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INVESTOR DECISION-MAKING AND THE ROLE OF THE FINANCIAL ADVISOR

A Behavioural Finance Approach

Caterina Cruciani

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ISBN 978-3-319-68233-4 ISBN 978-3-319-68234-1 (eBook)
https://doi.org/10.1007/978-3-319-68234-1

Library of Congress Control Number: 2017954969

Cover credit line: © Stephen Bonk/Fotolia.co.uk

Printed on acid-free paper

This Palgrave Macmillan imprint is published by Springer Nature
The registered company is Springer International Publishing AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

To my boys Valerio and Damiano
and
to Raffaele, "click, click, click".

Preface

This book focuses on providing a thorough and reasoned review of the literature on the role of financial advisory in modern financial markets. It summarizes a few years of research on the role of trust in financial intermediaries on market participation, bringing together the different literatures that I perused to understand the full potential of trust in financial markets with my research experience alongside professional financial advisors.

The recent financial crisis has dramatically changed the perception of the role of financial markets and negatively affected the credibility of the financial intermediaries that are part of it. The consequences of the crisis on market participation and trust have led regulators worldwide to focus on direct measures to ensure increased transparency and investors protection, mandating new standards and increasing requirements. This book explores the financial literature to understand the potential effects of these direct measures and to propose alternative indirect measures.

This book aims at providing a complete picture of the elements at play in the evaluation of the roles and functions of financial advisors. It brings together elements of traditional finance with behavioural finance models, using a direct language and setting aside formalities. This book uses a behavioural perspective to understand both client and advisor behaviour. In particular, it addresses the psychological underpinnings of client behaviour and the often-neglected role of emotions, but also the

behavioural incentives that advisors, just like clients, are subject to due to nature of the relationship and the regulatory requirements.

In a time where the financial markets suffer because of a trust deficit, this book focuses on how the lens of trust is the paradigm through which an advisor may fulfil his mandate at his best and shows empirical evidence that non-market considerations may play an important role in rebuilding the confidence in financial markets.

Mestre-Venice, Italy Caterina Cruciani

Acknowledgements

Writing this book would not have been possible without the support of many people, who have made my journey easier in a number of ways.

I am grateful for the financial support by the Center for Experimental Research in Management and Economics (CERME) of Ca' Foscari University of Venice and by Global Asset Management (GAM) during the last year and a half, which provided security and made room for creativity.

In particular, I wish to thank CERME Director Professor Michele Bernasconi and CERME Vice-Director Professor Massimo Warglien for providing useful comments and feedback on my research since my PhD years and offering me the chance to develop new ideas in a thriving environment like the CERME laboratory.

I also want to thank Riccardo Cervellin and Luciano Scirè from GAM for the countless useful and interesting insights from the world of finance professionals and the comments and suggestions that have helped shape my research on Trust in financial advisory.

Professor Ugo Rigoni provided important insights to my research and has helped me in the development and improvement of the research program on trust in financial markets. I want to thank him for listening to my ideas, giving them credit, and helping me strengthen my understanding of the world of finance. I still have a long way to go, and am fortunate to have such a mentor and research partner.

Gloria Gardenal provided useful insights to this book and is another key element of the team of researchers who study trust at CERME. I wish to thank her for the practical writing suggestions, her affectionate support and for being a great research partner.

Anna Moretti was the first one to suggest this book should be written. I thank her for the unrelenting and loving support, the silver linings and for providing practical guidance on how to organize the writing of a book.

I need to thank the colleagues at the Department of Management that have contributed to creating a productive and enjoyable working environment where this book could be written. Thanks to Marisa Agostini, Giulia Baschieri, Elisa Cavezzali, Francesca Checchinato, Maria Lusiani, Alessandra Perri, who, along with Gloria Gardenal and Anna Moretti, offered support, practical writing tips and some enjoyable time off from writing when I needed it most.

Along the same lines, I also wish to thank Professor Ugo Rigoni, Professor Elisa Cavezzali and Professor Antonio Proto for welcoming me to the Financial Institutions group at the Department of Management of Ca' Foscari University in these last few years.

The list of acknowledgements would not be complete without mentioning my wonderful, loving family. I owe the biggest thank you to my husband and sons, who provide constant inspiration and loving support and to whom this book is dedicated.

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Understanding Investor Behaviour

Abstract This chapter introduces the behavioural underpinnings of decision-making under risk, reviewing the literature from cognitive psychology and economics in order to provide a more empirically founded picture of the investor's mind. The chapter addresses the two stages of decision-making—information collection and processing, and the actual process of choice—showing behavioural regularities and identifying patterns of behaviour that may be detrimental to financial decision-making. Cruciani reviews the role of heuristics and the resulting biases, spanning from representativeness to overconfidence and discusses their implications in financial context. This chapter also provides an overview of the implications of a seminal behavioural model, prospect theory, and details how related concepts like loss aversion, framing effect, mental accounting impact asset allocation.

Keywords Heuristics • Biases • Prospect theory • Mental accounting • Ambiguity aversion

C. Cruciani, *Investor Decision-Making and the Role of the Financial Advisor*,
https://doi.org/10.1007/978-3-319-68234-1_1

1 Financial Advisory Practice and Investor Behaviour

A professional financial advisor can be defined as a professional offering advice on financial matters to other individuals in exchange for some form of compensation. There are a few key elements in this simple definition: first of all, an advisor is a professional. This implies that there exist specific qualification requirements and obligations that are formally regulated. Moreover, advisors offer financial advice—a very peculiar type of good that is not very easy to price. Lastly, advice is a service offered to others, who value it and are willing to pay for it.

Clients are at the same time the final recipients and the originators of the demand for the services financial advisors provide. Their goals, expectations and even moods are particularly interesting to a successful advisor and are the core of this chapter.

Understanding clients is part of many services offered by professionals: in order to have a long-lasting relationship with a client, any professional must be able to understand the goals of that client and ensure they are pursued as effectively as possible. The issue with financial advisory services is that many considerations generally applying to other professionals fall short of grasping the full range of complexities that advisors have to address in their job.

First of all, unlike many other sectors, the financial sector is profoundly characterized by uncertainty: markets are by nature very volatile and the performance of financial products is defined in probabilistic terms. Financial models require the collection of a very large bulk of information—sometimes impossibly large—to provide pinpoint predictions, and end up being difficult to explain to an average client in plain language. How the advisor decides to do so determines many aspects of the professional relationship, from the type of financial products that he is able to suggest to the duration of the relationship.

A second important aspect of the client–advisor relationship regards the fact that advisors support clients in using a medium they are very familiar with and use everyday—money. Many professionals support

clients in addressing issues they are not familiar with: lawyers support in litigation, doctors in medical procedures, and so on. The fact that their clients are not familiar with the content of the advice contributes to strengthening the perception of the professional quality of the advisor, and, indirectly, facilitates following advice. On the contrary, clients of financial advisors often feel they are experts with money as they use it so often. Even if most clients probably feel they are not as expert as advisors usually are, this feeling of competence may complicate the process of advice provision and implementation, especially in case of disagreement between client and advisor. In this sense, clients are not just passive recipients of advice, but affect, alter and shape the advice they receive using their own experience, whether it is fitting to the problem at hand or not. The way in which clients understand financial matters inevitably affect the way in which they understand the advice they receive and a good financial advisor needs to be concerned with this process and factor it into the way he fulfils his mandate.

This brief overview shows that many of the peculiarities of the profession of the financial advisor lie with the recipient of advice—the client. Understanding how clients form expectations regarding financial tools and the different options on which they can invest their money is of paramount importance to an advisor.

This chapter will focus exclusively on the client side of the advisor–client relationship with a twofold purpose. Its first goal will be to review and discuss the technical and theoretical tools that advisors have at their disposal to address potential issues in the process of advising what financial decisions to take. This review and discussion will build on the findings of behavioural economics and related disciplines, focusing on individual behaviour in financial markets and building on the findings from other social sciences to provide an empirically founded description of investor behaviour.

A second, but equally important, goal of this chapter will be to discuss the implications of the finding of behavioural finance for the profession of financial advisors, in order to understand how the behavioural perspective can help guide the understanding of how people really think and make decisions.

2 The Departure from Traditional Models of Decision-Making Under Risk

Human decision-making has always been a fascinating subject across all social sciences, from philosophy to economics. A particular branch of decision-making that has attracted the most interest is decision-making in situations of risk. Risk is traditionally identified by context where choices do not produce certain outcomes, but the latter are affected by external factors. Financial choices are a notable example of decision-making under risk, as most types of investment do not produce certain returns. Even the simple decision to save for retirement is fraught with risks.

Understanding behaviour in financial markets has become increasingly important, as the costs of trading have decreased and more individuals engage in such activities. Moreover, as welfare systems become more and more reliant on direct contributions, the ability to appropriately plan for the future has become a key objective for individuals, and for government, which eventually must provide financial support for those who need it.

Economics models have taken up the challenge to provide a description of economic behaviour in risky situations that is at once tractable, descriptive, and normative. The first feature refers to creating models defined along a reasonable number of parameters, in order to make them efficient but easy to use at the same time. This allows for reconstructing stylized interactions that retain the main features of the problem, making the model descriptively powerful.

Being normative refers to the fact that most economic models can be used to define benchmarks of optimal behaviour, able to suggest what would be the best decision to take given specific characteristic of the decision choice and the chooser.

In economics and finance, this paradigm of righteousness translates into an idea of rationality, which represents a founding assumption of behaviour in economic models.

One of the most important economic models of decisions under risk that attracted more interest by behavioural scholar was developed by

John Von Neumann and Oskar Morgenstern (1944) in the mid-1940s and is known as Expected Utility Theory (EUT).

EUT describes a risky situation using possible outcomes and their related probabilities. The rational decision-maker of EUT has a fixed set of preferences that allows him to compare all available alternatives and he is expected to choose the course of action that maximizes his utility. Utility is defined as an index number, different from profit or monetary outcome, and can be understood as the satisfaction that a given monetary outcome brings. The utility function is the formal tool that provides this calculation and its shape is affected by individual preferences and of course by how much an individual likes risk. Risk profiles can be divided into three categories: an individual is defined as risk-averse if he would prefer to receive €50 with certainty rather than participate in a lottery where he could win €100 with a 50% probability and €0 with 50% probability. Risk neutrality is the situation in which an individual is indifferent between the two options and risk-seeking is defined by preferring the lottery to the certain outcome.

The utility function can be seen as the lens through which all of the features of the decision problem—stated probabilities and outcomes—are interpreted, with the shape of the lens being determined by the individual features—past and future preferences and risk profile.

EUT is an example of both a descriptive and a normative theory: it describes how rational individuals behave and provides the framework for suggesting what the right course of action should be, given the features of the decision task. EUT is a theory that looks at choice as concerning final states—the levels of utility that could be achieved through different choices—rather than a process: given the stability of preferences, it does not matter when one is asked to place a bet on a given lottery, their answer would always be the same, and so would be their best choice.

Rationality in EUT refers to the stability over time and consistency of well-behaved preferences and utility maximization. Many other models derived from EUT retain the same vision of rationality, even when they relax some of the somewhat stringent assumptions of this model. For example, another very popular model is called Subjective Expected Utility Theory (SEU) introduced by Savage in 1954 and later originating another interesting strand of model of decisions under risk. The main difference

between EUT and SEU, in a nutshell, is that the latter model does not require knowing all probabilities. The relative probabilities of the different outcomes are subjectively assessed and then used as if they were stated probabilities. Despite retaining the axiomatic structure and the other assumptions about rationality, this model seems more suitable to describe choices under risk in real life, where probabilities often need to be assessed or approximated.

The axiomatic structure of economic models of rationality soon started to be challenged empirically, starting with Maurice Allais's seminal contribution (1953), where he shows the empirical inaccuracy of some of the preference axioms that underlie the theory. The empirical observation of systematic deviations from traditional economic models suggested the need to define more accurate theories of behaviour under risk, building momentum for behavioural economic theories to develop.

The study of the deviations from traditional economic theory predictions flourished after the 1970s and represents an interesting common ground between psychology, economics, finance and decision theory.

Today's behavioural finance is the result of the convergence of efforts by scholars of many different disciplines, and is characterized by two main areas of research (Barberis and Thaler 2003): the first one is referred to as "limits to arbitrage" and looks at how rational and irrational traders coexist and interact in financial markets in order to determine the prevailing prices. This strand of behavioural finance challenges the assumption from traditional finance that irrational behaviour will be corrected through market interactions, showing how this is sometimes not the case. Given the focus of this book on financial advisory practice, the following review of behavioural finance literature will investigate its other main strand, looking at investor behaviour and following in the tradition of cognitive psychology, which was the first discipline to actively invest in developing alternative theories of rationality.

A final consideration on the nature of behavioural finance is in order. Traditional models have played an important part in motivating the birth and the development of behavioural theories of decision-making under risk. In a way, violations of the prescriptions of normative models can be

interpreted as violations of the inherent rationality implied in the models. This is why behavioural theories investigating such violations have been understood as trying to explain "irrational" behaviour that went unjustly overlooked by traditional models.

It is important to underline that the scope of behavioural finance is very different from that of the models that provided motivations for it: while models like EUT or SEU are both descriptive and normative theories of behaviour, behavioural theories prefer to be mainly descriptive and give up the normative goal both in the description of how people think and on how they take decisions. Many behavioural theories are built upon the observation of empirical findings and are effective in providing a consistent and unitary explanation for specific deviations from traditional theories. This "ad hoc" approach has been on the basis of the criticism towards behavioural economics and finance, which seem able to detail several types of behaviour, but seem to provide no precise guidance on how to deal with them due to this lack of normative scope. The unanswered question seems to be whether these violations from rationality should and can be avoided or cured—a question that plays a crucial role in the profession of financial advisory practice.

The rest of this chapter reviews the extensive literature on such behavioural theories, focusing on the deviations that are more relevant to the study of finance and to the profession of the financial advisor, grouping them into two broader processes, following the framework proposed by Barberis and Thaler (B&T): how people think—referred to as *beliefs*—and how people choose—defined as *preferences* in the B&T framework.

The first process reviews the literature that looks at deviations from conventional theories that can be linked to information processing, belief updating, and attitudes, describing what is famously called behavioural heuristics and biases, focusing on key behavioural biases that can be particularly important in financial decision-making.

The second process will look at how individuals use alternative models to translate preferences into choices and will review some non-conventional models of behaviour and address empirical issues that conventional theories do not take into account.

3 Understanding How People Think Under Risk

3.1 The Rationale

Behavioural theories developed from the observation of the decision-making process in empirical settings, check, rather than take for granted, that the crucial assumptions behind such models are empirically sensible.

The first testing ground for traditional theories was information processing and decision-making. In fact, according to standard theories of behaviour, two fundamental statistical laws govern the behaviour of a rational individual: the law of large numbers and Bayes rule.

The first one suggests that the features of a sample such as the mean or the standard deviation approximate the same features of the full population only when the sample is very large, becoming more so as the number of observations in the sample becomes larger. This suggests that inferences on the true value of the population can be guided by sample data only when the sample is very large. It does not suffice to have a few data points to understand how a variable is distributed.

Bayes rule is another statistical rule that governs probabilistic inference and describes how new information is factored into probability assessments. Bayes rule allows refining a probabilistic estimate (e.g. percentage of blue cars in a city) once new evidence is presented. A rational individual is supposed to interpret and collect information regarding probability using both of these rules.

The respect of the prescription of these rules leads to correct inferences from a statistical point of view. This implies that any deviations from the use of these rules may lead to wrong estimates and eventually to suboptimal choices.

The first reasonable question behavioural scholars asked was whether individuals really use such tools: do they collect the information necessary to use the statistical rules that are supposed to govern rational behaviour? More importantly, do they do so in financially relevant context?

The following section looks more in detail at the biases that emerge from the misapplication of traditional rules of probability assessment.

3.2 Seminal Biases and Heuristics

The idea that individuals have issues in using classic probability rules in making decisions was introduced by Tversky and Kahneman (1971), in a famous article describing the "law of small numbers". The authors collected empirical evidence that, differently than what statistical theory suggests, individuals do not need to rely on very large samples to make inference on the nature of what they observe. The signals they receive (frequency of an outcome for instance) are factored in decision-making and combined with prior expectations, despite their accuracy or statistical validity. What individuals tend much more broadly to rely upon are simpler rules that require shorter time, both in terms of information collection and processing.

The implications of the law of small numbers and other misapplications of statistical rules are further addressed by Tversky et al. (1974), who explicitly address the way in which individuals make decisions in uncertain situations, looking at probability assessment and value prediction and formally introducing the concept of heuristics. Heuristics are defined as shortcuts that individuals use in order to reduce the complexity of the problem they are facing. Instead of collecting and processing all the information required for a given decision, individuals tend to rely on previously tried out, quick and effective "smart" solutions. Heuristics can turn out to be very useful in some cases, but also to lead to systematic and grave mistakes in others: the so-called biases.

The field of heuristics and their implications on decision-making developed formally in the field of cognitive psychology in the late 1970s, with the objective "to categorize the deviations from what is indicated by rational choice models, and, where possible, to improve heuristics so as to reduce those biases" (Schwartz 2011). This idea implicitly suggested is that heuristics are an irrational response to some form of information overload; thus, they may turn out to be ill-suited to make optimal decisions, giving rise to different biases.

The descriptive efforts of cognitive psychologists allowed for the identification of a collection of heuristics that occur most frequently in the population and that can impair decision-making. In their 1982 book, Kahneman and Tversky, alongside psychologist Paul Slovic, summarize

the evidence on the three important heuristics already presented in the Kahneman and Tversky 1974 article: representativeness, availability and adjustment and anchoring (Kahneman et al. 1982).

1. Representativeness

Representativeness is a very pervasive heuristic governing probability assessment. When facing a risky situation, probabilities have to be inferred to evaluate which option is more likely. Through representativeness, the subjective evaluation of the probability of an event is determined by similarity. Thus, the likelihood attached to the fact that an event belongs to a given category (e.g. a given stock price is among those who will increase in the next month) is determined by the degree to which the available information about that event agrees with the features of that category (e.g. the company is similar to another famous company whose stock went up in the last month).

Kahneman and Tversky proposed to several individuals the following task: they were given a description of an individual named Steve and asked to guess his profession from among a short list. Steve was described as "shy and withdrawn…a meek and tidy soul…with a passion for details" and could work either as a farmer, a salesman, a pilot, a librarian or a physician. The description of Steve is very reminiscent of the stereotypical librarian, and many individuals used the similarity between the description of Steve and the stereotype of a librarian to be indicative of Steve being a librarian.

Representativeness implies that individuals ignore what is referred to as the base rate of the professional categories—the share of individuals in the population that belong to each of the professional categories listed. It is reasonable to say that the description of Steve seems more coherent with the stereotype of a librarian, while there are probably fewer shy and withdrawn salesmen. Nevertheless, when assessing which profession is more likely, one should not abstract from the relative shares of the two professional categories in the population. In fact, librarians are much less frequent than salesmen in the population, which makes the probability that Steve is a shy librarian smaller than that he is a shy salesman instead.

Kahneman and Tversky show that even when individuals are given the base rate (frequency of the different categories of the population) they use it only when no other information is given; when descriptions like Steve's are given, they tend to drive the probability assessment even when they include completely worthless information. In fact, receiving information that does not fit into any of the stereotypes people have in mind leads to attributing equal probability to all possible events, despite their frequency in the population.

The representativeness heuristic is used in place of more complex applications of basic probability rules, which are somewhat counterintuitive. A very famous example is the Linda problem. In the experiment, a description of Linda is given, where she is described as "31 years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations". Participants are then asked to decide whether it is more probable than Linda is a bank teller or a bank teller and a feminist (Kahneman et al. 1982; Kahneman 2011). Individuals tend to select the second option significantly more than the first one, ignoring the fact that the combination of the probability of two independent events is always smaller than the both probabilities considered one at the time. This is an example of what is known as *conjunction fallacy*, by which "a compound target can be judged more probable than one of its components" (Kahneman et al. 1982, page 97) even by individuals that are able to correctly apply the rules of compound probability in abstract situations. In fact, this fallacy stems directly from the misapplication of a basic probability rule that is somewhat counterintuitive: given the description of Linda, who seems "representative" of the idea of a feminist woman we may have, the second option seems more probable, especially since both options propose she works as a bank teller. To use the words of Kahneman's, the Linda problem is a situation in which "representativeness trumps logic" (2011).

Taffler (2010) reviews the different aspects in which the use of the representativeness heuristic replaces the use of standard probability rules: besides the neglect of prior information (base rate) described in the Steve example, individuals may neglect that sample size determines whether a sample is really representative. In fact, individuals tend to imagine that a

fair coin produces a roughly equal number of heads and tails, but this is true only over a large number of tosses according to the law of large numbers. Individuals consider that a sequence of tosses resulting in a sequence of just heads is indicative of a biased coin, drawing on the small sample evidence as if it were a much larger one.

Representativeness explains also why individuals misunderstand the idea of regression to the mean, which implies that if a variable takes an extreme value at a given time t, its value at time $t + 1$ is likely to be much closer to the mean. Individuals like to see patterns and tend to expect that a very favourable outcome be followed by an even better one, instead of understanding than a worse one is much more likely. This explains phenomena such as the "hot hand", by which sports athletes that are performing well are expected to continue doing so. Gilovich and colleagues (1985) studied this phenomenon in professional basketball players, finding that the empirical evidence does not support the view that a player is more likely to score after a score than after a miss. The hot hand phenomenon incorporates the idea that when a streak of positive results continues for too long a time, individuals feel that it cannot be due to chance alone, but it must be representative of the fact that that positive result is more likely to continue in the following period.

Building on the law of small numbers and the evidence collected regarding the representativeness heuristic it underlies, Rabin (2002) proposes a formal model able to explain the gambler's fallacy, in which he is able to provide a formal foundation to the intuitions behind the law. The model is able to accommodate the different implications of the representativeness heuristic and explain both the gambler's fallacy and the previously discussed hot hand phenomenon. In fact, the hot hand phenomenon and the gambler's fallacy may seem contradicting: the former implies that long streaks of positive results lead individuals to expect the streak to continue, while the latter suggests that if too many positive results are observed, individuals believe that a negative one is much more likely. Nevertheless, Rabin (2002) suggests that both phenomena are consistent both with the law of small numbers underlying representativeness heuristics and with each other. In fact, he states that "precisely because people expect to see more switching among signals than they actually will that they mistake true randomness for streakiness".

Both the hot hand and the gambler's fallacy have been extensively studied in the laboratory, but evidence of the existence of these biases has also been found in empirical settings. For instance, Croson study gamblers playing roulette in a casino and finds evidence for both the gambler's fallacy and the hot hand using individual data (Croson and Sundali 2005).

