



Self-directed investors: important insights

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The Netherlands Authority for the Financial Markets

The AFM is committed to promoting fair and transparent financial markets.

As an independent market conduct authority, we contribute to a sustainable financial system and prosperity in the Netherlands.

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Introduction

Over the past year, the Netherlands Authority for the Financial Markets (Autoriteit Financiële Markten, AFM) conducted research on the behaviour of self-directed investors¹ (also known as non-advised or execution-only investors). The majority of Dutch investors are self-directed, i.e., they choose to make their own investment decisions without receiving professional advice from their bank or broker. Given the strong performance of stock markets in recent years and the very low interest rates currently offered on saving's accounts, we expect the number of investors to grow in the next few years. Moreover, as people are increasingly expected to manage their own financial futures, the results of self-managed investment portfolios will increase in importance within consumers' financial portfolios.

In this report we share the most significant insights we gained. We feel many of these insights are relevant for financial regulators in other countries, as well as policy makers, service providers and consumer protection organisations.

Our research consisted of a number of activities:

- An extensive review of the academic literature on investor behaviour and performance to identify the major psychological factors affecting retail investors;
- An assessment of the online investment platforms of four major providers;
- Interviews with 14 self-directed investors² to investigate the way they make investment decisions and, particularly, their reasons for investing the way they do; and
- A survey of 500 self-directed investors, to assess which level of investor protection they deem desirable.

In many cases, actual investor behaviour turns out to be very different from how regulators and policy makers assume investors behave, or how they expect or want them to behave. In this report, we discuss three common assumptions about investor behaviour: that investors have a well-defined investment goal, that investors compare options and, finally, that knowledge and experience are good predictors of investor behaviour. For all three assumptions we look at the evidence and conclude that real investor behaviour looks significantly different than assumed behaviour.

This is important because the market for self-directed investors is dynamic. Technological innovation and regulatory requirements for advised investment services cause providers to look for new ways to attract investors, and ways to offer self-directed investors affordable support in the decisions they make. Some providers have already started to support their customers in

¹ Unless specified otherwise, 'investors' in this report refers to self-directed investors investing in the secondary market.

² The interviews in particular delivered important and surprising insights. Of course, a sample of 14 investors is not representative and cannot be used to make statements or draw conclusions about the whole population of investors. Small-scale qualitative research can, however, be a valuable base from which to conduct further quantitative research.

making solid investment decisions. For example by narrowing their product range or by offering tools that help them diversify better. For regulators and policy makers, the challenge is to facilitate innovation where it is in the investor's best interest, while remaining able to mitigate risks if (or rather, when) they arise.

In assessing whether the current rules enable us to meet this challenge, we believe it is crucial to use realistic assumptions about investor behaviour. Insights provided by behavioural economics and psychology (hereafter behavioural sciences) are particularly useful in this regard. Behavioural sciences provide us with increasing insights about the way bounded rationality impacts our decision-making behaviour with respect to financial decisions (investment-related and otherwise). Given the virtually unlimited variety of options consumers have when opting to manage their own investments, these insights are of particular importance in this market. Moreover, investor behaviour is a field that has received a lot of attention from behavioural scientists, in part because of the availability of large datasets with trading information across many countries.

While our research does not provide a clear-cut answer to the question: "What would the ideal investor protection regime look like?" we hope it will be a starting point for substantive, evidence-based discussions in both national and international contexts. We also hope it will encourage investment service providers to further enable self-directed investors to make sensible investment decisions.

This report is constructed as follows:

- In the first section, we begin with a brief description of the retail investment market in the Netherlands and explain our interest in this market. We also describe the main characteristics of Dutch self-directed investors and what we know of their performance
- In the second section, we discuss a number of common assumptions about investor behaviour and the evidence we found supporting or rejecting these assumptions
- Thirdly, we explain why assumed investor behaviour is often so different from actual behaviour and discuss a number of key behavioural insights
- We conclude with our ideas on how to move forward, using the insights presented in this report

1. Self-directed investors in the Netherlands

In June 2015, 13% of Dutch households (approximately 960.000 households) were investing in the stock market (Millward Brown, 2015). The proportion of the population that invests indirectly (e.g., through pension or insurance products) is much larger. We also conducted research on this group of “indirect investors,” but the results of this research are not included in this report.

When a Dutch consumer starts investing, he³ can choose between three types of investment services: a) he can have his investments managed by a portfolio manager, who decides on and executes all transactions; b) he can receive investment advice while managing his own sales and purchases; or, c) he can manage his portfolio entirely independently. This last group is called “self-directed,” “execution-only” or “non-advised investors.” In this report, we will refer to them as self-directed investors.

The majority of Dutch investors (60%) choose the third option (i.e., they make their own investment decisions without receiving professional advice from their bank or broker)⁴. These investors have indicated that they consider self-directed investing the most important investment service used, or that the amount of money invested is greatest in their self-directed investment account (GfK, 2015). Of course, even self-directed investors might receive advice or support from other sources than their bank or broker. Several of the self-directed investors we interviewed did indeed use investment courses (e.g., on technical analysis) or publically-available expert opinions (not all “experts” being equally reputable).

Why is the AFM interested in this market?

We noted that about 13% of Dutch households are active in the stock market. This number, however, fluctuates and historic data shows a strong, positive correlation with the value of the Amsterdam Exchange Index (AEX): the higher the value of the index, the greater the number of investors active in the market. The most recent financial crisis seems to have had a major and long-lasting impact on investor trust and confidence: while the stock market has been performing strongly for a number of years, it is only since 2013 that the number of investors has started to grow again (Millward Brown, 2015). Given the strong performance of stock markets in recent years and the very low interest rates currently offered on savings’ accounts, we expect a large number of consumers will enter the market in the next few years in search of better yields. As we explain in the following paragraph, we also expect the group of investors to become more diverse in terms of investment experience and educational background.

³ Or she, of course. Most investors in the Netherlands, however, are male.

⁴ Exact numbers vary depending on how the survey question is asked, since there is a group of investors that uses more than one way of investing. They combine, for example, an advised account with self-directed investing. Of the consumers who indicated that self-directed investing is the most important investment service used, or that the amount of money invested is greatest in their self-directed investment account, 7% indicated that they also invest using advised and/or managed investment services (GfK, 2015).

While it is uncertain how many of these investors will opt for self-directed investing, it seems reasonable to assume a significant number will do so. The ban on inducements, for investment services in place since January 1st, 2014, might be relevant in this regard since the costs of receiving investment advice or investment management are now much more transparent than they were before.

Moreover, people are increasingly expected to manage their own financial future. For example, they are responsible for supplementing their pensions (comprised of private and public retirement plans) with additional sources of income during retirement. On one hand, this means that *not* investing in the stock market is a risky decision - risky in the sense of foregoing the higher potential returns of investing in favour of saving⁵. On the other, it also means that the stakes are higher for people who do invest: the results of their (self-managed) investment portfolios will be an increasingly important part of their total financial portfolio.

In the next paragraphs, we discuss some important characteristics of Dutch self-directed investors.

Who is the (self-directed) Dutch investor?

European data⁶ show that, on average, investors (both self-directed and advised) are older, better educated and wealthier than the average citizen (Chater et al., 2010). Our own data indicates that Dutch investors have similar characteristics (GfK, 2015). However, just like the number of investors fluctuates, the profile of the average investor changes throughout the years as well. In the past few years, Dutch investors were relatively experienced and highly educated, whereas prior to 2003 the group of investors included more moderately-educated and less experienced investors. The most recent data show that the numbers of relatively inexperienced and younger investors are once again growing (Millward Brown, 2015).

The European research also shows that investors have more faith in financial institutions than non-investors and that they are, unsurprisingly, less risk averse. They are also less inclined than non-investors to want to evaluate lots of information before taking a decision (Chater et al., 2010).

Online platforms are by far the most important channel for investors to make transactions (Millward Brown, 2015). Popular providers include the major Dutch banks, specialized investment services providers and a number of discount brokers. The products and services offered by the various providers differ greatly. Some limit the investor's choice to a small, predefined set of investment funds, linked to varying degrees of risk tolerance. At the other end of the range we see providers granting investors almost unlimited freedom and offering a complete set of investment products, including leveraged and structured investment products.

⁵ The fact that so few households hold stocks has been called "a puzzle" by Van Rooij et al., 2011.

⁶ n=6000 European consumers from the Czech Republic, France, Germany, Italy, Poland, Romania, Sweden and the UK, both investors and non-investors.

How do self-directed investors perform?

For several countries, researchers have investigated the (risk-adjusted) performance of self-directed investors using trading data (see Barber and Odean (2013) for an overview). This research consistently shows that on average, self-directed investors underperform relevant benchmarks (usually a passive investment strategy). Important factors explaining this underperformance are the tendencies of many investors to trade too much (resulting in high transaction costs) and diversify too little (resulting in risky portfolios and volatile returns).

There are, however, significant differences between individuals. Research for the Netherlands showed, for example, that investors using technical analysis and trading options perform worse than those who do not (Hoffmann and Shefrin, 2014). Based on a survey of relevant studies, Barber and Odean (2013) conclude that the group that consistently performs well is very small, particularly when accounting for trading costs.

What is currently lacking is an extensive segmentation of the complete population of self-directed investors, since researchers do not have access to trading data from all relevant service providers. This is an important limitation because the type of investor attracted to - for example, a discount broker - might differ from the type of consumer choosing to invest with one of the major banks. As a result, their behaviour and performance might also be different.

We also do not know enough about the overall financial situations of self-directed investors to accurately determine the impact and depth of their (often poor) investment performance. Do disappointing investment results mean investor X will have to sell his house when he retires, or that he will have to cut back the number of trips he takes each year? One complicating factor our interviews revealed was that, contrary to our assumptions, many investors do not appear to have a clearly defined investment goal.

In the next section, we discuss this assumption and others about investor behaviour.

2. Assumptions about investor behaviour

In this section, we discuss three common assumptions about investor behaviour and the evidence we found supporting or rejecting these assumptions.

Assumption 1: Investors have a well-defined investment goal

One common assumption about investors, self-directed or otherwise, is that they have a well-defined investment goal. For a rational investor, the abstract goal (e.g., 'I need additional income when I retire') would be the starting point to determine: his investment horizon ('I need the extra money 30 years from now'); the total amount required ('Given my desired income, life expectancy and expected inflation, I will need a total of €X'); investment strategy ('Given my long time horizon I should invest offensively in a well-diversified portfolio'); and how best to compare the various services on offer ('Although the costs are higher, I would have more peace of mind if an investment professional managed my portfolio').

It should be obvious that making these decisions demands quite a lot of the cognitive skill and motivation of a consumer. It would therefore not be very surprising to see consumers drop out of this decision making process at some point. We were surprised, however, that many of the self-directed investors we interviewed did not even seem to make it through the first few steps, i.e., establishing an abstract goal or total amount needed. In terms of goals, the one thing that most investors seem to agree on (rather obviously) is that they want to preserve their wealth and would rather not lose their investment.

The reason to start investing often was a life event or having some "excess" cash, not a clearly articulated financial need. For some of the investors we interviewed, investing was something that had more or less happened to them. Moreover, investment goals seemed to change throughout the years. E.g., an investor might start because he thinks it would be fun⁷ to invest, but realizes after a few years that he could actually use the money to have a more comfortable retirement. Or, conversely, he might be disappointed by the amount left⁸ in his investment account after five years and decides to use the money to buy a new television instead. And even self-directed investors who had a defined goal from the start, e.g., the self-employed with no additional pension provision, did not translate this goal to a total amount required. All of this means that it can be quite difficult to determine what an investor's actual goal is, and that commonly-used survey-based measures may not be up to the task of answering this question. It

⁷ When compared to other types of investors, self-directed investors more often indicate that 'the fun of it' is an important reason for them to invest. (GfK, 2015).

⁸ Another surprising finding was that even investors who claimed to be closely monitoring their investments often had no idea about their actual returns. This was all the more surprising given the fact that we had asked the respondents to prepare for the interviews, e.g., by looking up the current value and content of their investment portfolios.

also means that using investment goal as the basis for segmenting investors is a lot more complicated than we initially thought.

Assumption 2: Investors compare options

The second assumption we would like to address is the assumption that investors compare options – be it types of service (e.g., self-directed vs. advised), various investment products (e.g., mutual funds vs. ETFs) or investment strategies (e.g., active vs. passive). While it seems obvious that very few investors will compare every available alternative, we found it surprising that in many cases investors do not compare options *at all*.

This finding is confirmed by both quantitative and qualitative research. Chater et al. (2010) found that only about a third of investors compare different service providers or investment products. Many of the investors we interviewed made similar statements. For example, the choice for self-directed investing was made quickly, based on the lower costs and the fact that they thought they would enjoy investing. Self-directed investing also matched the perception these consumers had of their own capabilities: they thought they were as able as – or better than – investment professionals. Very few investors, however, seemed to have invested time in researching what distinguishes successful investors from those that are not.

Also, when choosing between various self-directed platforms, in most cases there seemed to be no comparison of the variety of services and support offered. Many named seeing a commercial as a reason to choose a particular broker. If there was comparison with other providers, this was usually limited to costs, not taking into account, for example, the service or support offered. This might give the impression of self-directed investors as independent decision makers who do not want or need support. Yet interestingly, the interviewed investors did indicate they felt a need for support when making investment decisions, like product choices or timing sales and purchases. But in choosing the type of support, the end result seemed far from optimal. For example, for some investors intuition or gut feeling were the most important guidance, while others used complicated strategies that seemed above and beyond their grasp (like technical analysis).

While, ideally, investors would take into account costs, risks and return when choosing financial instruments, risk and - particularly - costs seemed to play a very limited role. Moreover, when investors talked about risk, their understanding of this concept seemed very different from what is common among professionals. For a professional, an important aspect of a 'safe' investment strategy is diversifying well. For the interviewed investors, 'safe' meant managing their own investments (and not giving control to someone else), investing in well-known companies or investing a limited amount of money (in absolute, not relative, terms). We also noticed that questions about risk tolerance were answered inconsequently and the relationship between risk tolerance and the investment strategy used was not always obvious.

Assumption 3: Knowledge and experience are good predictors of investor behaviour

One subject we focused on in our literature review was the predictive value of knowledge and experience for investor behaviour. We zoomed in on this subject because knowledge and experience are core elements of the MiFID appropriateness test, an important component of current regulation aimed at the protection of self-directed investors.

The appropriateness test is required for retail self-directed investors, unless they only invest in non-complex financial instruments (and several other conditions are met; ESMA, 2012). Most providers in the Netherlands choose to have all investors (not only those wishing to invest in complex products) complete the assessment.

The appropriateness test requires providers to ask questions about an aspiring investor's knowledge (in particular, level of education and profession) and experience (familiarity with types of services and products and information about previous transactions). If an investor fails the test, he receives a warning that the service or product chosen is inappropriate. The format and wording of these warnings vary. Sometimes the warnings are one-off, in other cases investors receive a pop-up whenever they try to purchase a product for which, on the basis of the test, they lack the required knowledge and experience. The warnings are not binding and investors can choose to ignore them.

The test is format-free and ranges from paperwork that an investor completes and returns via post to more education-oriented online versions. Sometimes a tiered approach is used, with investors having to complete an additional, more in-depth test when they want to invest in more complex products (like leveraged structured investment products).

The obvious and intuitively logical assumption behind the appropriateness test is that investors with more knowledge and experience are more capable investors. On the basis of a literature review we conducted, we now have serious doubts about the validity of this assumption.

We looked at 12 studies using transaction data⁹ from Netherlands, Germany, Finland, Sweden and the United States. These studies looked for (among other things) a relationship between knowledge, experience and the two common investor pitfalls mentioned above: trading too much and diversifying poorly. The studies use various measures of knowledge, including IQ

⁹ In the 12 studies, 10 different data sets were used. The 12 studies are: Anderson, 2013; Barber and Odean, 2001; Barber and Odean, 2002; Dorn and Huberman, 2005; Dorn and Sengmueller, 2009; Glaser, 2003; Glaser and Weber, 2007; Grinblatt and Keloharju, 2009; Grinblatt et al., 2012; Hoffmann and Shefrin, 2014, Seru et al., 2010. Full references can be found in the list of literature at the end of this report.

and investment-specific test questions¹⁰. Experience is measured as the length of time someone has been investing.

The researchers agree that investors with more knowledge and experience diversify more (but only until a certain age). The research is inconclusive regarding the effect of knowledge and experience on the number of transactions. However, the most meaningful insight these studies offer is the fact that knowledge and experience have only very small effects on diversification and trading behaviour. Knowledge and experience are, in other words, poor predictors of the extent to which an investor manages to avoid the two important, and costly, pitfalls. The researchers find a variety of investor characteristics and behaviours that explain performance more completely than simple knowledge and experience, including risk tolerance, the investment strategy used and the importance of the “fun factor.”

Part of the explanation could be a measurement problem: perhaps the common ways of assessing knowledge and experience are not measuring the type of knowledge and experience one really needs to become a successful investor. Given the diversity of measures used to determine the level of knowledge and the consistency of finding only a small effect on behaviour, we doubt that this is the biggest problem with using knowledge and experience as measures to determine an investor’s actual level of skill.

We believe the more plausible explanation is that having knowledge of and experience with investing is something very different than being able to apply these insights to one’s own investment behaviour. If investment decisions are made intuitively instead of rationally, it makes sense that knowledge and experience would only help to some extent. Our interviews offered some support for this alternative explanation: even respondents who were able to correctly answer advanced, investment-specific, financial literacy questions had great difficulty applying basic rules of thumb to their own investment portfolio. More importantly, this alternative explanation is in line with insights from behavioural sciences into investor psychology. In the next section, we discuss a number of insights that are relevant to the assumptions discussed here.

¹⁰ This differs from the methodology used in most appropriateness tests, but, in our opinion, the academic measures are at least as sophisticated as the ones used by service providers to determine an investor’s level of knowledge and experience (and perhaps even more so).

3. Investor psychology

If we had to summarize our insights from the previous chapter in one sentence, we would probably come up with the following: *investors behave less rationally than we assumed they did*. In this section we will explain what we mean by rational investment behaviour and why actual observed behaviour often looks very different.

Rationality

The notion of rationality is the core of so-called rational choice theory (RCT), until a few years ago the predominant theory of consumer decision-making behaviour¹¹. In its most basic form, RCT simply means that people have preferences and base their decisions on these preferences. When several options exist, a rational consumer will make a choice by weighing up the pros and cons of the various options, and choose the one that best accords with his or her own preferences. 'Rational', in this sense of the word, is not a value judgement but a description of the process that people go through in order to make a choice. A person makes a rational choice by weighing up the pros and cons of the various options. 'Rational' here is not a judgement of the quality of the choice this person finally makes; a rationally chosen option is not necessarily a 'sensible' or 'good' choice. By the same token, a 'bad' choice, for example a risky investment decision that goes awry, can also be the result of a rational decision-making process.

For a rational consumer, the financial decision-making process would look like the diagram below (based on Kotler and Keller, 2011).



Figure 1 The decision-making process of a rational financial consumer. Based on Kotler and Keller (2011).

A rational consumer is held to: a) pass through every step and omit none, b) pass through these steps in the correct order, and c) devote adequate time and attention to each step in order to arrive at the choice of product or service that is most appropriate to his or her preferences. We have clarified what this might mean for a rational investor in the table below:

¹¹ Much of the text in the paragraphs below is taken and/or adapted from Autoriteit Financiële Markten (2015) Standardized products and consumer financial decision making. A behavioural analysis.

The decision-making process of a rational investor

1	Problem recognition	<p>For example:</p> <ul style="list-style-type: none"> • A consumer feels the need to start investing because he is dissatisfied with current interest rates • An investor is investing for additional pension income and notices he will not reach his desired return with his current investment strategy
2	Information search	<p>For example:</p> <ul style="list-style-type: none"> • The consumer researches the differences between self-directed investing and receiving investment advice • The investor looks for information on various investment strategies
3	Evaluation of alternatives	<p>For example:</p> <ul style="list-style-type: none"> • The consumer compares various providers of self-directed investment platforms • The investor weighs up the pros and cons of a more aggressive investment strategy
4	Purchase	<p>For example:</p> <ul style="list-style-type: none"> • The consumer opens an investment account with provider X • The investor increases the monthly deposit in his investment account and invests his money in an emerging market fund
5	Monitoring and adjustment	<p>For example:</p> <ul style="list-style-type: none"> • The consumer is dissatisfied with the service offered by provider X and starts looking for an alternative (back to step 1) • The volatility of the emerging market fund results in sleepless nights for the investor, he decides to diversify further by investing in a worldwide non-synthetic ETF (back to step 1)

Rationality and behavioural sciences

RCT has enjoyed long popularity, in part because the theory can be used to predict decision-making behaviour. This requires the assumption that people's preferences are 'stable,' that is to say, independent of the context within which a choice is made or of the way in which options are presented. Another necessary assumption is that people are motivated to invest time and effort into collecting and studying information on different options.

Behavioural economists and psychologists have long raised objections to both of these assumptions. But it is only in recent years that these insights have become increasingly popular, both in the academic world and among policy makers. An increasing amount of empirical evidence shows that in most situations, our decision-making process looks very different than the

diagram above. We might change the order of the steps, spend little time on some of them or skip parts of the process altogether. Instead of choosing rationally, most of our decisions are made in an intuitive way and influenced by things that should not matter for a rational consumer, like the wording of various choice options.

Behavioural scientists often speak of biases and heuristics to describe the deviations from the rational choice path. Heuristics are the mental rules of thumb we use to make quick decisions, as for instance in: "If everyone else is investing, it must be a good idea." If heuristics systematically lead to incorrect appraisals or non-rational decisions, we speak of a bias; for instance, people will over-estimate the likelihood of event X if they saw an instance of event X in the recent past, irrespective of the statistical likelihood of event X actually occurring.

According to behavioural scientists, our intuitive way of making decisions and our sensitivity to biases and heuristics often leads to suboptimal outcomes, particularly in financial contexts. As we will see in the next paragraphs, investing is a prime example of this.

Biases and heuristics in the investment context

Part of our literature review consisted of making an inventory of relevant biases, heuristics and other "psychological pitfalls" in the investing context. Barber and Odean (2013) provides a useful overview. Below is a far from exhaustive summary of relevant psychological factors.

Assessing risks and opportunities

The estimation of opportunity and risk play a significant role when making financial decisions, including investment decisions. Behavioural research has shown that many people are bad at this estimation (Kahneman and Tversky, 1973). For example, McKenzie and Liersch (2011) find that even people who are able to correctly explain the concept of exponential growth greatly underestimate its effect. Another consistent finding is that investors extrapolate past returns when forming expectations about future returns (Greenwood and Shleifer, 2014).

People also overweight unlikely extreme outcomes (both negative and positive). In other words, we overestimate the probability of something very bad or very good happening to us. According to behavioural scientists, the latter fact is an important explanation for people's simultaneous preference for both insurance and lotteries - and lottery-like investments (Barberis, 2013).

Another pitfall is a concept known as narrow framing: the tendency to evaluate a risk in isolation from other relevant and simultaneous risks (Barberis, 2013). Think of being focused on the risk of investing, without taking into account the risks of saving. Or focusing only on the fluctuations of one particular asset in an investment portfolio, when it might make more sense to look at the results of the portfolio as a whole. Regarding the second example, there is extensive academic literature on the effects of different ways of disclosing returns to investors. So far, the experimental evidence on the potential of returns disclosure as an instrument to improve investor

decision making is mixed, but we feel this is an interesting terrain to explore further (Beshears et al., 2015).

Social validation

We have already mentioned in the previous chapter that many investors do not deliberate over the decision to start investing. Rather, it often appears to be an intuitive decision. This helps to explain the strong effect of what behavioural scientists refer to as social validation. In the investment context social validation is commonly referred to as herd behaviour. Both refer to the fact that the decisions we take are regularly influenced by the choices that *others* around us make. People compare their own situation with that of others in their social environment. If many of those around us have already purchased a certain product, we implicitly assume that it must be a good product (Cialdini, 1993). And so, if many around us start investing, we assume it must be a good time to do so. This is evidenced by the strong correlation between the value of indices and number of investors we discussed in the first section.

Loss aversion

As we mentioned earlier, an important assumption of RCT is that people's preferences are stable; in other words, that the choices people make are independent of the context in which they make these choices (e.g., whether a choice is being made on one issue alone, or in combination with other choices) or the way in which the various choice options are presented. In reality, however, preferences are anything but stable (Camerer et al., 2003).

One example of unstable preferences is that people are sensitive to the presentation of a choice as being a profit or a loss. The fact that people find loss unpleasant is no surprise. But people find losses so unpleasant that a loss hurts twice as much as a corresponding profit causes pleasure: a €100 loss causes as much pain as a €200 profit causes pleasure. People are therefore prepared to run the risk of a €50 loss only if the potential profit is €100 (Kahneman and Tversky, 1984).

Behavioural scientists call this effect loss aversion. In the investment context, loss aversion is known because of the so-called disposition effect: people's tendency to sell profitable shares too quickly and retain loss-making ones in the portfolio too long, in the hope of later making good the loss (Barber and Odean, 2013). In this way, the disposition effect contributes to disappointing results for retail investors.

Framing and defaults

Another example of unstable preferences is that people making decisions are susceptible to the wording or the way that options and alternatives are described. A different presentation or framing can lead to a different choice, even if the content of that choice was not altered (Kahneman, 2003).

An important way in which framing influences decision-making behaviour is the effect of defaults: people turn out to be very susceptible to options that are presented as the default, and will often stick to these (Kahneman, 2003). A default here is a choice or setting that applies to you unless you take action to modify it (Johnson et al., 2012). A well-known example of a default is the way organ donorship is often arranged (e.g., in the Netherlands): you are not a donor unless you register yourself as one.

We now know that defaults have a strong influence on real-world choices, even with regard to issues having so much impact that you would expect people to act on their own initiative (Johnson et al., 2012). A famous piece of American research showed that participation levels in a pension plan are significantly higher when participation is the default and action is required to *not* participate. For the same reason, many people stick to default contribution levels and stockholding choices (Madrian and Shea, 2001).

An important objection to defaults is the fact that it can be difficult to decide what the default option should be. The more diverse consumer preferences are, the harder it is to design a default (Soll et al., 2014). One solution put forward by behavioural scientists is smart defaults: providing not one, but several defaults, chosen on the basis of a consumer's personal characteristics (Smith et al., 2013; Soll et al., 2014).

We are not aware of defaults currently being used in service provision to self-directed investors. But we mention them here because we feel they deserve attention as a possible instrument to improve the quality of decisions made by self-directed investors.

More choice is not always better

People attach great value to freedom of choice. But research has also shown that having a great many options actually makes it harder to make a good choice. Consumers faced with too many alternatives suffer from so-called choice overload; they may make suboptimal choices, or they may give up altogether and make no choice at all (Iyengar and Lepper, 2000).

With regard to investment decisions, for instance, many participants of defined contribution pension schemes turned out to feel overwhelmed if they had a great many options. This applied only to people with above-average financial knowledge; people with little financial knowledge always felt overwhelmed, no matter how many options were available (Agnew and Szykman, 2005).

Hyperbolic discounting/present bias

People generally prefer short-term rewards. Given the choice between receiving €10 now or €12 in a week's time, most people will choose to take €10 now. This is because they over-discount the value of future rewards (more than the delay would justify on rational grounds). The same phenomenon means that most people underestimate future costs (Laibson, 1997). Behavioural scientists call this phenomenon hyperbolic discounting or present bias. In the investors we interviewed, present bias clearly played a part in their strong focus on costs when

choosing the type of investment service and provider. When choosing investment products, however, the effect of another import bias in the investing context – home bias – seemed more prominent. We discuss home bias in the next paragraph.

Home bias

In the first section of this report, we mentioned two factors contributing to the disappointing results of retail investors: they trade too much and diversify too little. In both behaviours, psychological factors appear to play an important part. Trading too actively is related to overoptimism (discussed below). Diversifying too little is often linked to home bias: the preference of investors to invest in stocks from their own country and/or well-known companies (in the latter case, this is also referred to as the familiarity bias). As Barber and Odean (2013) point out, this makes investors feel safe, while actually achieving the opposite and resulting in under-diversified, volatile portfolios.

Several of the investors we interviewed strongly displayed these biases and invested in a small number of well-known Dutch companies, in some cases strongly correlated (e.g., investing in three Dutch financials). In explaining their choice of investment, it was clear that they considered this a safe way to invest, e.g., by describing the companies involved as ‘indestructible.’ Of course, in the eyes of a professional investor, this would be considered anything but a safe investment strategy.

Overoptimism

Research has shown that in a medical context people underestimate the chance that something unpleasant will happen to them and overestimate the likelihood of positive life events (Weinstein, 1980). If you are convinced that as an investor you can beat the market, it makes sense that you would ignore passive investment strategies and rather choose to trade actively. The overoptimistic conviction that they were able to beat the pro’s at their own game was clearly present in many of the investors we interviewed¹².

Overoptimism also seemed to play a part in the way the interviewed investors use the appropriateness test and (if applicable) its warnings. Several investors admitted to answering the questions in the appropriateness test opportunistically, so that they would have maximum freedom¹³. Warnings, if given, were usually ignored. Interestingly, respondents who were more positive about the warnings (if not for themselves, then at least for others) appeared to be more capable investors than the ones who were most critical. This finding is consistent with the academic literature: the investors most in need of support are often the least likely to use it (Bhattacharya et al., 2012).

¹² In research into investors, overconfidence (a concept related to overoptimism) is often linked to disappointing investment results (Barber and Odean, 2013). However, studies using direct measures of overconfidence (rather than proxies) fail to confirm this relationship.

¹³ Also see Linciano and Soccorso (2012) for an analysis of the limitations of surveys in assessing investors’ knowledge and risk tolerance.

Cognitive capacities, time and effort

Finally, we would like to point out that doing all the things a successful investor is supposed to do – determining your goal and translate this to an amount needed, establishing your appetite for risk, comparing alternatives, etc. – simply demands a lot of someone’s cognitive capacities, time and effort. Particularly given the fact that investing involves long-term trade-offs and estimations of opportunity and risk. Perhaps the most important assumption we regulators should reassess is what we can and should realistically expect from the average self-directed investor.

In our conclusion, we describe our view on how to move forward, using these insights on investor behaviour.

4. Conclusion

In this report we described the Dutch market for self-directed investing and discussed three common assumptions about investor behaviour. Our research showed that in all three cases, actual investor behaviour differs significantly from how regulators and policy makers assume, expect and would like investors to behave.

Investing is inherently risky. For many investors, this is at least part of the attraction of investing. But as people become increasingly responsible for their own financial future, being able to invest successfully is becoming less “nice to have” and more “need to have.” At the same time, our research also showed that the most important current regulatory tool aimed at protecting self-directed investors – the appropriateness test – appears to have serious limitations, related to both its content and form. We feel both regulators and service providers could do more to help consumers navigate the risks of investing successfully – and protect investors from losing money they cannot afford to lose.

Changing investors...

A logical and intuitive response to the insights on actual investor behaviour is to try to make investors more rational decision makers, e.g., by providing them with more knowledge or by “debiasing” them. But, as we discussed in the second section of this report, knowledge is not a strong predictor for being able to avoid investing pitfalls. We suggested that this might be because having knowledge and applying this knowledge to your own portfolio are two very different things. That is why we believe that the more traditional types of financial education initiatives aimed at transferring knowledge is unlikely to solve this problem.¹⁴ We do believe further research on how investors can be encouraged to reflect more on the quality of their investment decisions is an interesting concept to explore. Recent academic work on the provision of feedback and information on past returns to investors is interesting in this regard (e.g., Meyer et al., 2015 and Gerhard et al., 2015).

...or changing their choice architecture

One limitation in trying to change investor behaviour, as we mentioned earlier, is the fact that the same biases and heuristics that hinder our decision making also make us less inclined to acknowledge or admit that we might need a little help. Therefore, a more promising route to improve outcomes - certainly in the short term - might be to change not the investor but the (online) environment in which he makes his decisions. Behavioural scientists refer to this principle as ‘modifying the choice architecture.’ For self-directed investors, the choice architecture should make it as easy as possible to make sensible investment decisions.

¹⁴ Also see Fernandes et al. (2014) for a more general discussion of the limited (direct) effectiveness of financial education initiatives on financial behaviour.

Possible examples of modifying the choice architecture for self-directed investors would be to use smart defaults for novice investors, layering the product offer instead of showing every type of financial instrument at once or adapting the content and form of the appropriateness test in such a way that its warnings become a more effective tool for investor protection. The feedback mechanisms mentioned above could also be part of a more investor-friendly choice architecture, think, for example, of a reminder of an investor's stated long-term investment goal when he is about to make a speculative investment decision. We strongly encourage service providers to use the insights in this report to explore these and other options to improve the choice architecture for self-directed investors, perhaps in cooperation with scientists.

Providers already support their customers in making solid financial investment decisions, although some do so (much) more than others. Some providers have narrowed their product range. There are providers that give feedback to poor performing customers and point out different investment strategies and other types of investment services. We see dashboards where portfolio risk is compared with the risk appetite of the customer. If these two do not match, the customer receives a warning and receives support to diversify better. There are providers that stimulate customers to explicitly state their goals and provide information about the chances of reaching that goal. One step further, we see products that are targeted to customers with specific goals; for example lifecycle investing for retirement saving. The AFM encourages providers to develop new ways of supporting retail investors and measure its effects.

Is current legislation helpful?

At the same time, regulators should use these insights to critically evaluate the current rules and regulations. We already mentioned in the introduction that technological innovation creates possibilities to offer investors affordable support in the decisions they make. But it is unclear whether the current regulatory framework will be able to facilitate these initiatives, or whether it is more of a hindrance. And, conversely, whether regulators will still have the means to intervene if providers use these technological possibilities to the disadvantage of their customers. We hope this report will also be the start of good, evidence-based discussion, on both national and international levels.

In assessing whether the current rules enable us to meet this challenge, we believe behavioural insights should play a major part. Not only because they challenge our assumptions, but also because they can help us in finding the right balance between investor protection and investor freedom.

How much protection do self-directed investors prefer?

Attentive readers may have noticed that there is one part of our research we have not yet discussed: the survey of 500 self-directed investors we conducted to assess which level of investor protection they deem desirable. Unsurprisingly, most investors prefer low-impact measures, like explaining, supporting or warning. At the same time, more than half of the surveyed investors place at least some responsibility for their investment outcome on their bank or broker. Again,

the survey showed that investors preferring the least invasive type of protection (receiving explanations) were those with lower financial literacy.

Therefore, regulatory interventions limiting investor freedom will likely be considered paternalistic by many investors. Ironically, the investors who would benefit most from protection are also likely to be the strongest opponents. Using behavioural insights, we can try to find alternatives that are just as (or perhaps even more) effective in protecting investors than more invasive measures.

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