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THE PERFORMANCE OF SOCIALLY RESPONSIBLE FUNDS
DOES THE SCREENING PROCESS MATTER?

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THE PERFORMANCE OF SOCIALLY RESPONIBLE FUNDS: DOES THE SCREENING PROCESS MATTER?

NON-TECHNICAL SUMMARY

Socially Responsible Investment (SRI) is now quite popular in financial markets. This has prompted a surge of interest in the financial performance of mutual funds that practice SRI: Does the inclusion of environmental, social and governance criteria in the investment decision-making process hurt risk-adjusted returns, or does it lead to a "win-win" strategy, a sort of double dividend? As of 2010, more than fifty academic papers have examined this issue, all of which are very uniform in their methodology. They almost unanimously show that financial performance of SRI funds is not significantly different relative to their conventional peers or relative to a benchmark index. Actually, the absence of an overall effect is not surprising. SRI funds are very heterogeneous and socially- or environmentally-friendly investments may be a source of competitive advantage in some situations, but not in all. The debate on the economic and financial impact of corporate social responsibility should move away from the question "does it pay to be good?" to "when does it pay to be good?".

In this study, we assess the financial performances *within* SRI mutual funds. In particular, we examine whether the financial performance of these funds is related to the characteristics of the extra-financial screening process. Our sample is composed with French SRI mutual funds.

Modern SRI takes its roots in the US in the 1970s and spread slowly to other Anglo-Saxon countries and to the rest of the world. In Continental Europe, the growth of SRI dates back only to the 1990s. But now, the European market is larger and is expanding faster than the US one. This argument alone could be enough to justify interest in European markets. More importantly, the practices significantly differ on both sides of the Atlantic. In particular, almost all SRI funds in the US use exclusion criteria. This is far from being the case in Europe, particularly in France: in our sample, only one SRI fund out of three applied such criteria. Instead, in Europe, SRI funds select companies from *all* industries, provided that these companies are the leading ones with respect to ESG criteria (environment, social, and governance). This so-called best-in-class approach is often considered at the cutting-edge of SRI.

In this study, we examine the significance of the extra-financial screening process applied by fund managers on their financial performance. To do so, we build three main sets of explanatory variables. First, we use the number of exclusion criteria to measure the extent of the screening intensity. We hypothesize a U-shaped relationship between screening intensity, measured by the number of exclusion criteria, and financial performance. The second variable of interest concerns the nature of the extra-financial screens, that is, whether fund managers focus on specific ESG issues and whether they apply sectoral or transversal screens. In particular, we hypothesize that the only damaging exclusion criteria for SRI investors are those which target specific sectors. Third, we examine the potential impact of the quality of the extra-financial screening process, which is measured in two different ways. On one hand, we use SRI ratings computed by Novethic (the leading information center in France on SRI)

to gauge the social responsibility of the French SRI funds. On the other hand, we evaluate the "Strategy Distinctiveness Index" proposed by Sun, Wang and Zheng (2011), which captures managerial skill by assessing the extent to which a fund's returns differ from those of its peers.

Our study provides some salient results. First, as expected, we show that SRI mutual funds do not outperform the market, whatever the performance measure considered. Then, we confirm empirically that the SRI screening process may have a cost: the financial performance of SRI funds is hurt by the exclusion of non-socially responsible stocks. Like Barnett and Salomon (2006), we also find that this initial negative effect is partly offset as the number of screens increases. Further, we show that only sectoral screens (such as avoiding sin stocks) pull down financial performance, while transversal screens (commitment to UN Global Compact Principles, ILO/Rights at Work, etc.) do not have any impact. Moreover, it is not clear whether one of the ESG factors influences the financial performance of SRI funds more than the others, but these issues need further analysis. Lastly, when the quality of the SRI selection process is proxied by the rating provided by Novethic, its impact is not significant, while a higher strategy distinctiveness amongst SRI funds, which also gives information on the quality of the selection process, is associated with better financial performance.

ABSTRACT

In this study we examine whether the financial performances of socially responsible investment (SRI) mutual funds are related to the features of the screening process. Based on a sample of French SRI funds, we find evidence that a greater screening intensity slightly reduces financial performance (but the relationship runs in the opposite direction when screening gets tougher). Further, we show that only sectoral screens – such as avoiding "sin" stocks – decrease financial performance, while transversal screens – commitment to UN Global Compact Principles, ILO/Rights at Work, etc. –have no impact. Lastly, when the quality of the SRI selection process is proxied by the rating provided by Novethic, its impact is not significant, while a higher strategy distinctiveness amongst SRI funds, which also gives information on the quality of the selection process, is associated with better financial performance.

Keywords: Socially Responsible Investment (SRI), Sustainable and Responsible Investment, Ethical Investment, Corporate Social Responsibility (CSR), Strategy Distinctiveness Index, Portfolio Choice, Ratings.

JEL Classification: G11, Q56, C32.

L'IMPACT DES CRITERES EXTRA-FINANCIERS SUR LES PERFORMANCES DES FONDS ETHIQUES

RÉSUMÉ NON TECHNIQUE

Depuis le début des années 2000, l'encours en France des fonds éthiques – autrement appelés fonds d'investissement socialement responsables (ISR) – a été multiplié par dix. Certes, la pratique reste marginale (à peine quelques pourcents des encours totaux), mais cette croissance a suscité un grand intérêt pour les performances financières de ces fonds. Est-il possible de concilier performance financière, protection de l'environnement et promotion des valeurs sociales ? Pour certains, une gestion soucieuse des parties prenantes est potentiellement source de compétitivité et de gains de productivité pour l'entreprise ; c'est l'idée du « double dividende », des stratégies « gagnantes-gagnantes ». L'idée est séduisante, mais est-elle vérifiée ? Depuis les années 1990, une cinquantaine d'articles académiques ont abordé cette question. Ces études utilisent la même méthodologie et montrent quasi-unanimement que les fonds ISR ont, en moyenne, des performances financières très similaires aux fonds traditionnels. Ce résultat n'est guère surprenant, surtout que ces études font l'hypothèse que ces fonds sont homogènes. Or, cette hypothèse est loin d'être vérifiée et il semble bien que la question pertinente ne soit pas tant, pour reprendre un adage anglo-saxon, « *does it pay to be good?* » que « *when does it pay to be good?* ».

Dans cet article, nous examinons les différences de performance entre les fonds ISR, pour un échantillon de 116 fonds français sur la période 2004-2007. Nous estimons d'abord la rentabilité corrigée du risque des fonds ISR commercialisés en France : comme attendu, les fonds ISR de notre échantillon ne sur-performent ni ne sous-performent le marché. Nous examinons ensuite – c'est le cœur même de l'article – dans quelle mesure les caractéristiques du processus de sélection conditionnent la performance des fonds ISR. A cet égard, notre article prolonge les travaux de Barnett et Salomon (2006) et de Renneboog, Horst et Zhang (2008). L'essentiel des informations sur le processus de sélection des fonds nous a été fournies par Novethic, le principal centre français de recherche sur l'ISR. Sur la base de ces informations, nous construisons trois groupes de variables. Le premier décrit l'intensité du processus de sélection : le gérant utilise-t-il des critères d'exclusion ? si oui, combien ? Le second groupe de variables porte sur la nature des filtres extra-financiers : l'accent est-il mis sur l'environnement, le social, ou la gouvernance d'entreprise ? les critères sont-ils plutôt de type sectoriel ou transversal ? Le troisième groupe concerne la qualité du processus de sélection extra-financière. Celle-ci est d'abord mesurée en se basant sur les ratings ISR de Novethic qui synthétisent un grand nombre d'informations (l'équipe est-elle composée de spécialistes ISR ? le fond externalise-t-il la gestion ISR ? la sélection est-elle transparente ? etc.). En complément de ces ratings, nous utilisons également un indicateur qui mesure *ex post* l'originalité du fonds : l'hypothèse sous-jacente est que les meilleurs fonds ont intérêt à pratiquer une gestion active et à se distinguer de leurs concurrents.

Nos résultats confirment l'existence d'une relation négative entre le nombre de critères d'exclusion et la performance financière des fonds. Mais tous les critères ne se valent pas.

Seuls les filtres sectoriels (ceux qui conduisent à l'exclusion de toutes les entreprises d'un même secteur) conduisent à une sous-performance des fonds ; les filtres transversaux (tels que l'engagement à respecter les principes du Pacte mondial des Nations Unies, les droits fondamentaux au travail de l'OIT, ...) n'ont, quant à eux, pas d'impact. En outre, la qualité du processus de sélection ISR, telle qu'elle est appréciée par Novethic, n'influence pas les performances financières ; toutefois, plus le fonds s'écarte de ce que pratiquent les autres, plus sa performance est élevée en moyenne.

Nos résultats peuvent être interprétés en faveur des fonds *best-in-class*, par opposition à ceux qui pratiquent l'exclusion et qui sont *a priori* moins bien diversifiés. Il n'en reste pas moins que l'exclusion a un grand mérite : celui de la simplicité. Et il tout à fait possible que certains investisseurs soient prêts à sacrifier un peu de leur performance financière à condition d'avoir un portefeuille qui reflète mieux leurs valeurs.

RÉSUMÉ COURT

Cet article traite de la performance financière des fonds socialement responsables (ISR). La plupart des études antérieures ont cherché à savoir si, globalement, les fonds ISR parvenaient à « battre le marché ». Notre intérêt se porte ici sur les différences de performances financières *entre* fonds ISR. Plus précisément, nous examinons si les performances financières peuvent être expliquées par les caractéristiques de la sélection extra-financière. Notre échantillon est composé de 116 fonds ISR français sur la période 2004-2007. Les informations sur le processus de sélection nous ont été fournies, pour l'essentiel, par Novethic, le principal centre français de recherche sur l'ISR. Sur la base de ces informations, nous construisons trois groupes de variables : le premier décrit l'intensité du processus de sélection (le gestionnaire de fonds utilise-t-il des critères d'exclusion ? si oui, combien ?). Le second groupe de variables porte sur la nature des filtres extra-financiers (l'accent est-il mis sur l'environnement, le social, ou la gouvernance d'entreprise ? les critères sont-ils plutôt de type sectoriel ou transversal ?). Le troisième groupe concerne la qualité du processus de sélection extra-financière (appréciée en se basant sur les ratings ISR de Novethic ou sur l'originalité de la sélection). Nos résultats confirment l'existence d'une relation négative entre le nombre de critères d'exclusion et la performance financière des fonds. Cependant, seuls les filtres sectoriels (ceux qui conduisent à l'exclusion de toutes les entreprises d'un même secteur) conduisent à une sous-performance des fonds ; les filtres transversaux (tels que l'engagement à respecter les principes du Pacte mondial des Nations Unies, les droits fondamentaux au travail de l'OIT, ...) n'ont, quant à eux, pas d'impact. La qualité du processus de sélection ISR, telle qu'elle est appréciée par Novethic, n'influence pas les performances financières ; toutefois, plus le fonds s'écarte de ce que pratiquent les autres fonds, plus en moyenne sa performance financière est élevée.

Classification JEL : G11, Q56, C32.

Mots-clefs : Investissement socialement responsable (ISR), investissement éthique, investissement responsable et durable, responsabilité sociale des entreprises (RSE), choix de portefeuille, ratings.

THE PERFORMANCE OF SOCIALLY RESPONIBLE FUNDS: DOES THE SCREENING PROCESS MATTER?[◊]

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1. INTRODUCTION

Socially Responsible Investment (SRI) is now quite popular in financial markets. This has prompted a surge of interest in the financial performance of mutual funds that practice SRI: Does the inclusion of environmental, social and governance criteria in the investment decision-making process hurt risk-adjusted returns, or does it lead to a "win-win" strategy, a sort of double dividend? As of 2010, more than fifty academic papers have examined this issue, all of which are very uniform in their methodology. They almost unanimously show that financial performance of SRI funds is not significantly different relative to their conventional peers or relative to a benchmark index. Actually, the absence of an overall effect is not surprising. SRI funds are very heterogeneous (Sandberg *et al.,* 2009) and socially- or environmentally-friendly investments may be a source of competitive advantage in some situations, but not in all. As emphasized by King and Lenox (2001), the debate on the economic and financial impact of corporate social responsibility should move away from the question "*does it pay to be good?*" to "*when does it pay to be good?*". Among the many studies on the financial performance of SRI funds, very few examine the issue from this angle. In this regard, the contributions of Barnett and Salomon (2006) and Renneboog, Ter Horst and Zhang (2008b) should be highlighted. Then, these two seminal papers have been followed by Lee, Humphrey, Benson and Ahn (2010), Renneboog, Ter Horst and Zhang (2011), Humphrey and Lee (2011), Laurel (2011) and Biehl, Hoepner and Wilson (2011).