2. Availability

Another very common heuristic that can lead to significant mistakes is the availability heuristic (Tversky and Kahneman 1973). According to this shortcut, individuals assess the probability of an event depending on the easiness with which similar occurrences come to mind. The salience or familiarity of a particular event affects the degree to which an event is considered subjectively probable. The availability bias is very common and has sound evolutionary roots: more frequent events become more familiar, which makes relying on ease of recollection a reasonable short cut. The problem is that availability is used even in a context where one does not have acquired significant experience: reading news about an earthquake makes one much more worried about earthquakes than one was before.

3. Adjustment and anchoring

This heuristic refers to the tendency of sticking to an arbitrary reference point when making inferences, even when the reference point is not relevant to the decision task. Reference points can be suggested in the description of the problem or may be determined in a completely random way; in both cases, the anchor provided significantly affects estimates.

Anchoring can play major roles in financial decision-making. Making choices in a risky environment requires making estimates and best guesses often serve as implicit anchors. When best guesses are not well informed, they can lead to under or overestimation of the real target variables. Trading on financial markets, for instance, requires understanding and accurately predicting ranges of fluctuations.

3.3 Other Financially Relevant Biases

Dowling and Lucey (2011) mention three important areas where behavioural biases impact decision-making in financially relevant context: inertia, self-deception and affect. Each one impacts the way in which information is collected and processed into the decision-making process. Given its proximity to the role of emotions and feelings in decision-making, the affect heuristic will be dealt with in Chap. 2.

(a) Inertia

Inertia refers to the tendency to avoid incorporating new information despite the fact that doing so would lead to a better outcome. The biases that can be grouped under the heading of inertia are conservatism, status quo bias, and the endowment effect.

Conservatism implies that investors tend to stick with the current portfolio despite the fact that newly available information suggests it should be modified. This bias is in a sense the opposite of the representativeness bias, as conservatism underweights new information and overweights the information one has (the base rate information), while the opposite is true for representativeness.

The status quo bias and the endowment effect are neighbouring concepts as they both entail that the current holding is overvalued compared to an identical item one does not hold. The endowment effect implies that owning something induces a premium value that the investor looks for when one wishes to sell. The status quo bias is more general as it implies that the current situation is preferred to any variation, despite its nature and possible consequences.

(b) Self-deception

Under the broader heading of self-deception, one finds a set of biases that have been diversely categorized by different authors as optimism, wishful thinking (or desirability bias) or overconfidence. What all of these different labels have in common is that information gathering and processing is affected by an individual tendency to see oneself or the

situation one is facing in a more positive light that would be warranted by an objective evaluation.

In proposing a reorganization of the different causes and effects of optimism biases, (Windschitl and Stuart 2015) suggest that overconfidence, in general, may be thought of as referring to biased estimates regarding issues of which an individual has a direct experience with, such as ability, performance or knowledge. Other instances of biased estimates regarding events that are outside the direct control of an individual (i.e. the weather, or the outcome of a sports match) qualify as optimism biases. The finance literature refers more often to the term "overconfidence" or "biased self-attribution", looking at empirical occurrences and even introducing overconfident traders in pricing models. The following section looks into more detail at the relevant literature regarding this particular bias.

(c) Overconfidence

Overconfidence is the tendency to have too much confidence in one's abilities. Being overconfident translates in a variety of behaviours depending on the specific setting, but it may have pervasive consequences in many economically relevant activities. Overconfidence affects the way in which information is processed because it alters the perception regarding the ability to collect the relevant information for the decision at hand.

Overconfidence in finance has been introduced primarily as an explanation to excessive trading observed in real markets, which is not predicted by traditional model and finds no exhaustive explanation in the mere presence of noise traders.

Overconfident traders have been included in behavioural finance models, where their presence consistently translates into excess and/or aggressive trading. Please refer to Glaser et al. (2004) for a thorough review of behavioural finance models that include overconfidence and their main implications.

The excess trading result has also been confirmed at empirical level: for instance, Glaser and Weber (2007) propose an empirical analysis based on a combination of data sets of real traders' choices and demographics and document excessive trading due to overconfidence, although in this

case overconfidence is not measured as miscalibration but as better-than-average effects. Another important empirical study describing the economically relevant implication of overconfidence is due to Camerer and Lovallo, who confirm that overconfidence can lead to excess entry in a market in an experimental study (1999)—a finding that suggests an explanation for the excessive creation of new businesses that do not manage to survive over time.

Overconfidence may take different aspects, although, according to Glaeser and Weber (2010) there are two main ones that are particularly relevant in finance: miscalibration and better-than-average effect. The former aspect entails erroneous assessments due to too tight confidence intervals and is assessed through the estimation of confidence intervals to questions of estimation of different types of quantities. The better-than-average effect simply refers to the fact that in general individuals feel better than average: an often cited example dates back to Svenson (1981) and shows that the large majority of individuals interviewed indicated that their driving skills were better than the median level.

Miscalibration is a very robust phenomenon to different types of topics: too narrow confidence intervals are stated with more or less familiar topics, including the prediction of fluctuations of stock prices, although "harder" questions result in higher overconfidence levels. Overconfidence in the form of miscalibration is the most frequently studied form of overconfidence and is present both in non-expert and in expert populations, although there is mixed evidence on whether education and financial education, in particular, is able to reduce overconfidence significantly. The literature is concordant on the fact that men tend to be significantly more overconfident than women, see Barber and Odean (2001) for an example.

A recent study by Menkhoff, Smelling, and Schmidt studies the impact of experience and professionalism in an online experiment involving lay people, institutional investors and financial advisors (2013). In contrast to many studies assessing overconfidence, the authors use financial questions and assess three main dimensions of overconfidence (miscalibration, unrealistically positive self-evaluations, illusion of control), finding that they are affected in significantly different ways by traditional control

variables such as age, experience, and professionalism. The authors find that experience reduces miscalibration, but increases unrealistically positive self-evaluations. Moreover, they find that age and experience have significant but opposite effects; namely, age reduces miscalibration. This suggests that overconfidence is a broad concept encompassing different aspects that have non-negligible interactions that may be particularly relevant in empirical settings. Another interesting finding of this paper is that some types of professional investors—namely, financial advisors—are significantly more overconfident than institutional investors, which suggests that different types of professionalism should be investigated. In fact, previous empirical research with finance professional found significant levels of overconfidence, but did not discriminate between types of finance professionals (see Broihanne et al. 2014 for an example).

4 Understanding How People Choose Under Risk

4.1 Rationale

Traditional economic theories assume that the choice process is focussed on final states: given the fixed preference structure there is no need to emphasize the process of choice.

The dissatisfaction with the empirical validity of traditional models of rational behaviour led to the development of modelling alternatives focussed more explicitly on the choice process, which can be grouped into two broad categories: conventional and non-conventional theories of economic behaviour under risk. This definition, introduced by Starmer (2000), focuses on whether a theory retains or not an idea of utility maximization. All theories classified as conventional relax one or more of the assumptions regarding preferences, but always imply that choices are the result of a maximization process. In a way, they all assume that the input to the maximization process may be different than what EUT would imply, but the process of choice is the same. SEU, already described in an earlier section is a notable example of a

conventional alternative to EUT that has become mainstream in behavioural finance.

Non-conventional theories do not necessarily incorporate principles of utility maximization and depart more radically from EUT. Probably the most noted non-conventional model of decision-making is Prospect Theory, which earned the Nobel Prize in Economics in 1992 for two of the most important scholars in the field, the economist, Amos Tversky and the psychologist Daniel Kahneman.

4.2 Prospect Theory: The Modelling Framework

The original Prospect theory model was proposed by Kahneman and Tversky (T&K) (1979) and further extended a little over a decade later in another article entitled "Advances in Prospect Theory", further refining the features of the original model (Tversky and Kahneman 1992).

Prospect Theory is defined by K&T as a descriptive theory of the average behaviour of individuals under risk. Prospect Theory has no normative ambition, as it is built to accommodate for deviations from the predictions of conventional models in a unified framework of behaviour under risk, as was later stated explicitly by Kahneman (2011).

Prospect Theory (PT) introduces a radical modification in the way in which individual preferences are understood compared to traditional economics models. For instance in EUT, preferences are fixed and well-behaved, in the sense that they follow precise rules that do not change over time and that are applicable to each and every possible decision. Choosing between a risky and a riskless asset depends on individual preferences (how much one likes risk, for instance) and on the combination of probabilities and outcomes. If the features of the decision task were the same, the same individual would always make the same final choice, no matter when he is asked.

A very important feature of PT preferences is they are reference-dependent—what one prefers depends on his current reference point. Changes in wealth and not the absolute level of wealth matter for PT. This is a striking difference with EUT: a similar decision taken in different

conditions or points in time can no longer be considered identical decisions, because the reference point may be different. Introducing a reference point further allows classifying the possible outcomes of the decision to make as gains and losses—improvements or worsening of the situation at the reference point.

Prospect Theory is comprised of two different phases. Understanding how outcomes fare in terms of gains or losses with respect to a reference point qualifies the editing phase, which is the first step in PT. Editing allows making a series of operations to simplify the decision-making process, such as ignoring components of the problems that are shared by more alternatives, combining complex prospects to make them simpler, besides of course coding outcomes as gains or losses.

The following evaluation phase includes the final assessment of the prospects and builds on a framework that retains some of the characteristics of EUT. Outcomes are weighted by stated probabilities, but both elements are modified, thanks to the introduction of two crucial elements: a value function for outcomes and decision weights for stated probabilities.

The value function in PT is the equivalent of the utility function in EUT: it helps translate outcomes into utility. While the utility function in EUT normally assumes a constant degree of risk aversion and is in general strictly concave over the choice set, the value function in PT interacts with the reference point to determine two different risk profiles.

The value function introduced by PT implies instead risk aversion in the domain of gains and love for risk in the domain of losses; this means that it has a convex trait (for losses) and a concave trait (for gains). This "reflection" of risk profiles over the reference point that distinguished between gains and losses can be explained by a certainty effect, by which in the evaluation of expected outcomes, situations that are completely devoid of risk have an extra value in terms of final utility. Consider the following example in the domain of gains: the choice between a risky lottery with positive expected value and a certain, smaller, gain. In the domain of losses, consider the choice between a risky lottery with negative expected value and a sure, smaller loss. Thanks to the certainty effect,

the certain gain, although small, carries an extra value, making individuals risk-averse—they prefer the certain gain to the risky lottery. In the same vein, a certain loss, although small, has an extra psychological cost to it that induces to be more risk-seeking to avoid it—individuals prefer the risky bet over the sure loss.

The shape of the value function (concave for gains and convex for losses) implies another important fact that finds empirical support: diminishing sensitivity as an outcome gets away from the reference point.

The existence of a certainty effect and its effect on actual behaviour are of particular relevance for the financial advisor: individuals may prefer investments that are considered "safer" with more certain returns despite the actual evaluations of the risk involved in other, prospectively more lucrative, alternatives.

PT also introduces the fact that the steepness of the curve for gains is not the same as the one for losses. A series of decision tasks, later confirmed by many experiments, had suggested that the value brought about by gaining €1 is in absolute terms equal to half the disutility of losing €1. The idea that "losses loom larger than gains" (Tversky and Kahneman 1992: 18) is known as loss aversion.

Loss aversion and the anticipation of loss aversion play a very important role in decision-making. Just like certainty adds an intrinsic extra value, so losses and the possibility to incur losses have an extra negative value that is not captured in the probabilities alone. Loss aversion is responsible for the inclusion of sunk costs into the evaluation of possible investments and in holding on to bad-performing ones too long with the hope of making up for losses. Sunk costs are not normally considered by the rational individual, who focuses on final states and would select the alternative with the best prospective final states at any given moment in time.

Summarizing, the value function implied in PT features a reference point, placed at the origin of the axis, which marks the distinction between gains (outcomes to the right of the origin) and losses (outcomes to the left of the origin). Thanks to the certainty effect, the function implies risk aversion in the domain of gains and risk-seeking in the domain of losses. The steepness of the value function in the loss

domain is steeper, thanks to loss aversion. Overall, the function implies diminishing sensitivity as outcomes get away from the reference point.

The other important source of different from conventional model is the probability weighting function: in PT decision weights affect the probabilities attached to the different outcomes. Such decision weights are not probabilities, not even subjective ones like in the SEU approach, but measure "the impact of events on the desirability of prospects" (p. 19). Decision weights are characterized by specific features: in the original version of PT they are sub additive,[1] overweight all small probabilities, and are simple transformation of outcome probabilities. In the Cumulative version of PT (CPT), the weighting function is replaced by a cumulative functional that transforms the cumulative probability instead of the simple probabilities. The weighting function in CPT takes an inverse S-shape and has both a concave (for modest probabilities) and a convex trait (for larger probabilities).

The overweighting of small probabilities explains why individuals like to buy lottery tickets and insurances, both of which have negative expected values and would not be bought by an individual maximizing utility over expected outcomes. Both winning the lottery and incurring in an accident are considered very unlikely—they have very small probabilities. These probabilities are overweighed and this "flips" the traditional risk patterns found in PT for gains and losses. The probability of a small gain is overweighted and this makes individuals switch from the domain of risk aversion to that of risk-seeking. The opposite occurs for insurances, where the small probability of a loss gets overweighted and makes individuals risk-averse. Overall PT predicts a fourfold pattern of risk aversion that is summarized in Table 1.1.

Table 1.1 The fourfold pattern of risk aversion described by Prospect Theory

	Domain of gains	Domain of losses
Small probabilities	Risk-seeking	Risk-averse
Large probabilities	Risk-averse	Risk-seeking

4.3 Prospect Theory: Implications for Behavioural Finance

Prospect theory has found a strong appeal in behavioural finance, as it is able to explain several important phenomena that occur in financial markets. These phenomena are framing effects, mental accounting and the equity premium puzzle.

4.3.1 Framing Effects

A first important implication of PT lies in implications of classifying possible occurrences as gains and losses: the change in risk profile from aversion to seeking. This suggests that describing something as a gain or as a loss may affect dramatically the ensuing decision-making—individuals respond to frames. For instance, qualifying an alternative under a positive light "frames" it in a particular domain, suggesting with the unfounded extra layer of information that the given alternative is a good one (Altman 2010).

Soman (2004) reviews the implications of frames on decision-making. Frames can be defined as mental models that allow organizing, interpreting and solving decision problems. Frames provide a context where some solutions are more readily available than others, thus affects significantly how a problem is solved. The concept of frames as mental models evolved from cognitive science and artificial intelligence to judgment and decision theory, formalizing the role of frames as windows through which the decision maker sees and judges the problems. Different "windows" naturally make some solutions more available than others, as the decision maker sees only a part of the information. Soman suggests that frames can play their role by influencing the way outcomes are perceived (outcome framing), by reducing or enlarging the decision space, including or excluding other decision tasks (structure framing) or by affecting how a particular task is interpreted (task framing).

4.3.2 Mental Accounting

The research on the effects of frames on decision-making in financially relevant context finds a notable example in the practice of mental account-

ing. Thaler et al. (2000) define mental accounting as a practice similar in scope to the traditional financial accounting that organizations practice: its goals are basically to keep track of how money is spent and collect the necessary information to plan expenses appropriately given individual constraints and needs.

Different from traditional accounting, the rules and ways of mental accounting have been inferred from the choices of individuals in the last 30 years, finding that mental accounting can be described through three main processes: outcome evaluation, account creation, and evaluation frequency. The first process refers to how mental accounting affects the way in which outcomes are understood and evaluated: features like context, relative price, and relative changes affect the way in which individuals perceive a given cost. Account creation refers to the fact that expenses tend to be mentally organized in separate accounts (e.g. food, clothing, bills, vacations, etc.) that may be possible subject to different constraints. Finally, any accounting procedure requires defining a time frame at which accounts are checked and balanced if needed. Mental accounting research shows that the way in which all these processes are performed may have dramatic effects on choice.

Mental accounting explains why individuals are willing to pay different prices for the same item according to where the item is bought. Thaler uses the concept of transaction utility to define the difference between the actual price paid and the reference price at which one assumes a particular good should be sold at a given place. This form of mental accounting implies that individuals are more attracted to purchases that look like good deals and that marketing and advertisement might exploit this pattern of decision-making.

The existence of different accounts for different types of goods hinders compensating across accounts and makes eventual losses in a specific account very salient. Once a purchase is made, the cost is sunk in conventional economic thinking. The existence of separate accounts prevents from feeling that the cost belongs to the past: the inability to use a service paid in advance feels very relevant to the present, transforming the cost into a perceived loss. When sunk costs are felt as losses, individuals engage in activities aimed at rebalancing the account, despite the added costs needed to do so. Going to a game only because one has tickets, despite a very bad weather is an example of the power of sunk costs. In other cases

sunk costs exhibit decay over time that leads to behaviour that is very inconsistent with rational preferences. In another experiment reported by Thaler et al. (2000), individuals had to rate the cost of drinking a bottle of wine purchased at $20, but that now auctions at $75. Most individuals declared that drinking the bottle cost nothing to them, or even saved them the difference between what they paid for the bottle earlier and the price it was currently auctioned at. Only the economists provided the correct answer, according to conventional economics: the true cost of the bottle is $75 because that is the opportunity cost of drinking the bottle.

Mental accounting challenges the very idea of the fungibility of money; in fact, money set aside for college is not the same as money set aside for vacation. Of important financial relevance and close to the experience of financial advisors, money coming from different sources (gains from trading or an inheritance) might also not be perceived as the same money. The barriers between the different mental accounts, be they due to source or mental destination, profoundly affect choices: a sunk cost influences further choices in the same mental account, but cannot be compensated by gains in another.

Another process due to mental accounting governs how often accounts are opened and closed and applies very well to a financial investment context. Individuals are less likely to close a mental account (sell a given asset) if the selling price is below the price at which that asset was bought. This phenomenon, known as disposition effect, was introduced in a seminal contribution by Shefrin and Statman (1985) and empirically investigated by Odean (1998). The former group of authors identify the disposition effect as the tendency to realize gains sooner than losses and it represents another violation of the prescriptions of conventional economics in the US financial market. In fact, a rational individual would do exactly the opposite, given that the tax code allows for the deduction of capital losses, while capital gains are always taxed, the more so the sooner they are realized. Shefrin and Statman (1985) provide the theoretical underpinnings for the disposition effect, finding it is mainly due to a combination of loss aversion, mental accounting, and tax considerations. Once a stock is sold, the relative mental account is closed and the loss cannot be avoided; when a losing stock is held the loss is just a paper loss and could be recovered. Given that individuals seek to avoid losses, as

they anticipate the negative utility they would feel, losing accounts are held. Nevertheless, in December several more losing positions are closed in order to exploit the tax deduction.

Odean (1998) proposes an empirical analysis of the disposition effect using real trading data from a large brokerage house, confirming what described by Shefrin and Statman: individuals tend to sell losing stocks much later than winning ones, but they tend to do the opposite in December when tax deductions become more salient.

Recall that one important dimension of frames looked at how many different tasks are combined together. Mental accounting may have very different effects according to how large this "choice bracket" is (Thaler 1999). In fact, depending on how often the mental accounts are being checked, the balance between gains and losses may lead to very different performance evaluations, especially when combined with models of behaviour that account for loss aversion. The combination of mental accounting and loss aversion may induce different patterns in risk aversion over different time windows. In particular, a much-noted example is Samuelson's proposed bet to a colleague, described in (1963): he proposed to flip a coin, if the colleague guessed correctly he would win $200, if he lost he would pay $100. The colleague turned down the bet, but declared he would take it if Samuelson agreed to do it 100 times. A combination of loss aversion and of mental accounting bracket is able to explain the rationale for this counterproposal, which would require being incredibly risk-averse to be explained by EUT. Risk-averse individuals tend to more willingly accept bets that are combinations of other bets, rather than taking each one in isolation. This is due to loss aversion: empirical evidence has shown that losses loom more than twice as large as gain, thus the final utility from losing $100 generates a disutility that is greater than the utility of winning $200, with a negative expected utility from the bet. Combining two or more bets makes the expected utility turn positive, as the probability of incurring a loss becomes smaller as the number of bets increases. In order for this to be true, successive bets need to be considered as part of a larger portfolio of bets and this requires adopting a time bracket that includes them all. This combination of loss aversion and mental accounting is labelled myopic loss aversion.

4.3.3 The Equity Premium Puzzle

An interesting application of the effect of narrow time frames, mental accounting, and loss aversion serves as a solution to the equity premium puzzle. Initially discussed by Mehra and Prescott in 1985, the puzzle emerges from the observation that equity (stocks) exhibit historical returns that are much higher than the return from safe investments like treasury bills (bonds). Traditional economic models cannot reasonably explain this excess performance, as an implausibly large degree of risk aversion is required to set the equity premium puzzle at the levels observed by Mehra and Prescott (1985). Also, in this case, combining loss aversion and mental accounting yields a solution to the puzzle. Loss-averse individuals are more heavily affected by losses than by a gain of equal magnitude. Checking the performance of financial assets frequently leads to observing many days in which the performance of stocks is below that of bonds, because the former fluctuate more frequently. Through the lens of PT and loss aversion, in particular, an individual will perceive stocks are much riskier than they are, thus requiring a higher premium to hold them.

Using a PT-based model of behaviour, Bernartzi et al. 1995 investigate which time frame can lead to degree of risk aversion necessary to be indifferent between holding stocks or bonds, solving the equity premium puzzle. They find that the evaluation interval consistent with the equity premium observed in empirical data is about a year. In other words, since individuals check their investment properly about once a year and are loss averse, the expected utility of holding equity yields the return that seemed implausibly large when evaluated through the lens of EUT.

Bernartzi et al. 1995 also investigate what is the typical combination of stocks and bonds, given loss aversion and the 1-year time horizon. They find that stocks should make up between 35% and 55% of total portfolio, a datum that is again consistent with empirical evidence.

The empirical validity of the myopic loss aversion paradigm has been tested through a series of published experiments. Such studies include Gneezy and Potters (1997), where the impact on risk aversion of the frequency of acquisition of new information is tested, and Gneezy et al. (2003), who look at market interaction and the effect of time on trading prices.

The first study uses two different groups of participants and presents them both with the same task: a betting task with 12 rounds. Individuals had a given amount of experimental currency they could bet in part or in total in lotteries where the probability of losing the amount bet was two-thirds. With a one-third probability individuals could win two and a half times the amount they chose to bet. One of the groups receives feedback about the result of the lottery after each round, while the other only receives it (in aggregate form) every three rounds. Looking at the average bets per individual between treatments, the empirical results show that the latter group is significantly less risk-averse, showing an effect of frequency of information on the profile of risk aversion of the individuals.

