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**HOUSEHOLD PREFERENCES FOR SOCIALLY RESPONSIBLE
INVESTMENTS**

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Household Preferences for Socially Responsible Investments[♦]

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Abstract

We analyze revealed and stated household preferences for socially responsible investments (SRI). Using a questionnaire specifically designed for this purpose and administered to a Dutch representative household panel, we investigate the actual and latent demand for SRI products. Respondents reported whether they owned SRI products and why or why not, but also answered stated choice questions on traditional investments and hypothetical socially responsible products with an explicit return penalty and/or an in-kind compensation associated with lower return. Our results show that investors attracted by socially responsible financial products are more interested in the social product as such and show little interest in compensation. The magnitude of the penalty for investing in SRI is not diluting their investment intentions.

Keywords: Ethical mutual funds; Personal finance, Investor behavior

JEL: D14; G11; M30

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1. Introduction

Financial products, albeit sophisticated, tend to be standardized in their features. Investors shape their portfolio by choosing the ideal mix of risk and expected return over a given time horizon. Many investors, however, are also driven by less traditional factors in deciding where and how much to invest. Bauer and Smeets (2015), for example, highlight that investors' gains can go beyond the simple financial utility when they invest in bonds of firms that share their own values.

Socially Responsible Investments (SRI) represent one example. SRI mutual funds select their products not only based on the risk-return trade-off, but also on "social acceptability," giving, for example, the reassurance that investments exclude companies in the tobacco, weapons or gambling industries. A substantial group of investors values this type of guarantee and is therefore willing to invest in SRI products. In a world characterized by low (if not negative) interest rates and high volatility in financial markets, the possibility of attracting investors by going beyond the standard risk-return trade off represents a venue to be better explored and exploited by the financial industry.

The SRI market is gaining momentum: investments in sustainable and responsible market stocks have increased at a fast pace over the past years (Busch et al. 2016; EUROSIF, 2014) with a market value at \$6.57 trillion in the US only. This trend shows an increasing attention for non-strictly financial attributes of the assets, and specifically for the social characteristics of the product. The Netherlands is a particularly interesting country in this context since it represents one of the largest markets for SRI in Europe (Eurosif 2014). Furthermore, the size of this market is constantly growing.

In this paper, we investigate the actual and potential demand among private households for social bonds and social mutual funds: products that have a clear social component as specified in the product subscription (for example stating that part of the foregone interest will be devoted to some charity).

Given the increasing size of Social Responsible Investments, the room for financial products with a specific devolution, i.e. going into a well-specified program, is of special interest for the financial industry.

Our analyses aim to answer two main research questions. First, while most studies on the consumers' interest in SRI focus on financial market participant, we aim at analyzing the potential demand for specific SRI products in the complete population, using a representative survey of the Dutch adult population with questions on actual SRI investing and on hypothetical choices between specific SRI and non-SRI products. Using a representative sample is a clear advantage as it does not limit the size of the market and is also informative on the preferences of individuals who indirectly invest in financial assets, e.g. through their mandatory occupational pension.

Second, we want to investigate whether potential investors accept a higher cost associated to ethical products (i.e. lower return or higher risk) or are just driven by the possibility of a higher return and see SRI as a good investment “niche” in the market. To this end, in the stated choice questions, two possible products are proposed: the first offers a lower monetary return due to the donation component, the second compensates more for the social choice, albeit with a non-monetary compensation (in kind).

Results of our research are important for a large and diversified set of investors. Indeed consumer preferences for SRI are not only relevant for households who directly invest in financial markets. In the Netherlands, and many other countries with fully funded pensions, most individuals and households also save through mandatory participation in an occupational pension fund. In the Netherlands, most of these pensions are of a defined benefit nature, where the pension fund decides how participants' retirement savings are invested. Recent reform plans, however, tend towards increasing choice opportunities for participants, and one of the issues that has come up in this context is to give participants a say in the extent to which their pension savings will be invested in socially responsible products (de Beer et al, 2014). This raises the question how private households, including those who do not hold any discretionary financial savings, would prefer to invest their mandatory pension savings. An even further

reaching freedom of choice option considered in the reform plans, is that individuals can choose their own pension fund. In this case also, consumer preferences for SRI are relevant since investing in SRI may attract or alienate certain groups of participants. Even if pension fund participants cannot make any individual choices, pension funds are concerned about how they are evaluated and trusted by their participants (Van Dalen and Henkens, 2017), and their investment strategy may be one of the determinants of this. Accordingly, many Dutch pension funds already have of sustainable investment, and the importance sustainability is growing over time (DNB, 2016). Furthermore, if socially responsible investors accept to sacrifice returns, the result can be interesting for mutual funds and corporations in terms of lowering the cost of capital. At the same time, the profiling of a socially responsible investor can be used to expand the participation in financial markets of some types of households (e.g. households headed by females).

To our knowledge, this research constitutes the first such analysis carried out on a representative sample of private households. Our results show that social investors are willing to pay a price to be socially responsible rather than needing a little nudge, such as in kind compensation. The appeal of SRI is lower if there is an in-kind benefit associated to the product that comes with a small reduction of the financial return. Moreover, SRI investors show little sensitivity to the magnitude of the return penalty (measured as lower interest rate), suggesting that SR investment decisions are driven by non-monetary factors. Our analysis consistently identifies highly educated individuals as a group with a substantial latent demand that is currently unexploited. Moreover, we find that individuals who already have SR investments are more interested in the proposed new SR investments, thus representing a “warm list” (Landry et al., 2006).

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature on SRI. Section 3 illustrates the data and the set-up of the experimental module, while Section 4 provides descriptive analyses of actual and stated preferences. Section 5 presents the empirical results of regression

models explaining actual and stated choice behaviors. Section 6 draws conclusions and indicates potential topics for further research.

2. Conceptual Background and Literature Review

The literature on SRI has been growing at a very quick pace since the early 2000s. Focusing on the personal finance perspective,¹ the academic literature addresses a few related questions: why do households invest in SRI? How do SRI assets perform in comparison to conventional ones? What is the typical profile of an SR investor?