Barnett and Salomon (2006) measure how screening intensity affects the financial performance of the SRI funds. Their results are obtained from a panel of 61 SRI funds in the US over the period 1972-2000. Unlike previous studies, they do not compare the performance of SRI funds to non-SRI funds. Instead, they focus on the SRI funds' heterogeneity. Interestingly, they find a curvilinear relationship between screening intensity, measured by the number of screening criteria, and financial performance. Their main result is the following: "*as the number of social screens used by a SRI fund increases, financial returns*

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decline at first, but then rebound as the number of screens reaches a maximum (…), however, performance does not recover to reach the levels achieved by those funds with one screen". Moreover, their results suggest that community relations screening increased financial performance, while environmental and labor relations screening decreased it. Renneboog, Ter Horst and Zhang (2008b) examine the impact of the screening activity on risk-adjusted returns and risk loading. They show that the number of social screens reduces significantly the financial performance of the SRI funds, while the number of ethical screens, the number of sin screens, or the number of environmental screens do not have any significant impact (unfortunately, they do not test for a curvilinear relationship). With a sample similar to that used by Barnett and Salomon (2006), that is 61 US SRI funds, but over the period 1989-2006, Lee, Humphrey, Benson and Ahn (2010) confirm that the number of screens negatively impacts SRI fund performance, but also results in lower systematic risk. Laurel (2011), using a sample of European SRI funds, finds no impact on returns, but a inverted-U-shaped effect on risk. Interestingly, Humphrey and Lee (2011) find weak evidence that screening intensity increases (instead of decreases) risk-adjusted performance of SRI funds in Australia. Finally, Biehl, Hoepner and Wilson (2011) consider UK SRI funds and show that the portfolios with the highest social ratings underperform significantly, whilst the portfolios with the lowest social ratings do not significantly underperform the market.

In this study, we assess the financial performances *within* SRI mutual funds. In particular, we examine whether the financial performance of these funds is related to the characteristics of the extra-financial screening process. Our study departs from the existing literature in three ways.

First, we consider French SRI mutual funds. Modern SRI takes its roots in the US in the 1970s and spread slowly to other Anglo-Saxon countries and to the rest of the world. In Continental Europe, the growth of SRI dates back only to the 1990s. But now, the European market is larger and is expanding faster than the US one.[1] This argument alone could be enough to justify interest in European markets. More importantly, the practices significantly differ on both sides of the Atlantic (Louche and Lydenberg, 2006; Sandberg *et al.,* 2009). Shareholder advocacy, for instance, is rather specific to the US market, for both cultural and regulatory reasons. Furthermore, almost all SRI funds in the US (as well as in Anglo-Saxon countries, particularly in Australia) use negative screening criteria, which is far from being the case in Europe, particularly in France: thus, in our sample, only one third of the SRI funds use negative screens. Instead, in Europe, the best-in-class approach –where the leading companies with regard to ESG criteria from all industries are included in the portfolio – is the norm. Moreover, the best-in-class approach is often considered at the cutting-edge of SRI (Statman and Glushkov, 2009).

Second, we do not consider only the intensity of the screening process, which is the main focus of the existing literature, but also the nature of the selection process. Our study proceeds in two steps. First, we assess the risk-adjusted return of the French SRI mutual funds. As

[1] In 2007, the European SRI market is estimated to be worth about US$ 4,000 billion (1,200 billion in 2005), while the US SRI market is US$ 2,700 billion (2,300 billion in 2005) according to Eurosif and the US Social Investment Forum. It should be noted that these figures should be considered as upper bounds. For a critical appraisal of the growth of the SRI market, see Capelle-Blancard and Monjon (2010).

expected and confirming previous studies, we show that French SRI mutual funds do not outperform the market, whatever the performance measure considered. Then, we examine the impact of the extra-financial screening process on financial performance. We use the number of exclusion criteria to assess the screening intensity. Following Barnett and Salomon (2006), we hypothesize a U-shaped relationship between screening intensity, measured by the number of screening criteria, and financial performance. We consider also the "nature" of extra-financial screens. Like previous papers, we consider whether fund managers focus on specific environmental, social and corporate governance issues – the so-called ESG factors. Another relevant distinction is between sectoral and transversal criteria: sectoral criteria refer to the exclusion of entire sectors (i.e. sin screens and environmental screens), while transversal criteria apply to all firms (i.e. commitment to international conventions). We hypothesize that the only damaging exclusion criteria for SRI investors are those which target specific sectors.

Last but not least, we also test for the first time to what extent the quality of the extra-financial selection process matters, which is measured in two different ways. We use both private and public data. Private data are the SRI ratings computed by Novethic (the leading information center in France on SRI) to assess the social responsibility of the French SRI funds. These ratings (scaled from AAA to B) aggregate a dozen of qualitative criteria related to the selection device, to fund managers' engagement (shareholder activism on behalf of investors), and to the global attitude of the asset management firm towards SRI issues. Public data (historical returns) is used to compute a proxy for SRI managerial skills. Following Sun, Wang and Zheng (2011), the idea is to consider that skilled managers are likely to engage in original trading strategies, and thus their returns should co-move less with the average returns of their peer funds. An intuitive measure to capture managerial skill is thus to consider the distinctiveness of the funds' investment strategies.

Our study provides some salient results. Our sample is composed of 116 French SRI mutual funds over the period 2004-2007. Overall, we confirm empirically that the SRI screening process may have a cost: the financial performance of SRI funds is hurt by the exclusion of non-socially responsible stocks. Like Barnett and Salomon (2006), we find also that this initial negative effect is partly offset as the number of screens increases. Further, we show that only sectoral screens (such as avoiding sin stocks) pull down financial performance, while transversal screens (commitment to UN Global Compact Principles, ILO/Rights at Work, etc.) do not have any impact. Moreover, it is not clear whether one of the ESG factors influences the financial performance of SRI funds more than the others, but these issues need further analysis. Lastly, when the quality of the SRI selection process is proxied by the rating provided by Novethic, its impact is not significant, while a higher strategy distinctiveness amongst SRI funds, which also gives information on the quality of the selection process, is associated with better financial performance.

The remainder of the paper is organized as follows. Section 2 briefly surveys the empirical literature on the financial performance of SRI funds and proposes a set of testable hypotheses. Section 3 presents the French SRI market and the data used in the study. Then, it describes how the distinctiveness of a fund's investment strategy is measured and it considers the determinants of the screening intensity, as well as the determinants of the SRI ratings.

Section 4 examines the determinants of the risk-adjusted returns of the French SRI mutual funds. Section 5 concludes.

2. THE IMPACT OF SCREENING ON SRI FUND PERFORMANCE

2.1 Previous papers

SRI has been the subject of a good deal of research. Among all the publications on SRI, those dealing with financial performance are by far the most numerous. Capelle-Blancard and Monjon (2011) lists more than fifty academic papers on SRI fund performance published between 1992 and 2011. If we draw together the data, these studies cover several hundred funds in almost twenty countries over the period 1963-2008. Most of them used roughly the same methodology (they used the CAPM or a multifactor model to assess the risk-adjusted return of SRI funds), albeit more recent studies have access to larger samples and use more sophisticated ways of measuring performance. Whatever, their main conclusion is the same: SRI fund performance is no better or no worse than that of conventional (non-SRI) funds. Almost all academic studies find no significant results, including Statman (2000) or Bauer *et al.* (2005) who are often cited as prime examples.[2]

Recently, several studies have proposed not to compare the performance of SRI funds with those of conventional (non-SRI) funds, but to consider the relative performance between SRI funds. By doing this, they provide an analysis of the relationship between the selection process of SRI funds and their financial performances.[3] These studies are Barnett and Salomon (2006) and Renneboog, Ter Horst and Zhang (2008b), and more recently, Lee, Humphrey, Benson and Ahn (2010), Renneboog, Ter Horst and Zhang (2011), Humphrey and Lee (2011), Laurel (2011) and Biehl, Hoepner and Wilson (2011).[4] They are denoted respectively as BS, RTZ08b, LHBA, RTZ11, HL, LAU and BHW hereafter.

The findings of these papers tend to converge, though neither the data nor the econometric specifications are perfectly comparable (see also Table A in the Appendix). BS and LHBA examine 61 US SRI funds over a long time period (1972-2000 and 1989-2006 respectively), while RTZ08b (and RTZ11) examine 440 (321) SRI funds in 17 (23) countries over the period 1991-2003 (1992-2003); HL focus on 24 Australian SRI funds over the period 1996-

[2] Renneboog, Ter Horst and Zheng (2008a) provide additional references. See also Chegut, Schenk and Scholtens (2011) for a review of the SRI mutual fund performance literature. Lastly, note that results based on SRI portfolios are less clear: for instance, Kempf and Osthoff (2007) or Guenster, Derwall, Bauer and Koedijk (2011) report that equity portfolios composed of stocks with high socially responsible ratings (or eco-efficiency scores) outperform.

[3] There is also a broad literature on the relationship between financial performance and the characteristic of conventional (non-SRI) funds. See, for instance, Chevalier and Ellison (1999).

[4] Actually, three others papers (Scholtens, 2007; Jégourel and Maveyraud, 2008; Spekl, 2009) address this issue, albeit to a lesser extent. Scholtens (2007) attempts to associate social and financial performance of SRI mutual funds, but his sample contains only seven funds and two indexes for a three-year period (with annual data). Results suggest that there is no significant correlation between the Corporate Socially Responsability score and financial returns. Jégourel and Maveyraud (2008) examine the financial performance of 71 European SRI equity funds, classified in three categories according to the number of negatives screens (1 to 4; 5 to 8; 9 to 16). These funds significantly under-perform the Aspi Eurozone or the MSCI Europe indexes whatever the number of screens. Spekl (2009) investigates the impact of the screening intensity on the financial performance of 173 European SRI mutual funds. She finds decreasing risk-adjusted financial performance for increasing screening intensity, but her results are not statistically significant.

2008; LAU uses a sample of 177 European SRI funds over the period 1980-2010; BHW consider 50 UK SRI funds over the period 1998-2010. Overall, the methodology is the same in all these studies. Firstly, they use the CAPM (for BS and LAU) or a multi-factor model (for RTZ08b, RTZ11, LHBA, HL and BHW) to assess the risk-adjusted performance, RAP, of the SRI funds. Secondly, they explore the differences *within* SRI funds and investigate the determinants of the RAP. The definition of the independent variables varies according to the study, but we can classify them into two groups – the screening intensity and the features of the selection process – plus the control variables.

The screening intensity. The screening intensity is a quantitative variable. The aim is to measure the strength of the requirements imposed by the fund managers to filter firms. At the same time, it measures the lack of diversification of SRI funds and, in some extent, the quality of the process. The screening intensity is proxied by the number of screens applied by each fund. More precisely, BS, LHBA and HL consider the total number of screens by fund, which varies from one to a dozen. RTZ08b do not consider a unique variable for proxying the screening intensity, but four variables defined according to the screen types. Actually, they identify twenty-one different screening criteria and set apart the number of sin screens (Tobacco, Alcohol, Gambling, Weapons, Pornography), the number of ethical screens (Animal Testing, Abortion, Genetic Engineering, Non-Marital, Islamic, Healthcare), the number of corporate governance and social screens (related to Corporate Governance, Business Practice, Community, Labor Diversity, Labor Relations, Human Rights, Foreign Operations) and the number of environmental screens (Nuclear, Environment, Renewable Energy). Note that among the previous screens, some are positive screens (Healthcare, Environment and Renewable Energy). RTZ11 do not consider the number of screens, but only the screening types. LAU uses the Avanzi database which provides 24 screening criteria: sixteen are negative, eight positive. Moreover, these criteria are classified into four broad areas: Environmental (4 criteria), Social (6), Governance (3) and Controversial Business Involvement (11). BHW created twelve portfolios according to the ethical performance of the SRI funds in three categories: Social, Animal and Environment. The idea is not only to account for the number of screening criteria, but to consider the actual application of the screens, that is the realized ethical performance.

The features of the selection process. The second group of variables of interest is of a qualitative nature. The ultimate goal is to highlight "best practices" among the SRI funds, in terms of financial performance. At least, the funds orientation should be taken into account. BS use the screening criteria (once again) to distinguish between types of SRI funds. They created five dummy variables: Environment (equal to 1 for funds which exclude firms with a record of poor environmental performance), Labor Relations (equal to 1 for funds which exclude firms with a record of poor labor relations practices), Equal Employment (equal to 1 for funds which exclude firms that violate norms of equal employment and diversity at work), Community Investment (equal to 1 for funds which exclude firms that do not invest in and/or develop economically depressed communities), and Community Relations (equal to 1 for funds which exclude firms that have a poor record of accountability to local community stakeholders). RTZ08b do not set apart the impact of the screening intensity and the SRI fund orientation. But in addition to the numbers of screens, they consider the impact of activism policy, community involvement, and in-house SRI research. The same variables are used by

RTZ11, but they only consider the screening types (they use a set of three dummy variables for SRI funds that used at least one sin/ethical screen, one social screen, or one environmental screen), instead of the number of screens. LHBA only consider the participation in proxy voting.

The control variables. Lastly, traditional control variables are also considered: fund age, fund size, a dummy variable if the fund invests abroad, and time fixed effects are generally included. BS also consider the percentage of total assets each fund invests in stock, the percentage of total assets each fund invests in bonds, as well as mutual funds fixed effects. RTZ08 add the total risk of the fund (measured as the standard deviation of monthly fund returns over the last twelve months), the management fees, the load fees, the size of the fund's family, as well as countries' fixed effects; RTZ11 include also past flows. LHBA and HL consider, in addition to the traditional controls, the turnover, the average proportion of equity, and dummy variables if the fund is an institutional fund or a closed fund.

2.2 A set of testable hypotheses

In accordance with the previous literature (see mainly BS and RTZ08b), we can briefly formulate several testable hypotheses.

A first set of hypotheses is about the relationship between the screening intensity and SRI financial performance. If we stick to the modern portfolio theory, this relationship should be negative because of the lack of diversification of some SRI funds:

> *H1. A higher screening intensity reduces SRI financial performance.*

According to BS, however, the combination of the modern portfolio theory and the stakeholder theory may lead to a U-shaped relationship between screening intensity and financial performance. The rationale for this hypothesis is that the lack of diversification might be (at least partially) offset by a better stock-picking as the screening becomes really selective. The idea of a non-linear relationship can be also related to Derwall, Koedijk and Ter Horst (2011) which confront what they called the "shunned-stock hypothesis" and the "errors-in-expectations hypothesis". The former hypothesis predicts that a value-driven strategy may hurts financial performance while, at the same time, the latter predicts that SRI can deliver superior performance as the market is prone to undervalue the impact of the corporate social responsibility on future cash flows.