Gneezy et al. (2003) provide a further test of the empirical validity of the myopic loss aversion paradigm, extending previous findings on individuals' behaviour to market interaction. In their experiment individuals trade a risky asset in a market; the risky asset is a lottery, very similar to that of Gneezy and Potters (1997). There are two different treatments that differ for the expiration of the risky asset: in one case the lottery realizes after one period (high-frequency treatment), in the other one every three periods (low-frequency treatment). In both cases, individuals learn the effect of their investment when the asset expires. The findings reveal a significant effect of the frequency over which investments are evaluated, showing up in higher trading prices in the low-frequency treatment. This result is coherent with the implications of myopic loss aversion already discussed, namely that aggregating lotteries over time leads to less risk aversion. Moreover, this experiment shows that market interaction is not able to dilute the effect of myopic loss aversion on risk preferences.

Both of the experiments mentioned so far use student populations, which questions the validity of some of the conclusions of these experiments and their extendibility to the individuals that normally take the financial decisions involved—traders and investors. Haigh and List (2005) look for an experimental test of the validity of myopic loss aversion using traders from the Chicago Board of Trade. They find that professional traders are even more subject to myopic loss aversion than the students involved in the control group in an experiment where participants had to bet on a risky lottery and received feedback every round or every three rounds.

Both Thaler (1995) and Haigh and List (2005) discuss the fact that, if loss aversion can be considered a feature of preferences that is difficult to control, the frequency of trading or of checking one's account is something that could be subject to some form of control. Thaler (1995) suggests that the finding that risk aversion is affected by the time frame used might be used to control for excessive risk aversion—too wary clients should be encouraged to think about different investments as a bundle, in aggregate terms rather than focusing on each single one.

Haigh and List (2005) further build on this consideration and suggest that their findings may help shape new communication strategies for traders, where information is transferred to clients less frequently and clients are invited to think in aggregate terms.

The idea that myopic loss aversion can be controlled through different institutional settings is explicit also in (Gneezy et al. 2003), who refer to the frequency with which mutual funds provide fund performance information as a way to manipulate clients' risk aversion.

4.4 Ambiguity Aversion

This section focuses on the effect of ambiguity, a particular form of risky situations in which probabilities are not observable, on the decision-making process. Recall that EUT and SEU assume that probabilities play an important role in decision-making, through the utility function. The main difference between these two theories regarding probabilities is that EUT assumes that probabilities are observable and known, whereas SEU introduced the concept of subjective probabilities to compensate for the fact that some probabilities might not be known or observable and need to be inferred. Whether they are observed or inferred, probabilities are assumed to enter into the utility maximization process in an almost identical fashion. In other words, traditional economic models assume that different risky situations can be ultimately reduced to a same paradigm of decision-making.

Just as had happened with EUT, the empirical observation suggested that the implications of SEU were not supported by facts. Ellsberg (1961) was the first to note what has become known as the Ellsberg paradox and

summarized by the phrase "ambiguity aversion". In the famous "two-urn paradox" Ellsberg asked individuals to bet on a simple colour game with two urns containing a proportion of black and red balls. In one urn the proportion of black and red balls was known, whereas in the other it was not. Individuals needed to select a bet—which colour was more likely in the first or second urn. Ellsberg found that individuals were indifferent towards the two colours given the urn, but consistently preferred to bet on the urn in which the proportion of red and black balls was known, when given the chance. Subjective probabilities would imply that the two urns reduce to a similar problem, but this was not the case and individuals were trying to avoid the ambiguous urn when possible.

The existence of ambiguity aversion was later confirmed through several different experiments, reviewed in Machina and Siniscalchi (2014) alongside various attempts to formally model ambiguity. For example, a very popular model, Choquet Expected Utility (CEU) (Schmeidler 1989), can help explain how ambiguity-averse individuals perceive ambiguous situations. When an individual is ambiguity averse, he attaches more than one probability distribution to the events he needs to evaluate; in other words, he is unsure as to whether one event is more likely than the other. If, for simplicity, one assumes that an individual has only two possible probability distributions in mind, according to CEU he will choose to associate to each possible outcome the minimum expected value arising from the two probability distributions. This formalization shows how ambiguity aversion translates into a decrease in utility for all possible outcomes.

The empirical evidence confirms that ambiguity aversion is negatively affected by the way in which preferences are elicited. Various authors find that ambiguity aversion can be reduced, although not eliminated entirely, when alternatives are evaluated in isolation and not in comparison with other that are more familiar (Fox and Tversky 1995; Fox and Weber 2002).

Financial markets are a prominent example of an environment where ambiguity may play a significant role that goes undetected by traditional models, and have been the setting of several theoretical and experimental efforts to study ambiguity. For instance, Mukerji and Tallon (2001) propose a model populated by ambiguity-averse individual in which the

existence of ambiguity aversion leads to the impossibility to trade some financial assets. In their model, ambiguity aversion makes financial markets less complete and renders diversification ineffective in reducing the idiosyncratic risk of some financial markets.

Another interesting modelling contribution to the understanding of ambiguity is due to Boyle et al. (2012), who propose a model in which the two leading visions regarding portfolio selection—Keynes's and Markowitz's—are reconciled in a single setup able to predict both a concentrated and a fully diversified portfolio. In fact, Keynes suggested that investors should focus on few stocks towards which they felt more confident, whereas Markowitz champions diversification across a large number of different stocks. Measuring ambiguity as "the size of the confidence interval each investor has for the statistical estimate of the mean of each asset return" (p. 3) Boyle et al. are able to explain under which conditions a "familiar" portfolio will be preferred to a fully diversified one. When familiar and unfamiliar assets are perceived as similarly ambiguous and the standard deviation of the expected return estimate is low, the portfolio will include both types of assets. When the ambiguity of unfamiliar assets is much larger than that of familiar ones and the standard deviation is also large, unfamiliar assets tend to disappear from the portfolio up to the point in which only familiar assets are present. When all assets are perceived as ambiguous, the investors would find it optimal not to hold any assets at all.

The importance of ambiguity aversion in financial markets has been investigated also in experimental papers: Halevy finds that ambiguity aversion can be explained by the inability to correctly reduce compound lotteries and finds that SEU model is the best to describe the preferences of the subjects involved (2007).

5 Summary and Conclusion

This chapter presents an overview of the behavioural underpinnings of decision-making under risk, developed by psychologists and economists in the last decades in response to the observed empirical violations of the predictions of standard models of decision-making. The chapter has focussed on two stages of decision-making—information collection and

processing, and the actual process of choice—showing behavioural regularities and identifying patterns of behaviour that may be detrimental to financial decision-making, such as decision biases or features like loss or ambiguity aversion.

This chapter represents the first step in the journey to understand how investors make decisions, and would not be complete without addressing non-cognitive elements, like emotions and feelings, which also affect decision-making, left to Chap. 2 of this book.

The existence of biases and other deviations from traditional assumptions of rationality should not lead the reader to believe that behavioural models draw a picture of irrationality. What behavioural theories challenge is the centrality of a traditional form of rationality, as expressed by models like EUT. Individuals can be still considered rational, once specific features of how individuals think are understood and modelled appropriately.

Notes

1. The weight attached to certainty (probability equal to 1) is greater than the sum of the weights attached to two probabilities that sum to 1.

Bibliography

Allais, M. 1953. Le Comportement de L ' Homme Rationnel Devant Le Risque: Critique Des Postulats et Axiomes de L ' Ecole Americaine. *Econometrica: Journal of the Econometric Society* 21 (4): 503–546.

Altman, Morris. 2010. Prospect Theory and Behavioral Finance. *Behavioral Finance: Investors, Corporations, and Markets*, 191–209. http://www.google.com/books?hl=en&lr=&id=_PrVf0trM6EC&oi=fnd&pg=PT201&dq=behavioral+finance&ots=wFTOwFnZ6T&sig=VA-Cqk0QrhSGxjcfS0dV1H-gi-Aw%5Cn; http://www.google.no/books?hl=en&lr=&id=_PrVf0trM6EC&oi=fnd&pg=PT201&dq=behavioral+finance&ots=wFTOwFnZ6T&sig=VA-

Barber, Brad M., and Terrance Odean. 2001. Boys Will Be Boys: Gender, Overconfidence, and Common Stock Investment. *The Quarterly Journal of Economics* 116 (1): 261–292.

Barberis, Nicholas, and Richard Thaler. 2003. A Survey of Behavioral Finance. *Handbook of the Economic of Finance* 1: 1053–1128. https://doi.org/10.2139/ssrn.327880.

Bernartzi, S., and R. Thaler. 1995. Myopic Loss Aversion and the Equity Premium Puzzle. *The Quarterly Journal of Economics* 110 (1): 73–92.

Boyle, Phelim, Lorenzo Garlappi, Raman Uppal, and Wang Tan. 2012. Keynes Meets Markowitz: The Trade-Off Between Familiarity and Diversification. *Management Science* 58 (2): 253–272. https://doi.org/10.1287/mnsc.1110.1349.

Broihanne, M.H., M. Merli, and P. Roger. 2014. Overconfidence, Risk Perception and the Risk-Taking Behavior of Finance Professionals. *Finance Research Letters* 11 (2): 64–73. https://doi.org/10.1016/j.frl.2013.11.002.

Camerer, Colin, and Dan Lovallo. 1999. Overconfidence and Excess Entry: An Experimental Approach. *American Economic Review* 89 (1): 306–318.

Croson, Rachel, and James Sundali. 2005. The Gambler's Fallacy and the Hot Hand: Empirical Data from Casinos. *Journal of Risk and Uncertainty* 30 (3): 195–209. https://doi.org/10.1007/s11166-005-1153-2.

Dowling, Michael, and Brian Lucey. 2011. Other Behavioral Biases. *Behavioral Finance: Investors, Corporations, and Markets*, 313–330. https://doi.org/10.1002/9781118258415.ch17.

Ellsberg, Daniel. 1961. Risk, Ambiguity, and the Savage Axioms. *The Quarterly Journal of Economics* 75 (4): 643. https://doi.org/10.2307/1884324.

Fox, Craig R., and Amos Tversky. 1995. Ambiguity Aversion and Comparative Ignorance. *The Quarterly Journal of Economics* 110 (3): 585–603.

Fox, C.R., and Martin Weber. 2002. Ambiguity Aversion and Comparative Ignorance and Decision Context. *Organizational Behavior and Human Decision Processes* 88 (1): 476–498. https://doi.org/10.2307/2946693.

Gilovich, T., R. Vallone, and A. Tversky. 1985. The Hot Hand in Basketball—On the Misperception of Random Sequences. *Cognitive Psychology* 17 (3): 295–314. https://doi.org/10.1016/0010-0285(85)90010-6.

Glaser, Markus, and Martin Weber. 2007. Overconfidence and Trading Volume. *GENEVA Risk and Insurance Review* 32 (1): 1–36. https://doi.org/10.1007/s10713-007-0003-3.

———. 2010. Overconfidence. In *Behavioral Finance: Investors, Corporations, and Markets*, ed. H.K. Baker and J. Nofsinger, 241–258. Hoboken, NJ: John Wiley & Sons, Inc.

Glaser, Markus, Markus Nöth, and Martin Weber. 2004. Behavioral Finance. *Blackwell Handbook of Judgment and Decision Making*, 527–546. https://doi.org/10.1017/CBO9781107415324.004.

Gneezy, Uri, and Jan Potters. 1997. An Experiment on Risk Taking and Evaluation Periods. *The Quarterly Journal of Economics* 112 (2): 631–645. https://doi.org/10.1162/003355397555217.

Gneezy, Uri, Arie Kapteyn, and Jan Potters. 2003. Evaluation Periods and Asset Prices in a Market Experiment. *The Journal of Finance* 58 (2): 821–837.

Haigh, Michael S., and John A. List. 2005. Do Professional Traders Exhibit Myopic Loss Aversion? An Experimental Analysis. *The Journal of Finance* LX (1): 523–535. https://doi.org/10.1111/j.1540-6261.2005.00737.x.

Halevy, Yoram. 2007. Ellsberg Revisited: An Experimental Study. *Econometrica* 75 (2): 503–536. https://doi.org/10.1111/j.1468-0262.2006.00755.x.

Kahneman, Daniel. 2011. *Thinking Fast and Slow*. New York: Farra, Starus and Giroux.

Kahneman, Daniel, and Amos Tversky. 1979. Prospect Theory: An Analysis of Decision Under Risk. *Econometrica: Journal of the Econometric Society* 47 (3): 263–291. https://doi.org/10.1111/j.1536-7150.2011.00774.x.

Kahneman, D., P. Slovic, and A. Tversky. 1974. Judgment Under Uncertainty: Heuristics and Biases. *Science* 185 (4157): 1124–1131. https://doi.org/10.1126/science.185.4157.1124.

Kahneman, Daniel, Paul Slovic, and Amos Tversky. 1982. *Judgement Under Uncertainty: Heuristics and Biases*. Cambridge: Cambridge University Press.

Machina, Mark J., and Marciano Siniscalchi. 2014. Ambiguity and Ambiguity Aversion. *Handbook of the Economics of Risk and Uncertainty*. Vol. 1, 729–807. https://doi.org/10.1016/B978-0-444-53685-3.00013-1.

Mehra, Rajnish, and E.C. Prescott. 1985. The Equity Premium: A Puzzle. *Journal of Monetary Economics* 15 (2): 145–161. https://doi.org/10.1016/0304-3932(85)90061-3.

Menkhoff, Lukas, Maik Schmeling, and Ulrich Schmidt. 2013. Overconfidence, Experience, and Professionalism: An Experimental Study. *Journal of Economic Behavior and Organization* 86: 92–101. https://doi.org/10.1016/j.jebo.2012.12.022.

Mukerji, Sujoy, and Jean Marc Tallon. 2001. Ambiguity Aversion and Incompleteness of Financial Markets. *Review of Economic Studies* 68 (4): 883–904. https://doi.org/10.1111/1467-937X.00194.

Odean, Terrance. 1998. Are Investors Reluctant to Realize Their Losses? *The Journal of Finance* 53 (5): 1775–1798. http://www.jstor.org/stable/117424.

Rabin, Matthew. 2002. Inference By Believers in the Law. *Quarterly Journal of Economics*, August. 775–816.

Samuelson, Paul A. 1963. Risk and Uncertainty: A Fallacy of Large Numbers. *Scientia* 98 (612): 1–6. http://www.casact.org/pubs/forum/94sforum/94sf049.pdf.

Schmeidler, David. 1989. Subjective Probability and Expected Utility Without Additivity. *Econometrica: Journal of the Econometric Society* 57 (3): 571–587.

Schwartz, Hugh. 2011. Heuristics or Rules of Thumb. *Behavioral Finance: Investors, Corporations, and Markets*, 57–72. https://doi.org/10.1002/9781118258415.ch4.

Shefrin, Hersh, and Meir Statman. 1985. The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence. *The Journal of Finance* 40 (3): 777–790.

Soman, Dilip. 2004. Framing, Loss Aversion, and Mental Accounting. *Blackwell Handbook of Judgment and Decision Making*, 379–98. https://doi.org/10.1002/9780470752937.ch19.

Starmer, Chris. 2000. Developments in Non-Expected Utility Theory: The Hunt for a Descriptive Theory of Choice Under Risk. *Journal of Economic Literature* 38 (2): 332–382. https://doi.org/10.1257/jel.38.2.332.

Svenson, Ola. 1981. Are We All Less Risky and More Skillful than Our Fellow Drivers? *Acta Psychologica* 47 (2): 143–148. https://doi.org/10.1016/0001-6918(81)90005-6.

Taffler, Richard J. 2010. The Representativeness Heuristic. In *Behavioral Finance: Investors, Corporations, and Markets*, ed. H. Kent Baker and John R. Nofsinger, 259–276. Hoboken, NJ: John Wiley & Sons, Inc.

Thaler, R.H., et al. 1999. Mental Accounting Matters. *Journal of Behavioural Decision Making* 12: 183–206.

Thaler, Richard H., Daniel Kahneman, and Amos Tversky. 2000. Mental Accounting Matters. *Choices, Values, and Frames* 206: 241–268. https://doi.org/10.1002/(SICI)1099-0771(199909)12:3<183::AID-BDM318>3.0.CO;2-F.

Tversky, Amos, and Daniel Kahneman. 1971. Belief in the Law of Small Numbers. *Psychological Bulletin* 76 (2): 105–110.

———. 1973. Availability: A Heuristic for Judging Frequency and Probability. *Cognitive Psychology* 5 (2): 207–232. https://doi.org/10.1016/0010-0285(73)90033-9.

———. 1992. Advances in Prospect-Theory—Cumulative Representation of Uncertainty. *Journal of Risk and Uncertainty* 5 (4): 297–323. https://doi.org/10.1007/Bf00122574.

Von Neumann, J., and O. Morgenstern. 1944. *Theory of Games and Economic Behavior*. Princeton, NJ: Princeton University Press.

Windschitl, Paul D, and Jillian O'Rourke Stuart. 2015. Optimism Biases. *The Wiley Blackwell Handbook of Judgment and Decision Making*, 431–455. https://doi.org/10.1002/9781118468333.ch15.

2

Different Views on Economic Rationality: Affect and Emotions

Abstract This chapter suggests that the heuristic behaviour that may lead to biases in financial decision-making is not necessarily due to irrationality, but has sound evolutionary roots developed in a time where investments and yields were not a concern, but survival was.

This chapter also looks at emotions and personality traits as important elements to understand the investor mind. Emotions are not unstable "visceral factors", but produce predictable consequences that are key elements in the advisor–client relationship.

Cruciani reviews the concept of ecological rationality, through which different tools become more useful according to the specific features of the environment, and shows how fast and frugal trees are able to describe financial decision-making with the same, if not higher, accuracy than more cognitively complex methods.

Keywords Heuristics • Emotions • Personality traits • Ecological rationality • Fast and frugal trees

C. Cruciani, *Investor Decision-Making and the Role of the Financial Advisor*,
https://doi.org/10.1007/978-3-319-68234-1_2

1 Introduction

Behavioural economics and finance have challenged standard assumptions of rationality that underlay models like Expected Utility Theory and offered new paradigms of behaviour based on the empirical observation of human decision-making. The heuristics and biases program (Kahneman et al. 1982) and Prospect Theory (Kahneman and Tversky 1979; Tversky and Kahneman 1992) represent two cornerstones in the field of behavioural economics that have profoundly affected the view in which decision-making is studied and interpreted. Through the first program, the relevance of the deviations from the predictions of rational models (heuristics) was empirically proved alongside the implications for financial decision-making (biases). Prospect Theory represents a descriptive model of behaviour introducing the role of emotions and addressing the choice process rather than simply the choice outcome. The reader can refer to Chap. 1 of this book for a detailed overview of this behavioural revolution.

The behavioural revolution has confirmed that traditional views of economic rationality can offer no support in the financial advising process: the paradigm of the rational individual is both too abstract and too empirically unfounded to be of guiding aid. At the same time, ascribing to irrationality alone any behaviour that does not conform to the prediction of such paradigm is equally unrealistic and unjust.

This chapter proposes further evidence on the nature of biases and the interpretation of their role in decision-making. The reasons for the pervasiveness of cognitive biases will be searched in the evolution of the human mind (and brain), showing how (and when) seemingly irrational behaviour can actually be very reasonable.

The picture of judgment and decision-making could not be complete without addressing another important feature of being human: the ability to feel emotions. Emotions may have a dramatic effect on decision-making, affecting it directly and in combination with other cognitive processes, with profound implications for financial behaviour. Understanding investors requires understanding which are the elements at play in the difficult task of making decisions under risks. Understanding

the direct and indirect role of emotions is another one of these elements, just as is understanding that different concepts of rationality may govern behaviour.

This chapter presents formally an alternative view on the nature of heuristics, based on a different concept of rationality—ecological rationality. With the introduction of the Adaptive toolbox (Gigerenzer and Goldstein 1996; Gigerenzer 2001, 2004; Gigerenzer and Gaissmaier 2011) heuristics are no more considered suboptimal tools for decision-making, but "fast and frugal" instruments that are sensible for the specific environment in which the decision is taken. Ecological rationality becomes a framework where both cognitive and emotional heuristics represent a sensible response to a risky environment.

The chapter is structured as follows: after introducing the idea that biases are not irrational, looking at the evolutionary root of such behaviour, a large section of the chapter will be dedicated to the role of emotion, with a particular attention to finance. The ecological rationality framework will be then presented alongside examples of the power of this approach in financial context. Another section will conclude the review of potential behavioural determinants of investors' decision-making looking at personality. A concluding section will summarize the evidence presented and draw implications for financial advisors.

2 Are Biases Truly Irrational? An Evolutionary Perspective

The evidence reviewed in Chap. 1 confirms the pervasiveness of heuristics and relative biases in decision-making and its consequences for financial choices. Despite being classified as instances of irrational behaviour, some of the shortcuts presented seemed quite reasonable to save time and effort when facing a complex decision.

Thus, a question arises: how and why have humans developed such strategies? The answer to this question has been investigated following two different strategies: on one side, a recently developed field, neuroeconomics, has explored the investigation of human decision-making in the

brain, using neuroimaging and administering neuroreceptors to study brain activation patterns and find the neurobiological roots of emotions and decision-making patterns. Despite some limitations due to the extremely high costs of this line of investigation, such as low replicability and low observation numbers, neuroeconomics and neurofinance have managed to shed some light on the interaction (or lack thereof) between the purely cognitive and the affective system in making decisions. Peterson (2011) provides an interesting introduction to the field and its main findings, noting in particular the studies on risk aversion manipulation: for instance, some medications alter the perception of risk and returns and generate anticipation of reward, activating specific areas of the brain even with the presentation of a simple, costless gratification, which can induce a casino gambler to become more risk seeking.

An interesting example of how these types of studies can help understand the foundations of human decision-making is described by Martino et al. (2006), who investigate the neurobiological foundations of framing effects. Observing brain activation patterns during the experimental task—a choice between a sure win and a gamble under either a gain or loss frame—the authors show that a specific area of the brain is linked to the response to the framing effect. This area of the brain, called amygdala, is in general involved in the detection of emotionally relevant cues. The individuals that responded more to the framing effect became more risk averse in the gain frame and more risk loving in the loss frame, and showed the highest activation patterns in both this area and in another area involved in decision making—the orbitomedial prefrontal cortex (OMPFC). Individuals that have brain lesions in the OMPFC show impaired ability in decision-making, becoming impulsive. This study suggests that the framing effect is the result of the integration of an emotional reaction to the decision-making process. The authors conclude that there are sound evolutionary reasons for this brain process, as often contextual cues and the emotional reactions they generate can be very helpful in reaching a quick and effective decision.