Several studies aim to answer the question “why to invest socially” and look at motivations for SRI investments. The answers rest on a theoretical framework where the individual’s utility function depends on both wealth and non-wealth returns, the latter capturing the socially responsible dimensions of the decision. For example, Bollen (2007) tests whether differences in behavior exist between investors in SR mutual funds and investors in conventional funds. Results on the dynamics of cash flows in SR mutual funds are consistent with a multi-attribute utility function, with investors not only looking at the risk-return trade-off, but also getting direct utility from the socially responsible attributes of the funds, the so-called intrinsic motivation, the value of giving *per se* (Ariely et al. 2009). Similarly, Beal et al. (2005) provide three non-exhaustive and non-exclusive motivations for ethical investments: superior financial returns (consistently with traditional finance theory), non-wealth returns, and social change. Glac (2009) uses lab experiments to underscore that the decision frame influences the likelihood of engagement in SRI. In the same spirit, Døskeland and Pedersen (2016), based upon the theoretical model of

¹ Other studies take the firms’ viewpoint and look at advantages/disadvantages of adopting corporate social responsibility in terms of cost of capital (El Ghouli et al. 2011), cost of debt (Goss and Roberts 2011), shareholders’ wealth (Krüger 2015). Bénabou and Tirole (2010) provides a first attempt to give an economic framework to individual and corporate social responsibility.

utility of wealth and morality by Levitt and List (2007), use a natural field experiment to show that wealth framing is more effective than moral framing in inducing investors to engage in SRI. Pasewark and Riley (2010) utilize an experimental approach to determine the effects of values on an investment decision: they ask individuals to choose between bonds issued by a tobacco company or by a firm outside the tobacco industry. They conclude that personal values of the investor affect investment decisions. A related question concerns the historical performance of SRI compared to conventional funds, and hence the potential existence of an “ethical penalty”. Renneboog et al. (2008) find that SRI funds in European, North-American and Asia-Pacific countries underperform compared to conventional ones and conclude from this that the SRI investors pay a price for their socially responsible choice. In contrast, Bauer et al. (2005), using a database of German, UK and US ethical mutual funds, do not find significant differences in risk-adjusted returns between ethical and conventional funds. Gil-Bazo et al. (2010) even find that US SRI funds outperform conventional ones in the period 1997-2005. Renneboog et al. (2008) review the literature on SRI and emphasize that existing studies hint at but do not univocally prove the willingness of agents to accept a lower return in exchange for social or ethical goals. Benson and Humphrey (2008) analyze the investors’ behavior and find that SRI fund flows are less sensitive to returns than conventional funds, and more persistent, thus hinting at the difficulty faced by SRI investors in finding alternative investments that meet their non-financial goals. Riedl and Smeets (2017) highlight social preferences as the main driver in investing in SRI, despite expecting a lower return, this being suggestive evidence for a long run effect in affecting asset prices. A third strand of the literature aims to identify the SRI investor’s profile empirically. Bauer and Smeets (2015) use survey data from retail clients of the only two banks in the Netherlands that exclusively offer SRI and find high levels of social identification among

young, highly-educated and low-wealth investors, thus supporting the profiling of socially responsible investors by Junkus and Berry (2010). The roles of gender and education are also highlighted in Nilsson (2008), who further shows that social investors are not only driven by altruistic motives, but also by the idea that ethical mutual funds have an average or better than average performance. Hood et al. (2014) have recently looked at heterogeneities among socially conscious investors, emphasizing the different preferences for social investments across gender, age, religion and groups with different political affiliation.²

Our paper adds to the empirical literature on SRI by investigating whether SRI investors are indeed willing to pay for their social financial product with a lower interest rate or whether they want to be compensated, somehow, for the monetary loss they incur compared to the traditional investment. In this way, we identify whether the traditional drivers for SRI are the same for “pure” social investors versus SRI investors with compensation.

3. Data and Set up of the Experimental Module

Our data have been collected through an Internet survey among participants of the CentERpanel, run by CentERdata at Tilburg University. CentERdata is a survey research institute that is specialized in data collection and internet surveys. The CentERpanel consists of about 2000 households. It is based upon a random probability sample representative of the Dutch population; households without Internet access are provided with the necessary equipment so that they can still participate. All household members aged 16 or more are invited to complete short questionnaires on a weekly basis,³ although some questionnaires focus only on certain individuals such as the household head or the financially most knowledgeable household member. The response rate at the individual level is usually above 70%. Annually, panel

² For less recent papers on the issue, see, among others, Rosen et al. (1991), McLachlan and Gardner (2004), Williams (2007).

³ Participants receive a small monetary compensation for filling in the questionnaires.

members provide detailed information for the DNB Household Survey (DHS), supplying researchers with a rich set of background information on many domains of the respondents' lives. These data contain information on individual characteristics, employment, pensions, living conditions, mortgages, income, assets, loans, health, and economic and psychological concepts. Additional information about the dataset can be found in Teppa and Vis (2012) and CentERdata (2015). Teppa and Vis (2012) also discuss the pros and cons of self-administered surveys.

Our survey on SRI was conducted in May 2016. All members of the CentERpanel aged 18 or more received the questionnaire. In total, 2,888 individuals were asked to answer ten questions about actual and hypothetical socially responsible investments and crowdfunding.⁴ More details on the experimental module and the original questionnaire are provided in Appendix B.

The first part of the survey contained questions about actual financial behavior, while in the second part individuals were asked to express their preferences between different investment possibilities for a hypothetical inheritance. The first of these questions (Q5 in the questionnaire), asks individuals whether they would allocate the inheritance to a savings account at a traditional bank, at an SR bank offering a lower return, or at an SR bank giving a *deluxe* edition of a book as a gift to new clients, but offering a lower return. In the second question (Q6), respondents could choose among three options: (i) a savings accounts at a traditional bank; (ii) an account at an SR bank offering a lower return but specifically investing part of the return on children vaccination in Africa or in microcredit to women in developing countries,⁵ or (iii) an account at an SR bank giving new customers a voucher allowing them to participate in cultural activities, but also offering a lower return. In the third question (Q7), individuals were explicitly asked what percentages of the inheritance they would allocate to saving accounts at a traditional bank and at an SR bank offering a lower return but investing part of the return in children vaccination in Africa or microcredit to women in developing countries. Finally, in the fourth question (Q8) the choice

⁴ Questions Q4, Q9 and Q10 in our survey referred to crowdfunding and are not analyzed in the current paper.