> *H2. The relationship between the intensity of social screening and financial performance for SRI funds is curvilinear (U-shaped).*

The second set of hypotheses is related to the types of screens employed by SRI funds. In the previous literature, they do not distinguish screens that exclude entire sectors (i.e. sin screens and environmental screens) and those which are transversal and are applied to all firms (for instance, compliance with fundamental international conventions, such as the Universal Declaration on Human Rights). Yet, it is very likely that portfolio diversification is more impacted by sectoral screens than by transversal screens. Thus, compare to the previous studies, we add the following hypothesis:

H3. Only sectoral screens hurt financial performance, while transversal screens do not have any impact.

Besides, SRI funds may focus on environmental, social or corporate governance issues, the so-called ESG factors. The relative impact of these topics (one relative to another) on financial performance is mostly an empirical issue.

H4. SRI funds that select firms for their portfolios based on labor relations (H4a), or community relations (H4b), or environmental (H4c) screening criteria earn higher risk-adjusted returns than those that do not.

We may also wonder whether the quality of the screening process matters. There are several ways to measure the quality of the screening process. RTZ08b and RTZ11 consider whether the fund bases its screening activities on an in-house SRI research team to assess the quality. In this study, we take advantage of the SRI ratings, provided by Novethic, which synthesize several indicators of the quality of the screening process (Which source of information is used? How selective is the process? What kind of control is achieved? Is SRI reporting comprehensive? See next section). We expect that higher quality should lead to better financial performances.

A related issue is to consider managerial skills and the uniqueness of the SRI fund's trading strategies. As originally suggested by Sun, Wang and Zheng (2011), skilled fund managers follow original strategies because they have original ideas and superior investment abilities, while low skilled managers are more likely to herd and adopt passive strategies. In this study, we test whether a higher "Strategy Distinctiveness Index", which measures the extent to which a fund's returns differ from those of its peers, is associated with better performance.

H5. The relationship between the quality (or the distinctiveness) of the screening process and financial performance for SRI funds is positive.

Whether a fund engages in shareholder activism can be also a determinant of the financial performance (RTZ08b). It is a sign of the fund managers' engagement with the companies in which they invest.

H6. SRI funds engaged in shareholder activism earn higher risk-adjusted returns than those that do not.

In the following, we will consider this framework to assess the determinant of SRI risk-adjusted returns and to compare our results with previous ones.

3. THE SRI MARKET IN FRANCE

Information about the French SRI market was provided by Novethic (a subsidiary of the *Caisse des Dépôts et Consignations*), which is the leading French information center dedicated to SRI. Novethic also provided the data concerning our sample of SRI funds.

3.1 General market overview

The SRI market in France represented more than €20 billion at the end of 2007. Moreover, growth has been tremendous. Indeed, the total amount of assets under management increased ten-fold between 2001 and end-2007 (forty-fold from 1998 onwards). There were 175 SRI mutual funds in 2007, compared to 80 in 2002. In terms of assets managed, the French SRI market is the third largest in Europe (tied with Belgium), after the Netherlands and the United Kingdom. Most of the French SRI funds follow a best-in-class approach, almost all of them use information from SRI rating agencies (mainly Vigéo and Innovest), whileone third do not employ any special analyst to examine firms' extra-financial performances.

Out of the 175 French SRI mutual funds, 97 invest in stocks (the others are bond funds or funds of funds). Moreover, they invest mainly in the euro area or in Europe, but one third of the total outstanding assets are invested worldwide. About half of the SRI funds manage less than €50 million in assets, while one third of them manage more than €100 million.

3.2 The performance of the French SRI mutual funds

The initial sample includes 175 French SRI mutual funds, most of them having been created in the middle of the 2000s. Thus, we consider116 funds with complete data, over the period 2004-2007.[5] We exclude guaranteed funds, funds of funds and community funds. Like Barnett and Salomon (2006), we do not collect data on conventional (non-SRI) mutual funds, since in this study we are interested in financial performance *among* SRI funds only.

Monthly logarithmic returns are computed using funds' net asset values, adjusted for distributions. All fund returns are net of expenses. This panel contains 5,568 observations (116 funds × 4 years × 12 months).[6] As far as we know, no domestic SRI fund ceased operations during the sample period, so we do not have to correct for survivor bias in the data.

The characteristics of the 116funds included in our analysis (as of December 31, 2007) are presented in Table 1, Panel A. In our sample, fund age varies between 3 years (by construction) and 25 years, with a mean equal to 8 years, while assets range from € 0.32 million to € 1,446.21 million.[7] Most of the French SRI funds in our sample are classified as equity funds (59%) and the others split equally between bond funds (21%) and balanced funds (20%).About a fourth diversifies their assets outside Europe. Finally, the management fees range from 0.10% to 2.25% of the outstanding assets.

Panel B of Table 1 reports summary statistics for several equally-weighted portfolios of the SRI funds. We consider four different portfolios composed of four different categories of SRI funds: Equity funds that invest mainly in Europe, Equity funds that invest worldwide, Bond

[5] The oldest SRI mutual fund in France (*Nouvelle Stratégie 50*) was created in 1983.

[6] In a previous version of the paper, we considered an additional sample composed of 54 French SRI mutual funds, with complete data over the period 2001-2007. This panel contained 4,536 observations (54 funds × 7 years × 12 months). Interpretations of the finding did not change.

[7] With regard to these criteria, our sample is very similar to the sample used in BS of RTZ08: Fund age is 5.7 years on average in BS and 5.9 in RTZ08, while managed assets averaged $93 million (with a minimum of $0.19 million and a maximum of $1,483.92 million) in BS and to €63.9 million in RTZ08.

funds, and Balanced funds. For each category, we also document the Sharpe Ratio (which measures the portfolio's excess return per unit of its risk) and the Jensen's alpha estimated with the CAPM model (which captures the portfolio's excess return over what is expected, based upon its systematic risk). According to the CAPM model:

$$R_t - R_{f,t} = \alpha + \beta\,(R_{m,t} - R_{f,t}) + \varepsilon_t \quad (1)$$

where R_t is the return on the equally weighted portfolio of funds in month t, $R_{f,t}$ is the risk-free interest rate, $R_{t,m}$ is the market return, α is Jensen's alpha, β is the factor loading on the market portfolio, and ε_t stands for the idiosyncratic return. In this study, the proxy for the risk free interest rate is the 3-month Euribor. The proxy for the market index is the MSCI Euro Index for European equity funds, the MSCI International Index for International equity funds, the ML Europe Bond Index for bonds funds. All these data come from Datastream.

Table 1. Characteristics of the French SRI Mutual Funds Sample

This table documents some characteristics of our sample of French SRI mutual funds. The initial sample includes 175 French SRI mutual funds, but we only consider funds created before 2004, *i.e.*116 funds. Panel A reports some descriptive statistic (minimum, maximum, median, mean and standard deviation) concerning managed assets (in million euros), age (months since inception), and management fees per funds (in percentage), as of December 31, 2007. Panel B reports the mean annualized return, its standard deviation, the Sharpe Ratio, the Jensen's alpha and the number of funds for several equally weighted portfolios of SRI funds, over the period 2004-2007. Monthly logarithmic returns are computed using funds' net asset values adjusted for distributions. All fund returns are net of expenses and annualized. Data are provided by *Novethic*.[a)] indicates significance levels of 5%.

Panel A. SRI Funds	**Min**	**Max**	**Median**	**Mean**	**S.D.**
Total assets (€ million)	0.32	1,446.21	44.26	116.35	193.20
Fund age (months)	36	300	88	100	57
Management fees (%)	0.10	2.25	1.20	1.20	0.45
Panel B. SRI Portfolios	**Mean (%)**	**S.D. (%)**	**Sharpe**	**Jensen's α**	**Nb. Funds**
Equity funds (Europe)	15.83	9.47	1.37	-0.11	52
Equity funds (Global)	9.86	7.63	0.92	-0.03	16
Bond funds	1.75	1.82	-0.57	-0.07[a)]	25
Balanced funds	7.11	4.45	0.96	-0.05	23

Overall, as expected, our results show that French SRI funds do not outperform the market.[8] For all categories, over the period 2004–2007, Jensen's alpha is slightly negative, but significant for bond funds only (this last result was expected and has nothing to do with SRI). These findings corroborate the results obtained by Le Sourd (2008) or Renneboog*et al.*

[8] This result holds whatever the measure of risk-adjusted performance considered. In addition to the classic CAPM model, we considered multifactor models, regression-based measures as well as conditional measures, but it did not change the conclusion.

(2008b) for the French market. Our results are also in line with international evidence provided by Bauer *et al.* (2005) and others.

3.3 Data on the selection process

Unlike most of the previous studies, our database does not contain only financial data. Indeed, we also have valuable information concerning the screening activity of SRI funds. Some statistics are provided on Table 2 related to the quality of the selection process (A), to the nature of the selection process (B), and to the intensity of the screening process (C).

In 2002, Novethic launched a rating system to assess the social responsibility of SRI funds available on French market.[9] The rating scale is from AAA (the highest rating) to B (the lowest). Three aggregated criteria are considered:

- *The selection device*. This is the main criterion, which itself is divided into four sub-criteria: *i) Diversity and appropriation of sources.* The aim of this indicator is to assess the quality of the extra-financial data and analyses used by the management firm to pick securities for the portfolio using SRI criteria. *ii) SRI principles of selection.* The aim is to assess the degree of selectivity of the SRI management process. This indicator considers the ability of the asset management company to define a formal selection process and the importance of ESG criteria in the final portfolio selection. *iii) SRI management process.* This indicator measures the relevance and the quality of the relationship between the social, environmental and financial dimensions and seeks to verify the existence of internal and/or external systems whose role is to ensure that the securities in SRI portfolios meet all relevant SRI thresholds in force within the firm. *iv) Communication and Reporting.* The objective is to measure the ability to set up educational and transparent communication on SRI products for subscribers and potential investors and to provide investors extra-financial reports.
- *Shareholder activism of the fund on behalf of its investors*: Is there a formal proxy for voting policy? What are the mechanisms for promoting dialogue with businesses on CSR and sustainable development issues? Etc.
- *The global attitude of the asset management firm towards SRI issues*: What is the firm's contribution to the debate on SRI? What is the experience of the firm in the SRI market? Etc.

According to Novethic, amongst our sample of 116 SRI funds, 48 (41%) are graded AAA or AA, and these funds are in the vanguard of SRI. 18 funds (15%) make a remarkable effort to meet the expectations of the SRI community and are graded A. 13 funds (11%) yield to SRI community demands, but only partially and are graded BBB. Two funds (2%) are considered as mediocre with respect to all SRI requirements and are graded BB or B. Lastly, 36 funds

[9] For a comprehensive presentation of the SRI rating process, see www.novethic.com.

(31%) have no rating: this is either because the process was still in progress or because the asset management firm refused the rating.

Table 2. The Screening Activity of the French SRI Mutual Funds Sample

This table provides some descriptive statistics about the quality, the nature and the intensity of the screening process of the French SRI funds considered in this study. Information is provided by Novethic. A) The quality of the screening process is proxied by an overall SRI rating: AAA is the highest rating and B the lowest. B) We report the percentage of funds which are identified as attentive to Environmental issues, Social issues, Corporate Governance issues, or all of these issues (ESG). C) Intensity of the screening process: The first column reports the percentage of SRI funds which use a given category of screen. The second column reports the number of screens of a given category used by SRI funds, divided by the total number of funds, i.e. 116 for our sample (in parenthesis: the number of screens of a given category used by SRI funds, divided by the number of funds which apply screens, i.e. 43 in our sample).

A) Quality of the selection process	*Percentage of Funds*	
SRI rating: AAA	19%	
AA	22%	
A	15%	
BBB and less	13%	
No SRI rating	31%	
B) Nature of the selection process		
ESG	83%	
Environment	7%	
Social	7%	
Corporate Governance	3%	
C) Intensity of the screening process	*Percentage of Funds with*	*By Fund: Avg. No. of*
Negative screens, *including*	37%	1.34 (3.65)
Sin screens	24% (Weapons: 22%; Tobacco: 17%; Alcohol: 12%; Gambling: 14%; Pornography: 11%)	0.76 (2.07)
Environmental screens	12% (Nuclear: 9%; Petrochemical: 1%; Animal Testing: 6%; GMO/Intensive Livestock: 7%)	0.25 (0.67)
Governance and Social screens	14% (Human Rights: 8%; Foreign Operations: 5%; ILO/Rights at Work: 3%; Labor Diversity: 1%)	0.16 (0.44)
UN Global Compact	17%	_

Most of the SRI funds in our sample care about environmental, social and corporate governance (ESG) issues all together. Nonetheless, a few put the emphasis on a specific topic. In our sample, eight funds (7%) focus on the environment, eight more (7%) deal mainly with social concerns, and four more (3%) stress the importance of corporate governance.

While the best-in-class approach is the norm among the French SRI funds, some combine this approach with negative screens. In our sample, hardly more than one third of the funds (43 out of 116) use such screens. The array of screens varies a lot and they are not exclusive. As usual, the most widespread screen concerns "sin stocks": 22% of the SRI funds in our sample exclude "Weapons", 17% exclude "Tobacco", 12% exclude "Alcohol", 14% exclude "Gambling", and 11% exclude "Pornography". Additionally, 12% of the SRI funds use "Environmental screens" (10% exclude "Nuclear", 1% exclude "Petrochemicals", 6% exclude firms related to "Animal Testing", and 7% "GMO or Intensive Livestock").

