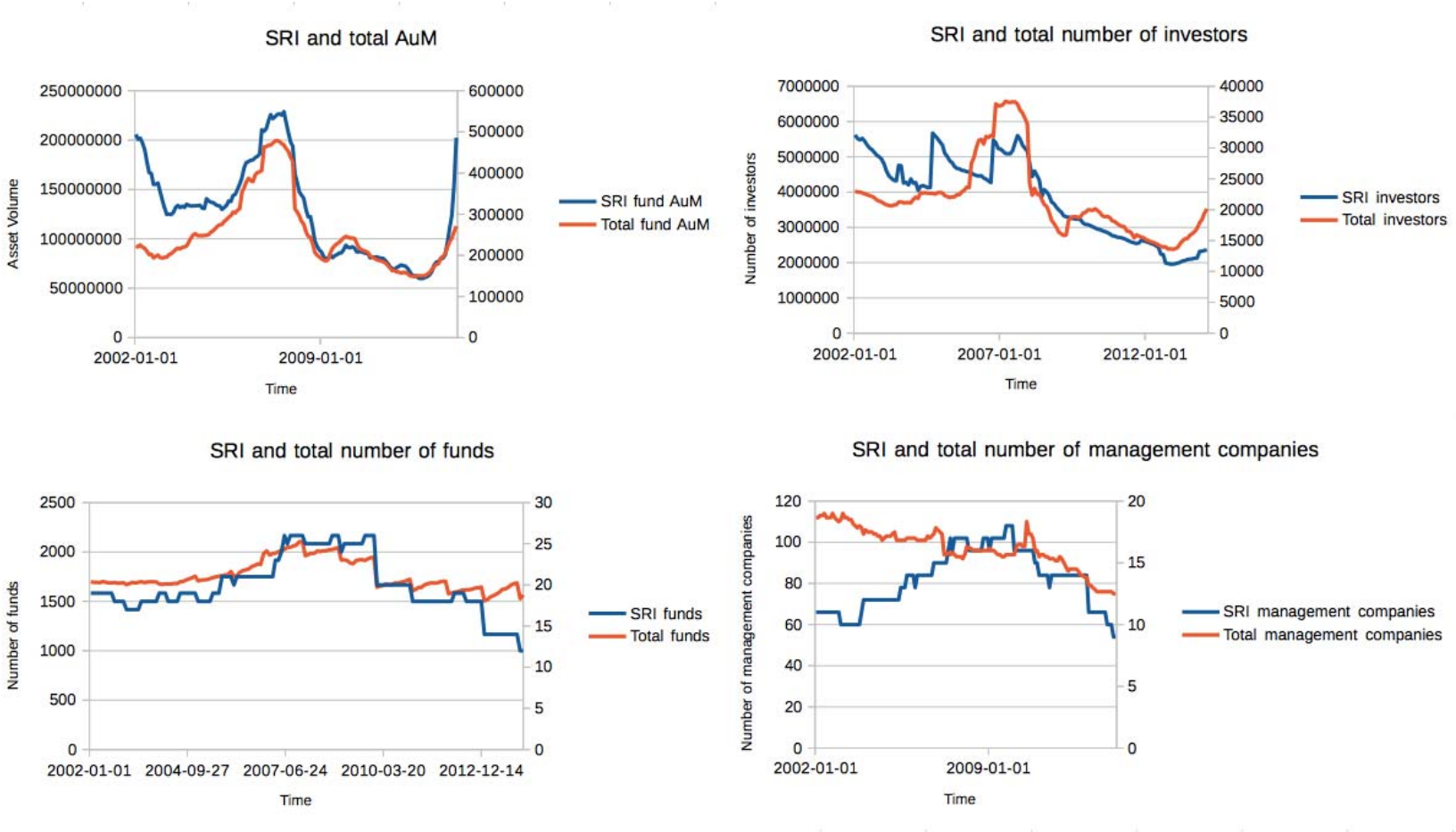


Figure 3: SRI Fund Asset Volume in Spain (2002/01-2014/02)

The figure shows the evolution of the SRI fund asset volume in Spain measured in thousand euros with and without the *BBVA Extra 5 II Garantizado* Fund along the sample (January 2002-February 2014) as reported by INVERCO.