⁵ This is in line with Berry and Junkus (2013), where the authors claimed that investors prefer to reward positive social behavior rather than exclude firms based on their products or activities.

was between a mutual fund linked to the AEX (Amsterdam Stock Exchange) Index, an SR mutual fund offering a lower expected return, and an SR mutual fund giving a book to new clients, but offering an even lower expected return.

Several randomizations are incorporated in the questionnaire, to investigate the willingness to pay for certain features of the socially responsible choice options. In particular, for half of the sample the hypothetical inheritance amounted to €5,000, while for the other half the level was €10,000. Moreover, the expected return and other specifics of the available financial investments were randomized.

The experimental design of the stated preference questions rules out the non-investment option, reflecting the mandatory pension savings features. Indeed, we are also interested in the SRI preferences of individuals who do not directly want to participate in financial markets or do not even have any discretionary financial wealth, since, as explained in the introduction, we are also interested in indirect SRI investments through, for example, mandatory occupational pensions.

4. Actual and Stated Behavior: Descriptive Analysis

As a starting point for our analysis we look at actual behavior (questions Q1-Q3). Only 8.9% of the respondents have investments in socially responsible mutual funds. The most frequently reported reason for doing this (question Q2), is to contribute to improving society (more than 60% of SRI investors). The other reasons are less common. Still, for 37.5% of SR investors (one of) the motivation(s) is that they have more confidence in SR banks than in traditional banks, 24% say they expect better returns than for traditional products, 27.8% of SR investors mention the tax-favored nature of these products, and only 3.4% (7 respondents) say they responded to some special offer.

Among non-SR-investors, the most frequently reported reason for not investing in SR assets, is that these mutual funds were not liquid (47%), or because respondents lacked money to save or invest (35%). Fewer respondents are discouraged by the low returns or high costs (11%) or wanted to invest only in traditional

banks with an investment strategy that considers expected return and risk only (15%). Furthermore, almost 10% of the respondents who did not have any SR assets said that they should make this kind of investment but did not yet get to actually doing this. This is a form of procrastination. It suggests that there is a latent demand for more SRI investments, something that we will also find when analyzing the stated preferences⁶.

Turning to stated preferences, the answers to question Q6 show that 32% of the respondents would opt for a saving account at a bank investing in SR companies instead of a more traditional bank.⁷ Even more than 43% of the respondents (46% among females) would prefer an ethical mutual fund over a traditional one linked to the AEX Index (question Q8).⁸

Question Q7 considers the intensity of the potential investment in SR savings. People are asked to allocate the hypothetical inheritance between savings accounts in a traditional bank and an SR one. As shown in Figure 1, we can see different peaks. The relative majority (44%) would choose to put everything in the traditional bank. Nevertheless, it is interesting to note that 19% of the respondents would allocate more than 50% of the hypothetical inheritance to the SR bank and 12% would assign the whole amount to such a bank. This is even more remarkable considering that the question explicitly states that the savings account at the SR bank offers a lower return. Last but not least, there is a peak at 50, which suggests an attempt to (naively) diversify between the two investment options, in line with the well-known *1/n* heuristic in behavioral finance (see Benartzi and Thaler, 2007).

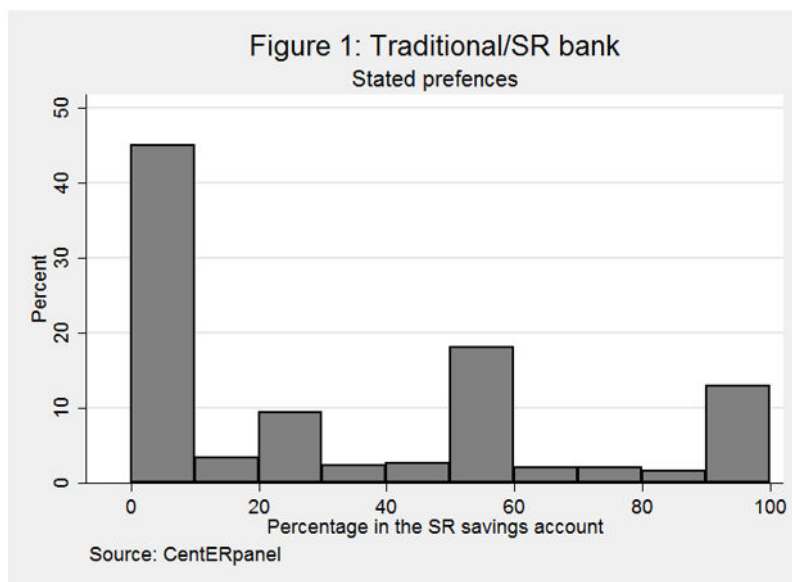
Table 1 shows the association between the actual decision to invest in SRI (question Q1 in Appendix B) and the stated preference question on the choice between traditional and SR mutual funds (question Q8). As might be expected, actual SRI investors also exhibit higher stated preferences for SRI. Indeed, 41% of

⁶ Intentions are the best predictors of actual choices, albeit not the only ones (Sheeran 2002)

⁷ Here we have combined the second option, SR investments for vaccinations/ microcredit, and the third one, SR investments plus voucher.

⁸ The second option, SR mutual fund, and the third one, SR plus book, have been combined here.

the respondents who actually do not hold any SR assets choose one of the SRI investments in the SP question, compared to 63% of the respondents who do own SR assets.



This confirms that stated preferences have some value for predicting differences in actual behavior, in line with earlier studies in many domains (see, e.g., Whitehead et al. 2008). Understandably, the correlation is far from perfect. For example, actual SRI investors may find the specific products offered in the SP questions unattractive, and respondents who choose an SR product in the SP question may not be interested in private investment at all.

In question Q8 we randomly varied the (negative) difference in expected return between the SR options and the traditional mutual fund. Table 1 shows that a higher expected return (or a smaller difference compared to the traditional investment) increases the tendency to choose the SRI options. The effect is rather small, except in one case: actual SRI investors much more often choose the product with an in-kind gift in case of the higher expected return (13% versus 4%).

Finally, it is clear from Table 1 that interest in the in-kind gift was limited. Indeed, only 10% of all respondents selected the last option (SRI and in-kind), with little difference between SRI owners and non-owners. Similar results are found for the choice between a traditional bank and an SR bank (question Q6). This is in line with the low interest found by Levin et al. (2016) when they tried to increase donations to a university by giving away signed copies of *Superfreakonomics*.