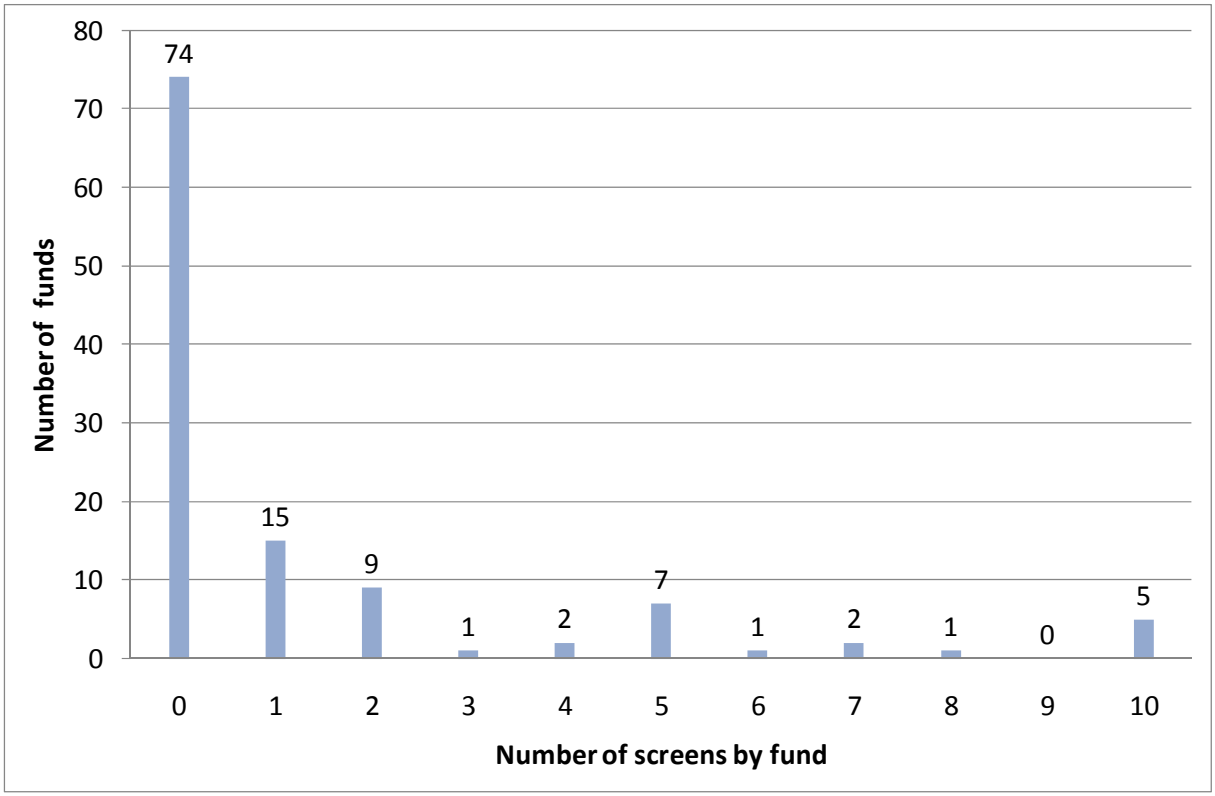
Some of the previous screens are more debatable than the others[10], but all in all "Sin screens" and "Environmental screens" are very similar: they result in the exclusion of a whole sector, without any differentiation within the sector. Conversely, "Governance and Social screens" are transversal. In our sample, 14% of the SRI funds exclude firms, whatever the sector, either because they do not comply with fundamental international conventions, such as the Universal Declaration on Human Rights (8%), the ILO Declaration on Fundamental Principles and Rights at Work (3%), or because they have business relations with totalitarian and corrupt regimes (Foreign Operations:5%). "Labor Diversity" also belongs to the category "Governance and Social screens", but accounts for only 1% in our sample. Finally, 17% of the SRI funds exclude firms which do not conform to the Principles of the UN Global Compact.

The SRI funds also differ by screening intensity, measured by the number of screening criteria. The number of negative screens varies between 0 and 10. If we consider only SRI funds which apply at least one screen, the average number of screening criteria is equal to 3.6 and as shown in Figure 1, the distribution of the screening intensity is very skewed.

[10] For instance, some SRI funds exclude firms owning nuclear plants, while other SRI funds support them, arguing that they help control climate change (nuclear plants do not emit greenhouse gases, unlike fossil-fuel power plants).

Figure 1. Screening Intensity of the French SRI Funds

About one third of the French SRI funds do not apply any screens. Moreover, the screening intensity varies widely. The initial sample includes 175 French SRI mutual funds. We consider funds created before 2004 only, i.e. 116 funds. Data are provided by *Novethic*.



In addition to the SRI ratings computed by Novethic, we propose to measure the skill of the SRI fund managers. For that purpose, we use publicly observable observations. Following Sun, Wang and Zheng (2011) we hypothesize that skilled managers are likely to engage in original trading strategies, and thus their returns should co-move less with the average returns of their peer funds. Conversely, low-skilled managers are expected to adopt passive trading strategy, thereby delivering performances close to the average.

To capture the distinctiveness of a fund strategy, we consider the "Strategy Distinctiveness Index" (SDI) proposed by Sun, Wang and Zheng (2011). SDI measures the extent to which fund's returns differ from those of its peers: For each fund, the SDI is equal to one minus the sample correlation of a fund's return with the average return of all funds belonging to the same style (here, we consider three categories of SRI funds: equity funds, bonds funds, balanced funds). The higher the SDI, the more distinctive is a fund's strategy. One of the main advantages of this index – beyond its intuitiveness – is that it is based on historical fund return data only. Like Ammann, Huber and Schmid (2011), because funds within a certain

strategy may exhibit more dispersion in SDI than funds within other strategies, we standardize the SDI. SDI (standardized) range from -1 to 3.5 for our sample of French SRI funds.

Sun, Wang and Zheng (2011) and Ammann, Huber and Schmid (2011) document that higher SDI is associated with better subsequent performance. Both papers consider the case of hedge funds. The innovative and skillful nature of the manager is very important in the case of hedge fund: it is their *raison d'être*. But the problematic is the same for SRI funds which are expected to adopt proactive strategies. It seems therefore interesting to examine, for the first time, how the distinctiveness of a SRI fund strategy impacts its financial performance.

3.4 Comparison with previous studies

Clearly, SRI practices on both sides of Atlantic are very different. Negative screens are widespread in the US (and Anglo-Saxon countries), while the best-in-class approach is the norm in Continental Europe, including France. Therefore, our sample differs significantly from previous studies. As BS and LHBA focus on the US, 100% of the SRI funds in their sample use negative screens; this is the same for HL on Australia. RTZ08b cover17 countries, but half of the SRI funds in their sample come from Anglo-Saxon countries: as a result, the percentage of SRI funds using negative screens in their sample rises to 72% (whereas only 56% of the SRI funds from Continental Europe in their sample use negative screens). It should be recalled that less than half of the SRI funds apply negative screens in our sample. Moreover, for both BS and RTZ08b, the average number of screens is almost equal to eight, which is five times higher than in France.

Obviously, this raises questions about the possibility of generalizing previous results. BS and RTZ08b paved the way for studying the impact of the SRI screening process on financial performances. But, a lot of work is needed to accommodate the results to best-in-class SRI funds. Moreover, none of the previous papers investigates the quality of the SRI rating or the distinctiveness of a SRI fund strategy.

3.5 The determinants of the screening intensity and of the SRI ratings

In Table 3, we investigate the relationship between various fund characteristics and the screening intensity. The dependent variable is, alternatively, the number of screens, the number of sectoral screens and the number of transversal screens. As the dependent variable is left-censored, we estimate Tobit regressions. There appears to be no systematic relationship between screening intensity of the French SRI funds and any observable characteristics, except that environment-oriented SRI funds tend to use more screens.

Table 3. The Determinants of the Screening Intensity

The table reports the results for Tobit regressions of the number of screens (all screens, sectoral screens or transversal screens) on various SRI fund characteristics. The sample includes 116 French SRI mutual funds created before 2004. Data are provided by Novethic. (D) denotes dummy variables.

	No. of Screens	No. of Sectoral Screens Only	No. of Transversal Screens Only
Environment (D)	7.485***	7.241**	3.299***
	(2.614)	(3.138)	(0.930)
Social (D)	-1.382	-4.286	0.839
	(2.315)	(3.450)	(0.836)
Corporate Governance (D)	-29.331	-31.653	-8.222
	(.)	(.)	(.)
Shareholders Activism (D)	0.627	-3.258	0.825
	(1.803)	(2.892)	(0.657)
SDI	-0.576	-0.632	-0.189
	(0.630)	(0.806)	(0.255)
Bond Funds (D)	-1.957	-2.007	-0.454
	(2.032)	(2.465)	(0.783)
Balanced Funds (D)	3.739**	1.971	2.298***
	(1.441)	(1.727)	(0.584)
Global Funds (D)	0.357	-1.196	-0.132
	(1.374)	(1.714)	(0.560)
Mgmt. Fees (%)	2.673*	3.679*	0.200
	(1.508)	(1.862)	(0.601)
Size (Total Assets)	3.956	0.618	2.765***
	(2.647)	(3.508)	(0.981)
Age (# Months)	0.121	0.314*	-0.121*
	(0.135)	(0.160)	(0.073)
Constant	-7.206***	-10.221***	-1.399
	(2.604)	(3.397)	(1.026)
Nb. of Obs.	116.000	116.000	116.000

* p < 0.10, ** p < 0.05, *** p < 0.01

In Table 4, we examine the determinants of the SRI ratings computed by Novethic. The dependant variable is a categorical variable ranging from 1 (B) to 6 (AAA) – that is, we restrict our sample to mutual funds actually rated by Novethic (80 out of 116 in our sample). Ordered Logit regressions suggest that the higher the number of screens (in particular the number of transversal screens), the better is the rating. Moreover, it appears that the biggest funds obtained a better SRI rating.

Table 4. The Determinants of the SRI Ratings

The table reports the results for ordered Logit regressions. The dependant variable is the SRI Ratings: a categorical variable ranging from 1 (B) to 6 (AAA).The sample includes 80 French SRI mutual funds created before 2004. Data are provided by Novethic. (D) denotes dummy variables. Robust standard errors are given in parenthesis.

	(A)	(B)	(C)
No. of Screens	0.189*		
	(0.109)		
No. of Sectoral Screens		0.138	
		(0.148)	
No. of Transversal Screens			1.798*
			(0.989)
SDI	-0.130	-0.119	0.029
	(0.310)	(0.315)	(0.328)
Environment (D)	-3.182	-2.524	-7.429*
	(12.227)	(14.293)	(4.023)
Social (D)	-0.206	-0.237	-0.702
	(0.760)	(0.758)	(0.797)
Corporate Governance (D)	-0.756	-0.835*	-0.927**
	(0.475)	(0.474)	(0.457)
Bond Funds (D)	-0.296	-0.341	-0.334
	(0.620)	(0.605)	(0.621)
Balanced Funds (D)	1.401	1.561*	0.670
	(0.923)	(0.920)	(1.085)
Global Funds (D)	0.016	0.028	-0.032
	(0.889)	(0.861)	(1.025)
Mgmt. Fees (%)	-0.492	-0.429	-0.189
	(0.559)	(0.596)	(0.585)
Size (Total Assets)	4.659***	4.980***	3.364**
	(1.699)	(1.896)	(1.610)
Age (# Months)	-0.044	-0.045	0.010
	(0.030)	(0.030)	(0.039)
Constant	-4.857***	-4.827***	-4.494***
	(1.105)	(1.145)	(1.033)
Nb. of Obs.	80.000	80.000	80.000

* p < 0.10, ** p < 0.05, *** p < 0.01

4. THE DETERMINANTS OF SRI MUTUAL FUNDS' FINANCIAL PERFORMANCE

4.1 Methodology

The aim of this section is to test econometrically the impact of SRI screening on mutual funds' financial performance. In order to facilitate comparisons, we follow a methodology very similar to the one considered by BS and RTZ08b.

Our dependent variable is the risk-adjusted performance of a given SRI fund, over the whole period.[11] The risk-adjusted return of a fund is the difference between its risk premium and its expected return, given its beta and the market's risk premium. Then, the risk-adjusted performance (RAP_i) is defined as $\alpha_i + \varepsilon_i$. RAP_i is estimated for each individual fund *I* over the full sample period.

We then examine whether SRI mutual funds' performance is related to characteristics of the screening process. In particular, we study the relationship between performance and three categories of variable of interest: the quality, the nature, and the intensity of the screening process. Moreover, we consider almost the same set of control variables as BS and RTZ08b and examine the impact of the shareholder activism.

