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Socially responsible investors and the disposition effect

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ABSTRACT

In this paper we analyze the possible interaction between socially responsible investment and the disposition effect— the tendency to hold losing stocks too long and sell winning stocks too early. We analyze trading and portfolio data from a large retail bank and find that socially responsible investors display a greater disposition effect than conventional investors. Only when investors invest a substantial proportion of their portfolio in socially responsible stocks do we find evidence for a differential disposition effect, whereas we do not find evidence for a relationship between the percentage invested in socially responsible stocks and the disposition effect.

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1. Introduction

The disposition effect is the tendency to sell appreciated stocks (winners) too early and hold depreciated stocks (losers) too long (Shefrin and Statman, 1985; Odean, 1998). This behavioral bias has been found at the aggregate market level (Ferris et al., 1988; Heath et al., 1999) and at the individual level (Dhar and Zhu, 2006; Barber et al., 2007; Barber and Odean, 2000). A large body of research tries to explain what drives the disposition effect, with explanations based on wealth maximizing strategies (Brown et al., 2006), Kahneman’s (Kahneman and Tversky, 1979) prospect theory (Barberis and Xiong, 2009) and mean reversion (Weber and Camerer, 1998; Odean, 1998). Not all investors seem to be equally affected by the disposition effect. It appears to be correlated with individual characteristics like sophistication (Dhar and Zhu, 2006) ethical background (Frino et al., 2015), and confidence and self-regard (Kadous et al., 2014), amongst others. This paper investigates whether the extent to which investors invest socially responsibly affects the disposition effect.

Socially responsible investment (SRI) is an investment strategy that considers attributes other than risk and return to select investments. Research suggests that in addition to risk–return considerations social preferences are likely to explain why investors invest responsibly (Riedl and Smeets, forthcoming; Bauer and Smeets, 2015; Williams, 2007; Webley et al., 2001). That is, socially responsible investors derive utility from consuming a social responsibility attribute (Heinkel et al., 2001; Mackey et al., 2007; Dam and Scholtens, 2015). When investors rationally deviate from optimizing their utility solely based on risk and return, equilibrium outcomes will deviate from CAPM (Fama and French, 2007), even without considering behavioral biases. In this paper we hypothesize that social preferences for investments make investors hold on to losing stocks longer and sell winning stocks earlier. That is, we expect socially responsible investors will display a greater disposition effect than conventional investors.

We use unique proprietary brokerage data from a large multinational retail bank that combines customers’ portfolio holdings and transactions with stocks’ social responsibility information provided by the bank to its customers. Controlling for individual and portfolio-level characteristics that show results largely in line with existing literature (e.g. Dhar and Zhu, 2006; Feng and Seasholes, 2005), we find that socially responsible investors exhibit a greater disposition effect than conventional investors. We do not find evidence of a significant relationship between the percentage of the portfolio allocated to socially responsible investments and the disposition effect. Instead, we only find evidence for a differential disposition effect when socially responsible investors allocate a substantial fraction of their portfolio to socially responsible stocks. Our results hold under various robustness tests.

This paper makes two contributions. First, we add to the disposition effect literature that has recently started to focus on the psychological and social dimension of investors’ trading behavior (Kadous et al., 2014; Chang et al., 2016; Heimer, 2016; Rau, 2015). Evidence shows that individual investment behavior is influenced by investors’ psychological disposition and social environment. Specifically, the disposition effect has been related to factors like confidence, self-regard, cognitive dissonance and social interaction between peer-investors (Kadous et al., 2014; Chang et al., 2016; Heimer, 2016; Rau, 2015). Our contribution is to investigate to what extent the tendency to invest socially responsible – possibly motivated by social preferences for certain investments – is related to the disposition effect.

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Second, we add to the literature on socially responsible investment by showing that in addition to changing investment behavior (Riedl and Smeets, forthcoming; Heinkel et al., 2001; Mackey et al., 2007; Dam and Scholten, 2015), investing socially responsibly also biases individual trading patterns. Within the SRI literature our paper is related to Benson and Humphrey (2008) who find that SRI fund flows are less sensitive to past returns than conventional fund flows and Bollen (2007), who finds evidence of an asymmetric response of cash flows into socially responsible mutual funds, which are more sensitive to lagged positive returns and less sensitive to lagged negative returns. Instead of analyzing socially responsible mutual fund flows, we use brokerage data on individual investors’ portfolios to analyze stock investments instead of mutual fund flows. 1 So we directly measure the disposition effect of individual investors for which Chang et al. (2016) show the disposition effect holds mostly.

2. Literature and hypotheses

2.1. Socially responsible investment

The socially responsible investment (SRI) industry has been growing rapidly over the last decades, increasingly generating academic interest (Renneboog et al., 2008). One of the questions is: “What motivates investors to hold socially responsible stocks?” Investors could be attracted to socially responsible stocks when they expect risk-adjusted returns on these stocks to be higher, but studies in the SRI performance literature offer equivocal results. Some studies suggest that socially responsible investment returns are better or at least not significantly different from conventional investment returns (Derwall et al., 2005; Kempf and Osthoff, 2007; Edmans, 2011; Bauer et al., 2005), whereas other studies find evidence of significant SRI underperformance (Hong and Kacperczyk, 2009; Fabozzi et al., 2008).