Another line of investigation looks at the evolution of the brain using an experimental approach, in order to understand if biases have an evolutionary foundation. In other words, some biases might have been the result of an evolutionary process that took place in a different

environment—the prehistoric world in which humans developed and learned to survive. Santos and Rosati (2015) compare human behaviour as emerged from traditional decision-making experiments with similar experiments run with primates. Their stated goal is to test whether humans are "uniquely irrational" (p. 3) or if there is some form of biological rationality to decision biases that humans share with other primates.

The experiments reviewed show that primates are subject to framing effects just like humans, exhibiting the same reflection effect when it comes to losses and gains: capuchin monkeys tend to choose the risky alternative over the safe one when the apple pieces at stake are reduced (domain of losses), but do the reverse when have to choose between a risky and a certain increase in apple slices.

Comparing primates and human behaviour may also be used to discriminate between alternative explanations of biases. A well-documented phenomenon with strong financial implications, the endowment effect, has been explained both through loss aversion and through other theories that involve the idea of a sense of self or an understanding of ownership—two ideas that are traditionally considered exclusively human-like. The literature reviewed by Santos shows that the endowment effect is also present in different species of primates, but only when dealing directly or indirectly with food: the effect tends to disappear when other types of goods are involved. This suggests that the superior cognitive abilities that humans possess are likely to strengthen an effect that is naturally present to a lesser extent in other primates.

Cognitive biases seem to have strong evolutionary findings that challenge the equivalence between biases and irrationality: biases made perfect sense in the world in which they were developed.

3 Emotions and Decision-Making

3.1 Rationale

The idea that emotions are part of the decision-making process is not alien to behavioural models: Prospect Theory is based on the concept of loss aversion, which is an entirely emotion-based effect due to the negative

feelings associated with a monetary loss. Despite the centrality of some emotions to behavioural models, the role of emotions in decision-making does not, in general, receive the same attention compared to cognitive biases.

Any financial advisors could confirm that emotions are a very important component of the advisor–client relationship, especially when they get out of control. Understanding the nature and the potential of emotions can help advisors improve the relationship with clients and achieve better financial results.

The role of emotions in decision-making is a very well established fact in psychology. In his seminal contribution, Damasio explores the effect of emotions on decision-making comparing individuals with inabilities in areas of the brain deputed to feeling emotions in able individuals (1994). He finds that not being able to feel emotions significantly impacts decision-making, even when cognitive abilities are intact.

Loewenstein reviews the reasons why emotions have been traditionally kept out of formal economic modelling: emotions or "visceral factors" are considered too variable over time and across individuals and too complex to be formally modelled in decision-making (2000). He suggests that both these accusations are unfounded, as visceral effects are variable but act in systematic and predictable ways on behaviour. Even their complexity can be understood and modelled, if one considers that visceral states are immediate, difficult to anticipate up to their real emotional extent (the difference between "hot" and "cold" states) and not cognitively mediated, but respond in a systematic way to the stimuli offered by the situation. Through this anticipation process, individuals can try to cognitively manipulate these immediate responses, for example avoiding going shopping when one is broke. An interesting point that Loewenstein makes is that emotions are particularly important in situations of risk and uncertainty, where the divergence between the cognitive and emotional dimensions are particularly strong and striking. Loewenstein et al. also discuss the different determinants of emotional reactions to risk and cognitive evaluation of risk and show that there is a substantially, empirically founded divergence (2001). On one side, the cognitive determinants of risk as probabilities, expected outcomes, and their variations, from an affective perspective risk is linked to states of anxiety or even fear that

affect behaviour through both anticipatory and incidental influences. For instance, the fear connected to investing in financial markets depends on anticipatory factors like the vividness of negative events that generate the negative emotion, the time and personal proximity to negative occurrences and on incidental influences such as the weather or being optimistic or pessimistic. Evidence from psychological studies abounds on these implications of emotions in financially relevant context, as reviewed by Loewenstein and his colleagues (2001).

The discussion on the role of emotions in decision-making can be organized looking at a simple distinction in the effect that emotions have on judgment: emotions may be qualified as expected emotions or immediate emotions (Loewenstein and Lerner 2003).

Expected emotions represent the expectations regarding how the consequences of a given decision will make one feel. Economic theory based on EUT has a sound consequentialist basis that leaves little room for emotions, but other economic theories have tried to accommodate their role in decision-making. These theories frame emotions; in particular, anticipated emotions, as a process that affects behaviour through cognitive processes. Thus, expected emotions affect decision-making through cognition and become another input in the utility maximization process. For instance, under such a framework an individual will choose the course of action that minimizes negative emotions associated with the choice, alongside maximizing monetary utility.

Psychology has been more concerned with understanding how immediate emotions may affect behaviour without necessarily interacting with cognition. Loewenstein and Lerner (2003) describe the influences that immediate emotions have on decision-making as incidental or anticipatory. The former refers to the effect of factors that are unrelated to the decision, such as the weather or personal dispositions (optimism or pessimism) that do not depend on the decision.

Anticipatory influences of emotions reflect the emotional consequences of a given choice, but will be dramatically different in intensity and magnitude compared to expected emotions. Expected emotions are a form of cognitive inference and are in general quantitatively measurable and determined by the features of the problem. Anticipated immediate emotions do not rely directly on the features of the problem and are likely

to affect behaviour in a completely different way than expected emotions. Consider, for instance, the option of flying in an aeroplane versus driving. The anticipated emotion of fear may push someone to choose driving over flying, even when someone is cognitively well aware that statistically, aeroplanes are safer than cars.

Some of the phenomena described in this section refer to the role of anticipated emotions that affect behaviour through cognition, looking at the notable example of regret aversion. The rest of the discussion focuses instead on processes that regard emotions affecting behaviour directly. These processes include the affect heuristic, the risk-as-feeling hypothesis, and the emotional finance literature.

3.2 Expected Emotions: Regret Aversion

Regret aversion describes how the anticipation of a negative feeling can substantially affect the outcome of the decision-making process. Different from other heuristics, whose nature and implications have mainly been treated descriptively, the implications of regret aversion have been formally described in a model, initially proposed as one of the alternatives to the Expected Utility Model by Loomes and Sugden (1982).

Economists shared the idea that regret may play an important role in decision-making, and curiously three different modelling contributions of this phenomenon were published in the same year. Alongside Loomes and Sugden, also Bell (1982) and Fishburn (1982) proposed models of decision-making based on different forms of regret aversion. Bleichrodt and Wakker review the historical importance of models of regret aversion (2015).

What all these models have in common is that they give up one of the crucial axiomatic properties of preferences assumed in EUT: transitivity. The model is able to reconcile the empirical evidence on most of the violations of EUT and assumes that individuals evaluate the possible regret or rejoice arising from the realization of each one of the possible occurrences (labelled consequences) compared to what could have been. In other words, individuals are able to anticipate negative and positive feelings arising from a given choice and translate them into increases or

decreases in utility. The model enjoyed a lot of empirical support in the first decade after its introduction, but was later challenged by several authors like Starmer and Sugden, who proved that many of its empirical predictions were due to the way in which alternatives were presented and not to the features of the model (1993).

The model is based on the ability of individuals of assessing utility through counterfactual thinking—understanding what might have happened after a different choice. In a sense, regret theory remains cognitively demanding and cannot be qualified as a truly heuristic procedure. Nevertheless, regret theory is an example of how an emotion can directly affect behaviour and this is why it is included in this review.

3.3 The Affect Heuristic

The affect heuristic is one of the latest biases to have been included among the factors affecting decision-making. Slovic reviews the developments in the study of the affect heuristic (Slovic et al. 2007). The affect heuristic is the tendency to be guided by unconscious affective "images" attached to events and different types of stimuli when making a decision.

When individuals receive a stimulus (e.g. observing the outcome of a decision or an occurrence), this stimulus also generates an affective (emotional) response that can be generally summarized by a positive or a negative tag. This tag attaches itself to memory and is recalled when a similar decision needs to be taken. Similarly to what happens with other heuristics, affective responses are, in general, fast and automatic, as is their use in guiding future decision-making through recollection.

This idea finds support in the psychological literature, where Loewenstein et al. calls these positive and negative tags "somatic markers" and proposes a comprehensive approach to the role of emotions on judgment and decision-making, the risk-as-feeling hypothesis (2001). Under this hypothesis, feelings and emotions interact with decision-making, both as immediate responses to the stimuli received, and through a form of conditioning and memory that does not go through cognition.

This result builds on research in clinical psychology, which provided evidence to support the idea that affect and cognitive systems interact,

but represents two separate avenues of information processing. Bechara et al. report of studies where patients that had suffered from brain lesions in the areas of the brain deputed to "feelings", but with intact cognitive abilities and skills, were outperformed by unlesioned patients at a repeated card game (1997). Patients could choose to bet on different decks of cards, with varying expected outcomes. Only unlesioned patients learned to consistently avoid decks with high-expected outcomes, but that led to extreme losses in some cases. Lesioned patients could not recall the negative emotion associated with large losses and kept going back to select them.

Looking at the financial context, Rubaltelli et al. ran an experiment to test whether affective reactions impact selling prices of a stock that is losing value, finding that the degree of affective reaction significantly affected selling prices (2010). Moreover, they find that stocks belonging to industries that are described as socially responsible trigger more positive affective reactions and reach higher selling prices.

3.4 Emotional Finance and Financial Advisors

Emotional finance is still an emerging field in behavioural finance that uses insights from psychoanalysis to propose a view of investment behaviour in which the unconscious plays a determinant role. Taffler and Tuckett review its core concepts and implications (2011). Building on the notion of *phantasy*—an unconscious, unrecognized emotion—derived from the Freudian vocabulary, emotional finance suggests that the unconscious emotions generated in the investment process are likely to have a profound, yet often overlooked, impact on decision-making.

Investing in a risky market may create anxiety, and anxiety generates stress that may alter the perception of new information and the ability to make new decisions. Emotional finance brings forward the idea that such financial phantasies are responsible for bringing about both positive and negative feelings—the possibility to become rich, but the possibility of losing both the money and the dream of ever being rich. These feeling

coexist subconsciously, and individuals may either fit into a *depressive* paradigm in which both goods and bads are more or less objectively evaluated or, more often, in a *schizoid* state of mind, where everything is either completely good or completely bad. Transforming an investment in a *phantastic obj*ect—a tool to pursue one's deepest desires—risks pushing individuals in the schizoid dimensions, where a simple turn of luck can transform pure love into pure hate, generating a lot of stress. Individuals in a schizoid state tend to separate the good aspects from the bad one, rejoicing for one's good choices and blaming external circumstances or others for the bad occurrences. Taffler suggests that being aware that dealing with uncertainty generates this possible dissociation and potentially fogs judgment is a way to deal more effectively with the stress that the investment process generates.

Emotional finance suggests also that trying to attach a statistical measure to risk is not useful to reduce the anxiety associated with investing. In a nice review of the literature on perceived risk, Ricciardi suggests that there is a difference between actual and perceived risk: the former can be measured through probabilities and ranges of variation, whereas the latter is depends also on emotions triggered by the characteristics of the risk to assess (familiarity, anxiety, worry) (2008).

Taffler suggests that measuring risks through statistical tools is a way to cope with the anxiety generated by the volatility of markets, rather than accepting the negative emotion associated with trading. Another interesting example reported by Taffler looks at the bad news anomaly, for which bad news is, in general, incorporated much more slowly than good ones in market behaviour. Thanks to the perspective of emotional finance, this slow updating of bad information can be explained by the tendency to avoid bad news that generates anxiety and stress, coupled with the attempt to avoid accepting that the good *phantastic* investment turned out to be a bad idea. Taffler argues that, being profoundly unconscious, this tendency to either subscribe to a rosy or a sombre picture of the world is so ingrained in the way the human mind works that is difficult to avoid, even when an individual is conscious of tendencies such as loss aversion that can explain his tendency to avoid accepting the bad news.

4 An Alternative View on Heuristic Decision-Making: Heuristics as Satisficing Responses

4.1 Rationale

Cognitive biases have been discovered and studied starting from the empirical validation of traditional economic models like EUT and SEU. Given the fact that such models assume that purely rational individuals populate economies, disproving their predictions seems to suggest that real individuals are somewhat short of the rationality that EUT prescribes. This section looks at a different way of looking at heuristics that merges the evolutionary perspective and the role of emotional biases to define a different sort of rationality, to which heuristics conform.

Gigerenzer and Goldstein (1996 and Gigerenzer (2004) and colleagues contend the prevalent view that heuristics characterize irrational behaviour, while logic and statistical inference should be considered the proper tool for effective decision-making. Gigerenzer refutes the idea that individuals should be considered irrational if they do not comply with models that are created to describe "heavenly beings" (2001) rather than real species. The Gigerenzer program looks at heuristics not as violations of a more general and more rational model, but as the model through which individuals can make effective decisions.

Rationality for Gigerenzer is heavily context- and species-dependent and heuristics are adaptive responses that comply with requirements of psychological plausibility, domain specificity, and ecological rationality. The first feature refers to the fact that different species have different tools at the cognitive, behavioural, emotional and social level, and that strategies to help decision-making making should make use of them, not of idealized abilities.

Gigerenzer defines heuristics as "a strategy that ignores part of the information, with the goal of making decisions more quickly, frugally and/or more accurately than more complex methods" (Gigerenzer and Gaissmaier 2011). This definition stresses the fact that "less can be more": heuristics require less information, but this does not necessarily mean

that they lead to suboptimal decisions. The notion of "less-is-more" challenges the standard "accuracy-effort trade-off", by which more information is always better and leads to better outcomes.

4.2 The Adaptive Toolbox

Gigerenzer et al. (1999) propose a set of tools that represent building blocks to construct domain-specific heuristics. The adaptive toolbox includes tools that allow addressing both cognitive tasks and adaptive tasks: the first type of problems requires to calculate, evaluate and choose, whereas the second entails more complex problems that involve mutual or multiple decisions of different individuals, such as participating in the stock market or finding a suitable partner.

The adaptive toolbox makes room also for emotions, which can be particularly useful in adaptive problems and are significantly domain-specific: Gigerenzer (2001) mentions, for example, how disgust is very helpful in reducing the number of potential foods to eat, but turns out to be much less useful than other emotions in other instances (e.g. deciding whether to cheat on a contract).

The tools included in the adaptive toolbox can be divided into three different groups: search rules, stopping rules and decision rules.

Search rules focus on cues to evaluate the alternatives, rather than searching for the alternatives, which are known. This is an important difference with another famous alternative to the traditional model—Simon's concept of bounded rationality and satisficing behaviour. Satisficing is an alternative to maximization, but in order to be pursued individuals search for alternatives and select the one that seems more attractive, stopping when they find one that fits with their aspirational level. Search rules for cues include random or ordered search and imitation, but also emotions may play a significant role in reducing the choice alternatives.

Stopping rules can be cognitive or emotional and allow addressing alternatives that need not be fully commensurable. Moreover, such rules do not have the goal of selecting the best alternative in cost-benefit terms. Stopping rules might suggest stopping once one (or more, depending on

the rule) cue that favours one alternative over the others is found. Emotions are a good example of domain-specific stopping rule that outperforms cognitive rules. In fact, in the example proposed by Gigerenzer (2001), searching for a romantic partner using cognitive tools would require evaluating emerging alternatives (new potential partners) as they come forward, wasting time and energy. Love might make everything simpler by setting one's interests and commitment to a person despite what other opportunities might be out there.

Decision rules are a feature that the adaptive toolbox has in common with traditional models, although with an opposite attitude: where traditional approaches calls for complex models that weight and sum differently aspects of the decision problem, the heuristics proposed by Gigerenzer are a form of one-reason decision-making, often relying only on one cue, ignoring all other sources of information. This allows taking decisions even when alternatives do not share a common measuring unit (i.e. cannot be translated into values), as there is no need to compose or combine different cues. Gigerenzer is explicit in mentioning that the simpler decision rules proposed in the toolbox are not necessarily less effective or accurate than more complex ones.

In the adaptive toolbox proposed by Gigerenzer, heuristics success is measured by the degree of adaptation to the features of the environment, be it social or natural, in which a decision takes place. Heuristics are "ecologically rational" as the strategies they propose are matched to the features of the environment. Thus, they produce good results saving time and effort. Moreover, such heuristics are also robust, in the sense that given the fact they use little information, they do not risk overfitting the data and are generalizable to different types of problems.

Differently from the anecdotal approach of the heuristics and biases program of Kahneman and Tversky, Gigerenzer and his team suggest that heuristics should not be studied just descriptively, but with the overarching goal of assessing their effectiveness, measuring the amount of error they generate and not taking for granted that they are the outcome of a faulty decision process. Gigerenzer and Brighton provide several examples in which simple heuristics, such as tallying (assigning the same weight to different cues/alternatives) or take-the-best (search for a cue that allows the identification of the best among given alternatives, once one is found,

select the best alternative according to that cue) are matched against more cognitively sophisticated alternatives such as multiple regressions (2009). The authors show under which conditions each heuristic is able to outperform the more cognitively demanding algorithm, finding that in many examples these conditions mirror situations that occur frequently in natural environments. This is a good example of the implications of ecological rationality of heuristics: the features of the environment determine how much information is needed to make a decision in a fast, frugal and effective way. In many cases, the extra information is simply not more useful than the information one already possesses.

The Homo Heuristicus, different from the unrealistic traditional Homo Oeconomicus, selects heuristics from the toolbox using one of three different selection mechanisms: memory, feedback and ecological rationality (Gigerenzer and Brighton 2009). All three selection mechanisms rely differently on the features of the environment and the characteristics of the individual. Memory leads to different heuristics according to how much information can be recalled from previous experiences. Feedback is a different form of memory and is related to the how well specific cues performed in the past. Ecological rationality is a broader concept that leads to selecting the heuristics that are the best fit for the environment given the (lack of) memory regarding similar situations.

4.3 Finance and Fast and Frugal Heuristics

Finance seems a promising field for the application of fast and frugal heuristics. The experience of the recent financial crisis has shown that cognitively complex models based on rational investors have not been able to predict and avoid the disastrous consequences of the crisis. The contribution by Gigerenzer and his group suggests that finance model could be improved by choosing simplicity over the option of making models more complex in order to increase realism or account for the unexpected.

Mousavi and Gigerenzer (2014) report a quote of the then Bank of England's executive director for financial stability, Andrew Haldane. He stated that given the complex task of regulating financial markets, simple

and not complex models and solutions were needed, "as you do not fight fire with fire" (p. 1671). In a recent publication by Neth et al., the fast and frugal heuristics method is translated into a practical methodology to deal with bank regulation in order to avoid further financial crises (2014). The authors operationalize fast and frugal decision trees that allow at each node to evaluate a cue and reach a decision if the cue is deemed significant. If it is not, the individual proceeds to the following branch when another single cue is examined. Different from other models employing decision trees, fast and frugal decision trees evaluate pieces of information one at the time and in isolation, evaluating only the amount of information necessary to decide and not more. For a background on fast and frugal decision trees see also Martignon et al. (2005).

The potential role of fast and frugal heuristics in designing bank capital requirements is investigated in a recent study by Aikman, who find that simpler methods can often outperform more complex rules such as the Internal Rating Based approach (IRB), especially when available data is scarce and defaults are unpredictable and frequent (Aikman et al. 2014). The paper presents another application of a fast and frugal tree to address bank vulnerability, showing that its performance in identifying the probability of a bank failure is comparable to that of more complex logistic regression models while being easier to communicate.

Heuristics can prove useful also when it comes to portfolio management. Traditional finance assumes that markets cannot be beaten in long run, a concept also known as the Efficient Market Hypothesis—for a review see (Fama 1969)—and this assumption has been incorporated in famous models like the Capital Asset Pricing Model (Sharpe 1964). Some of these models may be too complex to implement, even by a professional. It is very often cited how, speaking to *Money Magazine*, Markowitz, Economics Nobel-prize winner for the finding of mean-variance portfolio theory, admitted to having used a 50/50 diversification strategy between bonds and stocks when selecting his own pension scheme. If heuristics are undoubtedly easier to use, it remains to assess under which conditions they may also lead to superior performances compared to traditional models.

DeMiguel et al. use the 1/N heuristic as a benchmark to assess the how different rules for portfolio allocation suggested by traditional finance

fare (2009). The 1/N heuristic implies that investors simply divide equally the money they wish to invest in the available assets, without looking at any other information regarding performance. They use empirical datasets from the US equity market to test the effectiveness of 14 different portfolio models, measured looking at the Sharpe ratio, certainty-equivalent return and turnover, The results show that none of the 14 models are better than the naïve 1/N heuristic across the three performance indicators.

Ortmann looks at the effectiveness of the recognition heuristic, introduced by Gigerenzer and Goldstein (1996) compared to market indices, two major mutual funds and random portfolios (Ortmann et al. 2008). The recognition heuristic suggests how to pick a stock between two options, simply indicating to pick the stock that one recognizes. Of course this heuristic cannot be applied to professionals, whose job is to know which stocks are available, but it easily approximates the degree of knowledge of an average investor. The portfolios created using the recognition heuristic among German and American samples outperformed mutual funds and random portfolios, although it outperformed the market index only in the German case (DAX 30) over the investigation period.

4.4 Evolutionary Foundations of Ecological Rationality

Support for the concept of ecological rationality also comes from looking at the evolutionary foundations of biases. The evolutionary perspective relies on the idea of survival, which makes potential losses more threatening than potential gains are attractive. Survival requires that potentially fatal mistakes be avoided as much as possible.

Johnson et al. cites the fact that humans often mistake sticks for snakes, but it is much less frequent to do the opposite (2013): this can be explained in an evolutionary perspective considering that mistaking a snake for a stick is much riskier than doing the opposite. Evolution based on survival has ingrained mechanisms like this in the human brain, which compare the net costs (the difference between costs and benefits) of false

positives with those of false negatives, especially in situations of uncertainty. The authors describe how Error Management Theory (EMT) is able to explain the emergence and persistence of behavioural biases. Decision-making strategies evolve over time to incorporate biases that make individuals better off in terms of survival chances, making them prefer to make the less costly error to the more costly one. In situations of uncertainty, where the net costs of false positive and false negatives are very asymmetrical, this disproportionately leads to favouring avoiding false negatives (like crossing the road assuming a car is not going by when it really is). This may seem irrational from the point of view of maximizing outcomes, but it is perfectly rational to maximize Darwinian fitness (and survive).

The pursuit of fitness combines with the cognitive limitations of the brain, which would require a large amount of time to process the available information, assuming it was retrievable, leading to the establishment of cognitive biases that are ecologically sensible, faster and less time- and effort-consuming. The authors review several models from different disciplines that rely on concepts like EMT, showing a significant convergence towards embracing the idea of the ecological rationality of biases, despite the focus on different aspects of the decision process.