Hence, our model of SRI returns is the following:

$$RAP_i = \gamma_0 + \gamma_1 SI_i + \gamma_2 (SI_i)^2 + \gamma_3 SDI_i + \gamma_4 \text{ SRI Rating}_i + \gamma_5 ESG_i + \gamma_6 \text{ Activism}_i + \gamma_7 \text{ Fund Characteristics}_i + \gamma_8 \text{ Investment Style}_i + u_i \quad (2)$$

SI_i, SRI Rating_i, SDI_i, ESG_i and Activism_i are the variables of interest. SI_i stands for screening intensity and it is equal to the number of exclusion criteria. We also include the square of the number of exclusion criteria to capture a potential non-linear relationship.[12] SDI_i is defined as one minus the correlation between historical returns of the fund *i* and average returns of all funds belonging to the same category; SDI_i are standardized. SRI Rating_i is a categorical variable ranging from 0 (no rating) to 6 (AAA) – the rating are attributed by Novethic.[13] This variable serves as a proxy for the overall quality of the SRI screening process. ESG_i is a set of three dummy variables: Environment_i, Social_i, and Governance_i equal to 1 if the fund *i* focuses on environmental issues, social issues and corporate governance issues respectively, and 0 otherwise: i.e. the reference here is when the fund cares about environmental, social and corporate governance issues all together. The aim is to identify the nature of the screening process. Finally, we consider a dummy variable, Activism_i, equal to 1 if the fund *i* exercises its proxy vote and promotes dialogue with firm on ESG issues.

[11] In BS, the dependent variable is the RAP of a given SRI fund for a given month. Thus, BS apply a panel data specification with a fixed year effect and a random fund effect. But, since the variables of interest vary very little, we consider that it is more relevant to use a cross-sectional approach.

[12] Note that given that the bulk of French SRI funds do not use any screens, the number of screens and the square of the number of screens are highly correlated.

[13] We have also considered different specifications less parsimonious (like a dummy variable equal to 1 if the rating attributed by Novethic is AAA, AA or A, and 0 otherwise), but it does not change the results.

The control variables include Fund Characteristics$_i$ and Investment Style$_i$. Fund Characteristics$_i$ comprises the following variables: i) Age$_i$ is the number of months since the fund's inception, as of end of 2007; ii) Size$_i$ is the fund size (total assets in euros)[14]; iii) Management Fees$_i$ is the annual management fee in percentage.[15] Investment Style$_i$ is a set of three dummy variables: Global$_i$ is equal to 1 if the fund *i* invests outside Europe, and 0 otherwise; Bond$_i$ and Balanced$_i$ are equal to 1 if the fund *i* is a bond fund or a balanced fund respectively, and 0 otherwise.

4.2 The impact of SRI screens on mutual funds' performance

To begin with, we test for a negative (eventually nonlinear) relationship between financial performance and the screening intensity (measured by the total number of screens), together with the impact of the orientation of funds, their distinctiveness and the overall quality of the SRI selection process. Regression results are summarized in Table 5. In model (1) we consider the whole set of variables, while in model (3) we drop all the variables that are not significant. In models (2) and (4), we consider only equity funds (67 out of 116 observations). The main results presented hereafter are robust to these alternative specifications.

[14] Fund size may erode mutual fund performance as shown by Chen et al. (2004).

[15] Actually, we do not expect a significant effect of this variable, albeit Kreander et al. (2005) find that management fee is a significant explanatory variable for the Jensen measure of SRI funds.

Table 5. The Impact of the SRI Selection Process on Financial Performance

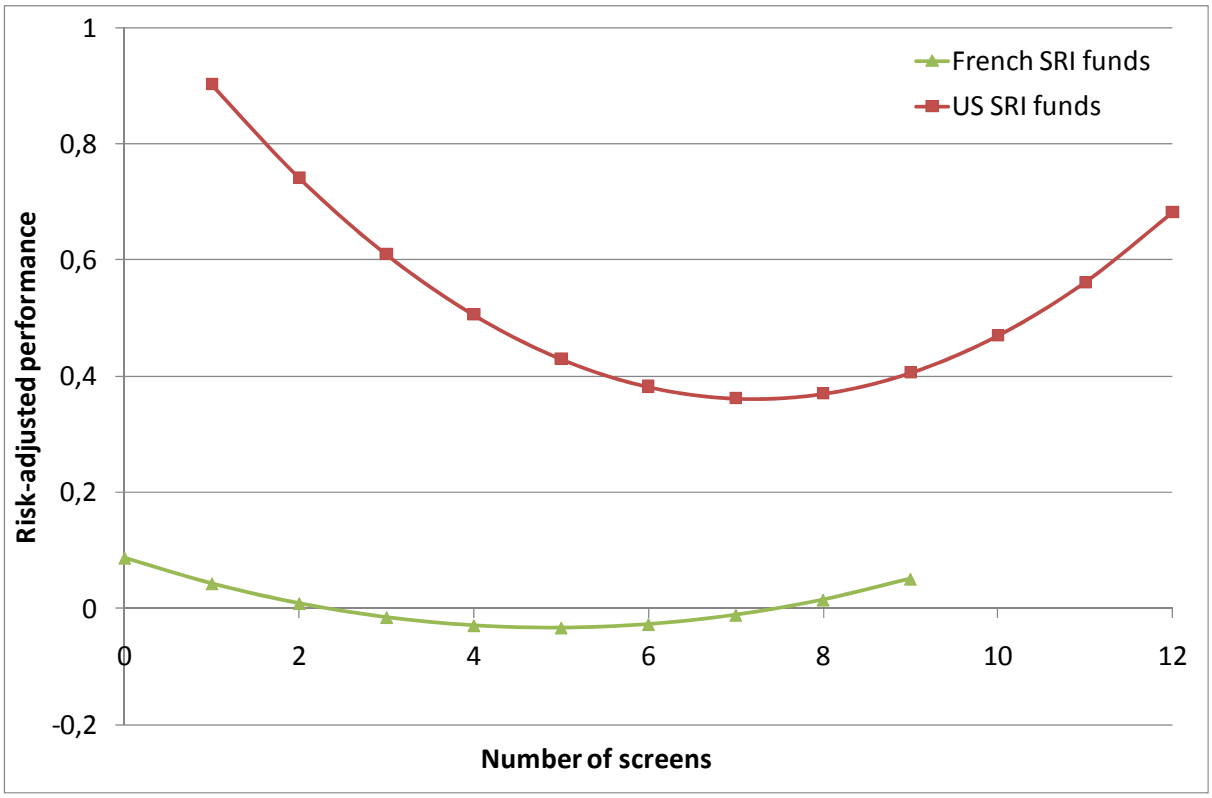
The dependent variable is the risk-adjusted performance (RAP) associated to SRI funds. The sample includes 116 French SRI mutual funds created before 2004 (except models (2) and (4) with only 67 equity funds). Data are provided by Novethic. (D) denotes dummy variables. Robust standard errors are given in parenthesis.

	(1)	(2)	(3)	(4)
No. of Screens	-0.049**	-0.064*	-0.040*	-0.059**
	(0.024)	(0.035)	(0.021)	(0.029)
(No. of Screens)²	0.005**	0.006*	0.004*	0.006*
	(0.002)	(0.003)	(0.002)	(0.003)
SDI	0.033*	0.061***	0.034**	0.060***
	(0.017)	(0.016)	(0.014)	(0.013)
SRI Rating	-0.001	0.003		
	(0.007)	(0.010)		
Environment (D)	0.102	-0.039		
	(0.072)	(0.050)		
Social (D)	-0.016	-0.062**		
	(0.029)	(0.029)		
Corporate Governance (D)	-0.015	-0.002		
	(0.058)	(0.060)		
Shareholders Activism (D)	0.081	0.080		
	(0.068)	(0.093)		
Bond Funds (D)	-0.162***		-0.183***	
	(0.028)		(0.024)	
Balanced Funds (D)	-0.104***		-0.094***	
	(0.035)		(0.032)	
Global Funds (D)	0.151***	0.211***	0.151***	0.206***
	(0.036)	(0.049)	(0.034)	(0.047)
Mgmt. Fees (%)	-0.004	-0.004		
	(0.036)	(0.040)		
Size (Total Assets)	0.256*	0.305**	0.238*	0.274**
	(0.141)	(0.150)	(0.133)	(0.132)
Age (# Months)	-0.005	-0.013*		
	(0.003)	(0.007)		
Constant	0.087	0.122	0.049**	0.040*
	(0.067)	(0.084)	(0.023)	(0.023)
R^2	0.510	0.572	0.464	0.507
Nb. of Obs.	116.000	67.000	116.000	67.000

* p < 0.10, ** p < 0.05, *** p < 0.01

According to the (lack of) diversification hypothesis, the coefficient associated with the number of exclusion criteria is negative and significant at least at the 10% level – this result holds for all specifications. That is, there is a financial cost of imposing screens. However, like BS, we show a rebound in financial performance, as the number of screens rises. The square of the number of screens is positive and significant at the 5% or the 10% level.[16] The curvilinear effect is statistically significant, albeit the U-shaped pattern between SRI financial performance and the number of screens is less pronounced than for BS. Figure 2 compare our results on the French SRI market with BS on the US SRI market. RAP decrease first as the number of screens gets higher, reaching a minimum at 5 screens (7 for BS), and then increases.

Figure 2. A curvilinear relationship between SRI screening intensity and financial performance



Sources: French SRI funds: authors' computation; US SRI funds: Barnett and Salomon (2006).

[16] To capture a potential non-linearity, we have previously added, in addition to the number of screens, a dummy variable equal to 1 if the funds impose at least one screen and 0 otherwise. In this case, the coefficient associated with the dummy is negative and significant at the 5% level, while the impact of the number of screens is no more significant.

In addition, we find that higher strategy distinctiveness is associated with better financial performances. This finding is consistent with our expectations and confirms recent studies by Sun, Wang and Zheng (2011) and Ammann, Huber and Schmid (2011) who obtain similar results for hedge funds. However, when we consider the quality of the SRI rating process and its potential impact on risk-adjusted returns, whatever the specifications, we do not find any significant result.

The other variables of interest do not have any significant impact on financial performance. As stated before, there is no *a priori* fundamental reason to find different financial performances between environment-oriented, social-oriented or corporate governance-oriented SRI funds (to put it differently, one can find several theoretical arguments to support each of the so-called ESG factors). Besides, empirically, neither BS nor RTZ08b find clear results in this respect. Likewise, in our regressions, none of the proxies for the ESG factors is significant. Also, shareholder activism has no impact on SRI financial performance.

Overall, all our results are thus consistent with theoretical expectations, except that we have assumed a positive relationship between SRI ratings and RAP. Thus, in Table 6, we push the investigation one step further by setting apart some components of the SRI rating. In other words, we no longer consider the overall rating as an explanatory variable, but instead the score attributed by Novethic for each of the following dimensions: Diversity and appropriation of sources, SRI principles of selection, SRI management process and Communication and Reporting. For each of these dimensions, we use a categorical variable which value ranges from 0 to 3 (3 being the highest SRI score).[17] We reproduce also the results of the model (3) as a benchmark. Our results show that none of these factors significantly improves the financial performance of the funds.

[17] In model (5), the categorical variable *Source* takes the value 0 when the fund has access to no specialized sources of information and takes the value 3 when it has access to the work of an expanded team or uses one or more external, accredited sources of information, with development of an internal research capability within the dedicated team. In model (6), *Selectivity* takes the value 0for funds without any SRI selection process and takes the value 3 when SRI process is detailed and formalized in an exhaustive way, when SRI screen excludes at least half of their initial universe or excludes between 25% and 50% of the initial investment universe, but where the SRI impact on companies' weighting in the final portfolio is "high", compared to the reference index in the final portfolio. In model (7), *Management process* takes the value 0 when the process is not well integrated or very well controlled and the value 3 when the process has an average degree of integration and a high degree of control. Lastly, in model (8), *Communication* is equal to 0 when there is absence of communication identified and absence of extra-financial reporting elements and equal to 3 when the communication is structured for all supports and for all subscribers, meaningful and explicit extra-financial reporting elements for all classes of assets are disclosed to all subscribers concerned and included in financial reporting.

Table 6. The Impact of the Quality of the SRI Selection Process on Financial Performance

The dependent variable is the risk-adjusted performance (RAP) associated to SRI funds. The sample includes 116 French SRI mutual funds created before 2004. Data are provided by Novethic. (D) denotes dummy variables. Robust standard errors are given in parenthesis.

	(3)	(5)	(6)	(7)	(8)
No. of Screens	-0.040*	-0.041*	-0.040*	-0.040*	-0.040*
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
(No. of Screens)²	0.004*	0.004*	0.004*	0.004*	0.004*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
SDI	0.034**	0.037**	0.032*	0.033*	0.037**
	(0.014)	(0.015)	(0.017)	(0.017)	(0.016)
Source		0.008			
		(0.012)			
Selectivity			-0.004		
			(0.013)		
Management Process				-0.002	
				(0.014)	
Communication					0.007
					(0.013)
Bond Funds (D)	-0.183***	-0.182***	-0.183***	-0.182***	-0.183***
	(0.024)	(0.024)	(0.024)	(0.025)	(0.024)
Balanced Funds (D)	-0.094***	-0.090***	-0.097***	-0.095***	-0.093***
	(0.032)	(0.033)	(0.032)	(0.032)	(0.032)
Global Funds (D)	0.151***	0.148***	0.151***	0.152***	0.150***
	(0.034)	(0.034)	(0.035)	(0.034)	(0.034)
Size (Total Assets)	0.238*	0.236*	0.240*	0.240*	0.234*
	(0.133)	(0.130)	(0.133)	(0.133)	(0.130)
Constant	0.049**	0.038	0.056	0.053	0.040
	(0.023)	(0.031)	(0.035)	(0.033)	(0.030)
R^2	0.464	0.467	0.465	0.464	0.466
Nb. of Obs.	116.000	116.000	116.000	116.000	116.000

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

In Table 7, we examine which type of screens may be relevant. More precisely, we separate the screens that avoid entire sector (mostly the sin screens and the environmental screens) and those that apply to all firms. The latter are qualified as transversal screens and are likely to impose less diversification costs. In model (9) we consider both the number of sectoral screens and the number of transversal screens (along with the square number of sectoral and transversal screens), while in model (11) and (12) we consider the two types of screens separately. For the sake of robustness, in model (10) we reproduce the model (9) but we

consider only equity funds (67 out of 116 observations). We also reproduce the results of the model (3) as a benchmark.

