Review of Financial Economics 23 (2014) 208–216

Contents lists available at ScienceDirect

Review of Financial Economics

journal homepage: www.elsevier.com/locate/rfe

Socially responsible investing and stock performance: New empirical evidence for the US and European stock markets

Janick Christian Mollet [a,b], Andreas Ziegler [a,b,c,*]

[a] Center for Corporate Responsibility and Sustainability (CCRS), University of Zurich, Switzerland
[b] Center of Economic Research (CER), ETH Zurich, Switzerland
[c] University of Kassel, Germany

ARTICLE INFO

Article history:
Received 15 March 2014
Received in revised form 25 July 2014
Accepted 30 August 2014
Available online 7 September 2014

JEL classification:
G11
G12
Q56
M14

Keywords:
Socially responsible investing (SRI)
Stock performance
Portfolio analysis
Asset pricing models
Risk factors

ABSTRACT

This paper empirically examines the theoretically ambivalent relationship between socially responsible investing (SRI) and stock performance. It contributes to the existing literature by considering both the US and the entire European stock markets and by using consistent world-wide corporate sustainability performance data. Our portfolio analysis from 1998 to 2009 is based on the common four-factor model according to Carhart (1997), which comprises market return, size, value, and momentum factors. We show for the US and the European stock markets that SRI is associated with large-sized firms. The insignificant abnormal stock returns for SRI in both regions are the main result of our paper. Therefore, our study supports the view that SRI stocks are correctly priced by market participants, although we cannot rule out that a corresponding mispricing has existed before the beginning of our observation period in 1998.

1. Introduction

Growing individual awareness of environmental, social, and ethical issues is strongly affecting purchase decisions of market participants, for example, with respect to certified green or fair-trade products (Kitzmueller & Shimshack, 2012). This development is fueling private and institutional investment decisions towards socially responsible investing (SRI), also labeled ethical or sustainable investing (Renneboog, Terhorst, & Zhang, 2008). This investment strategy consists of choosing stocks on the basis of environmental, social, and ethical screens (Barnett & Salomon, 2006). SRI has experienced strong growth around the world. Fig. 1 reports that according to Eurosif (2008, 2010, 2012), core SRI in Europe grew from 34 billion € in 2002 to 2630 billion € in 2011. For the US, the Forum for Sustainable and Responsible Investment reports that one out of eight invested US dollars (USD) follows SRI guidelines. According to Fig. 1, the assets under management following SRI screening increased from 166 billion USD in 1995 to 3314 billion USD in 2011 (US SIF, 2012). While these data for the US and Europe should not be compared directly due to different SRI categorization schemes, they reveal the increasing popularity of SRI.

The growth in the volume SRI assets has attracted academic interest so that several empirical studies examine the relationship between environmental, social, or ethical investments and stock performance. Methodologically, these studies use common micro-econometric approaches (Filbeck & Gorman, 2004; Ziegler, Schröder, & Rennings, 2007), the short-term event study approach (Cañón-de Francia & Garcés-Ayerbe, 2009; Capelle-Blancard & Laguna, 2010; Deng, Kang, & Low, 2013; Fisher-Vanden & Thorburn, 2011; Krueger, in press; Oberndorfer, Schmidt, Wagner, & Ziegler, 2013; Teoh, Welch, & Wazzan, 1999), or portfolio analyses (Bebchuk, Cohen, & Wang, 2013; Eccles, Ioannou, & Serafeim, in press; Edmans, 2011; Hong & Kacperczyk, 2009). Most studies in this field are based on the third approach by directly considering the investor perspective, i.e. by comparing the stock performance of SRI funds or portfolios with the stock performance of conventional funds or portfolios.

One direction of such portfolio analyses examines the performance of sustainability stock indexes (Bauer, Koedijk, & Otten, 2005; Sauer, 1997; Schröder, 2007), such as the Domini 400 Social Index. These stock indexes like the Dow Jones Sustainability Index family (Ziegler, 2012; Ziegler & Schröder, 2010) constitute the basis for some socially

* Corresponding author at: University of Kassel, Germany.
E-mail address: andreas.ziegler@uni-kassel.de (A. Ziegler).

http://dx.doi.org/10.1016/j.rfe.2014.08.003
1058-3300/

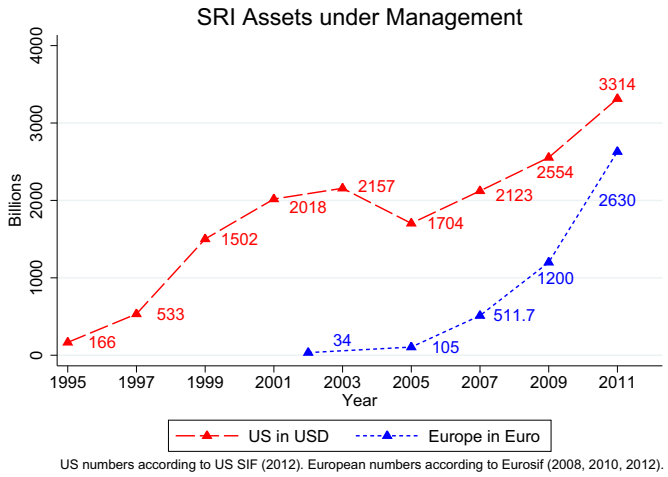

Fig. 1. Volumes of SRI assets in the US and Europe over time.

responsible mutual funds. A second group of portfolio analyses compares the risk-adjusted stock returns of socially responsible funds with the corresponding risk-adjusted stock returns of conventional mutual funds (Bauer, Derwall, & Otten, 2007; Bauer et al., 2005; Capelle-Blancard & Monjon, 2014). However, studies on actively managed mutual funds have the drawback that the financial performance is affected by SRI and the ability of the fund managers. This problem is addressed by a third group of portfolio analyses, building on synthetic SRI portfolios based on corporate sustainability performance assessments, for example, provided by Innovest (Derwall, Bauer, Guenster, & Koedijk, 2005) or KLD Research & Analytics (Borgers, Derwall, Koedijk, & ter Host, 2013; Derwall, Koedijk, & Ter Horst, 2011; Kempf & Osthoff, 2007). Some of these assessments are the basis for popular sustainability stock indexes, such as the Domini 400 Social Index that is constructed with KLD ratings.