Table 1. Ratio investing in traditional, SRI, SRI with in-kind across actual behaviour.

		Choice in SP question on mutual funds (Q8)	Expected return SRI products (randomized)		
			Low	High	Total
Actual behavior					
Not owning SRI	Traditional		0.60	0.58	0.59
	Pure SRI		0.31	0.31	0.31
	SRI & In-kind		0.09	0.11	0.10
Owning SRI	Traditional		0.42	0.32	0.37
	Pure SRI		0.54	0.55	0.55
	SRI & In-kind		0.04	0.13	0.09
Total	Traditional		0.59	0.56	0.57
	Pure SRI		0.33	0.33	0.33
	SRI & In-kind		0.09	0.11	0.10

Note: Each cell presents the fraction of those who made the given choice in the SP question Q8. “Low” and “High” refers to the randomized expected return of the SR options, which was always the same for the two SR options.

5. Multivariate analysis

5.1 SRI Versus Traditional Investments

The results of the previous section suggest that more people have a potential interest in SR investing than actual ownership rates suggest. The aim of this section is to analyze how actual and stated preferences for SRI are associated with basic socio-demographic characteristics of the respondents.⁹

Table 2 presents the results of some probit models for actual and stated SRI choices. In order to compare the socially responsible vs. the traditional investor, we always combine the two SRI options in the SP questions (the second and the third option in each question) and use binary choice models, with outcome $y=1$ for an SR choice and $y=0$ otherwise. Appendix A provides details on the included socio-demographic characteristics. The first column explains actual behavior, i.e., whether someone has SR investments ($y=1$) or not ($y=0$; question Q1). The other columns all focus on the stated preferences. In particular, for the second column the choice was between savings accounts in a traditional bank ($y=0$) or an SR bank ($y=1$; question Q5). The same has been done in the third column (question Q6), where it was clearly specified in which projects the SR bank would invest part of the return (vaccinations in Africa or microcredit). Finally, the last column (column 4) looks at risky investments: here the choice was between a mutual fund linked to the AEX ($y=0$) and an ethical mutual fund ($y=1$; question Q8). The table presents average marginal effects on the probability to hold SR assets or choose the SR option.

The most persistent result concerns education: highly educated individuals invest 10 percentage points more often in SR mutual funds and accounts than low educated respondents with the same other characteristics. Moreover, in the SP questions, they have 20 to 22 percentage points higher chances of selecting an SR bank (Q5 and Q6), and they are 13.6 percentage points more likely to allocate the hypothetical inheritance to an ethical rather than a traditional mutual fund (Q8). These results particularly point at a higher potential demand for risk-free SR products among the higher educated.

⁹ It might be interesting to also consider the correlations with other variables that refer to social preferences, such as those used in Whitehead et al. (2008). They also use data from the CentERpanel, but due to the time difference, the overlap between the two samples will be very small.

The gender difference in the actual SR ownership rate is insignificant, and there is no significant gender difference in the stated interest in socially responsible saving accounts either. Nevertheless, women are substantially (6.5 percentage points) more likely to choose one of the ethical mutual funds rather than the AEX fund. This is consistent with Dellavigna et al. (2013) who found that women may give more under some circumstances, but not in other situations.

Income is marginally significant for actual behavior, with a very small positive effect.¹⁰ On the other hand, income is negatively associated with the first stated choice of a savings account at an SR bank and not significant for the other two SP questions. The number of children is negatively associated with the SR choice in all cases, and significantly so in the second SP question on saving accounts. We could interpret this effect as a displacement effect: when people feel responsible for their household, they reduce their interest into the social cause.

The stated preference questions were designed with specific randomizations. Our results show that doubling the amount of the hypothetical inheritance from €5000 to €10,000 (the dummy “inheritance 10K”) does not significantly influence the stated choice. On the other hand, the interest rate differential (“higher SR interest rate”) is positive and significant in both SP questions on SR saving accounts. In case of Q6 (column 3), this means that respondents were more likely to select the SR bank when this bank invested only 20% rather than 40% of the returns in social projects. This result is important to understand how much investors are willing to sacrifice for social responsibility and is in line with Barreda-Tarrazona et al. (2011). On the other hand, the expected return differential between the SR mutual fund and the traditional mutual fund in the SP question on risky assets has the expected sign but is not significant (“Higher expected return on SR fund”).

¹⁰ Using net household income or gross individual income instead of net individual income does not alter our conclusions.

Table 2: Participation in social investments - Probit models

Survey question	Q1	Q5	Q6	Q8
	Actual choices	Bank accounts	Bank accounts	Stock Mutual funds
Female	0.006 (0.012)	-0.004 (0.018)	-0.003 (0.020)	0.065*** (0.021)
Age	0.002*** (0.001)	0.002** (0.001)	0.000 (0.001)	0.002* (0.001)
Secondary education	0.032* (0.019)	0.056** (0.026)	0.039 (0.028)	0.008 (0.029)
Tertiary education	0.099*** (0.018)	0.201*** (0.024)	0.224*** (0.025)	0.136*** (0.028)
Working	0.005 (0.017)	0.011 (0.026)	0.030 (0.028)	-0.014 (0.030)
Married / Living together	0.006 (0.015)	-0.015 (0.023)	-0.050** (0.024)	-0.004 (0.026)
Children in the household	-0.007 (0.017)	-0.030 (0.024)	-0.051* (0.026)	-0.037 (0.028)
Urban	0.018 (0.013)	0.047** (0.019)	0.027 (0.021)	0.070*** (0.023)
Log(Individual Income)	0.009* (0.005)	-0.010** (0.005)	-0.004 (0.005)	-0.001 (0.006)
Inheritance 10K		0.011 (0.018)	0.023 (0.019)	0.020 (0.021)
Higher interest rate SR account		0.050** (0.021)	0.056** (0.022)	
High book value		-0.012 (0.018)		
Investment in micro-credits			-0.008 (0.020)	
High voucher value			0.001 (0.019)	
Higher expected return SR funds				0.026 (0.021)
Observations	2055	2225	2223	2198

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Marginal effects. Standard errors in parentheses clustered at the household level. Source: CenntERpanel. Column 2 refers to Q5, where the option was between a traditional saving account or an account in an SR bank (with or without the book incentive, the two options are combined here). Column 3 refers to Q6, where the choice was between a traditional saving account or an account in an SR bank that invested specifically in microloans/children vaccinations (with or without the voucher incentive, the two options are combined here).

Higher interest rate SR account = 0/1: interest rate on SR accounts is 0.6% / 0.8%.

High book value = 0/1: third choice option in Q5 comes with book of €40/€60. Investment in micro-credits = 0/1: second option in Q6 explicitly states money is invested in vaccinations / micro-credits; High voucher value = 0/1: third choice option in Q6 comes with voucher of €40 / €60. Higher expected return SR fund = 0/1: expected return in second choice option is 1.0 / 0.5 %-points lower than in choice option 1, and expected return in choice option 3 is 1.2 / 0.6 %-points lower than for choice option 1.

Similarly, we find no significant effect of the value of the in-kind gift (question Q5) or the nature of the investment project for which the SR investment is used (microloans or vaccinations; question Q6).

In alternative regressions not reported here (detailed results available upon request), to check whether stated preferences are consistent with the actual household decisions (revealed preferences), we added in the above stated preferences specifications (columns 2-4) a dummy variable indicating whether the respondent's household had actually invested in SR activities. Results showed that, as expected, its coefficient was positive, highly statistically significant and with a magnitude going from 18 percentage points for the choice on mutual funds to 30 percentage points for the choice on savings accounts. This confirms that the positive correlation between revealed and stated preferences found in Table 1 still holds when controlling for basic socio-demographic characteristics.

5.2 Heterogeneity in SR products

The analysis above did not distinguish between the two SR options offered in each of the questions. In question Q8 for example, choice option 2 just focused on the ethical nature of the SR investment, to be traded off against a (0.5 or 1.0%-points) lower expected return than the traditional investment. The other SR option (choice option 3) came with an in-kind gift, and an even lower expected return (0.6%-points or 1.2%-points lower than for the traditional investment). These two choice options could attract two different types of investors: the former would appeal to the purely social investor, while the latter might be a nudge for investors who do not only consider risk and return, but do not necessarily have a high social responsibility driver. In order to analyze the differences between the drivers of choosing the two SR options, we ran a multinomial probit on the three types of investments: traditional investment, "pure" SR investment (with expected return loss compared to the traditional investment) and SRI with in-kind gift (a book with value €40 or €60). The results are presented in Table 3.

Table 3: Multinomial Probit - Wildlife Gift Stock (Q8)

	(1) Traditional	(2) SR	(3) SR & In-kind
Female	-0.065*** (0.021)	0.057*** (0.020)	0.009 (0.014)
Age	-0.002* (0.001)	0.001 (0.001)	0.000 (0.001)
Secondary education	-0.011 (0.029)	0.034 (0.028)	-0.022 (0.017)
Tertiary education	-0.137*** (0.028)	0.159*** (0.026)	-0.021 (0.017)
Working	0.014 (0.030)	0.013 (0.028)	-0.027 (0.018)
Married / Living together	0.003 (0.026)	0.012 (0.024)	-0.015 (0.016)
Children in the household	0.036 (0.028)	-0.046* (0.026)	0.010 (0.017)
Urban	-0.070*** (0.023)	0.076*** (0.021)	-0.006 (0.014)
Log(Individual Income)	0.001 (0.006)	0.003 (0.006)	-0.004 (0.004)
Inheritance 10K	-0.020 (0.021)	0.035* (0.020)	-0.015 (0.013)
Higher expected return SR funds	-0.026 (0.021)	0.001 (0.020)	0.025* (0.013)
Observations	2198	2198	2198

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The table presents marginal effects computed from estimates of a Multinomial Probit model. Standard errors in parentheses clustered at the household level. Source: CentERpanel. Inheritance 10K = 0/1: The amount to be invested is €5,000 / €10,000.

Higher expected return SR fund = 0/1: expected return in second choice option is 1.0 / 0.5 %-points lower than in choice option 1, and expected return in choice option 3 is 1.2 / 0.6 %-points lower than for choice option 1.

The first question we want to answer using Table 3 is how sensitive SR investing is to the expected return. The choice for the pure SRI option is not significantly influenced by the (difference of its) expected return (compared to that of the traditional investment). On the other hand, the in-kind option is chosen more often if its expected return is higher and this effect is marginally significant. We interpret this result as an indication that there are two different types of social investors, with different drivers. The purely SR investors consciously accept giving up some expected return and this does not diminish their interest in the SR product. These investors have a higher social interest overall. The fact that option 2 is chosen much more often than option 3 suggests that they constitute the majority of the investors with an

interest in SR products. Another group of SR investors is, on the other hand, more similar to traditional investors. They choose for the SR option if they get an in-kind compensation, in this case a book. The latter group is responsive to the expected return, like traditional investors.

5.3 SR Investing at the intensive margin

Following Dorfleitner and Nguyen (2016), we not only considered whether individuals are interested in SR investments, but also in how much they are willing to allocate to these. This is addressed using stated preference question Q7, asking for the percentage of the inheritance that respondents were willing to deposit in a savings account at a SR bank rather than at a traditional bank (providing a higher interest rate). See Figure 1 in the previous section for the distribution of the share of the total inheritance that respondents chose to invest in the SR option. The average share was 30%, while the median was 20%. To account for the censored nature of this share, we use a Tobit model; the results are presented in Table 4. Column 1 reports the coefficients, while the average marginal effects on the censored variable (the actual share) are shown in column 2.

As in the previous section, the pivotal regressor is education: individuals who completed tertiary education were willing to allocate 13 percentage points more to the SR bank than respondents with lower educational achievements, i.e. roughly between €650 and €1,300 more (the inheritance was set at €5,000 or €10,000). Among the other regressors, working status, income and household composition were not statistically significant, like in Section 5.1. Older people and those living in urban areas are inclined to invest more in the SR account than others. Furthermore, individuals living with a partner tended to select a lower level of SR investments. Gender did not play a role in the choice question, but it does matter at the intensive margin: females tend to allocate 4%points more to the SR option than males.

As we can see from the coefficient of “Inheritance 10K”, the amount to be invested (that is, the size of the inheritance) did not have a significant effect on the share invested in the SR account. Similarly to the

findings in Aretz and Kube (2013), respondents also appear to be insensitive to the nature of the project in which the bank invests their money: whether this is vaccination for children in Africa or microloans for women in developing countries does not matter significantly. On the other hand, in additional estimations not presented, we found that this effect depends on gender: if we include an interaction between female and “Investment in microcredits”: women tend to allocate 12 percentage points more to the SR account when the related social project was focused to vaccination of children in Africa.

Table 4: Intensity of SR saving (Q7) - Tobit Model

	(1) Coefficients	(2) Marginal effects
Female	8.676 ^{***} (3.211)	4.038 ^{***} (1.488)
Age	0.837 (0.642)	0.169 ^{**} (0.068)
Age squared	-0.004 (0.006)	
Secondary education	4.152 (4.226)	1.933 (1.965)
Tertiary education	28.121 ^{***} (4.296)	13.090 ^{***} (1.949)
Working	4.140 (4.651)	1.927 (2.164)
Married / Living together	-8.163 ^{**} (3.974)	-3.800 ^{**} (1.844)
Children in the household	-3.999 (4.293)	-1.861 (1.995)
Urban	6.052 [*] (3.504)	2.817 [*] (1.629)
Log(Individual Income)	-0.468 (0.880)	-0.218 (0.410)
Inheritance 10K	5.046 (3.169)	2.349 (1.473)
Higher interest rate SR account	9.681 ^{***} (3.244)	4.506 ^{***} (1.502)
Investment in microcredits	-1.557 (3.225)	-0.725 (1.501)
Observations	2209	2209

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Parameters and average marginal effects. Standard errors in parentheses clustered at the household level. Source: CenntERpanel. Inheritance 10K = 0/1: Amount to be invested €5,000 / €10,000. Higher interest rate SR account = 0/1: Interest rate 0.6% / 0.8%. Investment in micro-credits = 0/1: second option in Q6 explicitly states money is invested in vaccinations / micro-credits.

Respondents are willing to accept a lower interest rate for SR investments, by they do respond to the size of the difference: On average, they invest more in the SR account if they receive an annual interest rate of 0.8% instead of 0.6%. (The traditional bank offers an interest rate of 1% per year.) Combined with the results from the previous section, this suggests that the return does not matter for the decision to choose for an SR account at the extensive margin, but it does count at the intensive margin.

6. Conclusion

We analyze the potential market for a financial product with a social component for the entire Dutch population of adults, using a survey administered to a representative sample of the Dutch population. We aim to assess whether social investors are willing to pay a price in order to have a social investment in terms of lower interest or lower expected return, or whether they can be (partially) compensated with, for example, an in-kind gift. We investigate whether there is additional room for the development of the market in socially responsible financial products and identify the population segments more oriented to this market. Women, for example, could represent a potential market for risky SR investments, which has not been fully exploited yet. In line with Prast et al. (2015), alternative investment possibilities may increase women's participation in risky financial market products.

Our results show that social investors are willing to pay a price to be socially responsible rather than needing a little nudge, such as in kind compensation. Indeed, we detect two types of social investors: the pure social investors (the majority) do not look at the entity of the penalty and they invest socially tout court; these investors are willing to pay a penalty irrespective on its entity. A second group chooses social bonds or social stocks if associated with in kind benefits. This group differs from pure social investors as they are sensitive to the return loss. We suggest that they are oriented to social products but only with a nudge, such as an in-kind benefit. The appeal of SRI is lower if there is an in-kind benefit associated to the product that comes with a small reduction of the financial return. Moreover, SRI investors show little sensitivity to the magnitude of the return penalty (measured as lower interest rate), suggesting that SR investment decisions are driven by non-monetary factors.

Our analysis consistently identifies highly educated individuals as a group with a substantial latent demand that has not yet been fully exploited. To give a sense of the amplitude of this potential market, we can start from the marginal effect of education computed in the Tobit estimates (Table 4, Column 2): respondents with tertiary education allocated 13.4 percentage points more to the SR saving account than low educated respondents.

In addition to this, we have also shown that individuals who already have SR investments are more interested in the proposed new SR investments. Therefore, as also stressed in Landry et al. (2006), these individuals represent a “warm list”, i.e. a large pool of active SR investors who can be contacted by SR financial institutions.

In line with Levin et al. (2016), we hope that this paper has also highlighted the benefits of partnering with academics in the analysis of potential new financial products and markets. Rigorous quantitative methods and innovative survey designs could help financial institutions targeting more efficiently potential customers and identifying which tools may (or may not) be used to attract these individuals.

Finally, our findings have implications for institutional investors like the Dutch occupational pension funds. They have an interest in investing the retirement savings of their participants in accordance with their participants’ preferences. Our results suggest that SRI investing should be seriously considered, particularly by pension funds with many high education participants.

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Appendix A – Summary statistics and variables

Summary statistics

Variable	Obs	Mean	SD	Min	Max
Actual SR investments (Q2)	2,118	0.089	0.284	0	1
SR banks (Q5 - Dummy)	2,289	0.246	0.431	0	1
SR banks (Q5)	2,289	1.339	0.641	1	3
SR banks (Q6 - Dummy)	2,286	0.317	0.465	0	1
SR banks (Q6)	2,286	1.403	0.642	1	3
SR banks (Q7B)	2,272	30.336	34.987	0	100
SR mutual funds (Q8 - Dummy)	2,261	0.431	0.495	0	1
SR mutual funds (Q8)	2,261	1.535	0.675	1	3
Female	2,314	0.485	0.500	0	1
Age	2,314	54	17	18	93
Age squared	2,314	3203	1777	324	8649
Secondary education	2,314	0.323	0.468	0	1
Tertiary education	2,314	0.407	0.491	0	1
Working	2,314	0.507	0.500	0	1
Married / Living together	2,314	0.748	0.434	0	1
Children in the household	2,314	0.340	0.474	0	1
Urban	2,290	0.410	0.492	0	1
Log(Individual Income)	2,271	6.794	2.051	0	11.443

Note: these summary statistics refers to the whole sample. The actual observations used in the empirical analysis may be slightly different. The summary statistics for Q5, Q6, Q7B, Q8 refer to the original answers provided by the respondents (see the questionnaire below). For Q5, Q6 and Q8 we have also used in the empirical analysis dummy variables where the second option (SR investments) and the third one (SR investment plus book/voucher) have been combined.

Variable descriptions

Dependent variables

Actual SR investments (Q2) is an indicator variable equal to one if the respondent (or another household member) had already invested in SR financial assets.

Stated Preferences for Saving Accounts (Q5) - Book. We asked individuals how they would allocate an inheritance across saving accounts in a traditional bank, in a SR bank that guarantees a lower interest rate than the traditional bank, or in a SR bank that guarantees a lower interest rate than the traditional bank but gives a luxury book as a gift to new customers. Only one option could be selected. In the empirical analysis we have often combined the last two options.

Stated Preferences for Saving Accounts (Q6) - Voucher. We asked individuals how they would allocate an inheritance across saving accounts in a traditional bank, in a SR bank that guarantees a lower interest rate than the traditional bank but uses the remaining profits to finance children vaccinations in Africa or microloan to women in developing countries, or in a SR bank that guarantees a lower interest rate than the traditional bank but gives vouchers to attend cultural and sport events as a gift to new customers. Only one option could be selected. In the empirical analysis we have often combined the last two options.

Stated Preference for Saving Accounts (Q7) – Intensity. We asked individuals how they would allocate an inheritance between saving accounts in a traditional bank, and in a SR bank that guarantees a lower interest rate than the traditional bank but uses the remaining profits to finance children vaccinations in Africa or microloan to women in developing countries. Respondents had to specify which percentage of the inheritance they would assign to the SR bank.

Stated Preferences for Mutual Funds (Q8). We asked individuals how they would allocate an inheritance across a mutual fund linked to the AEX index, an ethical mutual funds with an expected lower return than the AEX (but the same risk), or an ethical mutual fund that gives a luxury book as a gift to new customers

and has an expected lower return than the AEX (but the same risk). Only one option could be selected. In the empirical analysis we have often combined the last two options.

Regressors

Female is an indicator variable equal to one when the respondent identifies herself as woman, zero if he identifies himself as a man.

Age records the age of the respondent (in years).

Primary Education is an indicator variable equal to one if the respondent's highest educational level was "basisonderwijs" (elementary school) or "wmbo" (preparatory middle-level applied education, i.e. non-selective secondary education), zero otherwise. This is the baseline.

Secondary Education is an indicator variable equal to one if the respondent's highest educational level was "havo/vmo" (higher general continued education/preparatory scholarly education, i.e. selective secondary education) or "mbo" (middle-level applied education, i.e. vocational training), zero otherwise.

Tertiary education is an indicator variable equal to one if the respondent's highest educational level was "hbo" (higher professional education, i.e. advanced vocational education) or "wo" (scientific education, taught at research universities), zero otherwise.

Working is an indicator variable equal to one if the respondent's main occupation is paid employment, self-employment or working in a family business, zero if the respondent is retired, a student, a housemaker, unemployed, disabled or similar.

Married / Living Together is an indicator variable equal to one if the household members are two individuals (un)married living together, with or without children. It is set to zero if the respondent is single (with or without children) or the household structure is different from the ones just mentioned.

Children in the household is an indicator variable equal to one if there were one or more children in the household living at home, zero otherwise.

Urban is an indicator variable equal to one if the respondent lives in an area with 1,500 or more addresses per km², zero for lower densities.

Log(Individual Income) is the logarithm of the respondent's individual monthly net income. It is equal to zero if such income was zero. It is set to missing if the respondent did not know his/her income, if he/she refused to provide it, or if the question was not answered.

Appendix B – Details on the Experimental Module and Original questionnaire

The first round of data collection occurred between May, 6th and May, 10th. Individuals who had not filled in the survey the first time received the questionnaire for the second time between May, 13th and May, 17th. The nonresponse rate was around 20%, which is in line with the usual response rate in these surveys. In particular, 574 (19.9%) individuals did not answer the questions. On the other hand, 2,250 (77.9%) individuals completed the task, while 64 (2.2%) individuals answered only some questions.

Turning to the feedback of respondents to the question, results show that individuals usually took around 5 minutes to complete the survey. In particular, among those who completed the survey, the median duration was around 4.7 minutes. Some individuals (around 5% of the relevant sample) took more than one hour to complete the task. In fact, it was possible to answer the questionnaire in more than one day. At the end of the questionnaire, as usual in the CentERpanel surveys, respondents are asked to give feedback. In particular, it is worth noticing that around 34% of the respondents found the topic interesting: on a scale from 1 (definitely not) to 5 (definitely yes), 21% reported 4, 13% reported 5. The percentages were higher among men than women (23% and 16% respectively). Around 35% of the respondent reported difficulties in answering the questions (20.3% reported 4, 14.8% reported 5). This percentage is higher among female individuals (42%) than among males (29%). Finally, it is reassuring that almost all of the respondents found the questions clear (Almost 90% reported 3, 4 or 5).

The following questions are part of the questionnaire designed for this paper (the whole survey is available upon request). Note that, in the Stated preferences section, several randomizations were included in the questionnaire. In particular, the *ARandom* dummy serve to assign to half of the sample the hypothetical inheritance amounted to €5,000, to the other half the level was €10,000 so as to asses the role of the amount of wealth to invest in the decision to go social. Dummies *BRandom*, *CRandom*, *ERandom*, *HRandom*, *JRandom* serve to randomize the reduction in the socially responsible opportunity. Dummies *DRandom* and *IRandom* serve to randomize the compensation (by means of a book or a voucher) to such a reduction, while dummy *GRandom* serves to specify the social project. These latter 8 types of randomizations allow investigate the willingness to pay for certain features of the socially responsible choice options.

Actual behavior

account

Financial respondent

0. No

1. Yes

introduction

Sustainability and corporate social responsibility are receiving a lot of attention. One way in which the citizens themselves can contribute to it is by saving their money in some particular way, for example in a special account or in a special investment fund at a regular bank, or at a special bank that only invests in socially responsible projects. Often this is also made more attractive by receiving a gift when you open a new account or, for example, by receiving a discount on transaction costs.

This questionnaire is actually talking about your behavior and your preferences for socially responsible ways to save your money. For example, do you only look to return and risk, or do you also consider other things?

If account=1

{finresp}

The following four questions are about you and your financial household. If an account or investment is owned by someone with whom you keep a financial family budget together (your partner or child, for example), add it. You don't need to count an account or investment of someone who owns financial household forms (for example, an adult son or daughter who still lives at home).

If account≠1

selection

The following four questions are about you and your financial household. If an account or investment is owned by someone with whom you keep a financial family budget together (your partner or child, for example), add it. You don't need to count an account or investment of someone who owns financial household forms (for example, an adult son or daughter who still lives at home).

Do you not want or are you unable to answer any question? Check the following option:

1. I don't own accounts or investments and I am not aware of the finances of my family

If account=1 or selection≠1

Q1

Do you (or your household) have any investments in socially responsible mutual funds or in other accounts that invest in environmentally friendly companies or in cultural or other activities that are beneficial to society?

1. Yes
2. No

Q2

If Q1=1

Why did you invest in these? (more than one answer can be given)

- a. Because I/we want to contribute in this way to improve society
- b. Because I/we have more confidence in the banks and people managing this kind of funds than in the rest of the financial sector
- c. Because of the (monetary) returns that I/we think these investments will have
- d. Because these accounts are or were (at the time I started this) tax favored
- e. Because I/we responded to a special promotion action promising me a (monetary or nonmonetary) gift for opening such an account or starting to invest in such a fund

If Q1=2

Why did you not invest in these? (more than one answer can be given)

- a. I/we should do this, but I do not get to it (yet)
- b. I/we have no money to invest or save
- c. I/we want to be able to withdraw my savings immediately if necessary
- d. Because of the high costs or low expected returns
- e. Because I/we only want to invest my money in the traditional banks who only look at expected return and risk

If account=1 or selection≠1

Q3

Some banks give you a present, such as a book or a voucher, if you open a new account or start investing or increase your investment in specific mutual funds. Were you (or your household) ever offered this opportunity and if so, did you make use of it?

1. This was never offered to me as far as I know
2. This was offered to me but I did not use this opportunity
3. I once used such an opportunity to allocate (some of) my savings
4. I more than once used such opportunities

Stated preferences

Q5

The following questions are not about facts but about how you would allocate money in a hypothetical situation.

Suppose you receive an inheritance of *[if ARandom=0: €5000 / if ARandom=1: €10,000]* but the condition is that you cannot spend the money now but only one year from now at the earliest. You can invest it in some account or mutual fund and receive the money plus net return one year from now.

We ask you how you would invest the money.

Please note that all the possible investment strategies are hypothetical; they do not reflect the returns you can currently get with real investments.

What would you choose you if you had the following possibilities?

- a. Put the money in a saving account at a traditional bank and receive an interest rate of 1%.
- b. Put the money in a saving account at a bank that only invests in socially responsible companies and receive an interest rate of *[if BRandom=0: 0.6% / if BRandom=1: 0.8%]*.
- c. Put the money in a saving account at a bank that only invests in socially responsible companies and receive an interest rate of *[if CRandom=0: 0.5% / if CRandom=1: 0.75%]*. In addition, if you open the account you get a Deluxe Edition of the book “Wildlife in Europe” with a value of *[if DRandom=0: 40 / if DRandom=1: 60]* if you would buy it in a store.

Q6

Suppose you receive an inheritance of *[if ARandom=0: €5000 / if ARandom=1: €10,000]* but the condition is that you cannot spend the money now but only one year from now at the earliest.

What would you choose you if you had the following possibilities?

- a. Put the money in a saving account at a traditional bank and receive an interest rate of 1%.
- b. Put the money in a saving account at a bank that only invests in socially responsible companies and receive an interest rate of *[if ERandom=0: 0.6% / if ERandom=1: 0.8%]*. The bank guarantees that the remaining *[if ERandom=0: 0.4% / if ERandom=1: 0.2%]* will be used for *[if GRandom=0: vaccinations of children in Africa / if GRandom=1: loans to help women in developing countries to set up their own business]*.
- c. Put the money in a saving account at a bank that only invests in socially responsible companies and receive an interest rate of *[if HRandom=0: 0.5% / if HRandom=1: 0.75%]*. In addition, when you open the account, the bank gives you a voucher worth *[if IRandom=0: 40/ if IRandom=1: 60]* that you can spend on theatre visits, cinema tickets, sports events, or concerts in the next twelve months.

Q7

Suppose you receive an inheritance of *[if ARandom=0: €5000 / if ARandom=1: €10,000]* but the condition is that you cannot spend the money now but only one year from now at the earliest.

For example, you can split the amount in two, put part of it in a savings account at a traditional bank with 1% interest rate, and the remaining part in a saving account at a bank that only invests in socially responsible companies, with an interest rate of *[if ERandom=0:0.6%/if ERandom=1: 0.8%]*. The bank guarantees that the remaining *[if ERandom=0:0.4% /if ERandom=1: 0.2%]* will be used for *[if GRandom=0: vaccinations of children in Africa / if GRandom=1: loans to help women in developing countries to set up their own business]*.

How would you choose to allocate the total amount?

0 ... 100% in the traditional savings account

0 ... 100% in the socially responsible savings account

Q8

Suppose you receive an inheritance of *[if ARandom=0: €5000 / if ARandom=1: €10,000]* but the condition is that you cannot spend the money now but only one year from now at the earliest.

What would you choose you if you had the following possibilities?

- a. Put the money in a mutual fund with a return linked to the AEX (Amsterdam Stock Exchange) Index. (The AEX invests in the stocks of the 500 largest companies in the Netherlands)
- b. Put the money in a mutual fund investing only in a careful selection of socially responsible companies. Compared to the AEX, this mutual fund has a *[if JRandom=0: 1.0 percentage point / if JRandom=1: 0.5 percentage point]* lower return per year on average, and the same risk.
- c. Put the money in a mutual fund investing only in a carefully selected group of socially responsible companies. Compared to the AEX, this mutual fund has a *[if JRandom=0: 1.2 percentage point / if JRandom=1: 0.6 percentage point]* lower return per year on average, and the same risk. In addition, you get a Deluxe Edition of the book “Wildlife in Europe” (with a value of 50 euros if you would buy it in a store).

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