The results corroborate our intuition. Indeed, while the coefficient associated with transversal screens is never significant, the one associated with sectoral screens is negative and significant at the 5% or the 10% level.

Table 7. The Impact of the Number of SRI Screens on Financial Performance

The dependent variable is the risk-adjusted performance (RAP) associated to SRI funds. The sample includes 116 French SRI mutual funds (except model (XX) with only 67 equity funds) created before 2004. Data are provided by Novethic. (D) denotes dummy variables. Robust standard errors are given in parenthesis.

	(3)	(9)	(10)	(11)	(12)
No. of Screens	-0.040*				
	(0.021)				
(No. of Screens)²	0.004*				
	(0.002)				
No. of Sectoral Screens		-0.051*	-0.042*	-0.062**	
		(0.028)	(0.025)	(0.030)	
(No. of Sectoral Screens)²		0.005	0.002	0.008*	
		(0.004)	(0.006)	(0.004)	
No. of Transversal Screens		-0.024	-0.085		-0.034
		(0.047)	(0.087)		(0.049)
(No. of Transversal Screens)²		0.021	0.048		0.016
		(0.014)	(0.046)		(0.014)
SDI	0.034**	0.027**	0.050***	0.030**	0.028**
	(0.014)	(0.013)	(0.013)	(0.013)	(0.012)
Bond Funds (D)	-0.183***	-0.198***		-0.191***	-0.186***
	(0.024)	(0.023)		(0.023)	(0.024)
Balanced Funds (D)	-0.094***	-0.129***		-0.119***	-0.122***
	(0.032)	(0.041)		(0.036)	(0.043)
Global Funds (D)	0.151***	0.155***	0.218***	0.140***	0.143***
	(0.034)	(0.040)	(0.072)	(0.037)	(0.040)
Size (Total Assets)	0.238*				
	(0.133)				
Constant	0.049**	0.079***	0.071***	0.081***	0.064***
	(0.023)	(0.020)	(0.020)	(0.020)	(0.021)
R^2	0.464	0.421	0.398	0.401	0.372
Nb. of Obs.	116.000	116.000	67.000	116.000	116.000

* p < 0.10, ** p < 0.05, *** p < 0.01

4.3 Discussion

In this subsection, we aim at summarizing and providing an overall view of the results related to the determinants of SRI funds financial performance. If we combine our results with previous findings, we obtain a set of six key results related to our set of hypotheses (see Table 8).

- Six out of eight studies find that higher screening intensity reduces SRI financial performance, though this result appears less clearly in RTZ08b. Interestingly, the relationship between the number of screens and the risk-adjusted performance is positive for HL, but the sample is small and the evidence is weak. BHW use a slighy different approach as they do not consider the number of screening criteria, but the actual application of the screens, that is, a proxy for the realized ethical performance – i.e. an ethical rating. Whatever, they show that the portfolio with the worst ethical rating tends to perform better than the other portfolios.
- The negative relationship between the screening intensity and financial performance seems to decrease as the number of screens increases. Like BS we find a U-shaped relationship (the others do no test the curvilinear hypothesis, except LAU who find an inverted U-shaped effect on risk only).[18] Notwithstanding the functional form, the overall effect is negative or, to put it differently, the initial negative effect is not offset.
- Only sectoral screens (such as avoiding sin stocks or the nuclear industry, for instance) hurt financial performance, while transversal screens (commitment to UN Global Compact Principles, ILO/Rights at Work, etc.) do not have any impact. Our study is the only one to test this hypothesis, and our results are robust for various specifications. This result is fully consistent with modern portfolio theory, since transversal screens may not have a decisive impact on diversification, unlike sectoral screens. This result is also consistent with empirical evidence concerning the risk-adjusted performance of "sin stock" portfolios which outperform the conventional benchmarks (Hong and Kacperczyk, 2009; Statman and Glushkov, 2009).
- It is not clear whether one of the ESG factors influence more than the other the financial performance of the SRI funds. Besides, the theoretical literature on this point is not really conclusive. Only Edmans (2011) shows superior returns to an SRI screen based on employee relations.
- The impact of shareholder activism is non-significant, except weak evidence of a positive impact for the US (RTZ11).
- The main open question is the impact of the quality of the SRI selection process. In-house SRI research seems to enhance SRI financial performance (RTZ08b, RTZ11). However, in-house SRI research is only one part of the quality process, an input among others. Diversity and independence of information, financial and extra-financial expertise, control, reporting, etc. are all key ingredients. The problem is that

[18] Interstingly, Barnett and Salomon (2011) have confirmed the U-shaped relationship between CFP and CSP at the firm level (instead of the fund level).

these components, by their very nature, are very difficult to assess. In this paper, we attempt to overcome this problem by using SRI ratings, but our results suggest than such ratings (global or specific) are not related to SRI funds financial performance. Another way to tackle this problem is to consider the quality of the output of the extra-financial process. We show in this paper that the strategy distinctiveness, which is supposed to be the result of managerial skill, enhances SRI financial performance. Anyway, our results reveals the importance (and also the complexity) of this issue which deserves more research.

5. CONCLUSION

The concept of diversification is a key ingredient in portfolio selection, and according to the modern portfolio theory all rational investors should hold a *market portfolio*: *i.e.* a value-weighted portfolio of all securities. Nevertheless, diversification has its own limitations. Some investors have not given up the wish of having portfolios that reflect their own personalities. Of course, there are still and will always be investors who are not satisfied with passive management, and who try to beat the market. But, what is new today is that a significant share of investors wants portfolios consistent with their beliefs. They refuse to invest in certain sectors – the famous "sin stocks" – and give priority to environment- or social-friendly companies. In other words, they want to "*put their money where their mouth is*".

We show in this study that these investors should be prepared to bear a cost for such strategies. Most of the papers on SRI do not find significant differences in risk-adjusted returns between SRI funds and conventional funds. Using a different approach, by looking into the determinants of the financial performance among the SRI funds, we find evidence that a higher screening intensity reduces the risk-adjusted return. However, this result holds only for sector-specific screening criteria; transversal screening criteria do not necessarily lead to poor diversification, and so, do not hurt financial performances.

In a way, these results favor the best-in-class approach. Still, this approach suffers from other drawbacks. In some cases, SRI funds which follow the best-in-class approach are barely distinguishable from traditional funds. Moreover, the multiplication of criteria can be detrimental to the consistency of the strategy. All in all, even if they lead to poorer financial performance, exclusion funds have the merit of simplicity and reflect well investors' values.

Table 8. The Relationship between Social Responsibility and SRI Funds Financial Performance

H1: A higher SRI screening intensity reduces financial performance. H2: The relationship between the SRI screening intensity and financial performance is curvilinear (U-shaped). H3: Only SRI sectoral screens hurt financial performance, while transversal screens do not have any impact. H4(a, b, c): SRI funds that select firms based on (labor relations, community relations, environmental) screening criteria earn higher risk-adjusted returns than those that do not. H5: The high quality of the SRI selection process (in-house SRI research, SRI ratings, or strategy distinctiveness - SDI) enhances financial performance. H6: SRI funds engaged in shareholder activism earn higher risk-adjusted returns than those that do not. Note: To save space, this table does not include Scholtens (2007, NL, 7 funds) or Jégourel & Maveyraud (2008, Europe, 71 funds); these papers do not find evidence of a negative relationship between screening intensity and SRI financial performance.

	BS	**RTZ08b**	**LHBA**	**RTZ11**	**HL**	**LAU**	**BHW**	**CBM**
Country	US	17 countries	US	17 countries	Australia	Europe	UK	France
Period	1972-02	1991-03	1989-06	1992-03	1996-08	1980-10	1998-10	2004-07
# SRI Funds	61	440	61	321	24	177	50	116
H1: Negative	Yes	Yes	Yes	Yes	No	No	Yes	Yes
H2: U-Shaped	Yes					No		Yes
H3: Sectoral > Trans.				Yes				Yes
H4a: Labor	No						No	No
H4b: Governance	Yes	Yes						No
H4c: Environment	No						No	No
H5: In-house research		Yes		Yes (Eur.)				
H5: SRI Rating								No
H5: Distinctiveness								Yes
H6: Activism		No	No	Yes (US)				No

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APPENDIX

Table A. Some previous studies about the impact of screening on SRI fund performance

	Barnett & Salomon (2006)				**Renneboog *et al.* (2008b)** [c]		**Lee *et al.* (2010)** [c]		**Humphrey& Lee (2011)** [c]	
Country	US				17 countries		US		Aus	
Period	1972-2002				1991-2003		1989-2006		1996-2008	
No. of SRI Funds	61				440		61		24	
Mean Age (months)	68				71		86		113	
Mean AUM (million)	93.0				63.9		120		46	
Mean Management Fees	na				1.4%		na		na	
% Global Fund	7%				39%		na		na	
No. of screens	7.79				3.81		Between 1 and 11			
(% of Funds with)	(100%)				(72%)		(100%)		(100%)	
Sin screens					2.52 (69%)					
Ethical screens					0.68 (51%)					
Gov.& Social screens	(approx. 75%)				2.45 (70%)					
Environmental screens	(83%)				1.47 (80%)					
Returns and SRI screens [a]	CAPM [b]				4-Factors		4-Factors		4-Factors	
	Coef.	(t-stat)	Coef.	(t-stat)	Coef.	(t-stat)	Coef.	(t-stat)	Coef.	(t-stat)
Activism Policy (D)					-0.000	(-0.20)	0.010	(0.57)		
Community Involvement (D)					0.002**	(2.34)				
Community Investment (D)			-0.138	(-0.84)						
Community Relations (D)			0.535**	(2.22)						
Environment (D)			-0.381**	(-1.91)						
Labor Relations (D)			-0.099	(-0.51)						
Equal Employment (D)			-0.471**	(-2.07)						
In-House SRI Research (D)					0.001**	(2.40)				
Islamic Fund (D)					0.005*	(1.68)				
No. of Sin Screens					0.000	(0.22)				
No. of Ethical Screens					-0.001	(-1.50)				
No. of Social Screens					-0.001*	(-1.66)				
No. of Environ. Screens					0.001	(1.36)				
No. of Screens	-0.202**	(-1.78)					-0.007**	(-2.57)	0.010***	(2.90)
(No. of Screens) ²	0.014**	(1.77)								
Fund Age	0.001	(0.88)	0.002	(1.35)	-0.000*	(-1.88)	0.000	(1.18)	0.002	(1.19)
Fund Size (AUM)	0.000	(0.46)	0.000	(0.36)	0.000	(1.22)	0.003	(0.61)	-0.005	(-1.37)
Global Fund (D)	-0.698***	(-2.46)			-0.001	(0.95)				
Risk					-0.097***	(-2.80)				
Management Fees					-0.105***	(-2.54)				
Constant	1.090***	(2.56)	0.950***	(3.58)	0.000	(0.13)	0.091	(1.12)	0.071	(0.98)
Fixed Effects (D)	Time, Mutual Funds				Time, Countries		Time		No	
Others Variables	% stocks, % bonds				Invest. styles, Load Fees, Family Size		Institut'l fund (D), Turnover, % stocks		Institut'l fund (D), Closed fund (D)	
No. of Obs.	4,821				15,182		145			
Chi-sq$_{(d.f.)}$	101.35*** $_{(17)}$		134.24*** $_{(19)}$							
R^2					0.11		0.42		0.28	

Notes: [a] The dependent variable is the risk-adjusted returns of SRI fund *i* in month *t*; (D) denotes dummy variables. [b] Using the Fama-French 3-factor model or the Carhart 4-factor model does not change the results; [c] RTZ08b also examine the cross-sectional differences between SRI funds and conventional funds, while LHBA and HL also analyze the link between screening intensity and risk, but we left these resultsaside.*, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

Table B. The Financial Performance of SRI Funds: A Review of Empirical Studies

Authors	Sample	# SRI funds (non-SRI)	Model	Main result [a)]	Summary of empirical findings
Mueller (1991)	US (1984-98)	10 (Vanguard)	CAPM	< 0	Average risk-adjusted return of SRI funds is 1% less than the conventional benchmark.
Luther *et al.* (1992)	UK (1984-90)	15 (0)	CAPM	ns	Average α_{SRI} is 0.03%. Small cap bias.
Hamilton *et al.* (1993)	US (1981-90)	32 (320)	CAPM	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -0.06% (-0.14%) before 1985 and -0.28% (-0.04%) thereafter.
Luther & Matatko (1994)	UK (1984-92)	9 (0)	CAPM	ns	Average α_{SRI} and $\alpha_{non\text{-}SRI}$ are not different from 0 on average. Small cap bias.
Mallin *et al.* (1995)	UK (1986-93)	29 (29)	CAPM	ns	α_{SRI} ($\alpha_{non\text{-}SRI}$) ranges from -0.28% to 1.21% (-0.41% to 1.56%).
Gregory *et al.* (1997)	UK (1986-94)	18 (18)	2-factors	ns	α_{SRI} ($\alpha_{non\text{-}SRI}$) ranges from -0.71% to 0.24% (-0.40% to 0.51%). Small cap bias.
Sauer (1997)	US (1991-94)	110 (0)	CAPM	ns	α of the Domini Social Equity mutual fund is -0.12% or 0.02% according to the benchmark (Vanguard Index Extented or VI 500).
Reyes & Grieb (1998)	US (1986-95)	15 (15)	Cointegration	ns	SRI and Non-SRI funds monthly returns are not cointegrated.
Goldreyer *et al.* (1999)	US (1981-97)	49 (180)	CAPM	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -0.04% (0.23%). SRI funds using positive screens consistently outperform these without (α is -0.01% and -0.07%, respectively).
Havemann & Webster (1999)	UK (1988-98)	15 (15)	Desc. Stat.	ns	Lower risk and lower return.
Cummings (2000)	Australia (1986-94)	7 (0)	3-factors	ns	α_{SRI} ranges from -0.6% to 0.2%. Older trusts (established in 1986) outperformed the other trusts.
Statman (2000)	US (1990-98)	31 (62)	CAPM	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -0.42% (-0.62%). Average α_{SRI} is -0.48% when using DSI as benchmark.
Asmundson & Foerster (2001)	Canada (1990-99)	4 (0)	CAPM	ns	Financial performance is not significantly different from market benchmark (TSE300).
Naturvårdsverket (2001)	Norway/Sweden (1997-00)	13 (13)	CAPM	ns	Financial performance is not significantly different from non-SRI funds.