According to another explanation, socially responsible investors derive utility from owning stocks of companies that are consistent with a set of personal values or societal concerns. Several papers investigate the social motivations behind SRI. Williams (2007) uses data from a large survey of investors across five countries and shows that SRI is likely more driven by investors’ appreciation of firms’ social aims than firms’ financial returns. Riedl and Smeets (forthcoming) show that investors hold SRI mutual funds mainly because of their intrinsic social preferences, whereas financial motivations play a much smaller role. In addition, they show investors are willing to accept lower financial returns on SRI. Bauer and Smeets (2015) show that investors that identify themselves more strongly with SRI allocate substantially more wealth to socially responsible investments. Webley et al. (2001) provides experimental evidence that confirms social factors motivate investments. In sum, the literature provides support for the assertion that socially responsible investors derive additional utility from investing responsibly.

2.2. Disposition effect and socially responsible investment

The list of possible explanations for the disposition effect is extensive (See Kaustia, 2011 for an overview) and provides several reasons for why the disposition effect could be greater for socially responsible investors. Early studies of the disposition effect include wealth-maximizing strategies like portfolio rebalancing, risk avoidance and transaction cost minimization (Shefrin and Statman, 1985; Odean, 1998; Ferris et al., 1988). The disposition effect could impose substantial costs on investors to the extent the impairment of rational forward-looking decision-making reduces investment performance and has investors pay more capital gain taxes than necessary (Kaustia, 2011). Because socially responsible investors could be less motivated by financial returns (Williams, 2007; Riedl and Smeets, forthcoming; Webley et al., 2001), they might care less about these costs than conventional investors.

A key explanation for the disposition effect features prospect theory (Kahneman and Tversky, 1979), which explains investors’ asymmetric response to performance. According to prospect theory, investors maximize their utility given an S-shaped value function defined on gains and losses. Applying prospect theory to investing, the purchase price of a stock is seen as the reference point, vis-à-vis which gains and losses are evaluated. Price increases imply investors are in the domain of gains where they are risk-averse and therefore relatively insensitive to further gains, making them more willing to sell early. Price decreases imply investors are in the domain of losses where they are risk-seeking and therefore relatively insensitive to further losses, making them more willing to hold on to a stock. Socially responsible investors could be more willing to hold on to losing stocks if their disutility is compensated with the utility derived from investing responsibly.

An alternative explanation for the disposition effect is the belief of investors in mean reversion (Odean, 1998). Investors may believe stocks experiencing recent wins are likely to fall, and stocks experiencing recent losses are likely to rebound. Investors could believe socially responsible stocks are more robust and therefore more likely than conventional stocks to feature mean reversion. Bollen (2007) proposes both prospect theory and expected mean reversion of mutual fund performance as possible explanations for the asymmetric result that cash flows into socially responsible mutual funds are more sensitive to past positive returns and less sensitive to past negative returns than those observed at conventional mutual funds.

More recent contributions on the disposition effect focus on individual investors and investor psychology. Dhar and Zhu (2006) confirm the overall disposition effect, and investigate the variation of the disposition effect across individuals. Kadous et al. (2014) show the disposition effect is positively related to confidence and negatively to self-regard. Chang et al. (2016) show the disposition effect is related to cognitive dissonance, which is the discomfort that arises when recognizing ones’ choices and/or beliefs are inconsistent with each other. Cognitive dissonance arises from the tension between the original investment decision that is based on the trader being convinced of having bought the asset for a good reason and the subsequent decrease in value that suggests otherwise. Traders can deal with this dissonance by holding on to the losing stock, rationalizing the recent poor performance as a temporary setback or introducing an ameliorating condition like blaming a delegated manager (Chang et al., 2016). Socially responsible investors could preserve self-image by holding on to a losing stock and convincing themselves that they still invested in a “good”, socially responsible stock, despite its recent negative financial performance.

Also social interactions matter for the disposition effect. Rau (2015) finds that investors that trade in teams display a more pronounced disposition effect than those trading alone. Investors may be reluctant to admit to their peer group that they made a wrong call on an investment: Heimer (2016) shows that traders connected through an online trading platform display correlated levels of the disposition effect and access to the platform nearly doubles traders’ disposition effect. Riedl and Smeets (forthcoming)

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1 This is common practice in the disposition effect literature (Dhar and Zhu, 2006; Odean, 1998; Frino et al., 2015), but the socially responsible investment literature either analyzes mutual fund data (e.g. Renneboog et al., 2008; Riedl and Smeets, forthcoming; El Ghoul and Karou, 2017), or constructs portfolios from social responsibility ratings to analyze performance (e.g. Kempf and Osthoff, 2007; Galema et al., 2008).

2 Chang et al. (2016) find that delegated fund managers display a reverse disposition effect, which is consistent with blaming the fund manager and thereby preserving self-image.
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