McDermott et al. introduce a model of behaviour based on optimal animal foraging theory and able to explain how behaviour consistent with prospect theory is evolutionary sensible (2008). Models that rely on standard economic preferences based on the maximization of expected outcome are reasonable in environments characterized by low variability and when the stakes are low—when survival is not at stake.

In the 1980s evolutionary biologists realized that risk seeking was the predominant strategy when an animal was risking starvation: an animal preferred to search for food in areas with high expected outcome but high variability, rather than simply maximizing expected outcome, especially when the alternative is a safer option (lower variability) with a lower expected value (find food often but in small quantities).

Just like animals, humans have evolved this risk-taking strategy when a potential loss is involved, whereas they tend to prefer to avoid risk when survival is not at stake, which frames them in the domain of gains. Environmental cues drive the selection between these two risk attitudes,

building on an ecological view of rationality: as McDermott et al. (2008) put it, "abundance leads to caution, while scarcity provokes risk" (p. 347).

5 The Last Piece of the Puzzle: Investor Personality

The goal of this chapter has been to complement the analysis of investor behaviour with other important features of the decision-making processes that are very closely linked to neurobiology and evolution. Understanding investors is a key element in the profession of the financial advisor and Chap. 4 will show that the changes in the regulatory framework of financial institutions is calling for a better understanding of clients' preferences and goals.

The picture would not be fully complete without addressing one final element to the understanding of investor behaviour—personality.

The idea that some form of investor-type classification may be useful in helping advisors to provide better-suited suggestions is not new to behavioural finance, especially to the literature on behavioural portfolio theory, covered in more detail in Chap. 5 of this book. Pompian explicitly classifies investors into types and analyses the potential biases each one is more prone to (2006). Statman investigates the role of temperament (Statman and Wood 2004). Temperament is defined as a general predisposition that affects preferences and behaviour; parts of it are innate, while others are developed and modified over time. The authors identify temperament as a factor that affects investment decisions just like it affects any other domain of life, and argue that it affects important components of choice under uncertainty, such as risk tolerance or the home bias. They suggest that classifying clients by their temperament type may help advisors in gaining clients' trust, as the vocabulary of temperaments revolves around goals and aspirations that clients can relate to easily. Easing communication further helps in discussing future goals and plans and selecting the most appropriate investment strategy.

Understanding the role of personality requires finding a way to describe and measure it. Psychology scholars have looked at different aspects of

personality, including temperament and locus of control,[1] but the most popular classification identifies five or more factors that underlie any personality type. The Big Five personality traits model (McCrae and Costa 1992) formalizes how personalities can be represented by different combination of scores along the dimensions of Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to new experiences. For all traits, a higher score indicates that the features of the trait are more prominent in personality. The first two traits refer to interpersonal dimensions: Extraversion relates to sociability, optimism, and level of activity, while Agreeableness identifies trust, altruism, and empathy. Conscientiousness relates to self-control: an individual with a high score in this trait is likely to be well organized, diligent, persistent and goal-directed. Neuroticism indicates the degree of emotional stability—an individual scoring high on this trait will be more prone to anxiety and stress. Openness to new experiences identifies how much an individual is curious, emotionally responsive and prone to unconventional thoughts and beliefs.

Until recent times economists have been more traditionally inclined into introducing the role of attitudes and expectations on financial decision-making rather than focussing on personality. A review of the role of personality in traditional economic domains such as economic success, health, and criminal activity is presented by Almlund et al. (2011). Despite not being directly related to financial investment, this discussion paper offers support to the idea that personality traits are a significant element in the analysis of life outcomes. As the authors correctly point out, reviewing the literature on the predictive validity of personality traits is a complex task, due to the fact that there is more than one accredited way of measuring personality traits, although the Big Five structured is quite common. Moreover, different measures of predictive validity are used, from studies employing simple correlations to others controlling for other important factors like situation or cognition. Most importantly, introducing the role of personality traits opens a question of possible reverse causality: does the trait help to predict the behaviour or cause it? There is yet no agreement on whether personality traits should be considered endogenous and, if so, how this endogeneity should be controlled in empirical analyses. Almlund and colleagues report that the

studies they review tend to employ different strategies, and very few studies acknowledge and address the potential endogeneity, as also reported by Borghans et al. (2008).

In my opinion, especially for empirical analyses that involve the adult population and look at financial choices, personality traits should be considered stable—not endogenous to the decision. Support for this view can be found in several articles including McCrae and Costa (2004) and Cobb-Clark and Schurer (2012), who both provide evidence in favour of this stability in working-age population, especially beyond age 30. The author must acknowledge that there is also evidence of modification of traits over time, as reviewed by Borghans et al. (2008), although changes, if any, are likely to occur during young adulthood or after dramatic environmental occurrences (e.g. becoming a parent) that may affect traits permanently.

The debate on the potential endogeneity remains open, but it is certain that empirical analyses of economic performance benefit from the inclusion of personality traits. Both Borghans et al. (2008) and Almlund et al. (2011) report of the significant impact of some traits in predicting economic performance: for instance, Conscientiousness is generally found to be the most significant trait in relation to school attainment and achievement across a variety of different measures, and in predicting occupational success, in terms of both performance and wage. For health-related indicators of well-being, all traits seem to matter to different degrees, but Conscientiousness is again the most predictive.

The importance of personality traits in economically relevant activities suggests that they may play an important role also in financial decision-making. Durand reviews the literature that addresses how personality traits affect financial decision-making looking in particular at risk-taking behaviour and overconfidence (Durand 2014). Looking at the first topics, the author reports that high Neuroticism scores are connected with being more risk averse and try to avoid losses, while overconfidence is more related to Extraversion. Durand concludes that personality traits are reflected in the way in which individuals address situations, but they are not entirely unconscious processes. Individuals may become aware of the implications of specific behaviours are find ways to mitigate or modify its effect.

Pan address the link between personality traits and investment behaviour using a survey of over 2500 individuals (Pan and Statman 2013). The findings confirm that overconfident individuals are high in Extraversion and low in Agreeableness, while the most risk tolerant individuals are both high in Extraversion and in Openness to experiences and low in Conscientiousness. Pan and Statman (2013) also look at other factors that may play a role in investing, such as the "propensity to attribute success to luck over skills" and the "propensity for regret". High scores in Openness and Agreeableness and low scores in Conscientiousness significantly explain the former. High scores in Conscientiousness combined with low scores in Extraversion instead explain regret.

Durand describes the effect of personality traits on financial behaviour using an experimental analysis of real Australian traders (Durand et al. 2008). The study collected information on personality traits and on the individual investment behaviour to find whether traits influenced the investment decision-making process (e.g. how much and which type of information is collected) and investment performance. Although the research involved only 21 traders, some significant relationships between individual traits and investment decisions and performance were found. In particular, the authors find that individuals higher in Neuroticisms tend to rely more on investment advice and that individuals high in Extraversion tend to achieve superior portfolio performance.

Durand et al. further extends these results using an experiment with 115 university students (2013). The empirical analysis confirms the relationship between personality traits and some aspects of investment selection and performance. This paper focuses on whether personality traits are also related to the availability heuristic and finds that the more neurotic and conscious an individual is the more they rely on it.

Brown provides an empirical analysis of the role of personality traits in financial decision-making, looking in particular at the existing impact on the choice of type of debt and assets (Brown and Taylor 2014). Using an unbalanced panel dataset (the British Household Panel Survey) of single individuals and couples, describing asset allocation choices over a 10-year period (1995–2005) and personality traits (using a version of the Big Five scale in 2005), the authors show that Extraversion for singles and Agreeableness for couples are significant correlates of debt in terms of

magnitude. The level of unsecured debt for all types of individuals is inversely related to Conscientiousness while having a credit card is positively related to Openness to experience both for individuals and for couples.

Reconciling the evidence coming from the cited sources is complicated by the somewhat different nature of the studies, but there is significant evidence that some traits in particular (Extraversion and Conscientiousness) do play an important role in financial decision-making.

Understanding that personality traits may play a role in decision-making is another step in enriching the set of behavioural factors that advisors need to take into account when dealing with clients. Personality traits make some financial assets more attractive to specific types of investors, or make them more prone to specific cognitive or behavioural biases. This suggests that the potential of this literature for behavioural finance should not be overlooked.

6 Summary and Conclusions

Are investors irrational if they do not behave according to the standard tenets of rationality? This chapter has shown that the heuristic behaviour that may lead to biases in financial decision-making is not necessarily due to irrationality, but has sound evolutionary roots that suggest that such behaviour can hardly be eradicated. In other words, it is rational not to behave according to standard rationality, given that mankind developed much of its decision-making skills in a time where investments and yields were not a concern, but survival was. This view should be comforting to both advisors and clients. It is impossible to be completely bias-proof, as long as one is human. Advisors do not need to correct their client's behaviour, and sharing the knowledge that some strategies simply need to be fine tuned to the new environment and are not wrong can significantly strengthen the advisor–client relationship.

Putting aside standard rationality is useful to provide a more detailed picture of the investor mind, and this picture would not be complete without looking at emotions. Emotions are not unstable "visceral factors", but can be categorized and understood, producing predictable consequences.

Risk causes anxiety and anxiety leads to stress, which in turn may fog judgment. A financial advisor can deploy its full potential only understanding that managing a client's emotions is a key element in the advisor–client relationship. This chapter also looked at personality traits as an element shaping the decision-making process and reviews related literature.

Heuristics and emotions are developed through a process of ecological rationality, through which different tools become more useful according to the specific features of the environment in which decisions are taken. In particular, this chapter has shown that fast and frugal trees are able to describe financial decision-making and have the same, if not higher, accuracy than more cognitively complex methods.

Despite its empirical and theoretical appeal, the adaptive toolbox and the concept of ecological rationality are rarely considered serious contenders of more popular approaches like the Heuristics and Biases program. Nevertheless, I believe that the former approach has a lot to offer to the profession of financial advisory, not just because they may help strengthen the relationship with clients, but also because they shift the focus from strategies that are technically impeccable to strategies that are implementable and easy to live with. Chapter 5 of this book will carry forward this suggestion and present a new version of Portfolio management that is aimed exactly at fulfilling these tow goals—behavioural portfolio theory.

Notes

1. Locus of control is a psychological measure related to self-control, and indicates much a person believes he is in control of life's events. To know more about locus and control and financial choices, see for example (Cobb-Clark et al. 2013).

Bibliography

Aikman, David, Mirta Galesic, Gerd Gigerenzer, Sujit Kapadia, Konstantinos V. Katsikopoulos, Amit Kothiyal, Emma Murphy, and Tobias Neumann. 2014. Taking Uncertainty Seriously: Simplicity Versus Complexity in Financial Regulation. *Bank of England Financial Stability Paper*, No. 28: 24–25. https://doi.org/10.2139/ssrn.2432137.

Almlund M., A. Duckworth, J. Heckman, and T. Kautz. 2011, February. *Personality Psychology and Economics*. IZA Discussion Paper No. 5500.

Bechara, A., H. Damasio, D. Tranel, and A.R. Damasio. 1997. Deciding Advantageously Before Knowing the Advantageous Strategy. *Science* 275 (5304): 1293–1295. https://doi.org/10.1126/science.275.5304.1293.

Bell, David E. 1982. Regret in Decision Making Under Uncertainty. *Operations Research* 30 (5): 961–981.

Bleichrodt, Han, and Peter P. Wakker. 2015. Regret Theory: A Bold Alternative to the Alternatives. *Economic Journal* 125 (583): 493–532. https://doi.org/10.1111/ecoj.12200.

Borghans, Lex, Angela Lee Duckworth, James J. Heckman, and Bas ter Weel. 2008. The Economics and Psychology of Personality Traits. *Journal of Human Resources* 43 (4): 972–1059.

Brown, Sarah, and Karl Taylor. 2014. Household Finances and the 'Big Five' Personality Traits. *Journal of Economic Psychology* 45: 197–212. https://doi.org/10.1016/j.joep.2014.10.006.

Cobb-Clark, Deborah A., and Stefanie Schurer. 2012. The Stability of Big-Five Personality Traits. *Economics Letters* 115 (1): 11–15. https://doi.org/10.1016/j.econlet.2011.11.015.

Cobb-Clark, Deborah A., Sonja C. Kassenboehmer, and Mathias G. Sinning. 2013. *Locus of Control and Savings*. 7837. IZA Discussion Paper.

Damasio, Antonio R. 1994. *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: Avon Books. https://doi.org/10.7202/051028ar.

DeMiguel, Victor, Lorenzo Garlappi, and Raman Uppal. 2009. Optimal Versus Naive Diversification: How Inefficient Is the 1/N Portfolio Strategy? *Review of Financial Studies* 22 (5): 1915–1953. https://doi.org/10.1093/rfs/hhm075.

Durand, Robert B. 2014. Personality Traits. In *Investor Behavior: The Psychology of Financial Planning and Investing*, ed. H. Kent Baker and Victor Ricciardi, 99–115. Hoboken, NJ: John Wiley & Sons, Inc.

Durand, Robert B., Rick Newby, and Jay Sanghani. 2008. An Intimate Portrait of the Individual Investor. *Journal of Behavioral Finance* 9 (4): 193–208. https://doi.org/10.1080/15427560802341020.

Durand, Robert, Rick Newby, Kevin Tant, and Sirimon Trepongkaruna. 2013. Overconfidence, Overreaction and Personality. *Review of Behavioural Finance* 5 (2): 104–133. https://doi.org/10.1108/RBF-07-2012-0011.

Fama, Eugene F. 1969. Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance* 25 (2): 28–30.

Fishburn, Peter C. 1982. Nontransitive Measurable Utility. *Journal of Mathematical Psychology* 26 (1): 31–67. https://doi.org/10.1016/0022-2496(82)90034-7.

Gigerenzer, Gerd. 2001. The Adaptive Toolbox. In *Bounded Rationality: The Adaptive Toolbox*. Cambridge, MA: The MIT Press.

———. 2004. Bounded Rationality. In *Blackwell Handbook of Judgement and Decision Making*, 92–94. Hoboken, NJ: Blackwell Publishing Ltd.

Gigerenzer, Gerd, and Henry Brighton. 2009. Homo Heuristicus: Why Biased Minds Make Better Inferences. *Topics in Cognitive Science* 1 (1): 107–143. https://doi.org/10.1111/j.1756-8765.2008.01006.x.

Gigerenzer, Gerd, and Wolfgang Gaissmaier. 2011. Heuristic Decision Making. *Annual Review of Psychology* 62: 451–482. https://doi.org/10.1146/annurev-psych-120709-145346.

Gigerenzer, Gerd, and Daniel G. Goldstein. 1996. Reasoning the Fast and Frugal Way: Models of Bounded Rationality Reasoning the Fast and Frugal Way: Models of Bounded Rationality. *Psychological Review* 103: 650–669. https://doi.org/10.1093/acprof.

Gigerenzer, Gerd, Peter Todd, and ABC Group. 1999. *Simple Heuristics that Make Us Smart*. New York: Oxford University Press.

Johnson, Dominic D.P., Daniel T. Blumstein, James H. Fowler, and Martie G. Haselton. 2013. The Evolution of Error: Error Management, Cognitive Constraints, and Adaptive Decision-Making Biases. *Trends in Ecology and Evolution* 28 (8): 474–481. https://doi.org/10.1016/j.tree.2013.05.014.

Kahneman, Daniel, and Amos Tversky. 1979. Prospect Theory: An Analysis of Decision Under Risk. *Econometrica: Journal of the Econometric Society* 47 (3): 263–291. https://doi.org/10.1111/j.1536-7150.2011.00774.x.

Kahneman, Daniel, Paul Slovic, and Amos Tversky. 1982. *Judgment Under Uncertainty: Heuristics and Biases*. Cambridge: Cambridge University Press.

Loewenstein, G. 2000. Emotions in Economic Theory and Economic Behavior. *The American Economic Review* 90 (2): 426–432. https://doi.org/10.2307/117263.

Loewenstein, George, and Jennifer S. Lerner. 2003. The Role of Affect in Decision Making. *Handbook of Affective Science*. https://doi.org/10.1016/B978-0-444-62604-2.00003-4.

Loewenstein, George F., Elke U. Weber, Christopher K. Hsee, and Ned Welch. 2001. Risk as Feelings. *Psychological Bulletin* 127 (2): 267–286. https://doi.org/10.1037/0033-2909.127.2.267.

Loomes, Graham, and Robert Sugden. 1982. Regret Theory: An Alternative Theory of Rational Choice Under Uncertainty. *The Economic Journal* 92 (368): 805–824.

Martignon, Laura, Oliver Vitouch, Masanori Takezawa, and Malcolm R. Forster. 2005. Naive and Yet Enlightened: From Natural Frequencies to Fast and Frugal Decision Trees. *Thinking: Psychological Perspectives on Reasoning,*

Judgment and Decision Making, No. 1999: 189–211. https://doi.org/10.1002/047001332X.ch10.

Martino, Benedetto De, Dharshan Kumaran, Ben Seymour, and Raymond J. Dolan. 2006. Frames, Biases, and Rational Decision-Making in the Human Brain. *Science* 313 (5787): 684–687. https://doi.org/10.1126/science.1128356. Frames.

McCrae, R., and P. Costa. 1992. An Introduction to the Five-Factor Model and Its Applications. *Journal of Personality* 60: 175–215. https://doi.org/10.1111/j.1467-6494.1992.tb00970.x.

———. 2004. Set Like Plaster? Evidence for the Stability of Adult Personality. In *Can Personality Change?* ed. T. Heatherton and J. Weinberger. Washington, DC: American Psychological Association.

McDermott, Rose, James H. Fowler, and Oleg Smirnov. 2008. On the Evolutionary Origin of Prospect Theory Preferences. *The Journal of Politics* 70 (2): 335–350. https://doi.org/10.1017/S0022381608080341.

Mousavi, S., and G. Gigerenzer. 2014. Risk, Uncertainty and Heuristics. *Journal of Business Research* 67 (8): 1671–1678.

Neth, Hansjörg, Björn Meder, Amit Kothiyal, and Gerd Gigerenzer. 2014. Homo Heuristicus in the Financial World: From Risk Management to Managing Uncertainty. *Journal of Risk Management in Financial Institutions* 7 (2): 134–144. http://henrystewart.metapress.com/index/K617855277847572.pdf.

Ortmann, Andreas, Gerd Gigerenzer, Bernhard Borges, and Daniel G. Goldstein. 2008. The Recognition Heuristic: A Fast and Frugal Way to Investment Choice? In *Handbook of Experimental Economics Results*, vol. 1, 993–1003. Amsterdam, Netherlands: Elsevier B.V. https://doi.org/10.1016/S1574-0722(07)00107-2.

Pan, Carrie H., and Meir Statman. 2013. Investor Personality in Investor Questionnaires. *The Journal of Investment Consulting* 14 (1): 15–23. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2022339.

Peterson, Richard L. 2011. Neuroeconomics and Neurofinance. *Behavioral Finance: Investors, Corporations, and Markets*, 1: 73–93. https://doi.org/10.1002/9781118258415.ch5.

Pompian, Michael M. 2006. *Behavioral Finance and Wealth Management: How to Build Optimal Portfolios That Account for Investor Biases*. *Wiler Finance*. https://doi.org/10.1007/s11408-007-0065-3.

Ricciardi, Victor. 2008. The Psychology of Risk: The Behavioral Finance Perspective. In *The Handbook of Finance*, ed. J. Fabozzi, 85–111. Hoboken, NJ: John Wiley & Sons, Inc. https://doi.org/10.1111/j.1539-6924.2008.01185.x.

Rubaltelli, Enrico, Giacomo Pasini, Rino Rumiati, Robert A. Olsen, and Paul Slovic. 2010. The Influence of Affective Reactions on Investment Decisions. *Journal of Behavioral Finance* 11 (3): 168–176. https://doi.org/10.1080/15427560.2010.507409.

Santos, Laurie, and Alexandra Rosati. 2015. The Evolutionary Roots of Human Decision Making. *Annual Review of Psychology* 33 (4): 395–401. https://doi.org/10.1038/nbt.3121.ChIP-nexus.

Sharpe, William F. 1964. Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk. *The Journal of Finance* 19 (3): 425–442. https://doi.org/10.2307/2329297.

Slovic, Paul, Melissa L. Finucane, Ellen Peters, and Donald G. MacGregor. 2007. The Affect Heuristic. *European Journal of Operational Research* 177 (3): 1333–1352. https://doi.org/10.1016/j.ejor.2005.04.006.

Starmer, Chris, and Robert Sugden. 1993. Testing for Juxtaposition and Event-Splitting Effects. *Journal of Risk and Uncertainty* 6 (3): 235–254. https://doi.org/10.1007/BF01072613.

Statman, Meir, and Vincent Wood. 2004. Investment Temperament. *Journal of Investment Consulting* 7 (1): 55–66.

Taffler, Richard J., and David A. Tuckett. 2011. Emotional Finance: The Role of the Unconscious in Financial Decisions. *Behavioral Finance: Investors, Corporations, and Markets*, 95–112. https://doi.org/10.1002/9781118258415.ch6.

Tversky, Amos, and Daniel Kahneman. 1992. Advances in Prospect-Theory—Cumulative Representation of Uncertainty. *Journal of Risk and Uncertainty* 5 (4): 297–323. https://doi.org/10.1007/Bf00122574.

Part II

The Advisor

3

Financial Advisory: Basic Roles and Functions

Abstract This chapter looks at the different roles that advisors play in the client–advisor relationship. Looking at empirical data, the first section of this chapter shows that the main goal of financial advisory—improving financial returns—is not effectively pursued.

This chapter looks at the ancillary roles that advisors play, which include information transmission, financial education and biases management. The literature assessing the effectiveness of the different ancillary roles is reviewed. The evidence reviewed suggests that the premium that advisors bring to the relationship with their clients can be found in the support they provide at emotional level. Framing the client–advisor relationship as a fiduciary relationship based on trust allows reconciling the evidence reviewed.

Keywords Information transmission • Financial education • Biases management • Emotional support • Trust

C. Cruciani, *Investor Decision-Making and the Role of the Financial Advisor*,
https://doi.org/10.1007/978-3-319-68234-1_3

1 Introduction

According to the Oxford English Dictionary, the verb "advise" indicates "to give guidance or suggestions, or state one's opinion, to (a person, etc.) as to the best course of action; to counsel, make recommendations to; (also more generally) to give one's assessment of something to (a person), usually as a basis for making a decision" and is derived from Middle English, which borrowed it from the French word *avis*, meaning opinion. This suggests that the process of giving advice is not completely devoid of subjectivity.

Professional advice is a specific form of advice where subjectivity is shaped by experience or qualifications: expert advice is considered more objective than other types of advice because the professional is expected to be better informed than the person seeking advice.

This chapter starts the journey looking at the other end of the advisor–client relationship: the advisor. Part I of this book has addressed the complexities of the investor mind, showing that financial decision-making is fraught with heuristics that are specific to risky situations. Through the idea of ecological rationality—the idea that solutions are contingent on the features of the problem and do not apply universally—I showed how they should not be considered instances of irrationality. Nevertheless, they characterize investor behaviour and make recommendations of traditional financial models difficult to explain and implement.

Most professions are characterized by experts providing recommendations: lawyers provide legal advice; doctors recommend how to treat diseases and afflictions. All professions that rely on statistical measures of efficacy are characterized by a degree of risk, but some professions are more characterized by volatility in results than others. Financial markets, which bring together thousands of traders at once, are inherently more volatile in returns than the effects of a specific medicine, once approved for use, are.

More importantly, and in contrast to other professions, financial advisors deal with a service that individuals are very familiar with: money. The decision to buy or sell stocks in financial markets could technically be taken by any individual with sufficient funding (although the actual buying or selling would have to be performed by an authorized intermediary at least in some markets) and the same could be said for subscribing

any insurance or joining a saving plan. Thus, the reason to have a financial advisor is that he is able to provide something that the client alone does not have.

This chapter will focus precisely on understanding what are the competencies that financial advisors may bring to the table when interacting with clients and how effective each one has been assessed to be in empirical studies.

This chapter will not address directly how different forms of compensation affect the performance of advisors in the different roles they perform for clients. Addressing how different compensation schemes and how they interact with the features of the client–advisor relationship will be explored in Chap. 4. This choice need not necessarily be seen as a limitation of the current overview, as it will become clear that improving market performance is but one of the possible benefits that financial advisors provide.

2 The Financial Advice Industry

2.1 The Context

Financial advisory is a very large industry, characterized by different types of professionals framed in different normative and incentive frameworks. Despite these regulatory differences, which are likely to disappear as markets become increasingly interconnected, advisors share common purposes and goals and fulfil specific functions in the finance industry. The goal of this chapter is to identify which roles and functions advisors may perform and gauge their effectiveness in each one, using empirical evidence from the related literature.

Providing a precise assessment of the size of the financial advice industry is quite a complex task, due to the fact that the industry is very diversified and in continuous evolution. Nevertheless, governments and professional associations are interested in monitoring the evolution of the sector and different statistics are available.

According to the US Bureau of Labour Statistics (US BLS), the profession of personal financial advisors[1] is likely to undergo a very significant

growth in the period 2014–2024, with a projected growth rate equal to 30% compared to 10% projected growth rate for other finance professions and 7% for all professions. According to the European Federation of Financial Advisers and Financial Intermediaries (FECIF), the European financial advisers and intermediaries add up to about 500,000 private individuals from over 26,000 different legal entities (FECIF 2017).

The demand for financial advice has increased over the years and is likely to be affected by further changes as several regulatory changes are implemented. Several countries are transitioning from a state-driven welfare system to systems that rely more directly on direct contributions that make more important to increase the ability to save over time and devise financial plans over longer horizons. Moreover, studies show that the degree of stock market participation is positively correlated with growth (Guiso et al. 2004).

2.2 Roles and Functions of Financial Advisors: Improving Financial Performance

The existence and popularity of financial advisors indirectly imply that they are perceived as able to generate a net benefit in the finance industry. This section is focussed on understanding which are the roles and functions that advisors performs for the final investors, looking also at the empirical evidence on their effectiveness in the different activities that they perform.

Advisors provide guidance in financial investment decisions, in order to support individuals in making the right choices and fulfilling their financial expectations and goals. The basic role of an advisor is to improve the quality of the financial decisions taken; for example protecting capital and increasing returns. I will refer to this role as the overarching goal of financial advisory practice.

The effectiveness of financial advisors in pursuing this goal has been addressed in a series of studies in the financial literature, which measure in different ways the financial improvements are due to the impact of financial advisory. Some studies use as counterfactual—the performance that would have been achieved without the support of the financial

advisor—the performance of unmanaged similar assets (i.e. accounts or funds). Other studies explicitly compute a counterfactual performance.

Comparing advised and non-advised accounts held by investors with similar characteristics Hackethal and colleagues (2012) show that the former exhibit lower returns, both when the accounts are advised by banks and by independent financial advisors. The main sources of this lower performance can be traced to trading costs and commissions, with the latter also explaining the higher portfolio turnover of advised accounts.

Looking at the mutual fund industry over the 1996–2004 period and comparing directly managed and brokered funds, Bergstresser and colleagues find that the latter generate lower performances (looking at raw returns or at any other risk-adjusted performance measures) and charge higher fees compared to the former, even without considering the costs associated with the brokerage service and controlling for different fund characteristics (2009). This paper looks also at whether advisors provide better market-timing recommendations, but Sharpe's ratios and other market timing tests show no superior quality in the asset allocation of brokered funds. The authors suggest that there are only two possible explanations for the fact that brokered funds remain an important and very active sector despite the fact that financial advisors do not seem to provide any substantial performance improvement. The first one is that brokers are affected by a conflict of interest with their clients that drives them towards suggesting options that generate a benefit to them at the expense of clients, who fail to react. The other option is that advisors provide a set of intangible, non-monetary benefits linked to advice that are not captured by performance assessment.

Another paper explores further the issue of underperformance of brokered funds with respect to directly held ones, hypothesizing that the features of potential investors determine a significant market segmentation that explains this underperformance (Del Guercio et al. 2010). Some investors care for advisory services and are willing to trade off performance for such ancillary services, while other investors are much more focussed on performance. The first group of investors will self-select in brokered funds and the second one in directly managed funds. The features of the clientele determine the costs structure of funds even before fees are accounted for: directly managed funds are found to spend more

money on portfolio management; for example, more skilled managers and graduates from top universities are hired, but overall earn better returns. Brokered funds invest less in portfolio management, which explains the lower returns before fees, and have to compensate brokers for the financial advice they provide, which explains the higher fees compared to the directly managed funds.

While the studies analysed previously use an empirically determined counterfactual, using unmanaged accounts, Chalmers and Reuter look at university employees joining an optional retirement plan in Oregon, USA, and define a counterfactual portfolio looking at the investment choices of individuals when a brokered investment ceases to be available (2012). The choices after the advisory service is no longer available represent the counterfactual portfolio. The authors show that a large number of individuals who previously chose to be advised switch to a target-demand fund (TDF), and comparing the performances of the brokered fund and the TDF shows the former underperforming in terms of risk-adjusted returns and Sharpe ratios, having higher fees but similar risk levels compared to the target default. The authors conclude that constructing a suitable target default could be beneficial for investors. It must be pointed out that the investors included in this analysis may not be considered fully representative of the general investor, as they include only university employees; nevertheless, this is one of the few attempts to try to estimate a proper counterfactual and try to assess the value of advice.

This paper seems to suggest that making investors aware of the fact that what they achieved with an advisor could be achieved at a lower cost through a target default where no advisor is involved, might make them happily shift to this new option. Would this really be the case? Are investors really not aware of the financial underperformance of managed investment choices?

I believe that even the empirical evidence presented so far suggests that the answer to this question is no. It is difficult to properly assess the perceived value that investors attach to advice, but the fact that some categories of investors consistently seek advice suggests that there must be something advisors provide that goes beyond improved financial performance.

2.3 Additional Roles of Financial Advisory Practice

2.3.1 Rationale

The picture described by empirical analyses reviewed in the previous section suggests that, while fulfilling their mandate, advisors perform a series of roles, which provide additional benefits to investors. These additional benefits add up to the monetary ones deriving from portfolio returns, tilting the balance towards a positive evaluation, even in cases where commissions and other costs erode returns, or when before-fee performance is already below what could be gained through direct management.

The financial literature has not been silent on the potential additional roles that advisors play while pursuing their general mandate. This section will show that in some cases, the benefits produced by ancillary services are so significant that they end up playing a major role in determining a successful advisor–client relationship.

The additional roles that advisors play are heavily dependent on the features of the investor's mind. In a perfect world without frictions, where all individuals are fully rational, giving investment recommendations would depend simply on some key characteristics of the investors: wealth, risk preferences, and financial goals. Part I of the book has shown that investors are much more complex than what rational theories assume, they are characterized by multiple risk preferences, which also may change over time and suffer from cognitive and emotional weaknesses that play a major role in financial decision-making.

The literature identifies five roles for financial advisors (Collins 2012):

1. Information provision
2. Financial education
3. Addressing cognitive biases
4. Addressing emotional biases
5. Mediation in collective decision-making

Successful financial advisors must address the complexity of the investor's mind, and they must select the combination of additional roles to

perform according to the specific needs of the clientele. This must be done to ease the pursuit of the overarching goal of the advisor, but also to achieve ancillary benefits that cannot be measured in monetary terms.

Recall that the starting point for the discussion on ancillary roles is the empirical finding that the impact of financial advice does not produce superior financial performance, as assessed by empirical analysis. The remainder of this section follows a similar path and looks at empirical studies assessing the effectiveness of financial advisors in performing these ancillary goals.

2.3.2 Information Provision

One of the distinguishing traits of experts is possessing information that is not accessible to the layman. The ability to know and use better information is at the basis of the professional competence of a financial advisor.

This role focuses on the importance of appropriate information in decision-making, considering that lack of precise information can lead to making sub-optimal decisions. The role of information provider can ease both the information acquisition process and the information processing itself.

Looking at the information acquisition process, unfortunately, in many cases, the costs of acquiring the necessary information outweighs the benefit accruing from using it. Information can be time-consuming (search costs) or economically costly to retrieve (direct costs like subscription to specific data sets). For instance, Vissing-Jorgensen reports that limited stock market participation can be explained by a technical reason like information and transaction costs (2003).

Information can play a crucial role in fostering the goal of achieving high returns. Using public recommendations from a large data set of brokerage houses, Barber and colleagues show that exploiting consensus across publicly available information regarding stock evaluations is an investment strategy that yields abnormal gross returns of 4%, provided that portfolios are frequently rebalanced following updated recommendations (2001).

Information is necessary but costly; thus efficient gathering and diffusion of information should be performed by those for which these costs are lower. For clients, this financial information may be difficult or time-consuming to locate. However, these costs are diluted for advisors, who have more direct access to such information, and may also provide the information to more than one client, thereby exploiting the economies of scale of the information-collection process. In this sense, advisors may reduce the cost of information search (Collins et al. 2010a), providing the necessary information to make a correct financial decision or presenting the client with a subset of suitable alternatives to choose from instead of evaluating all possible investment decisions.

It must be added that the informational advantage that advisors may bring to the investors normally does not come without cost. Advisors receive different forms of compensation, which in some cases may reduce the net benefits from the information on the final returns from the investment.

Making financial decisions may be costly not just in terms of information acquisition, but also due to the costs of information processing. Even assuming that an individual is perfectly able to acquire the necessary information regarding the features and implications of financial instruments, it still takes time and cognitive effort to understand them properly and make a decision.

Financial advisors may help to reduce the cognitive effort involved in decision-making through advice provision. According to Engelmann and colleagues (2009), receiving advice from an acknowledged financial advisor plays an important effect at a neurological level, reducing the neurological activation of different regions of the brain normally needed to make a decision regarding a risky lottery. These authors show that, once an advisor's opinion is established as reliable, getting advice reduces the mental costs of making a decision and that advice itself significantly alters the way the lottery is perceived and assessed. Namely, the probability distribution function changes after advice is received, in the direction in which advice is provided. This effect proves two important features of advice provided by an expert: information processing and decision-making are made easier by the fact that advice is received, believed and followed.

As long as the content of the advice is not challenged, its effectiveness in reducing cognitive effort at neurobiological level is maximized.

We have seen how advisors can pursue their mandate by transferring costly information to investors, which is then used either as direct input in decision-making or indirectly, using advice to reduce the decision landscape and reach decisions in a cognitively more parsimonious way. Information provision and advice reduce the likelihood that the cognitive costs of information may discourage individuals from trading or plan financially or lead them to wrong financial decisions. It makes sense that the potential benefits of this investor–client relationship in terms of lower information acquisition and processing costs accrue to the segments of the population who lack more financial skills. In this sense, the financial advisor would act as financial educator, helping clients to translate their preferences into the correct decisions, when such considerations become more mathematically or cognitively demanding (Bluethgen et al. 2008).

2.3.3 Financial Education

A specific cognitive issue very much addressed by the financial literature is financial (il)literacy. Financial literacy refers to the ability of individuals to understand and use financial concepts correctly and is usually measured through simple questions that test practical knowledge of how basic economic concepts like inflation or interest compounding work. Empirical analyses have shown that only a third of a representative sample of US individuals aged 50 years old or above were able to answer correctly to three simple questions regarding interest compounding, inflation and basic risk diversification (Lusardi and Mitchell 2014).

Financial literacy is an important issue that significantly affects the decision to participate in financial markets: a large study of Dutch households (van Rooij et al. 2011) finds that a higher financial literacy significantly leads to higher stock market participation and that older and more educated individuals tend to be more financially literate. Financial literacy significantly explains the tendency to plan for retirement (Lusardi and Mitchell 2007) and is increased by having attended economics courses in high school or at the workplace, with the latter having a stronger impact.

Financial literacy has been investigated in many countries and across age groups showing consistent results regarding the relatively low level of the general population. A cross-country comparison has confirmed that financial literacy tends to be low despite differences in market development and pension systems, and across very different countries such as Germany, Italy, Sweden and Japan. Moreover, answering correctly one more financial literacy question leads to higher participation in retirement plans (Lusardi and Mitchell 2011).

Given the key impact of financial literacy on the decision to participate in financial markets and the role played by education, it seems clear that any policy aiming at increasing financial knowledge both in school and in the workplace could translate in an increased stock market participation, higher returns, and better financial planning. Since providing financial education can be extremely costly, the relationship between education and literacy has been subject of several studies to evaluate its effectiveness.

Overall, the financial literature is still relatively inconclusive regarding the effect of educational programs, due to the difficulties in precisely evaluating the changes in literacy caused by methodological and theoretical issues. Collins and colleagues (2010b) compare 41 studies evaluating educational and counselling programs and point at the potential effect of self-selection bias of participants in the study as one potential issue when evaluating the effectiveness of such programmes. In fact, it is not possible to rule out that more motivated individuals sign up for the programme, as many of the studies they consider lack a control group. Moreover, measures of effectiveness are often self-reported and evaluation assessment is done over a short period of time after the exposure to the programme, hampering the possibility of understanding whether educational programmes have long-lasting effect.

A more recent review (Miller et al. 2015) of studies assessing the impact of educational programmes confirms the difficulties in providing a definitive evaluation: comparing 188 different studies, the authors show that financial education has a positive impact on financial decision-making in certain areas (namely savings and record keeping) but not in others such as loan default, although these effects become minor when focusing only on those studies that perform randomized control trials

that correct for methodological biases. Both reviews are also inconclusive regarding the effect of diverse methodologies and programme formal characteristics, such as delivery mechanism (face-to-face or group), duration or location.

Another meta-study (Fernandes et al. 2014) finds almost negligible effects of financial education on financial behaviour, especially when looking at low-income population groups. The study also shows that financial education decays rapidly over time—just 20 months after the training, its effects disappear almost completely.

The relative prevalence of financial illiteracy and the likely ineffectiveness of educational programmes demonstrated in the studies above suggest another way to solve the problem: if illiteracy cannot be "cured" it may perhaps be avoided, substituting the (low) competencies of illiterate individuals with those of a professional financial advisor. In fact, the possibility that seeking professional advice may help individuals with low financial literacy make the correct financial decisions has also been explored in the financial literature.

Collins (2012) finds that financial advice seems to be a complement rather than a substitute for financial literacy, as wealthier and more educated individuals are more likely to take up advice on a large range of financial issues. This evidence seems to suggest that those who would profit more from receiving the assistance of a financial advisor are those who are least likely to seek it.

Calcagno and Monticone (2015) provide a further element to describe the complementarity between advice and financial knowledge, using a representative sample from a large Italian bank to show that advisors tend to provide high-quality advice only to the most knowledgeable individuals and thus only such clients seek their services. Along similar lines is the contribution of Debbich (2015), who uses a representative sample of French individuals to show that literacy and financial advice work as complements, with more sophisticated investors being the ones seeking advice.

The relationship between seeking advice and poor financial literacy may be complicated by the fact that some financial literacy may be needed to understand that one's competencies are not sufficient to make the right financial choices. This potential endogeneity of poor economic performance and financial literacy is addressed in a recent paper by Disney and

colleagues (2014), who use a novel data set derived from a sample of representative UK individuals seeking a specific form of advice—credit counselling. The authors find significant evidence that advice may play the role of literacy substitute, as for a given debt problem, literacy reduces the likelihood of seeking credit counselling. This evidence seems to suggest that this form of financial advice, which in the UK is mainly provided through the Internet and by telephone with no economic charge to the clients, may serve as a safety net for the least literate fringes of the population.

Overall, the empirical evidence proposed in the literature seems to provide support for the complementarity between financial advice and literacy, reducing the effectiveness of the role of financial educators for advisors.

2.3.4 Addressing Behavioural Biases

The first part of this book has highlighted that heuristic behaviour, not coherent with traditional visions of rationality, is very frequent among investors. Chapter 1 highlighted that some of these heuristics lead to biased financial behaviour, although Chap. 2 proposed that heuristics may outperform more cognitively demanding methodologies in other cases.

Financial advisors have been aware of the existence and extent of behavioural and emotional biases for a long time. John Haslem (2010) reports the results of a poll conducted in 2009 by Morningstar, which asked advisors about their knowledge and use of behavioural finance in their practice: 73% of the 1720 advisors polled report that they use behavioural finance in their practices and 44% believe that up to half of their clients are prone to biases that characterized so-called irrational behaviour.

Financial advisors may play an important role in recognizing and addressing heuristic behaviour in order to reduce the negative impact of potential biases.

Advisors seem to be less prone to some of the heuristics their clients fall prey to. For instance, Shapira and Venezia used a random sample of

independent and managed clients of one of the largest Israeli banks in 1994 to empirically test whether professional investors are less prone to the disposition effect (Shapira and Venezia 2001). The authors found that managed accounts are less subject to the effect compared to independent ones. The authors suggest that biases like the disposition effect can be attenuated by training and experience, but that they cannot be completely eliminated.

Feng and Seasholes (2005) confirm that experience reduces the disposition effect, attenuating it by 72% and that a combination of investor sophistication and experience is able to eliminate one component of the disposition effect (the propensity to realize losses) but merely reduces the propensity to realize gains. This research focuses only on individual investors and does not discuss the eventual role of an advisor, but confirms that biases are a virtually irresolvable feature of how individuals think and act.

Financial advisors are naturally better informed and this higher degree of knowledge seems to protect them from the biases that some heuristic behaviour causes.

There is limited empirical evidence on the possibility of reducing the impact of biases. John List studies real market behaviour in a series of field experiments, where individuals trade real goods (sports memorabilia or collectors pins) (List 2003). The goal of the paper is to understand whether market experience, measured by the frequency of the trading experience, is able to reduce the endowment effect. The paper shows that the endowment effect, very present in observed behaviour when pooling all subjects, becomes negligible when looking only at experienced traders.

Overall, the evidence presented seems to suggest that, through their acquired competence in trading and financial markets, financial advisors are better placed than clients to recognize and anticipate possible cognitive pitfalls in decision-making, due to the way in which the investor's mind is set. Nevertheless, another important type of heuristics seems much more difficult to eradicate: the emotional and psychological heuristic behaviour.

Chapter 2 looked at the impact of emotions on decision-making and showed that emotions affect it both directly and in interaction with cognitive processes. Differently from cognitive biases, emotions are difficult

to control, as they are largely unconscious, although they are systematic. The financial literature on the role of biases converges on the idea that emotional biases may not be eliminated, but that one role of the financial advisor is to help clients live with (sometimes despite) them.

In a very detailed review of both emotional and cognitive biases, Pompian (2006) and Pompian and Longo (2005) explicitly propose an action framework to guide advisors, suggesting they should "moderate or adapt to 'irrational' client preferences". He presents practical suggestions to address and incorporate investors' biases into an optimal portfolio, merging traditional finance with practical insights. Pompian's approach will be discussed more in detail in Chap. 5 as a practical example of behavioural portfolio theory, but its main element is a twofold strategy of biases management, being to "moderate" or "adapt". The goal of this approach is to offer advice for creating a portfolio that not only performs well in terms of financial results but also ensures the peace of mind of the client. In a sense, Pompian postulates that there is a trade-off between returns and emotional stress that financial advisors need to address.

According to Pompian, the choice between moderation and adaptation depends on two variables: the level of wealth of the client, and the nature of the biases he is prone to. Cognitive biases should be corrected (*moderated*) as much as possible, as Pompian considers them to be due to a faulty information collection or processing, and more easily correctable by a professional, well-informed advisor. Emotional biases are more difficult to correct and addressing them too directly may hamper the relationship with the clients. Pompian suggests adapting to such biases as much as possible. Looking at wealth, the most important concern for the advisor is to avoid biased behaviour that puts at risk the standard of living of the client. Wealthier clients risk much less in compromising their economic stability when investing, and a less stringent guidance should be applied to their goals and financial aspirations. On the contrary, some clients may be investing for retirement and need to be better protected against the possibility of losing their money. Naturally, according to clients' types and needs, a mixture of the two strategies can be employed.

Despite the existence of debiasing techniques and the empirical evidence that experience puts advisors in the right position to recognize and

control clients' biases, there is also evidence that the debiasing actually practised by financial advisors is not very effective.

Mullainathan and colleagues conducted an audit study to assess whether advice provided by professional financial advisors is able to debias clients effectively in order to steer clients towards "a low-cost, diversified, index-fund approach" (2012). The authors show that advisors tend to avoid such debiasing and instead tend to reinforce biases that generate more fees and commissions. In other words, advisors themselves are prone to a self-serving bias that prevents them effectively acting in their clients' best interests. Despite this empirical fact, the authors mention that the study focuses only on the material implications of advice quality, and that advisors may provide benefits that are not directly related to the content of advice, even if the provision of these additional benefits is not seen as an excuse for poor-quality advice in their view.

Another author that suggests that financial advisors may be able to address and effectively manage investors' biases is Statman (2002). Suggesting a metaphor that will be discussed further in a next section, he suggests that, just like a doctor, the advisor should listen to his patients/clients and make an explicit effort to address the stress emerging from the investment process. Cognitive, but especially emotional, biases can play a major role in shaping investors' decisions and advisors need to address them.

2.3.5 The Role of Mediator in Collective Decision-Making

The role that is probably less addressed in the literature is that of mediator in collective decision-making. Being successful in this role may lead to substantial monetary benefits, as the advisors serve as an impartial third party in litigation and may efficiently speed up the process of conflict resolution, especially if the parties involved experienced difficulties in making choices, finding a suitable solution for all, or even agreeing on a common objective. Advisors can negotiate the needs of the different parties, highlight the existence of unseen common goals, reconcile differences and represent an objective external party in the resolution of disagreements. The role advisors may play in this context has not yet been empirically assessed, but is worth mentioning because it exemplifies

clearly the accessory benefits that advisors may bring to decision-making. In fact, being a successful mediator requires more than simply being competent; competence acts as a prerequisite to be brought into the discussion and a precursor of the trust that parties must feel in order to accept potentially unpleasant suggestions. In this perspective, advisors may offer support in a difficult time or peace of mind in making complex but necessary decisions, while at the same time managing to make parties agree on a sound financial decision.

The mediator role exemplifies the multi-layered role that advisors may play and suggests that another important aspect of the advisor–client relationship we will go back to, and that is trust.

2.3.6 Some Concluding Remarks on Ancillary Roles

There is empirical evidence supporting the idea that advisors are equipped to transfer better information and assist clients in recognizing and avoiding the decision-making pitfalls due to some cognitive biases, although empirical studies show that advisors are not efficient in pursuing these activities. The literature review confirms that ancillary roles that advisors play do not seem to contribute to superior financial performance. Coupled with the relevance of emotions in decision-making, this suggests that the main ancillary role that financial advisors may play relates to managing clients' emotions and the stress related to the investment process.

3 A Fiduciary Relationship

So far, the overview of the roles of advisors has focussed on objectively observable activities: advisors do provide information, which can be used directly or indirectly to come up with better financial decision-making, and they interact with clients, addressing the doubts and biases they may have. The previous section showed that sometimes the way in which advisors interact with clients and the non-monetary benefits they provide may even be more important than the results of the financial performance

alone. Investors seem to decide whether to continue a relationship with advisors looking at a more general picture, where monetary returns are just one element.

Understanding the roles that financial advisors play and their relative effectiveness is crucial to understanding the nature of the advisor–client relationship. Being non-monetary, the ancillary benefits that advisors produce and that compensate for inferior financial performances are difficult to measure and very subjective. Thus, the question is how advisors engage clients and keep the relationship going over time.

A very crucial and important aspect of the relationship between financial advisors and clients may mediate advice perception and its effectiveness—trust.

The relevance of trust in situations characterized by financial risk has been established in the experimental lab (Berg et al. 1995; Johnson and Mislin 2011), but extends to several other studies grounded on empirical evidence from stock market analysis. In fact, the idea that trust is a precursor of involvement in risky activities is well established in the financial literature: Guiso and colleagues (2008) propose a framework to understand how trust shapes the decision to invest in the stock market. Using a representative sample of Dutch households, the authors show that reporting a higher level of generalized trust[2] leads to a significant 50% increase in the probability of participating in the stock market, and raises by 3.4% the share of wealth that individuals invest in stocks.

According to Ennew and Sekhon (2007) trust plays a "central role" in financial advisory practice due to the fact that the nature of most financial products entails risk, generates vulnerability and requires reliance on another individual—all conditions described as fundamentals in describing a framework to understand trust. The authors propose a Trust Index based on a sample of over 1500 individuals, where trust is measured not by a direct question, but averaging the answers to different trust-related questions. Moreover, the paper exploits a distinction found in the consumer marketing literature, which sees trust in the financial organization as divided in cognitive (based on the perceived reliability of the organization) and affective (based instead on the clients' perception of seeing their best interests at the centre of the organization's concerns). In the sample studied, cognitive trust is significantly larger than affective trust and

among the other constructs measured to describe the relationship between financial service providers and clients the ability of the provider receives higher scores than the perception of having shared goals.

Georgarakos and Inderst (2011) provide further evidence of the role of trust in financial markets, addressing directly the role of advisory. Using a representative sample of European households, they show that the level of trust in financial advice positively affects the likelihood of holding risky assets when individuals have low financial literacy.

Going back to evidence presented earlier, the role of trust and of the perceived accountability of financial advisors is a subtle prerequisite, with important implications also, when we consider the other roles discussed so far. In fact, Engelmann and colleagues were able to show that advice reduces the cognitive costs of decision-making when advice is not challenged and thus can be easily followed. This requires some degree of trust in the good intentions and competencies of the advice provider.

The idea that advisors should be trusted and that this is able to generate positive indirect effects that do not necessarily correlate with the content of the advice, at least not in the short term, is included in another branch of literature dealing with the idea that financial advisors can be considered "money doctors" (Gennaioli et al. 2015). This literature, which will be further discussed in Chap. 5, tries to push forward the understanding of the nature of the immaterial benefits provided by financial advisory practice. The remark that professional financial advisors should make the effort to incorporate in their practice the qualities that individuals look for in a physician—namely "listening, hand-holding and reassuring" is one of the key messages of Meir Statman's (2002) previously mentioned paper, where he suggests that advisors should address clients' biases and especially emotional stress.

The main message of the "money doctor" model is that the cost of having an advisor is more than compensated by the non-material benefits he provides. The cost of advice is linked to commissions: the more a client trades, the more commissions are generated. This leads advisors to suggest trading more often and more aggressively than would be done by the investors alone, given his level of risk aversion. The benefits of financial advisory services are the increased expected returns, due to more significant investments in riskier asset classes and increased stock market

participation, due to the fact that some clients would not trade at all without the advisor, given their level of risk aversion.

This framework suggests that it may be reasonable for advisors not to correct clients' biases in order to generate more trading, possibly in asset classes characterized by higher risk. This model is particularly interesting because it formalizes how trust between clients and advisors can be beneficial to both parties, providing an economic rationale for the continued existence of advisors' fees. In other words, the "money doctor" model attaches a precise value to trust and its implications: by reducing stress and anxiety, advisors do not simply provide an immaterial benefit that is difficult to quantify; they also push clients past their risk boundaries and eventually, this is beneficial even then from a monetary perspective.

The implications of this model can be checked empirically: in a recent working paper, Dorn and Weber (2017) identify in the collapse of trust in financial advisors as the main reason to exit the stock market. In fact, using an broad sample of clients of a large German bank, the empirical analysis shows that individuals who invested only in actively managed funds before the crisis are much more likely to sell all positions than individuals who invested independently in single stocks. This reduction in the participation rate after the trust shock due to the financial crisis is perfectly consistent with the "money doctor" model, which posited that trust was necessary for some risk-averse individuals to trade at all. Nevertheless, this empirical analysis shows that trust has a potential for backfiring: in times of crisis the delegated portfolios are the ones that seem to suffer most. Dorn and Weber argue that money doctors seem unable to perform their role as providers of peace of mind in times of crisis. This explains why delegated portfolios, for which trust is essential, suffer more than undelegated ones when advisors cease providing peace of mind. The authors mention further evidence in support of these findings regarding reduced delegation after the financial crisis of 2007–2008; both in a large-scale survey of German investors, and using the 2007–2009 US Survey of Consumer Finances, the number of delegated portfolios tends to decrease after the crisis, testifying of a trust crisis in the sector that leads individuals away from managed investment strategies.

Using trust as the framework in which the client–advisor relationship is framed allows for the reconciling of most of the empirical evidence on the effectiveness (or lack thereof) of the different roles of an advisor. The "money doctor" model provides a simple explanation for the fact that advised

portfolios seem to underperform; for some individuals, having an advisor is necessary to even start trading, and actively managed portfolios are able to incorporate a level of risk (and expected returns) that may be out of reach of the individual investor when acting alone. Moreover, advisors provide non-monetary benefits such as tranquillity and peace of mind that appease the investor, even if advisors are not able to completely "cure" the investor of cognitive or emotional biases or to teach them how to be rational investors. In a sense, thanks to the fiduciary relationship, advisors do not need to tackle these issues directly but may help the client to live with them. Nevertheless, trust needs to be carefully maintained. When advisors provide ancillary services such as emotional mangement and peace of mind this adds a further layer to the advisor-client relationship that needs to be carefully monitored.

4 Summary and Conclusions

The financial advice industry is a very diversified industry that includes many different professionals all over the world: this chapter has shown that in many countries it is one of the industries with the best economic outlooks and, despite being a sector that has been hit directly by the financial crisis, it is also the sector through which confidence in the financial system can be reconstructed. In many cases financial advisors are in direct contact with clients; they are the ones to whom clients address questions, doubts, and insecurities. Financial advisors do a lot more than simply advising on which financial products to buy. Investing is not like other purchases: clients try to fulfil their aspirations, goals, and dreams through their investment choices. In fact, besides the complex nature of the products traded in financial markets, which would try the cognitive abilities of many individuals, advisors have to deal with this further emotional layer generated by the investors' expectations.

The goal of this chapter has been to understand more in detail what advisors can do for their clients and how well they do it. The review looked at the different roles that advisors may play in the client–advisor relationship. Starting from the consideration that the ultimate goal of the advisor can be defined as improving the financial welfare of his clients, the roles that advisors may play and of their effectiveness have been reviewed. The evidence presented proved that some of the benefits that an advisor

produces are monetary and thus are easier to spot, but many others have a non-monetary nature and are much more difficult to assess precisely.

The first section of this chapter showed that the overarching goal of financial advisory services—improving financial returns—is not effectively pursued by looking at empirical data, which consistently display higher returns for unmanaged accounts compared to actively managed ones.

In order to understand from where financial advisory practice draws its appeal, this chapter looked more in detail at the ancillary roles that advisors may play, which include information transmission, financial education and biases management. If financial advisors are better placed to retrieve and transfer quality information regarding investments, their clientele are often not characterized by individuals who really need this type of help. Financially literate individuals seem to be the ones more attracted to financial advisory services, which compromises the potential of advisors as financial educators.

Starting from the idea that, being better trained and more exposed to trading, advisors are less vulnerable to at least some documented decision biases, the review also addressed how advisors may potentially deal with emotional and behavioural biases. Despite the difficulty of assessing the non-monetary returns of client's emotional management, the evidence reviewed suggests that the premium that advisors bring to the relationship with their clients can be found precisely in the support they provide at the emotional level. This conclusion allows for explaining why financial advisory practice is a profession with a particularly good market outlook, despite the relatively disappointing financial results compared to unmanaged portfolios.

Finally, looking at the client–advisor relationship as a fiduciary relationship based on trust has allowed for providing a comprehensive framework able to reconcile the different evidence reviewed. The main strength of financial advisory services is linked to non-monetary benefits, whose existence is rendered possible by the trust premium that financial advisors receive. It is because clients trust their advisors that they let them devise a strategy that they follow, just like a patient would follow a doctor's advice. Trust is motivated by the peace of mind that delegating a stressful decision entails, and repaid by the implications of the strategy implemented. Pursuing higher commissions, advisors tend to engage clients in

riskier investments, which have higher expected returns and belong to risk classes that would be unattainable by the clients alone.

The conclusion of this review is that financial advisors should take particular care in developing strong relationships based on trust with their clients. In a way, trust allows for resolving the debate on whether biases should be corrected or not. Trust favours delegation of decisions, which allows bypassing the potential negative effects of some cognitive heuristic behaviour that clients may be prone to. A trusted advisor need not explain to clients what biases are and how to avoid them, and need not engage in costly and probably ineffective educational strategies. Emotional biases, which are more difficult to address but have more pervasive effects on behaviour, are not an unsolvable puzzle for the advisor but become their key concerns. Trust between clients and advisors make the trade-off between financial returns and peace of mind possible when investing in risky markets.

Notes

1. The US BLS provides this definition for a financial advisor: "Personal financial advisors provide advice on investments, insurance, mortgages, college savings, estate planning, taxes, and retirement to help individuals manage their finances." Source US BLS website accessed on March 6, 2017, https://www.bls.gov/ooh/business-and-financial/personal-financial-advisors.htm.
2. Generalized trust is measured in the World Value Survey (http://www.worldvaluessurvey.org/wvs.jsp) by asking the following question: "Generally speaking, would you say that most people can be trusted or that you have to be very careful in dealing with people?"

References

Barber, Brad, Reuven Lehavy, Maureen McNichols, and Brett Trueman. 2001. Can Investors Profit from the Prophets? Security Analyst Recommendations and Stock Returns. *Journal of Finance* 56 (2): 531–563. https://doi.org/10.1111/0022-1082.00336.

Berg, Joyce, John Dickhaut, and Kevin McCabe. 1995. Trust Reciprocity and Social History. *Games and Economic Behavior* 10: 122–142. https://doi.org/10.1006/game.1995.1027.

Bergstresser, Daniel, John M.R. Chalmers, and Peter Tufano. 2009. Assessing the Costs and Benefits of Brokers in the Mutual Fund Industry. *Review of Financial Studies* 22 (10): 4129–4156. https://doi.org/10.1093/rfs/hhp022.

Bluethgen, Ralph, Andreas Gintschel, Andreas Hackethal, and Armin Müller. 2008. Financial Advice and Individual Investors' Portfolios. *European Business School Working Paper*. https://doi.org/10.2139/ssrn.968197.

Calcagno, Riccardo, and Chiara Monticone. 2015. Financial Literacy and the Demand for Financial Advice. *Journal of Banking and Finance* 50: 363–380. https://doi.org/10.1016/j.jbankfin.2014.03.013.

Collins, J., 2010a. *A Review of Financial Advice Models and the Take-Up of Financial Advice*. Working Paper 10–5. University of Wisconsin-Madison.

Collins, J. Michael, Collin M. O'Rourke, and Collin M. O'Rourke. 2010b. Financial Education and Counseling—Still Holding Promise. *The Journal of Consumer Affairs* 44 (3): 483–498. https://doi.org/10.1111/j.1745-6606.2010.01179.x.

Collins, J. Michael. 2012. Financial Advice: A Substitute for Financial Literacy? *Financial Services Review* 21: 307–322. https://doi.org/10.2139/ssrn.2046227.

Chalmers, J., and J. Reuters. 2012, June. *Is Conflicted Investment Advice Better Than No Advice*. NBER Working Paper No. 18158.

Debbich, Majdi. 2015. *Why Financial Advice Cannot Substitute for Financial Literacy?* Direction Générale Des Études Et Des Relations Internationales. Banque de France Working Paper No. 534. http://ssrn.com/abstract=2552515.

Del Guercio, Diane, Paula A. Tkac, John Campbell, Joseph Chen, Larry Dann, Roger Edelen, Richard Evans, et al. 2010. *Broker Incentives and Mutual Fund Market Segmentation*. Nber Working Paper Series.

Disney, Richard, John Gathergood, and Jörg Weber. 2014. *Credit Counseling: A Substitute for Consumer Financial Literacy?* IFS Working Paper W(14/32). https://doi.org/10.1920/wp.ifs.2014.1432.

Dorn, D., and M. Weber. 2017, February. *Losing Trust in Money Doctors*. CEPR Discussion Paper 11859.

Engelmann, Jan B., C. Monica Capra, Charles Noussair, and Gregory S. Berns. 2009. Expert Financial Advice Neurobiologically 'Offloads' Financial Decision-Making Under Risk. *PLoS One* 4 (3): e4957. https://doi.org/10.1371/journal.pone.0004957.

Ennew, Christine, and Harjit Sekhon. 2007. Measuring Trust in Financial Services: The Trust Index. *Consumer Policy Review* 17 (2): 62. http://cam.

summon.serialssolutions.com/link/0/eLvHCXMwY2BQMDRJTUkzMDGxNEoG1l7AzGRikgyMi6RkS2APNy0RfIOCm6lPqGWkr6kfUmnJsog5-Ya4uyhCysV41NycuINQRfigi5JNjQUY-BNBC38zisBbxBLAQA-7ORrz.

FECIF. 2017. http://www.fecif.eu/html/about_fecif.html.

Feng, L.E.I., and Mark S. Seasholes. 2005. Do Investor Sophistication and Trading Experience Eliminate Behavioral Biases in Financial Markets? *Review of Finance* 9, 305–351.

Fernandes, D., J.G. Lynch Jr., and R.G. Netemeyer. 2014. Financial Literacy, Financial Education, and Downstream Financial Behaviors. *Management Science* 60 (8): 1861–1883. https://doi.org/10.1287/mnsc.2013.1849.

Gennaioli, Nicola, Andrei Shleifer, and Rw Vishny. 2015. Money Doctors. *The Journal of Finance* LXX: 1–40. https://doi.org/10.1111/jofi.12188.

Georgarakos D., and R. Inderst. 2011, February. *Financial Advice and Stock Market Participation*. European Central Bank Working Paper Series No.1296.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2004. The Role of Social Capital in Financial Development. *American Economic Review* 94 (3): 526–556. https://doi.org/10.1257/0002828041464498.

———. 2008. Trusting the Stock Market. *The Journal of Finance* 63 (602): 2557–2600.

Hackethal, Andreas, Michael Haliassos, and Tullio Jappelli. 2012. Financial Advisors: A Case of Babysitters? *Journal of Banking and Finance* 36 (2): 509–524. https://doi.org/10.1016/j.jbankfin.2011.08.008.

Haslem, John A. 2010. The New Reality of Financial Advisors and Investors. *The Journal of Investing* 157 (5): 23–30.

Johnson, Noel D., and Alexandra A. Mislin. 2011. Trust Games: A Meta-Analysis. *Journal of Economic Psychology* 32 (5): 865–889. https://doi.org/10.1016/j.joep.2011.05.007.

List, John A. 2003. Does Market Experience Eliminate Market Anomalies? *The Quarterly Journal of Economics* 118 (1): 41–71.

Lusardi, Annamaria, and Olivia S. Mitchell. 2007. Financial Literacy and Retirement Planning: New Evidence from the Rand American Life Panel. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1095869.

———. 2011. Financial Literacy Around the World: An Overview. *Journal of Pension Economics and Finance* 10 (4): 497–508. https://doi.org/10.1017/S1474747211000448.

———. 2014. The Economic Importance of Financial Literacy: Theory and Evidence. *Journal of Economic Literature* 52 (1): 5–44. https://doi.org/10.1257/jel.52.1.5.

Miller, M., J. Reichelstein, C. Salas, and B. Zia. 2015. Can You Help Someone Become Financially Capable? A Meta-Analysis of the Literature. *The World Bank Research Observer*, No. 2013: 1–27. https://doi.org/10.1093/wbro/lkv009.

Mullainathan, Sendhil, Markus Noeth, and Antoinette Schoar. 2012. *The Market for Financial Advice: An Audit Study*. NBER Working Paper Series, 1–32. http://www.nber.org/papers/w17929.

Pompian, Michael M. 2006. *Behavioral Finance and Wealth Management: How to Build Optimal Portfolios That Account for Investor Biases*. *Wiler Finance*. https://doi.org/10.1007/s11408-007-0065-3.

Pompian, Michael M., and John M. Longo. 2005. Incorporating Behavioral Finance into Your Practice. *Journal of Financial Planning* 18 (3): 58–63. http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=16401771&site=ehost-live.

Shapira, Zur, and Itzhak Venezia. 2001. Patterns of Behavior of Professionally Managed and Independent Investors. *Journal of Banking and Finance* 25 (8): 1573–1587. https://doi.org/10.1016/S0378-4266(00)00139-4.

Statman, Meir. 2002. Financial Physicians. AIMR Conference Proceedings, 5–11.

van Rooij, Maarten, Annamaria Lusardi, and Rob Alessie. 2011. Financial Literacy and Stock Market Participation. *Journal of Financial Economics* 101 (2): 449–472. https://doi.org/10.1016/j.jfineco.2011.03.006.

Vissing-Jorgensen, Annette. 2003. Perspectives on Behavioral Finance: Does "Irrationality" Disappear with Wealth? Evidence from Expectations and Actions. *SSRN Electronic Journal*, 18. https://doi.org/10.2139/ssrn.417421.

4

Financial Advisory: Normative Developments and Incentives

Abstract This chapter explicitly addresses the role of compensation structures in financial advisory practices in order to understand how the current and planned normative requirements interact with the features of the fiduciary relationship between clients and advisors.

A first section described the evolution of the profession of financial advisors in the US and in the EU, with a particular focus on the European regulation (MiFID I and II).

Using the lens of behavioural theories and the European example as a case in point, this chapter shows some preliminary evidence regarding potential unintended consequences of regulation aimed at improving consumer protection and transparency that may hamper the effectiveness of the new norms, advocating the need to further study the potential behavioural implications of such normative changes.

Keywords Compensation structure • Conflict of interest • Normative requirements • MiFID I • MiFID II

C. Cruciani, *Investor Decision-Making and the Role of the Financial Advisor*,
https://doi.org/10.1007/978-3-319-68234-1_4

1 Introduction

The financial advisor industry is a well-developed industry that offers services used by thousands of individuals worldwide. Even if not all individuals that participate in the stock market look for professional advice, those who do represent an important and growing share: in Italy, a recent report shows that almost 40% of active investors use the services of professional advisors (seeking advice or even delegating decisions); however, another 38% look for so-called informal advice, asking for help friends or colleagues (CONSOB 2016).

Chapter 3 helped highlight the different roles advisors can play in the client–advisor relationship and has reviewed the empirical and theoretical literature regarding their effectiveness. The main conclusion from that chapter is that improving the financial welfare of their clients is only one of the objectives of financial advisors. The main strength of professional advisory practice seems to be its ability to offer ancillary services with no direct monetary benefits, such as emotional support and peace of mind. The review also showed that the nature of the fiduciary relationship is crucial to ensure that it is possible for the advisor to offer these ancillary services: the existence of trust between advisors and clients is of paramount importance.

The discussion in Chap. 3 briefly covered the incentive structure that advisors face when providing their services. Professional financial advisors provide advice in exchange for different forms of compensation and this chapter will show that the compensation structure is not neutral to the type of advice provided.

Clients may pay for financial advice services in many ways: they can do so directly, but it is currently much more common for clients to pay advisors indirectly through commissions (also called retrocessions) that advisors receive from third parties (product providers, banks, etc.) upon the sale of specific products.

The financial literature has of course not been silent on this point, as the incentive structure may give rise to a conflict of interest between what improves advisors' and clients' wealth. A conflict of interest arises when

the assets that would be more suitable to a client's needs are not those that pay higher commissions: the advisor could potentially steer the client towards any asset, exploiting his position to further his own monetary interests.

The present chapter will fully address this aspect, looking at seminal contributions from the literature and at the recent experimental literature in order to understand how people react to different incentive structures. The experience of the recent financial crisis has brought about a trust crisis (Guiso 2010) that has further increased the preoccupation regarding the potential exploitation of the weaker part of the advisor–client relationship, shifting the focus of the regulator even more towards addressing the potential conflict of interest.