Authors	Sample	# SRI funds (non-SRI)	Model	Main result [a)]	Summary of empirical findings
Otten & Koedijk (2001)	Netherlands (1994-00)	4 (4)	CAPM	ns	Financial performance is not significantly different from non-SRI funds.
Tippet (2001)	Australia (1991-98)	3 (0)	CAPM	< 0	The average of the three largest Australian ethical mutual funds significantly under-performed the All Ordinaries index by 1.5% per year.
Turcotte *et al.* (2001)	France (1994-98)	7 (0)	Desc. Stat.	ns	Financial performance is not significantly different from the market benchmark (CAC 40).
Benjaminson & Westerdahl (2002)	Sweden (1999-02)	9 (0)	CAPM	ns	α_{SRI} ranges from -0.046% to 0.058%. Older funds seem to perform better than funds launched more recently.
Plantinga & Scholtens (2002)	Belg. Fra. Nld. (1994-00)	– (784)	Style	ns	Most funds have a significant exposure to the SRI index.
Young & Proffitt (2003)	US (2000-03)	32 (0)	Desc. Stat.	ns	Financial performance is not significantly different from the market benchmark (Morningstar).
Burlacu *et al.* (2004)	US (1997-02)	50 (1,688)	CAPM	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -0.03% (-0.04%). Neither type of fund displayed any ability to time the market.
Miglietta (2004)	Europe (1996-04)	65 (0)	FF	< 0	Underperformance. Small cap bias.
Muñoz *et al.* (2004)	Spain (2000-02)	12 (0)	CAPM	ns	α_{SRI} ranges from -0.57% to 0.04% (FTSE4Good as benchmark) and -0.32 to 0.11%. 9 out of the 12 are negative.
Schröder (2004)	US, Ger. & Swtz. (1990-02)	46 (0)	FF	ns	α_{SRI} ($\alpha_{non\text{-}SRI}$) ranges from -2.06% to 0.87% (-0.41% to 1.56%). 38 out of the 46 are negative.
Bauer *et al.* (2005)	Ger., UK & US (1990-01)	103 (4,384)	FFC	ns	Average α_{SRI} is 0.29%, 0.09% and -0.05% for Germany, UK domestic and US domestic funds. Higher expense ratio for SRI funds. Small cap bias and growth orientation.
Bello (2005)	US (1994-01)	42 (84)	CAPM	ns	α_{SRI} ranges from -0.87% to 0.99% (DSI as benchmark) and from -0.91% to 1.08% (S&P 500 as benchmark). Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -0.09% (-0.17%) with DSI as benchmark and -0.10% (-0.16%) with S&P 500 as benchmark.
Kreander *et al.* (2005)	Europe (1996-98)	40 (40)	CAPM	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is 0.20% (0.12%). Neither type of fund displayed any ability to time the market.
Scholtens (2005)	Netherlands (2001-03)	12 (0)	CAPM	ns	The performance differential between SRI and non-SRI funds is not statistically significant. SRI funds seem to be tilted toward value stocks.

Authors	Sample	# SRI funds (non-SRI)	Model	Main result [a)]	Summary of empirical findings
Barnett & Salomon (2006)	US (1972-02)	61 (0)	CAPM	U-shaped	U-shaped relationship between the number of screens and financial returns. Community relations screening increased financial performance, but environmental and labor relations screening decreased financial performance. *See Panel B.*
Bauer *et al.* (2006)	Australia (1992-03)	25 (281)	FFC	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -2.17% (-0.61%) for domestic and -1.42% (-4.40%) for international funds.
Benson *et al.* (2006)	US (1994-03)	185 (6,705)	Sharpe	ns	Financial performance is not significantly different from non-SRI funds.
Chong *et al.* (2006)	US (2002-05)	VICEX (DSEFX)	CAPM-ARCH	ns	The Vice Fund (VICEX) has outperformed both the Domini Social Equity Fund and the S&P500 (α_{VICEX} = 8.64%), while the Domini Social Equity Fund has underperformed (α = -0.84%, ns).
Geczy *et al.* (2006)	US (1963-01)	34 (860)	> 4-factors	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is 0.21% (0.08%). The SRI constraint imposes large costs. Restricting the SRI universe to the funds that screen out "sin" stocks increases the monthly cost by 10 bp or more.
Goodmacher (2006)	US (1997-06)	17 (17)	CAPM	ns	Both the SRI funds and non-SRI funds had negative Jensen's alphas.
Lozano *et al.* (2006)	Spain (2000-03)	14 (0)	Desc. Stat.	ns	Financial performance is not significantly different from the market benchmark.
Mill (2006)	UK (1996-04)	1 (3)	FF	ns	Examines the financial performance of a UK unit trust that was initially ''conventional'' and later adopted SRI principles. Mean risk-adjusted performance is unchanged by the switch to SRI.
Bauer *et al.* (2007)	Canada (1994-03)	8 (267)	> 4-factors	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -0.21% (-0.18%).
Bollen (2007)	US (1980-02)	187 (9,189)	FFC	ns	Cash flows into socially responsible funds are more sensitive to lagged positive returns than cash flows into conventional funds.
Girard *et al.* (2007)	US (1984-03)	117 (0)	Style	ns	SRI funds are less diversified. SRI fund managers showed poor stock selection and market timing.
Gregory & Whittaker (2007)	UK (1989-02)	32 (5)	FFC	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -0.1% (-0.1%) for domestic and international funds. For domestic funds, past 'winning' SRI funds outperform 'losing' SRI funds to a greater extent than their control portfolio counterparts.
Liedekerke *et al.* (2007)	Belgium (1995-05)	47 (1,287)	FFC	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -3.27% (-1.69%) for European funds and -4.58% (-7.84%) for World funds.
Scholtens (2007)	Netherlands (2001-05)	7 (0)	FF	ns	α_{SRI} ranges from -0.11% to 0.02%.

Authors	**Sample**	**# SRI funds (non-SRI)**	**Model**	**Main result** [a)]	**Summary of empirical findings**
Stenström & Thorell (2007)	Sweden (2001-07)	23 (41)	CAPM	< 0 or ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -2.13% (-0.69%). For regular portfolios from which unethical investments are excluded, alpha is non-significant.
Derwall & Koedijk (2008)	US (1987-03)	24 (5)	5-factors	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -1.08% (-1.28%) for pure bond funds and 0.11% (-1.25%) for balanced funds.
Fernandez-Izquierdo & Matallin-Saez (2008)	Spain	13 (2,051)	Style	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -0.03% (-0.02%) with net returns and -0.01% (-0.04%) with gross returns.
Gil-Bazo *et al.* (2008)	US (1997-05)	> 61 (> 1,100)	FFC	> 0	SRI funds may outperform their conventional peers, but only when they are operated by management companies specialized in the management of SRI funds.
Jégourel & Maveyraud (2008)	Europe (1998-08)	71 (MSCI)	FFC-GARCH	< 0	Average α_{SRI} is -0.04% when the number of negative screens is less than 4, -0.01% when it is between 5 to 8 and -0.02% when it is more than 8.
Jones *et al.* (2008)	Australia (1986-05)	89 (9,278)	FFC	< 0	SRI funds significantly underperform the market in Australia, particularly during the period 2000-2005. Average α_{SRI} is -0.07% over the whole sample period and -0.12% in 2000-2005.
Kempf & Osthoff (2008)	US (1991-04)	< 35 (< 1,700)	FFC	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -1.33% (-1.26%). SRI funds have a significantly higher ethical ranking than standard funds.
Le Sourd (2008)	France (2002-07)	62 (0)	FF	ns	For most SRI funds, α_{SRI} are negative, but not statistically significant.
Renneboog *et al.* (2008)	17 countries (1991-03)	440 (16,036)	FFC	< 0 or ns	SRI funds underperform their domestic benchmarks by -2.2% to -6.5% except in France, Japan and Sweden where the risk-adj. returns of SRI and non-SRI funds are not statistically different. SRI investors are unable to identify the funds that will outperform. Corporate governance and social screens yield lower risk-adjusted returns. *See Panel B.*
Cortez *et al.* (2009)	Europe (1996-07)	88 (0)	CAPM	ns	Average α_{SRI} ranges from -0.11% to 0.02%.
Spekl (2009)	Europe (1993-08)	173 (173)	FFC	ns	Average α_{SRI} ($\alpha_{non\text{-}SRI}$) is -0.13% (0.06%) with the CAPM and -0.19% (0.01%) with FFC. Higher screening intensity does not hurt financial performances.
Blanchett (2010)	US (1990-08)	na	CAPM	ns	
Hong & Kostovetsky (2010)	US (1993-06)	13 (488)	FFC	< 0	Risk-adjusted return is reduced by 0.1% for SRI funds, *ceteris paribus*.
Lee *et al.* (2010)	US (1989-06)	61 (0)	FFC	ns	Reduction in α of 70 bp per screen.

Authors	**Sample**	**# SRI funds (non-SRI)**	**Model**	**Main result** [a)]	**Summary of empirical findings**
Weber *et al.* (2010)	World (2001-09)	151 (MSCI)	Desc. Stat.	ns	The sustainability rating of these funds has a negative impact on their financial performance.
Renneboog *et al.* (2011)	17 countries (1992-03)	312 (3,532)	5-factors	ns	Ethical money is less sensitive to past negative returns than are conventional fund flows.
Humphrey & Lee (2011)	Australia (1996-08)	24 (593)	FFC	ns	Results show screening intensity does not impact a fund's total return, but we find some weak evidence that funds with more screens provide better risk-adjusted performance (alpha).
Laurel (2011)	Europe (1980-10)	177 (0)	CAPM	ns	Screening intensity has no effect on returns but has a curvilinear (inverted-U-shaped) effect on risk.
Biehl *et al.* (2011)	UK (1998-10)	50 (0)	FFC	ns	Portfolios with the highest ethical ratings underperform significantly, whilst the portfolios with the lowest ethical ratings do not significantly underperform the market.

Notes: [a)] "> 0", "< 0" and "ns" indicate respectively that SRI funds outperform, underperform and do not differ significantly from the market benchmark. The average value of the Jensen's alpha, as a measure of the risk-adjusted performance, is provided as far as possible in the column "summary of empirical findings".

Additional Appendix

The Novethic SRI rating system

The SRI rating can be broken down into three phases.

1. Evaluation of SRI Management and practices

2. Engagement of fund managers

3. Evaluation of investment management firms

A series of indicators has been developed for each phase and a value between 0 and 3 is attributed to each indicator. Finally, all the indicators are aggregated using a specific weighting scheme.

1. Evaluation of management policy and practices

- *Diversity and appropriation of sources (Weighting 3)*

  The aim of this indicator is to assess the quality of the extra-financial data and analyses used by the management firm to pick securities for the portfolio using SRI criteria. Two criteria are used to make this assessment:(i) the ability of the management firm to acquire the internal resources needed to appropriate extra-financial expertise (the number of staff devoted to extra-financial analysis, along with their professional background),and (ii) make use of diverse and accredited external sources of information (the number of SRI agencies consulted and their credentials, the collaboration with NGOs, etc.).

  Level 0: Fund has access to no specialized sources of information.

  Level 3: Fund has access to the work of an expanded team (10 or more people) or uses one or more external, accredited sources of information (rating agencies and others), with development of an internal research capability within the dedicated team.

- *SRI principles of selection (Weighting 3)*

  The aim is to assess the degree of selectivity of the SRI management process. This indicator considers the ability of the asset management company to define a formal selection process and the importance of ESG criteria in the final portfolio selection.

  Level 0: Funds without any SRI selection process.

  Level 3: Funds whose SRI process is detailed and formalized in an exhaustive way. Funds whose SRI screen excludes at least half of their initial universe or excludes between 25% and 50% of the initial investment universe, but where the SRI impact on companies' weighting in the final portfolio is "high", compared to the reference index in the final portfolio.

- *SRI management process (Weighting 3)*

  A) Relationship between the SRI and the FIN dimensions

  This indicator measures the relevance and the quality of the relationship between the social, environmental and financial dimensions. The focus is therefore on what mechanisms have been set up to disseminate and integrate SRI expertise with that of the financial specialists. This indicator takes into account the interactions between the analyst or the dedicated SRI team with the financial management team: physical location of the analyst or SRI team with respect to the relevant financial teams, frequency and processes of exchange between the two teams (emails, meetings, etc.). This indicator also considers the existence of formal mechanisms for sharing and disseminating SRI information (informational meetings and awareness-raising sessions for financial teams, general information/SRI warnings sent electronically to relevant financial teams, existence of shared databases or paper documents).