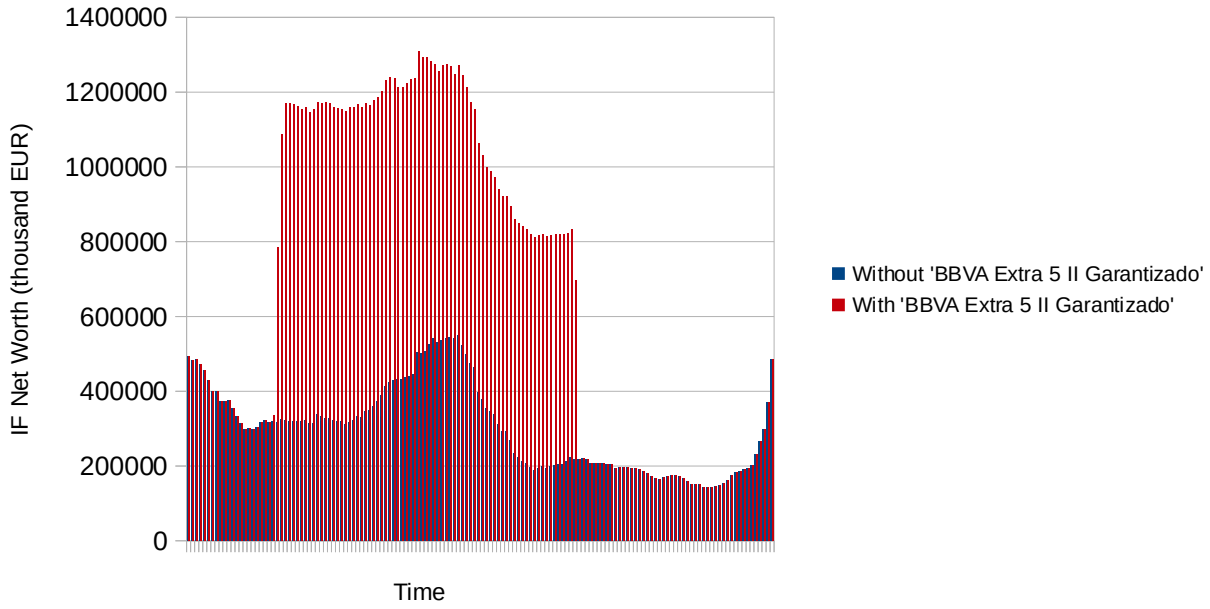
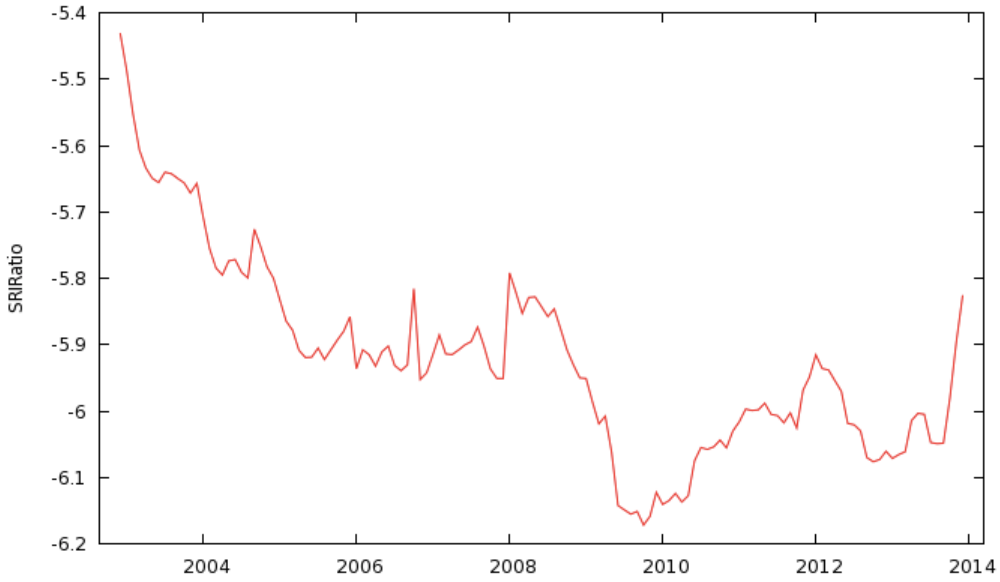


Figure 4: Dependent and independent variables

The figure shows the graphs of the evolution of the dependent variable (*SRIRatio*) and all of the possible explanatory variables (*MR*, *MD*, *MS*, *SRIIF*, *SRIMC*, *SRIInvestors*, *FECRatio*, *IECRatio* and *IPI*) during the sample period December 2002-December 2013.

a) Dependent variable:



b) Independent variables: