



Network for Studies on Pensions, Aging and Retirement

Infographics and Financial Decisions

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DESIGN PAPER 148

NETSPAR INDUSTRY SERIES

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Netspar Design Paper 148, May 2020

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Abstract

Infographics and Financial Decisions

Since 2012, infographics have been used in European mutual fund disclosures, but, to date, no studies have examined how they affect investment decisions. Using a survey experiment with students and retail investors involving financial incentives, we test how the visualization of key mutual fund disclosures affects investment behavior. We find that adding infographics leads to a significant reduction in avoidable costs incurred for the student sample. The control variables of financial literacy and investor experience are not statistically significant, thus these do not lower avoidable costs when using infographics. For the retail investor sample, however, adding infographics does not significantly affect the level of avoidable costs. However, we do find that respondents with higher financial literacy and higher education and those who invest directly incur lower avoidable costs irrespective of disclosure design. Taking into account that the student respondent sample is meant to act as a proxy for the large population of consumers who have difficulties making individual financial decisions, our findings indicate that infographics can help potential vulnerable investors to make better investor decisions, while not hurting the group of more experienced investors. Our findings thus provide important insights for effective disclosure design.

Samenvatting

De effecten van 'infographics' op keuzegedrag van particuliere beleggers

Sinds 2012 worden grafieken, tabellen en andere figuren ("infographics") gebruikt in de verplichte informatiedocumenten van Europese beleggingsfondsen. Er is evenwel nauwelijks onderzoek gedaan naar hoe deze van invloed zijn op beleggingsbeslissingen van particuliere beleggers. Met behulp van een onderzoeksexperiment met financiële prikkels, met studenten en particuliere beleggers als respondenten, hebben we getest hoe de visualisatie van belangrijke informatie die beleggingsfondsen moeten publiceren het investeringsgedrag beïnvloedt. De analyses van de resultaten laten zien dat het toevoegen van infographics tot een aanzienlijke vermindering van vermijdbare kosten leidt onder de studenten. Wij vinden onder hen geen statistisch significante effecten van financiële geletterdheid en beleggingservaring. Die lijken dus niet tot vermindering van vermijdbare kosten te leiden. Voor de particuliere beleggers heeft het toevoegen van infographics echter geen significant effect op vermijdbare kosten. De resultaten laten wel zien dat respondenten met een hogere financiële geletterdheid en hogere opleiding en die zelf beleggen significant lagere vermijdbare kosten hebben, ongeacht of er infographics werden toegevoegd. Als de keuzes van de studenten representatief zijn voor de grote groep consumenten met weinig kennis van en ervaring met het maken van financiële beslissingen, dan impliceren onze bevindingen dat infographics potentieel kwetsbare beleggers kunnen helpen om betere beleggingsbeslissingen te nemen, terwijl meer ervaren beleggers niet geschaad worden. Onze bevindingen bieden daarom belangrijke inzichten voor het opstellen van een effectief informatiedocument.

Introduction

Clear communication is crucial in the pension and insurance domain, especially when clients have to make financial decisions based on information that they are provided with. This information needs to be clear and understandable for good decisions to be made. An example of such a financial decision is portfolio choice and what funds to pick. This is especially relevant for consumers who save for their pension in a DC pension scheme. Currently in the Netherlands, most pension fund participants have only limited freedom of investment choice. However, if in the future more flexibility is allowed and offered, this research becomes very relevant for the way information and communication documents are designed. It is also relevant for the growing number of self-employed persons who need to save for their own pension, aside from the current legislation regarding information documents. In most cases freedom of choice implies that the consumer or client must choose from a list of investment possibilities, typically mutual funds. In this study we investigate whether explanatory infographics in mandatory communication material for mutual funds enable better financial decisions.

Mutual fund investors have numerous options. In 2017, a total of 114,131 regulated open-end funds were available worldwide, of which nearly half (48%) are based in Europe (Investment Company Institute, 2018). This abundance leads to search costs as investors encounter an overload of information when comparing different funds. Empirical research casts doubts on the rationality of fund investor behavior, as investors tend to under-diversify (Benartzi and Thaler, 2001; Campbell, 2006), to buy funds that performed well in the past (Frazzini and Lamont, 2008; Bailey, Kumar, and Ng, 2011), to purchase funds involving high expenses (Huang, Wei, and Yan, 2007; Van Nieuwerburgh and Veldkamp, 2010), and to be sensitive to fund marketing (Sirri and Tufano, 1998; Jain and Wu, 2000; Elton, Gruber, and Busse, 2004; Barber, Odean, and Zheng, 2005; Cronqvist, 2006).

An important source of mutual fund information is the statutory prospectus. Unfortunately, *retail investors rarely read the prospectus*, let alone rely on it for investment decisions as they consider it too detailed and complex (SEC, 2009; ICI, 2006).¹ Regulators have responded by introducing summary sheets that emphasize key information (Kozup and Hogarth, 2008; Hung, Heinberg, and Yoong, 2010). However, this has not induced all investors to behave optimally (Beshears, Choi, Laibson, and

1 About 60% of mutual fund investors find the prospectus difficult while 26% find it very difficult to understand (ICI, 2006).

Madrian, 2011; Choi, Laibson, and Madrian, 2010). This may be explained by the fact that, although the volume of information is reduced, little attention has been given to its accessibility. The Key Investor Information Document (henceforth KIID) was introduced in 2012 for investment funds sold within the European Union. This implies that, for Dutch consumers, it already includes third-pillar pension products that are purchased individually. In addition, since January 1, 2018 the KIID must be provided to consumers for all PRIIP² products.

Contrary to the narrative U.S. summary sheet, these mandatory documents contain visual representations or infographics that make the regulated content more accessible to investors and facilitate their understanding of the information. Previous research indicates that the way information is presented is influential for decision-making. For example, Bertrand, Karlin, Mullainathan, Shafir, and Zinman (2010) and Bertrand and Morse (2011) found that visualizations and framing of information for consumer and payday loans can affect the demand for loans both positively and negatively.

This paper examines whether introducing infographics in summary sheets increases the accessibility of key information and benefits investor decision-making. Infographics make risk and fee information stand out more and can assist investors in comparing and choosing between funds. Data are collected using a survey experiment involving financial incentives, similar to that of Choi et al. (2010). We ask participants to invest in three anonymized MSCI Europe index funds.³ A rational investor should realize that all funds have the same risk profile in terms of expected returns and systematic risk. Thus, the expenses incurred should be minimized by allocating all of the investment amount to the cheapest fund. However, if fund risks and costs are difficult to compare, then investors could erroneously diversify across funds and consequently incur "avoidable costs". These are the expenses incurred in excess of the optimal investment strategy costs; in an optimal investment strategy they would be zero. The hypothesis tested in this paper is that infographics lead to greater understanding of the key features of the funds, thus facilitating the comparability of funds and reducing the amount of avoidable costs incurred.

The reference category (the control group) in the experiment is the current mandatory summary sheet for European mutual funds, the Key Investment Information

2 PRIIP stands for Packaged Retail and Insurance-based Investment Products.

3 This ensures that differences in idiosyncratic risk, non-portfolio services, and reputation effects are not relevant to investors.

Document (KIID).⁴ This document contains information regarding fund objective, investment style, tabulated costs, a graph with past performance relative to the benchmark index, and a standardized relative risk indicator (henceforth SRRI)⁵. The treatments are variations from the reference category; they are drawn up to test disclosures in the narrative without infographics (the text-only treatment), the stand-alone effect of the SRRI, the stand-alone past-return histogram, and a graph that shows the *net expected* return of the investment (see also Figure III below). All of these visual treatments affect the amount of avoidable costs incurred.

The findings are summarized as follows. Including infographics helps consumers make better investment decisions, i.e. with lower expenses. Therefore the 2012 regulation that created the KIID is an improvement compared to the prior situation where no infographics were used. However, we find that replacing the past-return histogram in the KIID by a net-expected-returns graph significantly decreases the amount of avoidable costs incurred, by as much as 20%. Hence, there appears to be room to improve the KIID. Moreover, adding infographics does not raise the chance that investors will choose the minimum cost strategy. As a result, infographics lower the amount of avoidable costs incurred but do not fully eliminate them. Infographics are also less effective for those respondents who recognize that all funds fall into the same risk category as in this case the opposite effect can even occur. Merely including a past-performance histogram, that is uninformative about future performance, is disadvantageous to decision-making as it leads to an *increase* in avoidable costs incurred (Shaton, 2017).

Therefore, it is important to understand how it affects investor behavior. As such, participants were asked to indicate what information they find important when making an investment decision (e.g. costs, past returns). Our analysis reveals that these factors have significant explanatory power. If investors consider costs to be important, then they will seek to reduce avoidable costs and choose the minimum cost strategy. These results are robust against various alternative model specifications. We want to emphasize that our results are found for the subsample of student respondents and not for the retail investor subsample. In the latter subsample, we do not find that infographics have a significant impact on investment allocations. This implies that adding infographics does not help all investors. However, we interpret

4 These funds, referred to as UCITS (Undertakings of the Collective Investment in Transferable Securities), account for roughly 75% of all collective retail investments in Europe. Publication of the KIID has been mandatory since 2009.

5 The Standardized Relative Risk Indicator (SRRI) is based on annualized return volatility and expresses the fund's risk on a standardized scale ranging from 1 (least risky) to 7 (most risky).

this result as follows. For the group of consumers that have only limited or no experience with individual financial decision-making, adding infographics helps. This does not apply for more experienced investors, who typically base their investment decisions not solely on information documents such as the KIID. However, adding infographics does not hurt them either. This leads us to conclude that for the entire consumer population, inclusion of well-developed infographics in required information documents such as the KIID is beneficial.

The first outcome of the paper is that it provides a detailed analysis of the impact of infographics on investment decisions in index mutual funds. Although there is some evidence regarding the effectiveness of visual disclosures (Shaton, 2017; Lusardi et al., 2017, Beshears et al., 2011), no systematic evaluation of how infographics improve investment decisions exists. Understanding these mechanics is important since evaluation and redesign of financial markets disclosure is costly. Moreover, consumers are increasingly personally responsible for their own financial (e.g. retirement) planning such that the consequences of costly investment behavior grow. Visualized disclosure can reduce these costs in two ways. First, avoidable costs are lower as respondents can easily verify, based on the standardized relative risk indicator, that all mutual funds have the same risk level such that there is no need for (costly) diversification. Second, Bordalo, Gennaioli, and Shleifer (2013) show that consumers attach a disproportionately high weight to salient attributes and as a result, their choices will be tilted towards goods with higher quality/price ratios. In our context, infographics add emphasis to fund expense information and increases the weight in the decision-making process. Our findings suggest that using well-defined infographic nudges can lead to better communication of financial information that is otherwise difficult to understand.

The second contribution of this paper is that our tests are based on a unique dataset, one that consists of both (unexperienced) students and (experienced) investors. Participants with prior investment experience are likely to respond differently to disclosures than unexperienced investors such as students (Kirchler, Lindner, and Weitzel, 2018). Experienced investors are likely to be familiar with the current disclosure documents, which can affect the way they scrutinize disclosures. The inclusion of student respondents allows us to estimate the effects of infographics for a large group of consumers with limited or no previous investment experience or familiarity with disclosure.

The final contribution of this paper is that past investment performance can make experienced investors overconfident and less sensitive to fundamental information regarding new investments (e.g., they may rely on their "gut" feeling). Our results

demonstrate the importance of distinguishing between these subgroups when evaluating disclosure design. Infographics are more effective for experienced investors and remain significant even if we control for the factors that participants find important. The effectiveness of infographics is substantially influenced by past investment experience also supports the argument of Campbell, Jackson, Madrian, and Tufano (2011) that a one-size-fits-all approach to investor protection is likely to be less than optimal if the underlying population is heterogeneous.

The remainder of this paper is organized as follows. Section 1 presents an overview of the literature and the development of our hypotheses. Section 2 discusses the research design, while Section 3 provides the data collection and descriptive statistics. The empirical analyses are presented in Section 4, while a discussion of our findings follows in Section 5. Finally, Section 6 presents our concluding remarks.

1. Institutional Setting and Related Literature

1.1 Institutional Setting

The European mutual fund market is characterized by an extensive supply of funds that differ in investment style, risk level, fee structure, and fund ownership. In the Netherlands, where our study is conducted, about 20% of households own at least one mutual fund (Alessie, Hochguertel, and Van Soest, 2001), and many more households invest indirectly in funds via their mandatory pension savings.

The European fund market is a particularly interesting laboratory since open-ended investment funds, such as mutual funds and ETFs, are required to publish a KIID since July 1, 2012. In addition, since January 1, 2018 the KIID must be offered to consumers for all PRIIP products. Dutch consumers who purchase third-pillar pension products as individuals, for example the growing group of the self-employed, have thus already been confronted potentially with the KIID since 2012. The KIID contains key fund information in narrative form, similar to summary sheets in the U.S., but also in graphic form. The intent of the KIID is to provide investors with key information to enable them to make informed investment decisions. An example of such a KIID is provided in Figure A.I of the Appendix. Regulations require the KIID to contain information on the fund objectives and investment policy, risks and rewards, costs and fees, other practical information, a histogram of past performance (see Figure I), and the graphic standardized relative risk indicator (SRRI) (see Figure II). Up to ten years of past performance are included in a histogram, while the risk category assigned to the fund is determined on the basis of annualized return volatility.

Prior to the introduction of the KIID, some EU countries, including the Netherlands, had their own disclosure regime. In 2002, the Netherlands introduced the Dutch Financial Leaflet (DFL), in which mutual funds disclose summarized information similar to the KIID.⁶ However, the DFL does not contain past-return information but a histogram of net *expected* returns (see Figure III). Figure III presents a graph as to how, as an example, a EUR 500 initial investment in a fund develops over a 24-month period after deduction of costs and loads.⁷ The gray rectangle that depicts the initial investment highlights the effect of upfront expenses on net expected returns. Compared to

6 In the Netherlands, the DFL is known as the “Financiële Bijsluiter.” A Dutch example of the DFL is provided in Figure A.II of the Appendix.

7 Note that the figure only shows the net expected returns over a 24-month period. This period has been chosen for the purpose of consistency and comparability with existing studies such as Choi et al. (2010). The investment period for retirement investment decisions is obviously much longer, but re-evaluation of portfolio decisions within 24 months is recommended.

Figure I. Past Returns Histogram

This histogram illustrates past performance and is included in the Key Investment Information Document (KIID). It includes the past annual returns of the index fund (dark bars) and the benchmark index (light bars) for up to ten years.

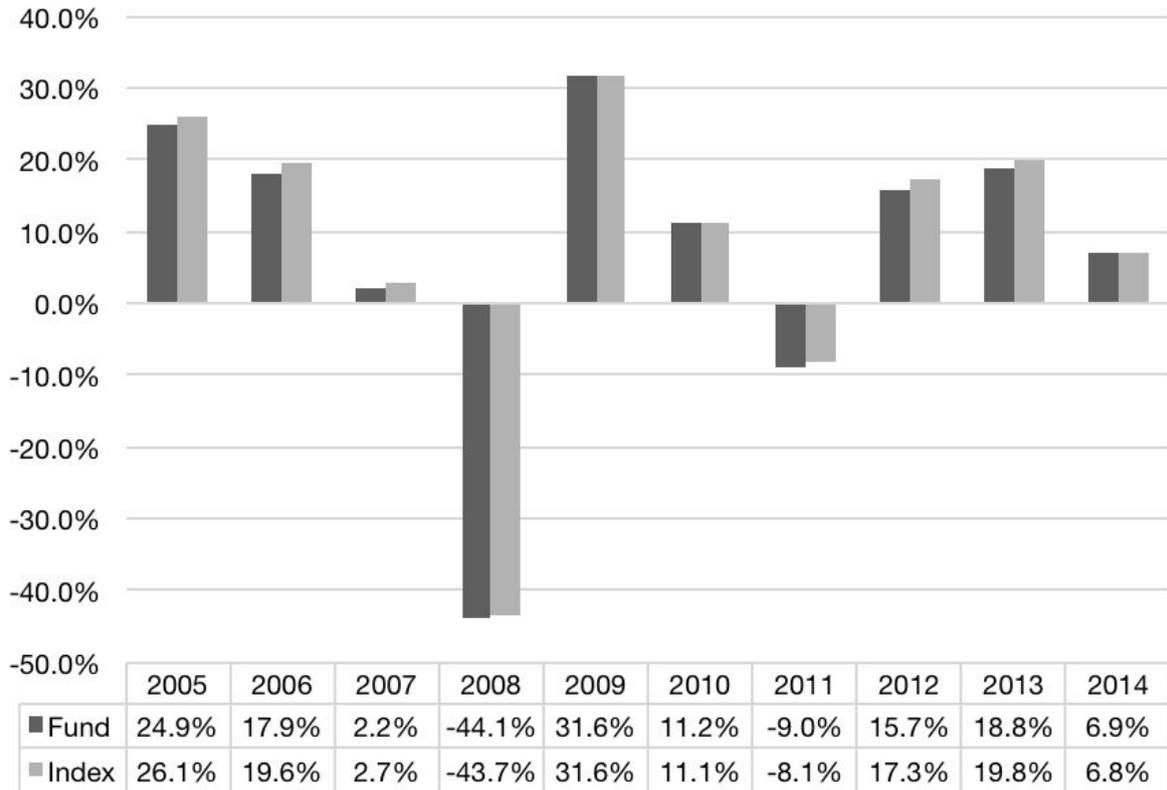


Figure II. Standardized Relative Risk Indicator (SRR)

The standardized relative risk indicator is included in the Key Investment Information Document (KIID). It illustrates the relative risk level of the index fund on a seven-point scale. The risk level of the fund is determined based on the annualized returns volatility.

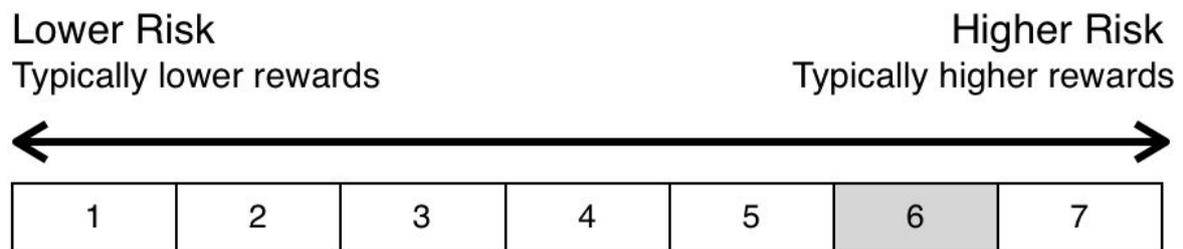
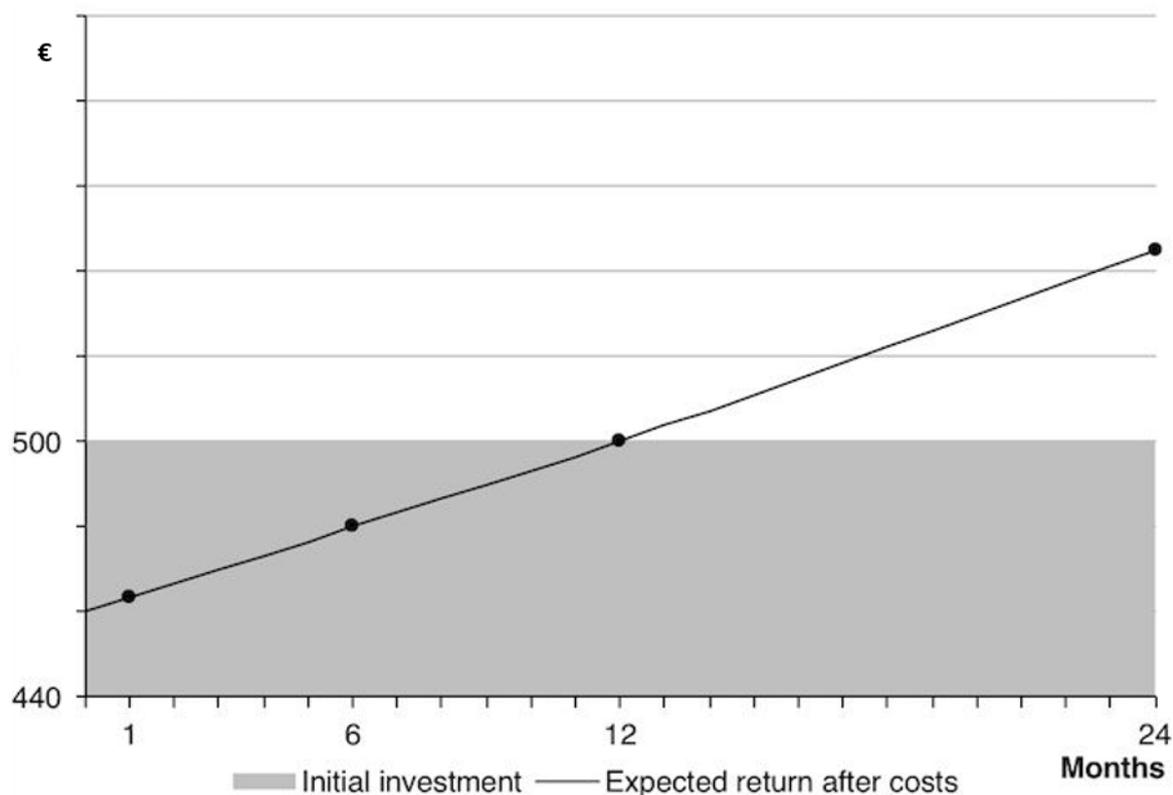


Figure III. Net Expected Return Graph

This graph presents net expected returns and is included in the Dutch Financial Leaflet (DFL) that preceded the KIID. The black dotted line represents the net expected returns over the next 24 months for a 500 euro initial investment in the fund. Expected returns are estimated based on the index return during the past ten years. Due to front loads, the expected returns are initially negative.



a standard past return histogram, fee (risk) information is easier to compare with the net expected return and the graphic in the DFL (KIID). Thus, we expect that highlighting these characteristics helps participants to minimize the costs of their investment strategy.

1.2 Related Literature and Hypotheses

The existing literature indicates that the large variety of mutual funds and associated search costs pose challenges to make sound investment decisions (Hortaçsu and Syverson, 2004; Agnew and Szykman, 2005). Investors rely on past returns (Sapp and Tiwari, 2004; Johnson and Tellis, 2005; Hendricks, Patel, and Zeckhauser, 1993), even though these are uninformative about future performance (De Bondt, 1993). Moreover, limitations in cognitive capacity and behavioral biases (Bailey et al., 2011; Coval and Shumway, 2005; Elton et al., 2004) lead to naïve diversification across available

alternatives (Benartzi and Thaler, 2001).⁸ While this is not irrational in the presence of idiosyncratic risk, this heuristic can lead to high transaction costs. Moreover, naïve diversification can result in portfolios with inefficient risk/return profile or undesirable exposure (Brennan and Torous, 1999; Vlaev, Chater, and Stewart, 2009).

Summarized fund information increases the accessibility of key fund information and facilitates comparison of different funds (Nelson, 1970, 1974).⁹ The summary sheet is not intended to inform investors in full (Franco, 2009) but to provide them with the specific information needed to make an informed investment decision. The idea is that shortcomings in the decision-making process can be overcome by reducing the barriers to the acquisition and processing of information by investors. However, empirical evidence shows that investors continue to make suboptimal decisions even after the introduction of summarized fund information (Choi et al. 2010; Beshears et al. 2011). Several explanations have been offered for this phenomenon such as (i) poor intelligibility of the information, (ii) ignoring cognitive limitations such as the overweighting of salient information (Kozup and Hogarth 2008), and (iii) the inability of the summary sheet to allow comparison of costs or risk profiles across funds.

An important avenue of improvement are infographics, as research has shown that these can mitigate these issues and increase the comparability and comprehensibility of disclosures. Infographics are found not only to affect financial decisions (Shaton, 2017; Lusardi et al., 2017) but also health-related (Lipkus, 2007) and risk-taking behavior (Stone, Yates, and Parker, 1997). Infographics are effective as they visually highlight the information, which in turn gives it greater weight in decision-making (Bordalo et al., 2013; Bertrand et al., 2010; Bertrand and Morse, 2011). Bertrand et al. (2010) show that by randomizing advertising content, loan price, and loan offer deadlines using different visual representations, the different representation significantly affects demand. For example, showing fewer sample loan without suggesting a particular use for the loan, or including a photo of an attractive woman, increases loan demand by about as much as a 25% interest rate reduction does. Moreover, in a field experiment at a national US chain of payday lenders, Bertrand and Morse (2011) show that information presented in infographics makes people think less narrowly (over time) about finance costs, resulting in less borrowing. In particular, highlighting the dollar

8 Note that as the number of options increases, naïve diversification heuristics can become impractical. Iyengar and Kamenica (2010) find that an increase in the number of funds in retirement plans leads to lower equity allocation and increased investment in money market funds and bond funds. For every ten funds added, the allocation to the latter two categories increases by 3.3 percentage points.

9 In the U.S., the SEC issued rules (SEC Release No. 33- 8998) that allow mutual funds to publish summarized key information in addition to the statutory prospectus.

fees incurred when rolling over loans and comparing these to the (much lower) dollar costs in interest using a credit card, reduces the take-up of payday loans by 11% in the subsequent four months. In our setup, the SRRI in Figure I highlights risk information, making it easier for investors to consider fund risks in their investment decisions. In addition, infographics also contribute to reducing information overload (Tegarden, 1999).

The question of interest is to determine whether infographics help participants to achieve lower fees, either by increasing the comparability of funds or the prominence of cost information. In our research design, the KIID serves as the reference category (control group) and is compared to traditional text-only fund disclosure without infographics. Since text-only disclosure makes it harder to compare funds, we expect that respondents' risk assessments will show greater variation resulting in more costly diversification behavior and higher avoidable costs:

Hypothesis 1: Individuals who view the narrative (text-only) fund disclosure have 1) more diverse fund risk assessments and 2) incur more avoidable costs.

We also test the standalone effect of the standardized relative risk indicator (SRRI) by removing the past return histogram from the KIID. This results in an increase in the prominence and comparability of risk information across funds. Since all funds have the same risk level, we expect that including the SRRI would lead to more consistent answers regarding the risk level of the individual funds. Note that in all cases, in addition to the SRRI also a textual message is shown with the risk level relative to the maximum level of 7. To measure whether the risk evaluations of all funds are similar, we use the standard deviation of the individual fund risk assessments. If respondents realize that the risk level is the same, the standard deviation is then zero. Thus, our expectation is that including the SRRI lowers the standard deviation of the individual fund risk assessments. Avoidable costs consequently decrease as participants can easily verify that all funds have the same risk. Therefore, there is no need to engage in costly diversification strategies. The second hypothesis is formulated as follows:

Hypothesis 2: Individuals who view the graphical risk indicator (SRRI) have 1) lower standard deviations of risk assessments and 2) lower avoidable costs.

Providing participants with expected return information net of expenses increases the prominence and comparability of fund expenses. The traditional inclusion of past net returns makes it difficult to compare fund costs as funds differ by inception dates. Net

expected returns do not suffer from this drawback and are expected to result in lower avoidable costs. Our third hypothesis is formulated as follows:

Hypothesis 3: Individuals who view the net expected return graph incur lower avoidable costs.

We expect participants who receive both the SRRI and the net expected returns histogram to incur lower costs as expected returns facilitate fee comparison, while the SRRI makes it easier to compare risks across funds. Since the KIID contains the SRRI with past returns, we expect that the combination will lead to less variation in risk assessment and a reduction in the level of avoidable costs incurred when compared to the KIID alone. This leads to the fourth and final hypothesis:

Hypothesis 4: Individuals who view the graphical risk indicator (SRRI) and the net expected returns graph have 1) lower standard deviations of risk assessments and 2) lower avoidable costs.

2. Research Design

Since legal considerations make it impossible to conduct a field experiment, we resort to an incentivized survey experiment. The survey is conducted among students with little or no investment experience and participants with much investment experience. Individuals in the two groups are randomly assigned to the control or treatment groups. They are instructed to invest 500 euros in three mutual funds that track the MSCI Europe index.¹⁰ We follow Choi et al. (2010) and use an investment period of one month. For pension decisions, this is a really short investment period, but the result is that especially the entry and exit fees are an important part of the overall average costs of the investment. This is done on purpose, any information treatment that is intended to make the expected returns, risk, and costs of the investment more clear will be more affected by the short investment period.

The funds we use are the KBC Index Fund Europe, the Meesman Indexfonds Europa, and the UBS – MSCI Europe UCITS ETF. During the experiment, we refer to these as Funds A, B, and C. This serves to eliminate differences in idiosyncratic risk and to exclude noise related to the past experience of the participants.¹¹ Note that the KIIDs assign all funds to the same risk category (Category 6) because they all track the same benchmark index. Table I indicates that the UBS fund (Fund C) charges 8.20% in annual fees, while the Meesman fund (Fund B) charges only 1.00%. Since the three funds involve materially different costs, a naïve diversification strategy creates additional and avoidable costs. Thus, the minimum cost strategy is to invest all assets in the fund that is by far the cheapest, namely Fund B.¹²

Respondents received a short introduction at the beginning of the experiment explaining the investment task and the nature of the index funds. There was no time

10 Note that the investor sample respondents were asked to invest 10,000 euros instead of 500 euros to make the question more realistic. We rescale their allocations to a 500 euro investment to make the results comparable.

11 Idiosyncratic risk, such as fund default, matters to investors and provides a rationale for diversifying across funds or fund managers. However, the KIID does not mention what the SRRI risk rating is based upon apart from historical data. In a theoretical context, a well-diversified portfolio, such as an index fund, only contains systemic risk. This implies that the risk indicator level is a measure of systemic risk and of the returns that investors are expected to achieve.

12 Because of the very short one-month investment period the fees are proportionally high relative to the expected returns of the investment, similar to what is noted in the paper of Choi et al. (2010). It is meant to reinforce the concept that fees are a very important element in investment decisions and to make any deviations from the optimal decision immediately clear in the expected return payout.

Table 1. Fund Characteristics

This table reports the characteristics of the three MSCI Index funds offered in our sample. All information is obtained from the publically available Key Investor Information Document (KIID). Annual expense is the percentage fee charged to investors on a yearly basis and is calculated from the amount invested. Front-end and back-end load are the expenses paid by investors to enter or exit the fund.

Experiment reference name	Fund A	Fund B	Fund C
Company name	KBC	Meesman	UBS
Inception Date	January 1, 1997	January 6, 2006	January 1, 2009
Annual past return since inception	7.60%	4.50%	9.40%
Front-end load	2.00%	0.25%	5.00%
Annual expense	1.11%	0.50%	0.20%
Back-end load	5.00%	0.25%	3.00%
SSRI risk level (min = 1, max = 7)	6	6	6

limit to complete the survey.¹³ In addition, participants were told that the mutual funds cannot go bankrupt during the investment to eliminate the perception of idiosyncratic risk.

Before making their investment allocation, respondents simultaneously view all three fund KIIDs (see Figure A.III of the Appendix) next to each other, while varying infographics for every treatment group. We standardize other visual features of the KIID to eliminate differences in prominence. We stress that the reference condition (the control group) is the existing and legally required KIID that contains narrative "text only" information, and two infographics, namely the SRRI and a past returns histogram. We develop five treatment conditions. In all these treatment conditions, relative to the control group, only the infographics are either left out or replaced. None of the textual information has been changed and is thus the same as in the control group. The Text Only condition (TG1) consists of the narrative information in the KIID without any infographics. Since the comparison of fund risk levels is key to our investment task, we also devise a treatment where only the SRRI (TG2) is added to the narrative disclosure. Our next two treatment conditions examine the effect of returns disclosure. We add a past returns histogram to the text-only disclosure (TG3) and then add the net expected returns graph (TG4). Finally, we test the combination of the SRRI

¹³ The time to complete the experiment is measured for the student sample. Students spend, on average, 42 minutes on the experiment. We consider completion times of less than 15 minutes and more than two hours as outliers.

and net expected returns graph (TG5). A visual overview of the setup of the experimental survey and the treatment groups is provided in Figure A.IV of the Appendix.

3. Data Collection and Descriptive Statistics

The experiment was administered among a sample of students at Tilburg University and a sample of Dutch investors obtained via the Dutch Financial Markets Authority. We obtained demographic information, such as gender, age, and educational attainment, and information on risk aversion, financial literacy, and investment experience. For the student sample, we also documented information regarding cognitive abilities. After the respondents made their investment allocation, they were given closing questions regarding their investment experience, their assessment of the fund's risk category, and the confidence they have in their decision. We refer the reader to the Appendix for a complete overview of the survey and the exact wording of the questions.

Participation incentives for students were aligned with the investment task by randomly paying 20 out of every 100 respondents the one-month realized net return of their portfolio up to a maximum of 10 euros. Students could earn more money by following the minimum cost investment strategy. In addition to paying the realized return, one out of every 100 participants could win an Android smartphone worth about 200 euros, regardless of their investment allocation.¹⁴ The one-month investment horizon ensures that the impact of entrance fees and the costs of (irrational) diversification weigh heavily on the returns. Students were informed by e-mail about the outcome of their investment portfolio.

For the sample of actual investors, responses were collected by a marketing research bureau in October 2015 from among a representative sample of Dutch retail investors. It proved unfeasible to provide these respondents with the same monetary incentives as the students. Instead, this group received a standard compensation from the research bureau for participating in the study. Although these respondents volunteered to be part of the panel and were likely to be intrinsically motivated, the absence of an incentive directly linked to the investment task is a limitation to our data.

The total dataset included 509 students composed of 352 first-year and 157 graduate students.¹⁵ The investor sample consisted of 592 participants, of whom 341, or 60%, reported that they make their own investment decisions and 241 that they delegate investment decisions to their financial advisor or asset manager. This latter

¹⁴ In total, five Android phones were made available in the lottery. Students who were notified that they had won a smartphone reacted amazingly fast to this good news.

¹⁵ First-year students were business economics students who were in the first week of their first introductory finance class. Graduate students were (pre) master finance students.

Table II. Demographic Statistics

This table presents demographic statistics for the participants across treatment groups. Panels A and B contain the characteristics of the student and investor samples, respectively. All respondents received basic information regarding the fund strategy, risks, and tabulated fees (TG1). The current KIID served as the control group and contained both the SRRRI (TG2) and the past-return histogram (TG3). In TG4 and TG5, this histogram was replaced by a Net Expected Return graph that provides the expected returns for the next 24 months after the deduction of fees. The questionnaires are available in the Appendix.

Panel A. Student Sample

	Control Group	Text Only (TG1)	SRRRI (TG2)	Past Return Histogram (TG3)	Net Expected Return Graph (TG4)	SRRRI + Net Expected Return Graph (TG5)
Average age	20.34	20.58	20.68	20.33	20.52	20.58
Female (percent)	25.3%	37.3%	30.8%	29.9%	33.3%	22.7%
Cognitive Level (max = 3)	1.84	1.98	1.95	1.89	1.81	2.13
Risk Aversion Level (percent)						
Least risk averse: R1 and R2 = Yes	10.8%	14.5%	12.8%	6.9%	7.8%	10.2%
Low risk averse: R1 = Yes and R2 = No	30.1%	30.1%	30.8%	40.2%	34.4%	43.2%
Medium risk averse: R1 = No and R2 = Yes	39.8%	33.7%	30.8%	36.8%	33.3%	38.6%
Highly risk averse: R1 and R2 = No	19.3%	21.7%	25.6%	16.1%	24.4%	8.0%
Financial Literacy Level (max = 7)	6.04	5.86	5.92	5.86	5.94	5.89
Bachelor Finished (percentage)	28.9%	31.3%	28.2%	31.0%	32.2%	33.0%
Experience with investing (agree/completely agree)	12.0%	20.5%	16.7%	20.7%	15.6%	22.7%
Number of Respondents	83	83	78	87	90	88

group is relevant for our study as these participants typically do not make investment decisions themselves but are forced in the survey experiment to rely on information that they are probably not used to. We provide demographic characteristics for both groups in Table II, where the KIID treatment is the reference group.

Panel A of Table II indicates that the students were, on average, 20 years old. Roughly 30% was female and 30% had completed their bachelor's degree. Note that Dutch students usually complete their master's degree before they start their professional career, implying that 70% of the students were still in the initial phase of their studies. The students answered, on average, two out of three cognitive and six out of seven financial literacy questions correctly. The majority were moderately risk-averse, although some differences across treatment groups existed. Respondents in the fifth treatment group were somewhat more risk-seeking than the average, and we found that about 20% of the students agreed or strongly agreed with the statement of having prior experience with investing in stocks, bonds, or mutual funds.

Panel B. Investor Sample

	Control Group	Text Only (TG1)	SRRI (TG2)	Past Return Histogram (TG3)	Net Expected Return Graph (TG4)	SRRI + Net Expected Return Graph (TG5)
Average age	51.47	49.42	52.78	52.85	52.61	50.95
Female (percent)	37.5%	34.9%	42.2%	42.0%	37.3%	50.0%
Risk Aversion Level (percent)						
Riskseeking	13.6%	10.5%	9.8%	13.6%	10.2%	15.5%
Moderate	42.0%	44.2%	44.1%	48.9%	50.8%	42.7%
Risk Avoiding	44.3%	45.3%	46.1%	37.5%	39.0%	41.8%
Total Value of Investment (percent)						
Up to €10,000	38.6%	26.7%	41.2%	30.7%	33.1%	38.2%
€10,000 - €50,000	34.1%	46.5%	33.3%	40.9%	33.9%	37.3%
More than €50,000	20.5%	16.3%	19.6%	19.3%	27.1%	19.1%
I do not know	2.3%	2.3%	2.9%	2.3%	0.0%	0.9%
I do not want to tell	4.5%	8.1%	2.9%	6.8%	5.9%	4.5%
Financial Literacy Level (max = 3)	2.08	2.10	1.94	2.03	2.13	1.99
Education Level (percent)						
Low	13.6%	10.5%	16.7%	18.2%	16.1%	12.7%
Medium	42.0%	39.5%	33.3%	40.9%	37.3%	32.7%
High	44.3%	50.0%	50.0%	40.9%	46.6%	54.5%
I invest by myself (percent)	54.5%	60.5%	61.8%	52.3%	56.8%	68.2%
Investment Experience > 5 years (percent)	79.5%	81.4%	80.4%	80.7%	79.7%	83.6%
Investment Experience > 10 years (percent)	62.5%	58.1%	56.9%	64.8%	64.4%	54.5%
Number of Respondents	88	86	102	88	118	110

Panel B of Table II contains the demographics statistics for the investor sample. Not surprisingly, the average age of these respondents was higher (50 years). In addition, the subsample contained more women (40%), with a peak in treatment group five (TG5), where 50% of the respondents were female. These characteristics are similar to Van Rooij, Lusardi, Alessie (2011). The investor sample only completed three financial literacy questions. Two of three questions were correctly answered, on average, with some variation across treatment groups. We found that the majority of the investors, more than 80%, displayed moderate to high risk aversion. One of every five participants invests 50,000 euros or more, with a particularly high concentration in TG4 (27.1%). Note that the level of risk aversion of the investor and student subsample is not directly comparable, given that different measures were used.¹⁶ Finally, our investor subsample was experienced, with the majority (60%) of respondents being active investors since more than five years (ten years).

16 The construction of the risk aversion measure is explained in detail in the Appendix.

Table III presents statistics regarding investment behavior. The first three rows provide avoidable fee levels (*Avoidable Costs*), the percentage of respondents who minimized costs (*Minimized Costs*), the percentage that invested positive amounts in *all three* funds (*Diversified*), and the percentage that invested *equal* amounts in all three funds (*Naively Diversified*). Recall that avoidable costs are calculated as costs in excess of the minimum cost investment strategy. The second set of indicators deals with the risk assessment. We measure both the level and standard deviation (*Risk SD*) of the risk assessments (*Average Risk Assessment*). The standard deviation of the individual assessments (*Risk SD*) is equal to zero if all funds are assigned the same risk level. The percentage of respondents who correctly assessed the risk category of all three funds is captured by the variable *Correct Risk Level*. This group is a subset of the respondents, for which *Risk SD* is equal to zero.

The student sample in Panel A of Table III provides some interesting insights. A non-negligible proportion incurs avoidable costs in all conditions despite receiving the fee and risk level information (in text form) necessary to make an optimal decision. For the student sample (Panel A), we find that in line with Hypothesis 1, the Text Only (TG1) group performs worst, incurring about 19.26 euros in avoidable costs on a 500 euro investment. In the group that views the current KIID, only 15.7% of the students minimize costs, dropping to 8.4% in TG1 and increasing to 22.2% when the net expected returns are presented (TG4). About 60% of the students diversified their investments across all funds, resulting in avoidable costs. These percentages are about 10 to 15 percentage points lower for students who are in the Net Expected Return (TG4) or SRRI treatment (TG5). A small percentage displayed naïve diversification behavior, although the results indicate a somewhat counterintuitive pattern. Naïve diversification is higher for treatment groups that incur lower avoidable costs.

To our surprise, we find that only half of the respondents realized that all of the funds had the same risk category. Awareness of this fact is essential in order to make an optimal investment decision. Moreover, risks seem to be underestimated as the average risk assessment of 5 is below the actual risk category of the funds, which is 6. When compared to the KIID, Text Only (TG1) respondents were significantly less accurate in their risk assessment, and the addition of the SRRI improved this (see TG2 and TG5), in line with Hypothesis 2. Surprisingly, we also find that students who received the Net Expected Return graph *without* the SRRI (TG4) performed relatively well on the risk assessment task compared to the reference group which received the KIID, as 41.1% of the students correctly assessed the risk levels of all three funds, while 47.8% had a standard deviation of zero in their assessment. Avoidable fee levels are 14% lower in the SRRI treatment (TG2) relative to the KIID (reference condition). Replacing

Table III. Avoidable Fee Levels, Diversification Behavior, and Risk Assessments

This table provides the information regarding avoidable costs, diversification behavior, and risk assessments for the student (Panel A) and investor (Panel B) samples. The top half of the table reports the proportions (means) for the dummy (other) variables. Avoidable Costs are calculated as the difference between the respondent's investment allocation and the minimum cost strategy based on an initial investment of 500 euros. Minimized Costs indicates whether the respondents invested all of their assets in the cheapest fund. (Naively) Diversified indicates that (equal) investments were made in all three MSCI Index funds. Average Risk Assessment is the average assessed risk level of the three MSCI Index funds and Perceived Correct Risk Level indicates that respondents correctly identified that all three funds are assigned to the same risk category (6). Risk SD and Risk SD = 0 are the standard deviations of the respondent's risk assessments of the three individual funds and indicate when SD is equal to 0. The exact wording of all survey questions is contained in the Appendix. The lower half of both panels provides the relative differences in the avoidable fee levels across treatment conditions and tests whether the difference in mean avoidable fee levels are statistically different from 0. Significance at the 5% and 10% levels is indicated by ** and *, respectively.

Panel A. Student Sample

	Control Group	Text Only (TG1)	SRRI (TG2)	Past Return Histogram (TG3)	Net Expected Return Graph (TG4)	SRRI + Net Expected Return Graph (TG5)
Preventable Fees (€)	18.90	19.26	16.17	18.37	15.24	15.76
Minimized Fees	15.7%	8.4%	15.4%	12.6%	22.2%	17.0%
Diversified over all funds	61.4%	62.7%	66.7%	62.1%	50.0%	55.7%
Naively Diversified	1.2%	0.0%	2.6%	2.3%	2.2%	0.0%
Average Risk Assessment (min = 1, max = 7)	5.04	4.71	4.94	4.78	5.02	4.85
Perceived Correct Risk Level	48.2%	28.9%	48.7%	32.2%	41.1%	50.0%
Risk SD	0.51	0.89	0.55	0.76	0.60	0.61
Risk SD = 0	51.8%	31.3%	53.8%	36.8%	47.8%	53.4%
Text Only (TG1)	1.9%	-	-	-	-	-
SRRI (TG2)	-14.4%	-16.0%*	-	-	-	-
Past Return Histogram (TG3)	-2.8%	-4.6%	13.6%	-	-	-
Net Expected Return Graph (TG4)	-19.4%**	-20.9%**	-5.8%	-17.1%*	-	-
SRRI + Net Expected Return Graph (TG5)	-16.6%*	-18.2%**	-2.5%	-14.2%	3.5%	-

Panel B. Investor Sample

	Control Group	Text Only (TG1)	SRRI (TG2)	Past Return Histogram (TG3)	Net Expected Return Graph (TG4)	SRRI + Net Expected Return Graph (TG5)
Preventable Fees (€)	19.50	17.93	21.22	21.82	19.18	19.41
Minimized Fees	17.0%	23.3%	15.7%	11.4%	15.3%	12.7%
Diversified over all funds	62.5%	47.7%	62.7%	64.8%	67.8%	59.1%
Naively Diversified	4.5%	3.5%	2.0%	9.1%	5.1%	6.4%
Average Risk Assessment (min = 1, max = 7)	5.08	5.05	5.06	4.96	5.14	5.11
Perceived Correct Risk Level	36.4%	26.7%	37.3%	23.9%	24.6%	30.9%
Risk SD	0.68	0.62	0.68	0.60	0.85	0.69
Risk SD = 0	50.1%	50.3%	50.1%	50.2%	47.2%	50.0%
Text Only (TG1)	-8.1%	-	-	-	-	-
SRRI (TG2)	8.8%	18.4%**	-	-	-	-
Past Return Histogram (TG3)	11.9%	21.7%**	2.8%	-	-	-
Net Expected Return Graph (TG4)	-1.7%	7.0%	-9.6%	-12.1%*	-	-
SRRI + Net Expected Return Graph (TG5)	-0.5%	8.3%	-8.5%	-11.0%	1.2%	-

the historical returns in the KIID with information about net expected returns without showing the SRRI (TG4) leads to an even higher reduction in avoidable costs (19.4%), while including both (TG5) reduces avoidable costs by 16.6%.

Two interesting insights emerge from this analysis. First, all treatment conditions, including the KIID reference condition, lead to an economically significant reduction in avoidable costs relative to the classical narrative text-only disclosure (TG1). This is evidence in support of Hypotheses 1, 2, and 3. In addition, adding information regarding net expected returns instead of past return information, as is currently included in the KIID, leads to a significant further reduction in avoidable costs incurred, which is evidence in favor of Hypothesis 4.

Our findings for the investor sample (Panel B of Table III) are quite different. The net expected return treatments (TG4 and TG5) performed slightly better in reducing avoidable costs relative to the KIID. However, the Text Only alternative (TG1) outperformed all other conditions, contradicting Hypothesis 1. Since experience and literacy levels were homogeneous across the treatment groups, this result could be explained by infographics leading to an overload of visual information. In addition, investors underestimated fund risks, and 50% of the investor respondents assigned all three funds to the same risk category irrespective of the treatment group they were assigned to. Because these are very similar to the student sample, this indicates that differences in avoidable costs are not driven by differences in risk comparability. The difference in means tests at the bottom half of the table confirm that the text-only (TG1) condition significantly lowers avoidable costs compared to the SRRI only (TG2) or past-returns histogram (TG3). However, none of the differences are statistically significant when compared to the KIID reference category.

In general, we find support for our hypotheses even though the results vary between the student and investor sample. Since the investor subsample is more heterogeneous with respect to investment experience, familiarity with investment disclosures, and investable assets, we present in the next section the empirical results of multivariate regression analyses that take these confounding factors into account.

4. Multivariate Analyses Results

Since we have different sets of background variables for the student and investor samples, we run separate regressions for each subsample. Next, we analyze how the treatment effects change if we control for participants who assign all three funds to the same risk category. Finally, we analyze how our results are affected by controlling for what investors deem important when making an investment decision, similar to Choi et al. (2010).

4.1 Multivariate Analysis of Investor Behavior

We estimate three regression models, with the amount of avoidable costs, the standard deviation of the risk assessment, and a fee minimization dummy as dependent variables. These three variables capture the investment strategy and associated costs, as well as explanations for the variation in fund assessments. The former two regressions are estimated by Ordinary Least Squares, while the minimized fee model uses a Logit regression and reports odds ratios. We also conducted Tobit regressions as a robustness check (not reported); the results of this are virtually identical.

The results for the student sample are presented in Panel A of Table IV. They indicate that female respondents have a 22.8% lower standard deviation of their fund risk assessment compared to their male counterparts. Moreover, a one standard deviation increase in cognitive abilities is associated with a 4.9% reduction in avoidable costs, a 2.6% lower standard deviation of risk assessment, and a 28.2% increase in the likelihood that costs are minimized. Students who finished their bachelor's degree incur 19% lower avoidable costs and are more than 2.5 times more likely to minimize costs compared to undergraduates.

Adding the net-expected-return information to the disclosure significantly reduces avoidable costs compared to the disclosure provided in the KIID (20% for TG4 and 16% for TG5). This effect is economically significant and in line with Hypotheses 3 and 4. However, respondents in Treatment Groups 4 and 5 are not more likely to follow the minimum cost strategy. Thus, although infographics help reduce avoidable costs, they do not necessarily ensure that they are eliminated. Finally, the Text Only (TG1) and past returns histogram (TG3) condition lead to a 63.6% increase in the standard deviation of the fund risk assessment, implying that risk assessments become less accurate when the SRRI is excluded from the KIID. This result supports our first hypothesis. Panel B of Table IV contains the results for the investor sample. Economically speaking, age does not have a large impact, while female investors are about 40% less likely to minimize costs compared to male investors. More literate and higher educated

Table IV. Regression Analysis of Avoidable Costs and Risk Assessments

This table reports the OLS and Logit regression results for the student (Panel A) and investor (Panel B) samples. Avoidable Costs are calculated as the difference between the respondent's investment allocation and the minimum cost strategy based on a 500 euro initial investment. Minimized Costs is equal to 1 if the respondent invests the full amount in the cheapest fund and 0 otherwise. Risk SD is the standard deviation of the respondent's risk assessment of the three individual funds. The current KIID serves as a reference condition for the treatment conditions. The exact wording of all survey questions is contained in the Appendix. All of the variables are measured as dummies unless otherwise indicated. Robust standard errors are reported in parentheses with *, **, and *** indicating statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Student Sample

Estimation Method	(1)	(2)	(3)
	Avoidable Costs OLS	Risk SD OLS	Minimized Fees Logistic
Age (years)	-0.024 (0.248)	0.001 -0.017	0.931 (0.069)
Female	-1.265 (1.088)	-0.149** (0.073)	0.806 (0.253)
Cognitive Level (min = 1, max = 3)	-0.853* (0.468)	-0.071** (0.031)	1.282* (0.173)
Risk aversion level			
* Low risk aversion: R1 = Yes and R2 = No	0.081 (1.672)	-0.126 (0.111)	1.691 (0.827)
* Medium risk averse: R1 = No and R2 = Yes	0.680 (1.671)	-0.161 (0.111)	1.192 (0.603)
* Highly risk averse: R1 and R2 = No	0.021 (1.820)	-0.123 (0.121)	1.590 (0.845)
Financial Literacy Level (min = 1, max = 7)	-0.491 (0.470)	-0.010 -0.031	1.172 (0.152)
Bachelor Finished	-3.282** (1.545)	-0.263** (0.103)	2.611** (0.997)
Investment Experience	-0.910 (1.299)	-0.037 (0.087)	1.247 (0.390)
Text Only (TG1)	0.740 (1.653)	0.416*** (0.110)	0.495 (0.247)
SRRI (TG2)	-2.535 (1.672)	0.051 (0.111)	0.986 (0.428)
Past Return Histogram (TG3)	-0.360 (1.628)	0.279** (0.108)	0.750 (0.335)
Net Expected Return Graph (TG4)	-3.449** (1.610)	0.110 (0.107)	1.528 (0.596)
SRRI + Net Expected Return Graph (TG5)	-2.766* (1.633)	0.133 (0.109)	0.995 (0.429)
Constant	25.01*** (5.801)	0.927** (0.386)	0.0981 (0.171)
Observations	509	509	509
R-squared	0.063	0.084	-
Pseudo R-squared	-	-	0.0661

Panel B. Investor Sample

Estimation Model	(1)	(2)	(3)
	Avoidable Costs OLS	Risk SD OLS	Minimized Fees Logistic
Age (years)	0.051 (0.033)	0.007*** (0.002)	0.999 (0.008)
Female	0.604 (0.902)	-0.075 (0.067)	0.594** (0.155)
Risk aversion level			
* riskseeking	1.221 (1.676)	0.099 (0.093)	1.168 (0.392)
* moderate	1.089 (0.928)	0.139** (0.066)	0.750 (0.193)
Financial Literacy Level (min =1, max = 3)	-1.372*** (0.485)	-0.044 (0.041)	1.450** (0.223)
Education Level			
* Medium	-1.725 (1.287)	-0.068 (0.094)	1.460 (0.625)
* High	-3.516*** (1.293)	-0.060 (0.093)	2.141* (0.874)
I invest by myself	-1.816** (0.897)	-0.151** (0.064)	1.608* (0.407)
Investment Experience > 5 years	-1.698 (1.118)	-0.127 (0.090)	1.393 (0.448)
Text Only (TG1)	-1.113 (1.740)	-0.031 (0.111)	1.385 (0.557)
SRRI (TG2)	1.652 (1.601)	-0.000 (0.108)	0.951 (0.383)
Past Return Histogram (TG3)	1.917 (1.595)	-0.101 (0.105)	0.651 (0.290)
Net Expected Return Graph (TG4)	-0.326 (1.480)	0.156 (0.104)	0.907 (0.355)
SRRI + Net Expected Return Graph (TG5)	0.222 (1.570)	0.042 (0.104)	0.711 (0.301)
Constant	23.52*** (2.522)	0.597*** (0.191)	0.0407*** (0.0320)
Observations	592	592	592
R-squared	0.060	0.054	-
Pseudo R-squared	-	-	0.068

participants incur lower avoidable costs and are 45% to 210% more likely to allocate their entire endowment to the cheapest fund. Moreover, investors who make their own investment decisions, compared to those who delegate investment decisions, incur 9.2% lower costs. Although individual investors are prone to make investment mistakes (Barber and Odean, 2000), in our sample the investors who make their own investment decisions are more likely to distill relevant information from the fund disclosures.

Similarly, the insensitivity of investors to infographics can be driven by a lack of participation incentives or by reliance on information in the prospectus. Although unlikely, such an effect is not adequately captured by our experience measure which may cause the insignificance of our treatments. Finally, we have relatively small samples, thereby reducing the power of statistical tests.

Figure V in Appendix A provides a visual representation of avoidable costs in each treatment group, after correcting for the individual characteristics described above.

4.2 Effect of Heterogeneity in Risk Assessments

We continue our examination by testing whether the results are affected by the ability to compare risk categories. Recall that recognition of the equality of risk categories is important to refrain from costly diversification behavior. As such, investors could first be aware of the similarity in risk levels rather than the fund costs. In order to separate these two effects, we augment the regression equations of Table IV by adding a dummy ($Risk\ SD = 0$) that is equal to one if the risk assessment of the respondent has a zero standard deviation and zero otherwise. To conserve space, we do not report the demographic coefficients.

The results for both groups indicate that avoidable costs and the likelihood that costs are minimized are significantly influenced by risk assessment. The odds ratios demonstrate that respondents who correctly assess the equality in risk levels are twice as likely to minimize costs. In terms of avoidable costs, we find that respondents with zero variation in risk assessments incur 18.4% (students) to 9.5% (investors) lower costs.¹⁷ Considering the residual effects of infographics, we find that the addition of Net Expected Returns (TG4 and TG5) lead to a further 16.2% to 20.9% reduction in avoidable costs in the student sample. A similar result is observed in the investor sample, where the Net Expected Return graph (TG4) leads to a 2.7% reduction in avoidable costs, although this effect is economically small and only marginally significant at the 10% level.

17 This is calculated as the coefficient estimate divided by the sample average (3.173/17.261).

Table V. Effect of Assessment Standard Deviation on Avoidable Costs and Risk Assessments

This table reports the OLS and Logit regression results for the student (Panel A) and investor (Panel B) samples. Avoidable Costs are calculated as the difference between the respondent's investment allocation and the minimum cost strategy, based on a 500 euro initial investment. Minimized Costs is equal to 1 if the respondent invests all of his or her assets in the cheapest fund and 0 otherwise. Risk SD is the standard deviation of the respondent's risk assessment of the three individual funds. Risk SD = 0 is a dummy equal to 1 when the standard deviation of the risk assessments is equal to 0 and 0 otherwise. The current KIID serves as a reference condition for the treatment conditions. Respondent characteristics contains all of the control variables included in Table IV. The exact wording of all survey questions is contained in the Appendix. Robust standard errors are reported in parentheses with *, **, and *** indicating statistical significance at the 10%, 5%, and 1% levels, respectively.

Estimation Method	Panel A - Student sample			Panel B - Investor sample		
	(1)	(2)	(3)	(4)	(5)	(6)
	Avoidable Costs	Risk SD	Minimized Fees	Avoidable Costs	Risk SD	Minimized Fees
	OLS	OLS	Logistic	OLS	OLS	Logistic
Risk SD = 0	-3.173*** (0.982)	-1.209*** (0.038)	1.990** (0.535)	-1.887** (0.940)	-1.230*** (0.033)	2.171*** (0.531)
Text Only (TG1)	0.0243 (1.652)	0.143** (0.063)	0.578 (0.290)	-1.062 (1.735)	0.002 (0.062)	1.395 (0.576)
SRRI (TG2)	-2.494 (1.656)	0.066 (0.063)	0.971 (0.429)	1.665 (1.599)	0.008 (0.060)	0.978 (0.404)
Past Return Histogram (TG3)	-0.866 (1.621)	0.086 (0.062)	0.858 (0.383)	1.969 (1.593)	-0.067 (0.058)	0.654 (0.296)
Net Expected Return Graph (TG4)	-3.609** (1.596)	0.049 (0.061)	1.574 (0.611)	-0.544 (1.491)	0.014 (0.063)	1.020 (0.419)
SRRI + Net Expected Return Graph (TG5)	-2.786* (1.618)	0.126** (0.062)	1.008 (0.436)	0.190 (1.578)	0.0209 (0.057)	0.737 (0.320)
Constant	26.30*** (5.760)	1.420*** (0.220)	0.0742 (0.131)	24.61*** (2.593)	1.308*** (0.121)	0.0251*** (0.0205)
Respondent Characteristics	yes	yes	yes	yes	yes	yes
Observations	509	509	509	592	592	592
R-squared	0.082	0.705	-	0.067	0.686	-
Pseudo R-squared	-	-	0.0806	-	-	0.087

Although we lack data to establish whether respondents actually compare the mutual funds on the elements presented in the infographics, our findings indicate that adding infographics to investment disclosures seems to affect investment behavior *indirectly* by increasing the comparability of funds. Adding the SRRI and Net Expected Return graph lowers avoidable costs, but primarily because it increases awareness that all three index funds have the same systematic risk exposure.

4.3 Effect of Investor Information Preferences

Infographics have strong effect on the reduction of avoidable costs in the student sample, while no significant effects are found in the investor sample. It is possible

Table VI. Importance of the Various Factors for Investment Decisions

This table reports the mean values for the expressed importance of each factor on the respondent's investment decision. There were five possible responses ranging from "1: not important at all" to "5: very important." Each factor's ordinal rank is in parentheses, with 1 corresponding to the most important and 4 corresponding to the least important factor. The exact wording of all survey questions is contained in the Appendix.

Panel A. Student Sample

	Control Group	Text Only (TG1)	SRRI (TG2)	Past Return Histogram (TG3)	Net Expected Return Graph (TG4)	SRRI + Net Expected Return Graph (TG5)
Past experience with mutual funds	3.30 (4)	3.49 (4)	3.47 (4)	3.38 (4)	3.27 (4)	3.33 (4)
Fund fees, expenses and loads	3.81 (1)	3.80 (2)	3.83 (1)	3.83 (1)	3.90 (1)	3.91 (1)
Past performance	3.66 (2)	3.58 (3)	3.59 (3)	3.67 (2)	3.33 (3)	3.41 (3)
Desire to diversify across funds	3.58 (3)	3.82 (1)	3.63 (2)	3.53 (3)	3.48 (2)	3.57 (2)
Number of respondents	83	83	78	87	90	88

Panel B. Investor Sample

	Control Group	Text Only (TG1)	SRRI (TG2)	Past Return Histogram (TG3)	Net Expected Return Graph (TG4)	SRRI + Net Expected Return Graph (TG5)
Past experience with mutual funds	3.28 (4)	3.16 (4)	3.21 (4)	3.24 (4)	3.08 (4)	3.18 (4)
Fund fees, expenses and loads	3.73 (1)	3.71 (1)	3.62 (1)	3.60 (1)	3.75 (1)	3.70 (1)
Past performance	3.40 (3)	3.40 (2)	3.41 (3)	3.36 (3)	3.42 (3)	3.52 (2)
Desire to diversify across funds	3.59 (2)	3.17 (3)	3.59 (2)	3.39 (2)	3.53 (2)	3.50 (3)
Number of respondents	88	86	102	88	118	110

that the respondents are sensitive to our treatments because they intrinsically deem certain factors more important than others when making investment decisions. If that is the case, then the respondents could actively look for the information regardless of how it is presented to them.

Therefore, we asked the respondents to indicate, on a five-point scale, the importance of past performance, fees and loads, experience with mutual funds, and diversification when making an investment decision. These importance factors relate to the information in the summary sheet and the infographics. Table VI contains the descriptive statistics and reveals that both groups consider fund costs to be the most important factor and past experience as the least important attribute. Both samples find past performance and diversification less important than costs but more relevant than past experience.

Since fees are important in both subsamples, we are interested in how these interacts with the treatment conditions. The importance factors are added to the

Table VII. Effect of Importance Factors on Portfolio Costs and Risk Assessments

This table reports the OLS and Logit regression results for the student (Panel A) and investor (Panel B) samples. Avoidable Costs are calculated as the difference between the respondent's investment allocation and the minimum cost strategy, based on a 500 euro initial investment. Minimized Costs is equal to 1 if the respondent invests all of his or her assets in the cheapest fund and 0 otherwise. Risk SD is the standard deviation of the respondent's risk assessment of the three individual funds. All importance factors are included as an integer on a scale of 1 to 5, where higher integers correspond to greater importance. Risk SD = 0 is a dummy equal to 1 when the standard deviation of the risk assessments is equal to 0 and 0 otherwise. The current KIID serves as reference condition for the treatment conditions. Respondent characteristics contain all of the control variables included in Table IV. The exact wording of all survey questions is contained in the Appendix. Robust standard errors are reported in parentheses with *, **, and *** indicating statistical significance at the 10%, 5%, and 1% levels, respectively.

Estimation Method	Panel A - Student sample			Panel B - Investor sample		
	(1)	(2)	(3)	(4)	(5)	(6)
	Avoidable Costs	Risk SD	Minimized Fees	Avoidable Costs	Risk SD	Minimized Fees
	OLS	OLS	Logistic	OLS	OLS	Logistic
Past experience with mutual funds	0.626 (0.427)	0.003 (0.017)	1.046 (0.145)	-0.397 (0.534)	-0.025 (0.022)	1.210 (0.238)
Fund fees, expenses and loads	-3.112*** (0.555)	0.013 (0.022)	2.151*** (0.497)	-4.667*** (0.544)	0.003 (0.023)	3.198*** (0.678)
Past performance	-0.473 (0.478)	0.006 (0.019)	0.865 (0.130)	2.891*** (0.521)	0.017 (0.022)	0.436*** (0.0774)
Desire to diversify across funds	1.547*** (0.466)	-0.005 (0.019)	0.451*** (0.064)	2.040*** (0.531)	-0.023 (0.018)	0.301*** (0.0468)
Risk SD = 0	-3.057*** (0.944)	-1.208*** (0.038)	2.048*** (0.570)	-0.429 (0.874)	-1.237*** (0.0345)	1.386 (0.427)
Text Only (TG1)	-0.658 (1.590)	0.145** (0.0637)	0.776 (0.432)	-0.565 (1.498)	-0.009 (0.062)	0.957 (0.483)
SRRI (TG2)	-2.755* (1.589)	0.067 (0.064)	1.234 (0.582)	1.124 (1.439)	0.006 (0.060)	1.245 (0.629)
Past Return Histogram (TG3)	-0.847 (1.553)	0.085 (0.062)	0.926 (0.438)	1.969 (1.407)	-0.073 (0.058)	0.433 (0.245)
Net Expected Return Graph (TG4)	-3.363** (1.539)	0.049 (0.062)	1.499 (0.628)	-0.274 (1.296)	0.005 (0.064)	0.767 (0.377)
SRRI + Net Expected Return Graph (TG5)	-2.727* (1.555)	0.126** (0.062)	1.104 (0.518)	-0.282 (1.435)	0.015 (0.056)	0.797 (0.428)
Constant	29.58*** (6.139)	1.371*** (0.246)	0.132 (0.297)	24.93*** (3.874)	1.399*** (0.187)	0.175 (0.263)
Respondent Characteristics	yes	yes	yes	yes	yes	yes
Observations	509	509	509	592	592	592
R-squared	0.164	0.705	-	0.235	0.688	-
Pseudo R-squared	-	-	0.218	-	-	0.365

regression models, and Table VII indicates that they have great explanatory power. A one standard deviation (1.071) increase in the importance of costs decreases avoidable costs by 19.3% for students and 23.5% for investors (see Models 1 and 4). Conversely, a one standard deviation increase in the desire to diversify increases costs by 8.9% for students and 10.3% for investors. The odds that respondents minimize their costs

increases by 215% for students and 320% for investors. Not surprisingly, we find the opposite effect for the importance of diversification as this increases avoidable costs for both groups. Among investors, we furthermore find that a one standard deviation (0.777) increase in the importance of past performance leads to a 12.6% increase in avoidable costs and a 46% decrease in the likelihood that costs are minimized. The importance of past performance hurts investors, especially if they find this to be an important factor in investment decisions.

The other coefficients in Table VII remain similar as before. Among students, we find that including the Net Expected Return graphs reduces avoidable costs by 19.5% in TG4 and 15.8% in TG5 when compared to the KIID, in line with our third hypothesis. These effects are statistically significant at the 10% and 5% levels, respectively. Our results indicate that awareness of what investors consider important is at least as important in understanding their behavior as focusing on the information presented to them. This is especially true for experienced investors as this increases the explanatory power of the model from 7% to 24%. Nevertheless, the differences in avoidable costs between treatment groups are not affected that much.

5. Discussion

The analysis of this paper has been conducted using two different respondent samples. The main reason for using two different samples is that the academic literature suggests that differences in financial literacy may explain differences in financial decision behavior. First, the student respondent sample is meant to act as a proxy for the large population of consumers who find it difficult to make personal financial decisions. Second, the retail investor sample is used to approximate the higher financially literate consumer for whom these types of decisions are typically more familiar and easier to make.

We point out that our significant empirical results are found for the subsample of student respondents, but not for the retail investor subsample. This implies that adding infographics to the KIID does not have the same effect for all consumers. We interpret this finding as follows. For consumers who have only a limited or no experience with individual financial decision-making (represented by the student respondent sample in the experiment), adding infographics helps. However, this is not the case for experienced retail investors, as they typically base their investment decisions on more information than only documents such as the KIID. Note that our findings imply that adding infographics does not hurt them either, but in line with the existing literature we establish that the more financially literate and higher educated respondents in the retail investor sample incur lower avoidable costs. This leads us to conclude that for the entire population of consumers, inclusion of clear infographics in mandatory information documents such as the KIID helps consumers to make better decisions. Taking into account that the recent trend in the Netherlands is to offer self-employed contract constructions to individuals in jobs requiring low skills, our results are especially important. Anyone who is self-employed needs to take their personal pension decisions. Typically, these are arranged using DC-type pension schemes, which approximate the empirical setup of this paper. Overall, we believe that the empirical findings of our paper, while mixed, will become much more relevant in the future.

We also believe that the findings of this study have implications for other situations. The obvious case is pension communication by pension providers to their clients. Many studies have been conducted in this area, but the findings of our paper suggest that including well-developed infographics in communication documents would improve understandability. Overall, their success will depend on the answers to several questions, as follows. What type consumer is the information meant for, what exactly is the information that is communicated, and what is the means of communication? Future research in this area is therefore necessary.

6. Concluding Remarks

Investors face a vast menu of mutual funds when undertaking an investment decision. This involves search costs and the risk of information overload, leading to difficulties in comparing different funds. As a result, investors follow suboptimal investment strategies. Financial regulators seek to help investors by mandating summary disclosures, intended to enable informed investment decisions on the basis of easily accessible key information. These efforts reduce the flood of information, but this has not necessarily improved the understandability. We test how visualization of key information in summary sheets affects investor behavior.

Based on a survey experiment using financial incentives, where participants can invest in three index funds tracking the same underlying index, we find that adding a graph with net expected returns to the summary sheet reduces the amount of avoidable costs by up to 20% for the student respondent sample. Net expected returns facilitate the comparison of fund fee levels and eliminate differences in inception dates. Moreover, we find that merely adding graphical fund information is insufficient to ensure that investors minimize expenses, and that avoidable costs are lower when investors consider costs important irrespective of the disclosures provided to them. However, as noted in the discussion above, for the private investor subsample no significant results were found.

Our results indicate that the effectiveness of regulatory disclosures can be increased by visually presenting key information on mutual funds. This appears to be not so relevant for investors with high financial literacy and investment experience, but more so for investors who lack such literacy and experience. The findings are especially relevant for consumers who save for their pension in a DC pension scheme. In the Netherlands, for most pension fund participants freedom of investment choice is currently limited. However, if in the future more flexibility is allowed and offered, research becomes very relevant on how to design information and communication documents. Nevertheless, for the growing number of lower-educated self-employed persons, who need to set money aside for their personal pension, this research is very relevant.

Several dimensions deserve further exploration, however. First, it is not clear how the design of infographics contributes to their effectiveness. In addition, understanding how investors' preferences for certain information (e.g., costs) are construed will help to increase the "demand" for key information. For now, we conclude that inclusion of visual information in investment disclosures is a relatively simple strategy that benefits investors in the decision-making process, but it does not guarantee that optimal investment strategies are actually followed.

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Appendix

Student Sample Survey Questions

Q: What is your gender?

Answer scale:

1: Male, 2: Female

Q: What is your age in years?

Answer scale:

.... years

Q: What is your current study program?

Answer scale:

Open answer

Q: Risk aversion (R1, R2 and R3)

R1) Suppose you are the only income earner in the family and you have a good job that is guaranteed to give you your current (family) income every year for life. You are given the opportunity to take a new, equally good job with a 50% chance that it will double your (family) income and a 50% chance that it will cut your (family) income by one third. Would you take the new job?

Answer scale:

1: Yes, 2: No, 3: Do not know [If R1='yes' then R2, If R1='no' then R3]

R2) Suppose the chance is 50% that it would double your (family) income, and 50% that it would cut it in half. Would you take the new job?

Answer scale:

1: Yes, 2: No, 3: Do not know

R3) Suppose the chance is 50% that it would double your (family) income and 50% that it would cut it by 20%. Would you then take the new job?

Answer scale:

1: Yes, 2: No, 3: Do not know

The dummy variables in the paper are constructed as follows:

Least risk averse: R1 and R2 = Yes

Low risk averse: R1 = Yes, R2 = No

Medium risk averse: R1 = No, R3 = Yes

High risk averse: R1 and R2 = No

Q: To what extent do you agree or disagree with the following statement?

I have experience with investing in financial products such as stocks, bonds, and investment funds.

Answer scale:

1: Completely disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Completely agree

Q: Cognitive skills

A book and a pen together cost €1.10. The book costs €1.00 more than the pen. How much does the pen cost in cents?

It takes five machines five minutes to make five products. How many minutes does it take 100 machines to make 100 products?

A portion of a lake is covered with a bunch of water lilies. The water lilies double in size every day, and it takes 48 days for the water lilies to cover the entire lake. How many days will it take to cover half the lake with water lilies?

Answer scale:

Open answers

Q: Financial literacy (F1 through F7)

F1: Suppose you have €100 in a savings account. The interest rate is 2% per year. How many euros will be in the savings account after five years? (Assume that you leave the money in the savings account for these five years).

Answer scale:

1: More than €102, 2: Exactly €102, 3: Less than €102, 4: I don't know

F2: Suppose you have €100 in a savings account. The interest rate is 20% per year. How many euros will be in the savings account after five years? (Assume that you leave the money in the savings account for these five years).

Answer scale:

1: More than €200, 2: Exactly €200, 3: Less than €200, 4: I don't know

F3: Suppose that the interest rate on your savings account is 2% per year. The inflation rate is 3% per year. After one year, would you be able to buy less, more, or exactly the same as today with the money in your savings account?

Answer scale:

1: More than today, 2: Exactly the same as today, 3: Less than today, 4: I don't know

F4: Suppose that Tom inherits €10,000 today. We know with certainty that Jerry will also inherit €10,000 exactly three years from now. Which of the two is richer because of the inheritance?

Answer scale:

1: Tom, 2: Jerry, 3: Tom and Jerry are equally rich, 4: I don't know

F5: Suppose your income in the year 2020 is double your current income. The prices of all goods have also doubled compared to today. In 2020, would you be able to buy more, less, or the exactly the same as today?

Answer scale:

1: More than today, 2: Exactly the same as today, 3: Less than today, 4: I don't know

F6: Consider the following proposition:

In general, an investment in an individual company's stock is less risky than an investment in a fund with stocks of multiple companies.

Answer scale:

1: True, 2: False, 3: I don't know

F7: What happens to the prices of bonds if the interest rate declines?

Answer scale:

1: The prices of bonds fall, 2: The prices of bonds rise, 3: The prices of bonds will stay the same, 4: I don't know

Task introduction

General background information on investment funds

Your task is to invest money in one or more MSCI Europe Index funds.

What is an investment fund?

People can put their money (= invest) in an investment fund. This investment fund will invest your money for you. The fund will realize a certain return. The return on your investment is determined by subtracting the costs of the investment fund from the realized return.

What is an index fund?

An index fund is a type of investment fund that tracks the components of a market index. An MSCI Europe Index fund is an index fund that seeks to realize a return that matches the MSCI Europe Index.

What is the MSCI Europe Index?

The MSCI Europe Index is a stock index of large and medium-sized companies across fifteen developed European countries. It represents approximately 85% of the market capitalization of all outstanding shares in the stock markets of all European developed countries.

The task

You have a fictional amount of €500 to invest in one or more MSCI Europe Index funds.

These index funds are managed by respected companies. These companies will definitely not go bankrupt during the investment period. If your investment realizes a positive return, you will get that return with certainty.

The names of the index funds are disguised on purpose to prevent you from deciding to invest in funds you might know from your own investing experience.

The rules

You must make an investment decision based on the information presented on the following page. You are required to invest the full amount of €500. Thus, the sum of the investments in the three different index funds must equal €500.

You are allowed to invest the full amount in one index fund.

You are not allowed to make negative investments (go short). Thus, an investment in an index fund must be equal to or higher than €0.

What is your reward?

Twenty winners will be randomly selected from among every 100 participants. The winners earn the return of their investment decision. As in real life, your return is equal to the index fund's realized return minus the costs of the index fund (with a maximum of €10). The better your investment decision, the higher your return.

The return on your investment decision will be determined by an investment period of one month. That is, from September 15, 2015 to October 15, 2015.

[One of the treatments is shown (TG1 through TG5)]

Q: What is the risk category of the three index funds?

Answer:

	1	2	3	4	5	6	7
Fund A							
Fund B							
Fund C							

Q: To what extent do you agree or disagree with the following statement?

I am confident that I made the right investment decision.

Answer scale:

1: Fully agree, 2: agree, 3: neither agree, nor disagree, 4: disagree, 5: fully disagree

Q: Please indicate the importance of each of the following aspects in making your investment decision:

Experience in investing in investment funds.

The ongoing charges and the entry and exit charges of the fund.

Past performance.

Desire to diversify the money across different funds.

Answer scale:

1: Not important at all, 2: Not important, 3: Neutral, 4: Important, 5: Very important

Investor-sample survey questions

Q: Do you consider yourself as a risk-seeking, a risk-avoiding, or a moderate risk-seeking investor?

Answer scale:

1: Risk-seeking, 2: Moderate, 3: Risk-avoiding

Q: How do you invest? *Multiple answers are possible*

Answer scale:

I invest on my own and do not have the possibility to consult a financial advisor.

I invest and have access to a financial advisor, whom I do not necessarily use for every individual investment decision.

I invest via a money manager who performs transactions on my behalf. I do not carry out investment transactions myself.

Q: What is at this moment the total value of your investments? *We mean free investable assets excluding the balance of your investment mortgage.*

Answer scale:

Less than €5,000

€5,000 – €10,000

€10,000 – €25,000

€25,000 – €50,000

€50,000 – €100,000

€100,000 – €250,000

250,000 – €500,000

More than €500,000

I do not know

I do not want to say

Q: How long have you been investing?

If you do not know the exact answer, please provide us with your best estimate. Provide your answer in years.

Answer scale:

... years (minimum = 0, maximum = 99) or I don't know

Financial literacy (F1 through F3)

F1: Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After one year, how much would you be able to buy with the money in this account?

Answer scale:

1: More than today; 2: Exactly the same; 3: Less than today; 4: Do not know; 5: Refuse to answer

F2: Buying a company stock usually provides a safer return than a stock mutual fund. True or false?

Answer scale:

1: True; 2: False; 3: Do not know; 4: Refuse to answer

F3: If the interest rate falls, what should happen to bond prices?

Answer scale:

1: Rise; 2: Fall; 3: Stay the same, 4: Do not know; 5: Refuse to answer

Task introduction

Imagine that you have **€10,000** available to invest in one or more MSCI Europe Index Funds. This is a fund that aims to track the share index of medium-sized and large enterprises across fifteen developed European countries.

You can choose from three index funds.

You need to invest all of the money. This implies that the sum of your investments in the funds needs to be equal to €10,000.

You are allowed to invest all of the assets in a single index fund.

The investment horizon is one month.

On the next page, we present three index funds. Please read the information carefully. We are interested to know how you would invest your money across the three funds.

[One of the treatments is shown (TG1 through TG5)]

Q: How would you invest your €10,000 across the three funds?

Fund A	€
Fund B	€
Fund C	€
Total	€

Q: What is the risk category of the three index funds?

Answer:

	1	2	3	4	5	6	7
Fund A							
Fund B							
Fund C							

Q: To what extent do you agree or disagree with the following statement?

I am confident that I made the right investment decision.

Answer scale:

1: Fully agree, 2: agree, 3: neither agree, nor disagree, 4: disagree, 5: fully disagree

Q: How important were each of the following factors when you were making the investment decision?

Past experience with mutual funds.

Fund fees, expenses, and loads.

Past performance.

Desire to diversify across funds.

Answer scale:

1: Not important at all, 2: Not important, 3: Neutral, 4: Important, 5: Very important

Figure A.I. Example of Key Investor Information Document (KIID)

Key Investor Information

This document provides you with key investor information about this fund. It is not marketing material. The information is required by law to help you understand the nature and the risks of investing in this fund. You are advised to read it so you can make an informed decision about whether to invest.

123 Fund, a sub-fund of ABC Fund SICAV (ISIN: 4321)
This fund is managed by ABC Fund Managers Ltd, part of the XYZ group of companies

Objectives and Investment Policy

Joint description of the objectives and policy of the UCITS in plain language (not copy-out of the prospectus)

Essential features of the product which a typical investor should know:

- main categories of eligible financial instruments that are the object of investment
- a statement that the investor may redeem units on demand, and how frequently units are dealt in
- whether the UCITS has a particular target in relation to any industrial, geographic or other market sectors or specific classes of assets
- whether discretionary choices regarding particular investments are allowed, and whether the fund refers to a benchmark and if so which one
- a statement of whether any income arising from the fund is distributed or reinvested

Other information if relevant, such as:

- what type of debt securities the UCITS invests in
- information regarding any pre-determined pay off and the factors expected to determine performance
- if choice of assets is guided by growth, value or high dividends
- how use of hedging / arbitrage / leverage techniques may determine the fund's performance
- that portfolio transaction costs will have a material impact on performance
- minimum recommended holding term

Risk and Reward Profile

← Lower risk
Typically lower rewards

—————→ Higher risk
Typically higher rewards

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Narrative explanation of the indicator and its main limitations:

- Historical data may not be a reliable indication for the future
- Risk category shown is not guaranteed and may shift over time
- The lowest category does not mean 'risk free'
- Why the fund is in its specific category
- Details of nature, timing and extent of any capital guarantee or protection

Narrative presentation of risks materially relevant to the fund which are not adequately captured by the indicator:

- Credit risk, where a significant level of investment is made in debt securities
- Liquidity risk, where a significant level of investment is made in financial instruments that are likely to have a low level of liquidity in some circumstances
- Counterparty risk, where a fund is backed by a guarantee from, or has material investment exposure through contracts with, a third party
- Operational risks including safekeeping of assets
- Impact of any techniques such as derivative contracts

Charges for this Fund

The charges you pay are used to pay the costs of running the fund, including the costs of marketing and distributing it. These charges reduce the potential growth of your investment.

One-off charges taken before or after you invest	
Entry charge	□%
Exit charge	□%
This is the maximum that might be taken out of your money [before it is invested][before the proceeds of your investment are paid out].	
Charges taken from the fund over a year	
Ongoing charges	□%
Charges taken from the fund under certain specific conditions	
Performance fee	□% a year of any returns the fund achieves above the benchmark for these fees, [insert name of benchmark].

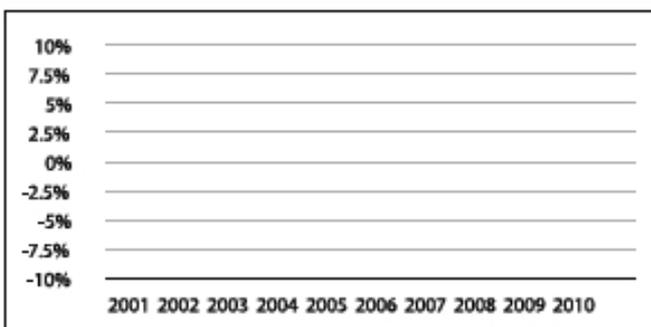
The **entry and exit charges** shown are maximum figures. In some cases you might pay less - you can find this out from your financial adviser.

The **ongoing charges** figure is based on expenses for the year ending □. This figure may vary from year to year. It excludes:

- Performance fees
- Portfolio transaction costs, except in the case of an entry/exit charge paid by the UCITS when buying or selling units in another collective investment undertaking

For more information about charges, please see pages x to x of the fund's prospectus, which is available at www.ucitsfund/

Past Performance



The chart will be supplemented with prominent statements which:

- warn about its limited value as a guide to future performance
- indicate briefly which charges have been included or excluded
- indicate the year in which the fund came into existence
- indicate the currency in which past performance has been calculated.

Practical Information

- Name of the depositary
- Where and how to obtain further information about the UCITS (prospectus, reports & accounts)
- Where and how to obtain other practical information (e.g. where to find latest unit prices)
- A statement that tax legislation of the fund's Home State may have an impact on the personal tax position of the investor
- A statement that "[Name of management company] may be held liable solely on the basis of any statement contained in this document that is misleading, inaccurate or inconsistent with the relevant parts of the prospectus for the fund"
- Specific information relating to umbrella funds (e.g. any switching rights between sub-funds)
- Information about other share classes, if applicable (KII may be based on a representative class)

This fund is authorised in [name of Member State] and regulated by [identity of competent authority].

Where relevant the statement that [[Name of management company] is authorised in [name of Member state] and regulated by [identity of competent authority].]

This key investor information is accurate as at [the date of publication].

Figure A.II. Example of the Dutch Financial Leaflet (DFL)

In the red rectangle in the picture below, you can see the infographic which the net return infographic is based on.

Financiële bijsluiter

- Het product**
- De risico's**
- De kosten**
- De opbrengst**
- Eerder beëindigen**

[Naam product]
van **[Naam financiële instelling]**

Gebruik de Financiële Bijsluiter vóór u overgaat tot het afsluiten van direct ingaande lijfrente **[Naam product]**. Vergelijk deze Financiële Bijsluiter ook met de bijsluiter van andere direct ingaande lijfrenten. Lees ook de offerte en/of de algemene voorwaarden.

Let op! Er wordt gerekend met een eenmalige inleg van € 20.000 en met beleggingen in een mix van aandelen en obligaties. Hierbij wordt uitgegaan van 50% beleggingen in aandelen en 50% beleggingen in obligaties. Uw persoonlijke keuzes en situatie kunnen van invloed zijn op de resultaten die in deze bijsluiter vermeld worden. Meer informatie: www.definancieelbijsluiter.nl of vraag een adviseur.

Heeft u vragen?
[Naam financiële instelling], naam, _____, adres, telefoonnummer
of neem contact op met een adviseur.

Deze Financiële Bijsluiter is opgesteld op 23 October 2006 volgens de voorschriften van de Autoriteit Financiële Markten (www.afm.nl). Deze organisatie houdt toezicht op sparen, lenen, beleggen en verzekeren.

Let op!

Er wordt gerekend met een eenmalige inleg van € 20.000, met 50% beleggingen in aandelen en met 50% beleggingen in obligaties

Wat houdt **[Naam product] in?**



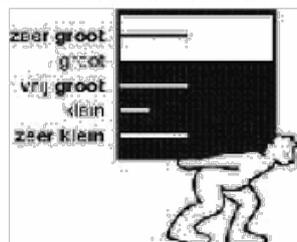
U gaat	U moet	U kunt
beleggen	eenmalig een vast bedrag storten. <i>Vraag naar het bedrag en vraag waarin u belegt</i>	een periodieke uitkering ontvangen <i>Vraag naar de hoogte en duur van de uitkeringen</i>
en verzekeren	eenmalig premie betalen. <i>Vraag naar het bedrag</i>	bij overlijden een periodieke uitkering nalaten aan nabestaanden.

Wat zijn de risico's?

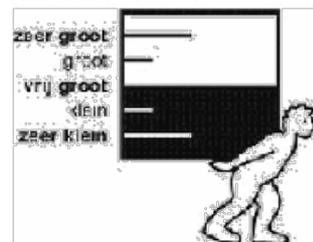


Risico dat u uw inleg niet terugkrijgt

Bij tussentijdse beëindiging (3 jaar)



Bij gehele looptijd (20 jaar)



Wat kan er gebeuren in het ergste geval?

bij tussentijdse beëindiging kunt u uw volledige inleg kwijtraken

bij een gehele looptijd (20 jaar) kunt u uw inleg kwijtraken

Wat zijn de kosten?

De kosten bij een voorspelling op basis van een waardevermeerdering van de belegging van 4%

	Inleg	Rendement	Uw kosten exclusief te betalen rente		Wat u overhoudt om af te lossen	
Na 1 jaar			€ 160	verzekeringspremie		na 1 jaar is uw netto rendement - 17,9%
			€ 550	overige kosten		
			€ 100	bij eerder beëindigen		
	€ 3.900	+ € 110	- € 810		= € 3.200	
Na 10 jaar			€ 1.600	verzekeringspremie		na 10 jaar is uw netto rendement - 0,5%
			€ 5.800	overige kosten		
			€ 1.000	bij eerder beëindigen		
	€ 39.000	+ € 7.400	- € 8.400		= € 38.000	
Na 30 jaar			€ 4.800	verzekeringspremie		na 30 jaar is uw netto rendement + 2,7%
			€ 65.400	overige kosten		
			€ 0	bij eerder beëindigen		
	€ 117.000	+ € 133.200	- € 70.200		= € 180.000	

Wat kan [de/het] [Naam product] opbrengen?

De opbrengst bij een voorspelling op basis van historie

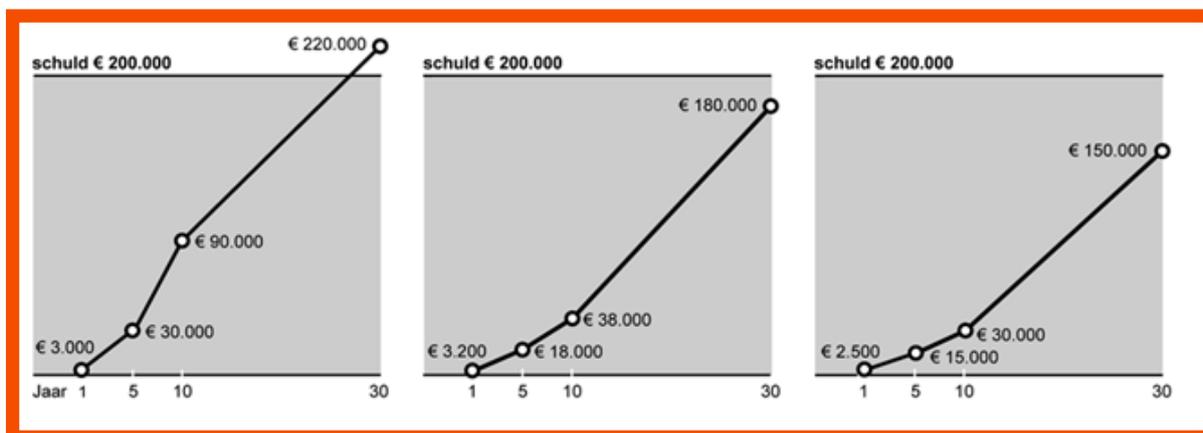
De opbrengst is hoger dan de schuld

De opbrengst bij een voorspelling op basis van een waardevermeerdering van de belegging van 4%

De opbrengst is lager dan de schuld

De opbrengst bij een pessimistische voorspelling

De opbrengst is lager dan de schuld

**Wat gebeurt er bij eerder beëindigen?****Eerder beëindigen**

bij overlijden

bij opzeggen (bijvoorbeeld bij scheiding, baanverlies, arbeidsongeschiktheid)

Gevolgen

uw nabestaande krijgt een vast bedrag
Vraag naar de voorwaarden

u heeft afkoopkosten
Vraag naar de bedragen

Figure A.III. Example of Information Provided to Respondents

The red rectangles in the picture below indicate where the changes are made for the different treatment groups. For TG1, both infographics have been left out. For TG2, the second infographic has been left out. For TG3, the first infographic has been left out. For TG4, the first infographic has been left out, and the second infographic has been replaced with the net expected return graph. For TG5, the second infographic has been replaced with the net expected return graph.

OBJECTIVES AND INVESTMENT STRATEGY OF THE FUNDS

Index fund A	Index fund B	Index fund C
<p>This index fund aims to generate a return that matches the return of the MSCI Europe Index. This index comprises of a selection of shares of European companies.</p>	<p>This fund aims to achieve long-term capital growth by investing passively in a diversified portfolio of shares of large and medium-sized listed companies based in Europe.</p>	<p>This index fund will take proportionate exposure to the components of the MSCI Europe Index either through direct investments in almost all of the securities and/or through the use of derivatives.</p>
<p>The fund tracks the features (e.g., the spread of assets across countries, sectors and currencies) of the index as closely as possible. This means it mainly buys and sells from a selection of shares from this index.</p>	<p>The fund invests in one or more passively managed investment funds that individually or jointly cover the investment universe as complete as possible. Moreover it accurately tracks the return and the risk of the investment universe at the lowest possible cost. The index fund aims to match the performance of the MSCI Europe Index as closely as possible. Therefore, imitation of the index is done by buying and holding the shares in the index, not through derivatives.</p>	<p>Derivatives will in particular be used when it may not be possible or practical to replicate the index through direct investments or in order to generate more efficient exposure to the index. Exposure to the index through direct replication may be accompanied by re-balancing costs, while exposure to the index through derivatives may be accompanied by derivative transaction costs.</p>
<p>The fund may make limited use of derivatives. This means that derivatives can be used to help achieve the investment objectives (for example, to increase or decrease the exposure to one or more market segments in line with the investment strategy). In addition, derivatives can be used to neutralize the portfolio's sensitivity to market factors (for example, to hedge an exchange rate risk).</p>	<p>The dividends received by the fund will be reinvested in the fund.</p>	<p>The fund will invest its net capital primarily in shares, transferable securities, money market instruments, deposits at credit institutions, structured notes listed or traded on a regulated market, and other eligible assets specified the prospectus.</p>
		<p>This class distributes its net income in order to maintain the maximum tracking accuracy of the MSCI Europe Index.</p>



Do not take any unnecessary risk. Read the Essential Investing Information. The bar indicates that the risk of this product is high, namely 6 on a scale of 7.

This figure is based on data from the past. Data of the past is not always a reliable indication of risk and return in the future. The risk and reward indicator is assessed regularly and can therefore be increased or decreased.

The lowest figure does not mean that the investment is entirely risk-free. However, it does indicate that, compared with the higher figures, this product will generally provide a lower, but more predictable return. The figure gives an indication of the return the fund might generate, but it also indicates the risk involved. The higher the figure, the greater the potential return, but also the more difficult it is to predict this return. You might even make a loss.

The figure has been calculated from the point of view of an investor in euros.

Why does this fund have a risk and reward indicator of 6?

6 is a typical figure for an equity fund and indicates that the fund is highly sensitive to the market. Shares do not provide a guaranteed return and their value can fluctuate sharply. Moreover, an investment in this fund involves:

- a moderate level of exchange rate risk.
- Since the fund invests in securities that are denominated in currencies other than the currency in which the fund itself is denominated, there is a real chance that the value of the investment will be affected by movements in exchange rates.

Do not take any unnecessary risk. Read the Essential Investing Information. The bar indicates that the risk of this product is high, namely 6 on a scale of 7.

The risk indicator is based on the volatility of the price of the fund in the past five years. Such historical data is not always a reliable indicator of future risk. The risk profile of the fund may change over time. The lowest category does not mean that there is a risk-free investment.

This fund has received a relatively high risk and reward indication because it invests in stocks. Stocks are in general riskier than bonds. The fund does not fall into the highest risk and reward category because it invests in a very large number of shares (approximately 450) of companies located in sixteen European countries. This fund's investments are broadly diversified across countries and sectors. It is less risky than equity funds which diversify their investments less broadly.

This fund is an index fund. The returns of index funds is typically higher than comparable actively managed funds. The risk is almost exclusively tied to the fluctuations in the value of the tracked stock market index (the so-called marketrisk). There is little or no risk associated with active management (known as specific risk).

Do not take any unnecessary risk. Read the Essential Investing Information. The bar indicates that the risk of this product is high, namely 6 on a scale of 7.

More information on the risk category

The risk category is based on the return volatility over the last five years. The method used for this estimation depends on the type of fund.

Historical data may not be a reliable indication for the future.

The risk category is not guaranteed to be left unchanged. The risk category may vary over time.

The lowest category does not imply that the investment is risk-free.

Why is this fund in category 6?

This fund invests in country/regional specific stocks across various sectors and may be subject to high fluctuations in value. The rating is therefore driven by equity market fluctuations.

CHARGES

The charges you pay are used to cover the costs of running the fund, including the costs for marketing and distribution. These charges reduce the potential growth of the investment.

Index fund A

One-off charges taken before or after you invest	
Entry Charge:	2.00%
Exit Charge:	5.00% on sale of units within one month of purchase
Charges taken from the fund over a year	
Ongoing Charges:	1.11%

Index fund B

One-off charges taken before or after you invest	
Entry Charge:	0.25%
Exit Charge:	0.25%
Charges taken from the fund over a year	
Ongoing Charges:	0.50%

Index fund C

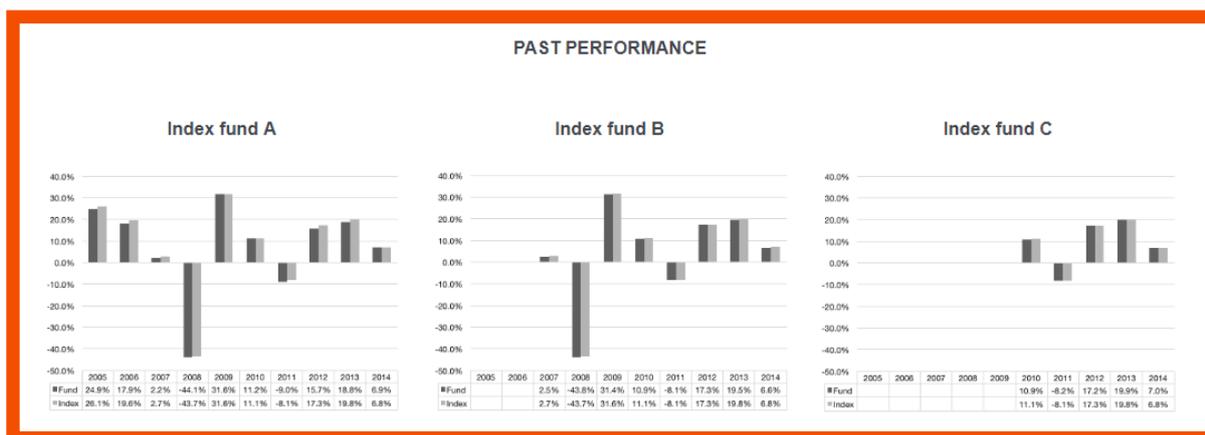
One-off charges taken before or after you invest	
Entry Charge:	5.0%
Exit Charge:	3.00%
Charges taken from the fund over a year	
Ongoing Charges:	0.20%

These charges are used to cover, among other things, the management costs of the fund, including marketing and distribution expenses. They reduce the investment's ability to grow.

Charges are of great importance for the investment's return. The charges are used to cover the management fees and operational expenses of the fund. They reduce the potential growth of your investment.

The ongoing charges figure is an estimation. Because of a reduction in management fees in 2013, the ongoing costs are based on an estimation instead of historical data.

The ongoing charges figure is based on the fiscal year ended December 31, 2014.



Past performance is not an indicator of future performance.

The calculation of past performance includes all charges and fees, except taxes, and entry and exit charges.

The fund was started in 1997.

The results shown are calculated in euros, and include ongoing charges and transaction costs but exclude entry and exit charges.

The index is the MSCI Europe Index.

Past performance is no guarantee for future results.

The fund was established on 1 July 2006.

The histogram shows the annual return of the fund. In general, past performance takes into account all ongoing charges, but not the entry charge. The return of the benchmark is also shown.

The fund was introduced in 2009.

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Netspar
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E-mail info@netspar.nl
www.netspar.nl

May 2020