Theoretically, the relationship between SRI and stock performance is ambivalent. The following three hypotheses are discussed in the literature (Bauer et al., 2005; Hamilton, Jo, & Statman, 1993): First, if socially responsible investors increase stock prices of firms with a high sustainability performance over their fundamental value, SRI stocks are overpriced and thus have lower expected returns than conventional stocks. The second hypothesis is that the expected returns of SRI stocks are higher than those of their conventional counterparts if a high corporate sustainability performance is related to a higher corporate economic performance without recognition by investors, implying underpriced SRI stocks. Finally, the third hypothesis states that SRI stocks are not mispriced since corporate sustainability performance or corporate social responsibility (CSR), referring to corresponding corporate environmental, social, and ethical activities, is correctly priced by the stock market. This third argument reflects the traditional finance view because in the presence of efficient capital markets and elastic demand curves, SRI cannot influence the cost of firm capital (Wall, 1995).

The first hypothesis is in line with the extension of the Capital Asset Pricing Model (CAPM) by Merton (1987). According to the CAPM, the optimal risk-return stock portfolio for mean-variance investors is the market portfolio. As a consequence, portfolios deviating from the market portfolio are not optimally diversified. However, if the CAPM is extended by asymmetric information according to Merton (1987), segmented markets are created in which stock prices are affected by the combination of different investor bases and imperfect diversification. Therefore, SRI stocks can be overpriced due to a broader investor base. Hong and Kacperczyk (2009) apply this reasoning to the opposite of SRI stocks, namely to sin stocks, which are shunned by many investors because they are involved in alcohol, tobacco, or gambling industries. In the presence of limited arbitrage these stocks should have higher expected returns than stocks from other sectors because of limited risk sharing in combination with possibly higher litigation risks. Hong and Kacperczyk (2009) indeed find positive abnormal stock returns for sin portfolios for very long time periods in different markets. In contrast, the studies of Eccles et al. (in press) and Edmans (2011) report positive abnormal returns for SRI stocks in the US, which is in line with the second hypothesis. Eccles et al. (in press) analyze firms with sustainable practices in 1993 over the time period 1993 to 2009. They show that these firms follow different practices and have a different investor base and thus have a higher stock performance than their counterparts with a lower sustainability performance. Edmans (2011) reveals positive abnormal returns between 1984 and 2005 for a portfolio of the "100 Best Companies to Work For in America" and concludes that certain SRI screens may increase stock returns.

With respect to the third hypothesis in relation to the second hypothesis, two recent studies by Bebchuk et al. (2013) and Borgers et al. (2013) find for the US that errors in expectations of investors associated with corporate sustainability performance indeed existed in the past, but that the corresponding mispricing of SRI stocks disappeared over time due to gradual learning of market participants. Bebchuk et al. (2013) report positive abnormal stock returns for SRI portfolios from 1990 to 1999, but show that these become insignificant between 2000 and 2008 since the market participants learned to differentiate between poorly and well governed firms during the 1990s and paid more attention to governance issues in the 2000s. Similarly, Borgers et al. (2013) consider SRI portfolios on the basis of KLD data and find that these have a higher stock performance from 1992 to 2004, but that the abnormal returns are insignificant in the following years until 2009. As a consequence, all three discussed hypotheses about the relationship between SRI and stock performance are supported by some studies, at least if different time periods are considered. However, it should be noted that these former studies exclusively refer to the US stock market, whereas corresponding analyses for other stock markets are rare so far.

Our portfolio analysis is methodologically in line with these former studies, i.e. we also use raw corporate sustainability performance assessments. Furthermore, we also examine whether SRI stocks are mispriced so that they can have positive or negative abnormal returns. The main contribution of our study to the literature is two-fold: First, in contrast to the studies discussed above, we do not only consider the US stock market, but also analyze the entire European stock market. Second, our study is based on consistent world-wide corporate sustainability performance data from the Swiss bank ZKB (Zurich Cantonal Bank). This allows a comparative analysis for these two world-wide leading stock markets. The portfolio analysis is based on the common four-factor model according to Carhart (1997), which comprises market return, size, value, and momentum factors. These risk factors are necessary to estimate risk-adjusted returns that are more reliable than estimates from a restrictive one-factor model based on the CAPM.

We analyze different portfolios in this study: In a first step, we only examine firms that are included in the Morgan Stanley Capital International (MSCI) World Index. Based on the corporate sustainability performance assessments by ZKB, we construct US and European portfolios comprising firms that are sector leaders in terms of sustainability performance and corresponding portfolios comprising firms that are not sector leaders. These stock portfolios are then used to estimate average monthly risk-adjusted or abnormal returns. Furthermore, we consider a trading strategy of buying stocks of MSCI firms that are sector leaders in terms of sustainability performance and selling stocks of MSCI firms that are not sector leaders. In a second step, we additionally include firms from the US and European stock markets that are not part of the MSCI, but are identified as leaders in terms of sustainability performance by ZKB. We estimate again average monthly risk-adjusted returns for the corresponding slightly more diversified portfolios.

The remainder of the paper is structured as follows: In Section 2 we present our portfolio analysis approach and Section 3 examines the