  B) Control of SRI management process

  This indicator seeks to verify the existence of internal and/or external systems whose role is to ensure that the securities in SRI portfolios meet all relevant SRI thresholds in force within the firm. While it is important to have internal controls, especially if documents are available to formally attest to this function, more attention should be paid to third-party controls. This type of external control appears to provide assurance that the SRI management process is genuinely subject to verification. Tangible evidence of this control is appreciated. The control by an outside party is often played by specialized rating agencies (portfolio verification contract, labeling or certification process) and audit firms. In some cases, ethics or compliance committees made up of investors and other parties may play this watchdog role for the securities that go into the portfolio.

  Level 0: Process not very well integrated or not integrated at all and not very well controlled or not controlled at all.

  Level 3: Process has an average degree of integration and a high degree of control/ Process is highly integrated and controlled.

- *Communication and Reporting (Weighting 3)*

  A) Communication

  The objective is to measure the ability to set up educational and transparent communication on SRI products for subscribers and potential investors. Here, various aspects are taken into account: the existence of a marketing booklet focused on SRI issues; the existence of an SRI space in asset management section of the company's website; the existence of an SRI publication; the existence of an answer to the Transparency Code of Eurosif for SRI products and the possibility of downloading it; the existence of concrete initiatives regarding the training of retailers of SRI products; the existence of a document presenting the SRI process to subscribers; the existence of initiatives of communication to investors on SRI.

B) Reporting

The objective resides in the firm's ability to provide investors/unit holders with extra-financial reports. Particular attention will be paid to the traditional monthly fund performance reports, as well as to other sources of information (SRI newsletter, dedicated web space, etc.) which may report extra-financial information. What we mean by extra-financial information is information that pertains to the extra-financial decisions made by the management firm (disclosure of ratings, an extra-financial focus on a sector or a stock, or an explanation of how extra-financial considerations influence portfolio composition).

Level 0: Absence of communication identified (SRI specificity not mentioned) and absence of extra-financial reporting elements.

Level 3: Communication structured for all supports and for all subscribers (SRI supports, retailers training, publicity). Meaningful and explicit extra-financial reporting elements for all classes of assets disclosed to all subscribers concerned and included in financial reporting.

2. Managers' engagement (Shareholder activism of the fund on behalf of its investors)

The transparent and active exercise of proxy voting rights, motivated not only by concerns about corporate governance issues but also by issues related to CSR and sustainable development, is today one of the central pillars of shareholder engagement. The second pillar, which seems to be more firmly anchored in current practice, lies in the dialogue between SRI management firms and the businesses they invest in, with the aim of gaining insight into their CSR and SD policy and practice. In some cases, the goal is to call attention to certain issues that the company might have neglected. This assessment is made by calculating two indicators:

- *Exercise of proxy vote (Weighting 2)*

  This indicator includes information about: the policy guidelines on proxy voting, the use of recommendations made by corporate governance experts; the existence of a formal, official proxy voting policy based on compliance with corporate governance and/or CSR/SD requirements; the ability to communicate in a transparent way on proxy voting rights; etc.

- *Mechanisms for promoting dialogue with businesses on CSR and SD issues (Weighting 2)*

  This indicator includes information about: the personal meetings with businesses on CSR/SD issues that are relative to them; the targeted meetings with a company and/or a series of companies in the same sector, with the aim of raising awareness of the CSR/SD issues they face; the formal, written processes and procedures for informing businesses of critical SD issues; the active participation in shareholders' coalitions; etc.

Level 0: Firms that do not exercise their proxy voting rights. Asset management firms that have no formal mechanism for promoting dialogue.

Level 3: Firms that have a clear policy on proxy voting, and go further by showing their wish to make firms more responsible in social and environmental issues. Asset management firms that have established regular and targeted processes that seek to inform businesses of their concerns as socially responsible investors.

3. Evaluation of the management firm (The global attitude of the asset management firm towards SRI issues)

- *SRI involvement (Weighting 1)*

  The following criteria are used to make this assessment: Firm's global attitude on SRI; Number of SRI funds offered and the firm's positioning in SRI; Firm's contribution to discussion and debate on SRI; Engagement of the firm and the group it belongs to with respect to social and environmental responsibility.

  Level 0: Management firms that are not involved.

  Level 3: Management firms that are involved.

- *SRI funds under management (Weighting 1)*

  This assessment is made on the basis of funds under management in SRI portfolios.

  Level 0: Firms that manage less than €5 million in the SRI market.

  Level 3: Firms that manage more than €100 million in the SRI market.

- *SRI experience (Weighting 1)*

  The following criteria are used to make this assessment: Date of SRI market entry; Experience acquired since SRI market entry (number of SRI funds, SRI track record of teams, development of investment methodology).

  Level 0: Companies with less than 1 year of experience in the SRI market.

  Level 3: Companies with more than 5 years of experience in the SRI market.

Finally, the weighted rating system is used to rank SRI funds on the following 6-point scale:

AAA: Fund fully meets all SRI requirements

AA: Fund comes close to meeting all SRI requirements

A: Fund is satisfactory with respect to all SRI requirements

BBB: Fund is average with respect to all SRI requirements

BB: Fund is mediocre with respect to all SRI requirements

B: Fund is far from meeting all SRI requirements

Additional Figures

Figure A. Socially Responsible Investing in the US and in Europe (1995-2007)

The SRI market in Europe expanded more than in the US and was larger in 2007. *Source*: Social Investment Forum Foundation & Eurosif SRI Survey 2008 (the market coverage is not constant: 8 countries were covered in 2002, 9 in 2005 and 13 in 2007; assets were converted using year-end exchange rates).

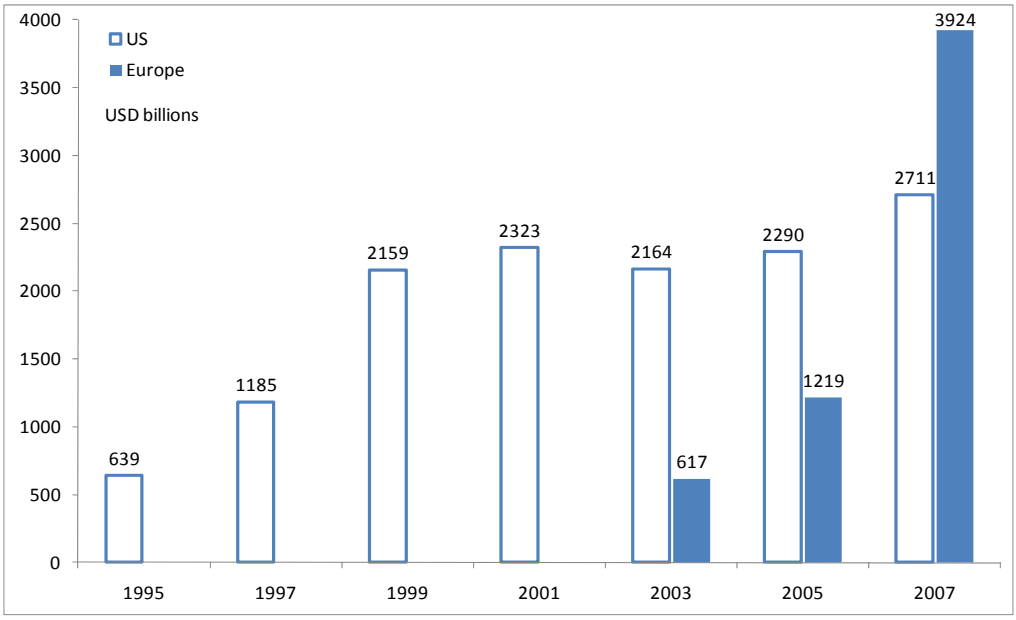


Figure B. The Growth of SRI Mutual Funds in France

Total assets invested in SRI mutual funds in France have been growing at a faster rate than total assets under professional management. Data: *Novethic*.

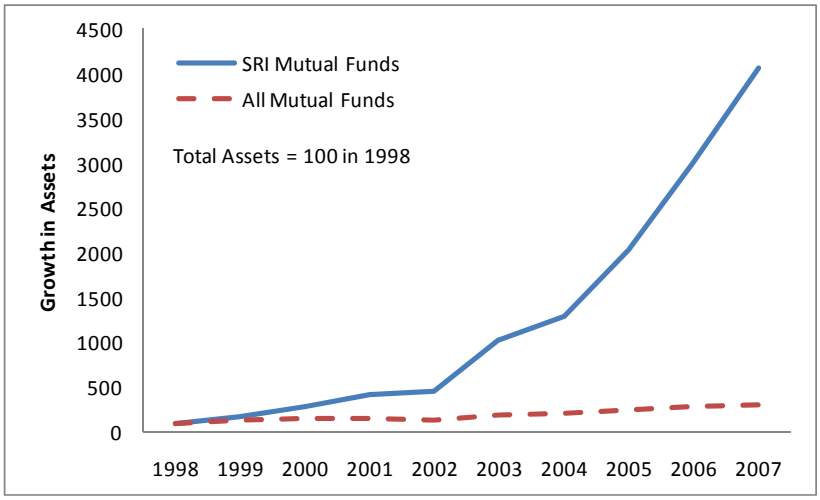
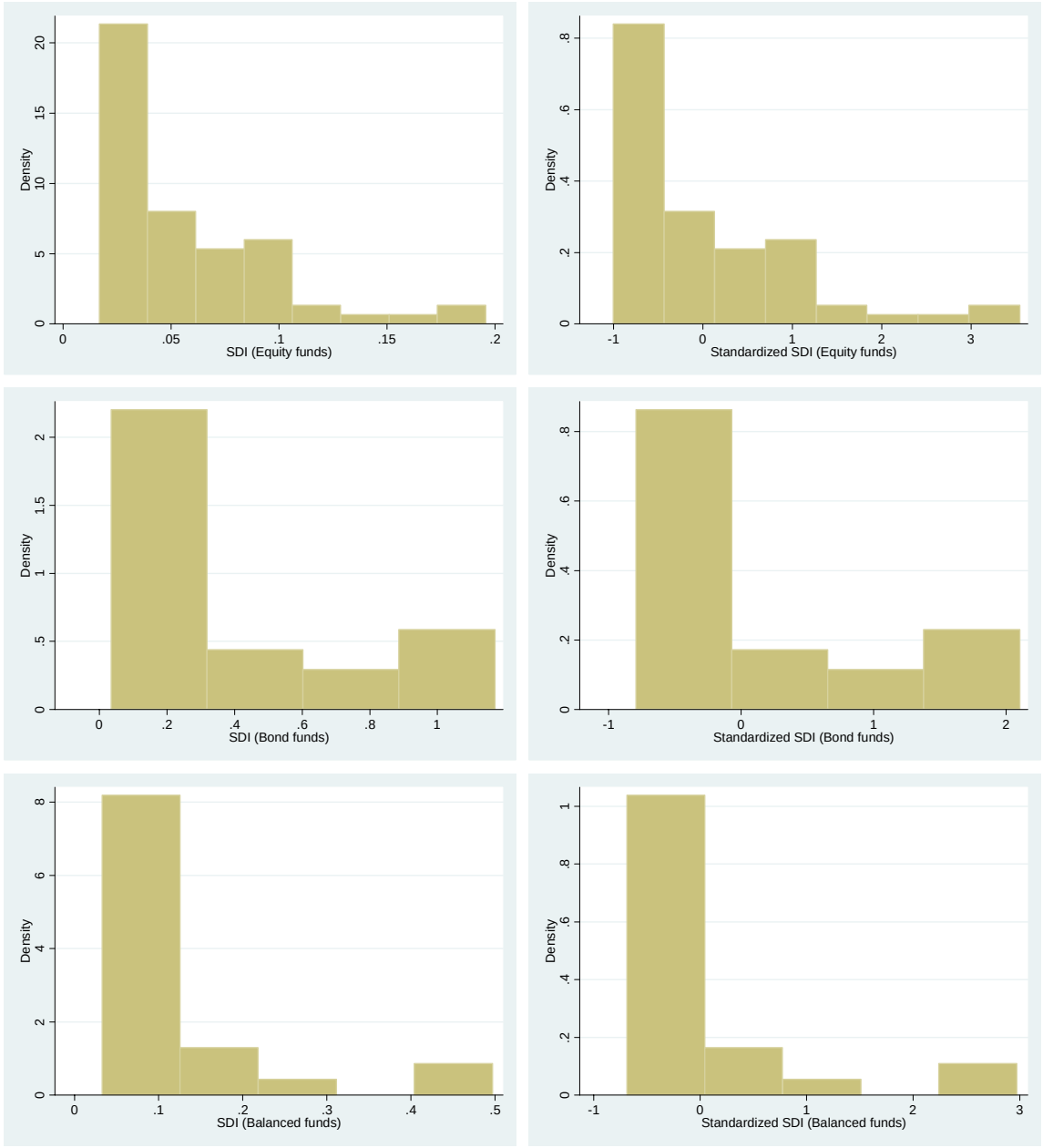


Figure C. Strategy Distinctiveness of SRI Mutual Funds in France

Figure C represents histograms of the SDI ("Strategy Distinctiveness Index") and the standardized SDI for Equity funds, Bonds funds and Balanced funds: Standardized SDI is computed by subtracting the average SDI within the same class of funds and dividing by the standard deviation of SDI within this class. The higher the SDI, the more distinctive is a fund's strategy. The sample includes 116 French SRI mutual funds created before 2004. Data: *Novethic*.



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