Formal regulation affects and shapes the incentive structure that advisors face. This chapter will focus explicitly on the normative components of the profession of the financial advisor, looking at the examples of the United States and the European Union. In particular, this chapter will review the important developments in the European framework, where a new EU Directive will enter into force in January 2018 and look at how national governments are paying more attention to how financial services are used.

Assessing the importance of the normative frameworks advisors face today requires looking back in time and focusing on the historical evolution of the profession, in order to understand the reasons behind the current regulatory structure and the need for change and harmonization that some countries are experiencing. This is why the chapter starts out with a historical review of how financial advisors established their credibility as a profession. After reviewing the current state of the art concerning the regulation and the normative requirements advisors face, this chapter will address explicitly how economic and financial literature suggests addressing potential conflicts of interests in a fiduciary relationship. The discussion will conclude by bringing together literature and the normative framework to discuss the possible implications of the changes introduced after the financial crisis.

2 The Financial Advisory Industry: A Historical Overview

2.1 Rationale

This chapter will focus on providing a historical overview of how the financial advisory industry has defined itself since its beginning, looking at the positive actions put forward by two distinct actors: professional associations and governments. The historical review will clarify how each actor has shaped the profession as it is today and how they are addressing key issues like investors' protection and transparency.

National governments and international political institutions are ultimately responsible for creating the legal framework in which advisors operate and providing general rules for financial markets, and have been involved since the beginning in the definition of the scopes and purposes of the profession of the financial advisor. Their actions are driven by general welfare concerns that include addressing the needs of all parties involved—advisors, financial institutions, and clients.

Professional associations have been more engaged in the definition of rules and codes of conduct to establish financial advisory practice as a profession distinct from other forms of salesmanship. In fact, at the onset of the profession, the boundary between a financial advisor and a salesman was rather blurred. Overcoming this confusion has been the first step in a series of positive actions by professional associations, which have also helped shape the new boundaries of the profession at the normative level, through the interaction with national and international governments.

The following paragraphs provide a synthetic overview of the historical developments of the profession in two key players in the international arena: the United States and the European Union.

2.2 The American Context

2.2.1 Building the Profession

Looking at the American context, a fairly recent book (Brandon and Welch 2009) provides a detailed analysis of the historical evolution of the

profession in the United States, going back to the 1920s when the introduction of mutual funds started popularizing stock markets and increasing participation in this new form of trading. Following the stock market crash in 1929, the US government introduced legislation in order to protect investors: in 1933 the Securities Act was introduced, closely followed by the 1934 Securities Exchange Act and the Investment Adviser Act of 1940. Despite this normative effort, for the following thirty years investing continued to mean hedging against risk through different forms of insurance policies, with financial professionals broadly seen as mere salesmen.

Advisors were largely paid on commissions from sales—thus, they were thought as primarily interested in making sales. Establishing financial advice as a profession beyond this perception was one of the motivating reasons for the financial planning movement to start at the end of the 1960s and has remained a core issue throughout the history of financial planning.

The birthday of financial advisory practice as a profession can be dated to 1969, when two former salesmen, Loren Dunton and James Johnson created the Society for Financial Consulting Ethics, later called the Society for Financial Counselling. The main goal of this society was to turn financial advisory practice into a real profession, providing formal tools and proper formal education to financial advisors, in order to support them in the practice of the profession. One of the more long-lasting results of the Society was the establishment of a College of Financial Planning offering a formal certification (the Certified Financial Planner certification) for financial advisors, grounded on a comprehensive vision of the investment advice industry that spans from fundamentals and money management to a better understanding of consumer behaviour. The first class of graduates of the College founded the Institute of Certified Financial Planners (ICFP) in 1973, which became the main institution promoting the professionalization of financial advisors and issuing certifications. Since the 1980s several attempts at merging the two more important financial planners associations of the time—ICPF and the International Association of Financial Planners (IAFP)—were made, but the merger eventually succeeded only in 2000, when the Financial Planning Association was officially born.

The role of professional associations of financial advisors can be summarized by two broad goals: to "professionalize" the industry and to define it as a qualified interested party in the definition of financial markets and industry regulation—in other words, lobbying.

To pursue the first goal, national and international professional associations have taken centre stage in providing a formal structure and diffusing accepted practices to push financial advisory practice forward in the search for acceptance as a profession distinct from salesmanship. The effort of such associations has been to improve the profession by formalizing a specific education process, a proper certification and standards of conduct able to clarify the perception that clients have of the industry. For instance, since its first version, the certification process has evolved, and now includes a focus on understanding clients' goals and ambitions and it will certainly continue to evolve and adapt to the new evolutions of the financial markets.

The second goal is naturally related to the first one, as a formal and well-regulated structure is necessary to be considered a qualified party in the discussion about financial markets regulation. Almost 20 years after the first professional association of financial advisors had been created, the ICFP was invited to testify at an official Senate hearing, marking the fact that professional advisors had successfully managed to create a professional industry.

2.2.2 Current Challenges

Currently, in the United States, the financial advisory industry comprises two different professional figures: investment advisers and broker-dealers (Burke and Hung 2015).

Investment advisers are defined as "a person or firm that is engaged in the business of providing investment advice to others or issuing reports or analyses regarding securities, for compensation" (U.S. Securities and Exchange Commission 2013) and must be registered with the U.S. Security and Exchange Commission or with a State Securities Authority. Investment Advisers are regulated through the Investment Advisers Act of 1940 and following modifications and through state statutes.

Broker and dealers are defined under the Securities and Exchange Act of 1934: a broker is "any person engaged in the business of effecting transactions in securities for the account of others", while a dealer is "any person engaged in the business of buying and selling securities for his own account, through a broker or otherwise". Broker-dealers must also be registered with the U.S. Securities and Exchange Commission and are subject to the oversight of the Financial Industry Regulatory Authority (FINRA), a non-profit organization "authorized by Congress to protect America's investors by making sure the broker-dealer industry operates fairly and honestly" (FINRA website). Broker-dealers are exempt from the provision of the Investment Advisers Act and subsequent modifications if the advice provided is "solely incidental"—meaning that it is related to the brokerage services provided—and when the broker receives only commission and not other forms of "special compensation".

Summarizing, one important difference between these two categories of advisors is the remuneration they receive: investment advisers tend to charge a general, non-transaction-based fee, while broker-dealers tend to charge transaction-specific fees such as commission, mark-ups or markdowns.

Another important difference between investment advisers and broker-dealers concerns the fiduciary status of the professional: an investment adviser is a "fiduciary whose duty is to serve the best interests of its clients, including an obligation not to subordinate clients' interests to its own" (U.S. Securities and Exchange Commission 2013), while a broker-dealer can be considered a fiduciary only in specific circumstances but is subject to a suitability obligation, which implies that he must make recommendations that are coherent with the needs and features of the specific client. The suitability obligation is described in FINRA rule 2111 that lists the information necessary to evaluate the client's investment profile; namely, it "includes but is not limited to, the customer's age, other investments, financial situation and needs, tax status, investment objectives, investment experience, investment time horizon, liquidity needs [and] risk tolerance" (FINRA website[1]).

In 2010, in the aftermath of the financial crisis, the US Congress passed an important new legislation, the Dodd–Frank Wall Street Reform and Consumer Protection Act, introducing important changes to the regulatory landscape of financial markets. In over 2300 pages, the reform

introduces new government agencies in charge of overseeing specific provisions of the act. For what concerns the financial advice industry, the act requires the Securities and Exchange Commission (SEC) to conduct a study and evaluate the effectiveness of the current regulation regarding the financial advisory industry, identifying existing gaps or shortcomings. Moreover, the act provides the SEC with the authority (although not with the obligation) to introduce a uniform fiduciary standard for both investment advisers and broker-dealers. The study produced by the SEC following the Dodd–Frank Act's requirement (U.S. Securities and Exchange Commission 2011) picks up on this task and suggests a pathway for its implementation. This includes addressing important issues that have become omnipresent in the post-financial crisis scenarios worldwide, such as the need to "eliminate or disclose the conflict of interest", understand which disclosure might be more effective between advisors and clients, and look at investor education as a complement to the fiduciary standard.

2.3 The European Context

2.3.1 Creating a Common Financial Market

The European Union is another key player in the international financial arena.

The European Union is a radically different political entity than the United States, as the member states are different sovereign political entities that have agreed to adopt harmonized legislation across many different policy areas. Currently, only fiscal and welfare policies are largely in the hands of the different member states and all other policies are discussed, agreed and implemented at EU level. Naturally, this harmonization process has taken some time to develop and is still in progress in many areas.

The first landmark date for the harmonization process of financial services in the European market for the then-called European Economic Community dates back to May 1993, when the Investment Service Directive (European Parliament and Council of the European Union 1993) was introduced. The Directive regulates all investment firms deal-

ing with the securities markets and seeks to suggest common criteria for granting the authorization to operate across the different member states and guidelines for the definition of the prudential rules that each of the member states must ensure all authorized firms respect in their activity. Financial advice is defined by this Directive as a "non-core" service and listed in Annex C. Following Article 3(1), firms that only provide financial advice may not receive authorization to operate, which left the need to provide any formal harmonized rules for such activity momentarily unanswered.

The gap in the regulatory framework regarding financial services allowed different standards and frameworks to develop in different member states, creating a group of professionals with heterogeneous licensing requirements and compensation schemes (Burke and Hung 2015).

Despite the lack of focus on financial advice, the momentum for the construction of a proper common European financial market built over time: building upon the Commission Communication "Financial services: building a framework for action" (Commission of the European Communities 1998) published in 1998, the European Community inaugurated the Financial Services Action Plan (Commission of the European Communities 1999) with specific goals to improve the harmonization process, in order to make national markets more integrated, remove barriers and create a flexible and faster regulatory framework. The need to make the system more adaptive to the rapid changes in financial markets was also spurred by the start of the first phase in the introduction of the euro, the new European currency, which started in 1999 at bank level once all accounts were technically in the new currency, while allowing withdrawals in the national currencies until the effective entry into force of the euro in January 2002.

Overall the Financial Services Action Plan lists three strategic objectives (A single EU wholesale market, open and secure retail markets, state-of-the-art prudential rules and supervision) and a general objective (wider conditions for an optimal single financial market), further spelled out in a total of 42 different actions. For what concerns wholesale services, among the key areas of interest for the Action Plan, the Commission highlighted the need to upgrade the Investment Services Directive in order to ensure "effective cross-border provision of investment services"

and harmonize the protection requirements for the treatment of sophisticated and household investors. Moreover, specific attention was devoted to overcoming the barriers in terms of different national legislation and working for the adoption of common international standards for reporting (namely the International Accounting Standards) as a necessary basis to ease raising capital across the Union. Looking at retail services, the Action Plan highlighted the need for information transmission and transparency as a means of ensuring consumer protection, efficient redress procedures in case of disputes and the development of a cheaper and efficient cross-border system of payments.

The Action Plan implementation has been monitored over time and progress reported in ten Progress Reports, the last of which showed that 41 out of the 42 actions had been implemented by the end of 2005 (Commission of the European Communities 2006b).

The process of harmonization, regulation and monitoring of the single financial services market in the European Union is an ever-growing process that continues to this date and seeks to account for the continued progress in the sector, including the diffusion of new tools and practices. For instance, the White Paper on Financial Services Policy 2005–2010 (European Commission 2005) define five-year objectives broadly in line with the need to continue working for an effective regulatory framework able to address the new emerging challenges of financial markets.

2.3.2 Formal Regulation of the Financial Advice Industry: The MiFID Directive

The explicit regulation of financial advice services in the European Union had to wait until April 2004, when the Markets in financial instruments (MiFID) and investment services Directive (European Parliament and Council 2004) was published. The Directive fulfilled the need for harmonization of the requirements for authorized intermediaries operating across the Union, but it was clearly aimed at achieving two other related goals: creating an efficient, integrated and fair financial market in the European Union; and protecting investors operating in an increasingly larger and interconnected financial market.

MiFID required that each member state set up a system for the authorization of investment firms to operate, improving on previous legislation. Technical standards for the authorization were developed in a harmonized way across the EU, which implies that no matter in which European Union country a firm is authorized, it can benefit from a "passport system" and operate across all member states, creating a proper unified legal framework.

The Directive applied since April 2004, but the member states had until January 31, 2007, to translate it into national laws. Each member state was in charge of identifying a national competent authority responsible for carrying out the duties provided for in the Directive and report to the European Security and Markets Authority (ESMA), identified as the central authority responsible for setting up technical standards. ESMA's key role is to elaborate and issue technical standards and Guidelines addressed both to competent authorities and to market participants; guidelines are developed after a period of public consultation and serve as the basis to translate into national laws the Commission Directives, while technical standards, once prepared after a period of public consultation, are sent back to the Commission and receive its endorsement. ESMA provides and updates a list of National Competent Authorities (European Securities and Markets Authority 2016).

The Directive represents a landmark document for financial advisory, as it formally includes financial advice under the investment services that require authorization, recognizing "the increasing dependence of investors on personal recommendations" (consideration 3, page 1). The Directive also provides a precise definition of investment advice, which includes personal recommendations coming from a request of the client but also directly from an investment firm (Article 4, subparagraph 4).

MiFID addresses the issue of consumer protection shifting the responsibility to evaluate the appropriateness of an investment to the financial intermediary. Section 2, focusing on "provisions to ensure investor protection", notably includes the requirement for firms providing financial advice to ascertain the clients' "knowledge and experience in the investment field, (…), financial situation and financial objectives" (Article 19, subparagraph 4). Article 19 of the Directive explicitly calls for acting "with the clients' best interests in mind", providing timely, accurate and

comprehensible information and keeping a record of the documentation exchanged between the investment firm and investor. The Directive only sets general principles regarding the details of the implementation of this suitability assessment, with the goal that investors should be offered appropriate and suitable investment opportunities and should receive appropriate information. More specific details regarding the implementation of these general goals can be found in the MiFID Implementing Directive, also called the Level-2 Directive (Commission of the European Communities 2006a), which provides further implementation details.

In general, MiFID introduces new layers of differentiation both on the supply and the demand side. On the supply side, the banking and securities sector is completely affected by the provisions of the Directive, while the Directive is not explicit about the insurance sector, leaving member states in charge of designing an appropriate regime compliant with the general provisions of the Directive on Insurance Mediation.

On the demand side, MiFID introduces a distinction between professional (defined in the 2004 Directive in Annex II) and retail clients, requiring for the first ones a more stringent discipline in terms of information requirements and investors' protection. The Level-2 Directive clearly sets out the informational requirements that must be fulfilled before a client is bound by any agreement, mentioning explicitly that the retail or professional nature must be kept into account for instance when describing the nature and risk of financial instruments (Article 31).

A further layer of differentiation lies on the type of financial services provided; in fact, the information requirements provided for in the Directive are different for the investment firm dealing in services like portfolio management and financial advice, or in other financial services. In the former case, Article 19, subparagraph 4 of the Level-1 Directive and the implementation details included in Article 35 of the Level-2 Directive provide that a "suitability" questionnaire must be filled out before the client is engaged in any operation. Such questionnaire includes information regarding the client's financial situation (source and extent of regular income, liquid and illiquid assets and regular financial commitments) investment objectives (including time preferences and risk

profile), the client's financial capability to bear the investment[2] and assessment regarding the level of knowledge and experience the client has. The inability to collect the information described in Article 35 of the Level-2 Directive prevents the investment firm from providing the investment service of portfolio management or investment advice.

Article 19 subparagraphs 5 deals instead with investment firms that dispense investment services other than portfolio management and financial advice and lists informational requirements further set out in the Level-2 Directive at Article 36 and included in an "appropriateness" questionnaire. This questionnaire only includes one general provision: it must be assessed that the client has sufficient knowledge and experience "in the investment field relevant to the specific type of product or service offered or demanded" in order to determine the appropriateness of the investment product to the client. In contrast to the suitability questionnaire, if a firm is not able to gather the information required for the appropriateness questionnaire, the service may still be provided, although the investment firm must warn the client that a proper appropriateness assessment has not taken place.

It is important to mention that the MiFID Directive also includes "optional exemptions rules" (Title I, Article 3) that allow the member states to opt some firms out of the Directive, regulating their activities only through national law. Member states are allowed to avoid applying the Directive to "any persons (…) that are not allowed to hold clients' funds or securities" (Article 3(1)). The so-called non-MiFID firms whose home member state has opted for this exemption may not then take advantage of the provisions included in Articles 31 and 32 of the Directive that guarantees that one firm receiving authorization from one member state can also operate in others without needing to acquire further authorizations.

Several countries have opted for this exemption, but national laws are in general crafted starting from the provisions devised at Union level, which makes national laws informally but substantially harmonized, with important exemptions, such as the remuneration schemes.

2.3.3 MiFID II: Redefining Financial Advisory Practice

The last formal step in the evolution of the normative framework affecting financial advisory in Europe is the introduction of the Directive on Markets in Financial Instruments published in May 2014 (European Parliament and Council of the European Union 2014a), also known as the MiFID II Directive, and of the Markets in Financial Instruments Regulation (European Parliament and Council of the European Union 2014b) also known as MiFIR. The Directive and the Regulation amend previous legislation and form the new regulatory framework for European financial markets.

MiFID II improves on previous legislation in several respects. Although its key objectives remain to improve and harmonize the functioning of financial markets to ensure transparency and to improve investors' protection, it addresses the landscape created after the financial crisis and the natural evolution of markets and instruments and tries to close loopholes and provide a more thorough and comprehensive framework.

MiFID II also looks at organizational aspects of market regulation, redefining standards for trading venues and describing the organization and conduct of business requirements for investment firms. MiFIR focuses more on trade transparency data and on derivatives trading and the supervisory rules, with the stated goal to "establish uniform rules applicable in all Member States" (Premise 3, MiFIR).

This chapter will focus on the modifications that mainly affect the financial advisory industry, although some of the most important points regarding other aspects of financial markets regulation might be included to provide context if needed.

The implementation timeline of the MiFID II/MiFIR package is still in progress: in the original text of the MiFID II Directive, member states had to translate the Directive and the Regulation into national law by January 2017, but in February 2016 the European Commission shifted the application deadline to January 3, 2018. Member States have to transpose into national law the provisions of MiFID II by July 3, 2017 (originally the deadline was set to July 3, 2016). The European Commission monitors the transposition process through its website[3]; at

the time of writing only Belgium, Denmark, Germany, France, Cyprus, Hungary, Spain, Austria, Portugal, Slovakia, Sweden, and the United Kingdom had already complied with the transposition process.

MiFID II and MiFIR represent the first level of the legislative revision of financial markets regulation in the European Union. As for the 2004 MiFID Directive, based on ESMA implementing and regulatory technical standards, the Commission also issued Delegated Acts and Implementing and Delegated regulations that represent the second level in the implementation process. ESMA is further issuing a set of guidelines on different aspects of the Directive aimed at describing and exemplifying specific implementation details, closing the parabola towards the full implementation of the Directive.

Looking more in details at the content of the MiFID II Directive, among the many premises to the Directive, financial advice enters at number 70, where it is stated that the rationale for including financial advice in the list of investment services and activities (Annex I Section A of both Directives) is not only confirmed but worthy of increased attention: "the continuous relevance of personal recommendation to clients" is now coupled with the "increasing complexity of services", making formal obligations necessary to protect clients across the Union.

The Directive is particularly clear on transparency regarding the costs and fee structure related to the provision of financial advice: the idea that all costs and fees should be clearly communicated enters both at Premise 72 and at Sect. 2 (Provision to ensure investor protection) Article 24(4). This Article details all the information that should be communicated to clients, including the nature of the advice provision (independent basis or not), the range of different types of financial instruments evaluated, the suitability of the recommendation to the specific features of the client and the previously mentioned costs. It is noteworthy that the cost of advice becomes a specifically separate category of costs. Article 24(9) states that "any fee or commission" and "other non-monetary benefits" cannot be received by firms for the provision of an investment service or ancillary service unless such payments or benefits are "designed to enhance the quality of the relevant service to the client" and do not prevent compliance with the "firm's duty to act honestly, fairly and professionally".

Another important issue described by the Directive is the distinction between independent and non-independent advice. The MiFID I Directive had not been clear on the definition of independence in financial advisory practice, a topic that became particularly relevant in the international debate especially in the aftermath of the crisis. Premises 73–75 address the issue of independence, which is then also discussed in Article 24(7) introducing specific provisions. In particular, for advice to be considered provided on an independent basis, the investment firm must "assess a sufficient range of financial instruments" and "not accept and retain fees, commissions or any monetary or non-monetary benefits paid or provided by any third party or a person acting on behalf of a third party in relation to the provision of the service to clients."

Another very interesting aspect of the Directive that is likely to have a major impact on the financial advice industry is the extension of suitability requirements to financial advisors. In fact, Article 25(2) confirms the suitability requirements (experience and knowledge, financial situation and investment objectives including risk tolerance) that define the information that advisors have to collect from clients before advice is provided and to which such advice must be appropriate to, building on Premise 82. More importantly, this Article requires that "natural persons giving investment advice or information about financial instruments, investment services or ancillary services to clients on behalf of the investment firm possess the necessary knowledge and competence to fulfil their obligations" (Article 25(1)).

The Directive identifies in the same article (25(9)) that the competent authority in charge of providing guidelines for the implementation of subparagraph 1 is the ESMA and sets to January 2016 the deadline for ESMA guidelines to be published.

The final version of the ESMA guidelines published online (European Securities and Markets Authority 2017) provides criteria for the assessment of the knowledge and competence requirement provided for in the MiFID II Directive, setting minimum standards and providing a series of illustrative examples to guide competent authorities in the application of the guidelines. In general, the nature of the service provided should guide the assessment process, with staff providing investment advice being required to possess expert knowledge and a high level of competence than

staff merely providing information. These two categories of personnel are, then, affected by different requirements regarding the level of knowledge and competence. For those who provide advice, it is necessary to have an appropriate knowledge of market functioning, including the difference between past and future returns, and portfolio management and valuation and the impact of global events and economic figures, while at the same time being able to collect and use appropriately all necessary information to assess suitability and provide appropriate investment advice (already present in MiFID I) and to explain the cost and tax structure of all proposed investments. Staff providing investment information or basic ancillary services do not need to have in-depth knowledge on portfolio management; neither are they are subject to the MiFID I and II suitability requirements. Competency should be assessed looking at the professional experience of staff providing different types of financial services and should be pertinent to the services currently provided.

The Guidelines address explicitly the organizational requirements regarding staff knowledge and competence assessment by the financial firms, suggesting that it should be at least an annual process, based on an internal or external review. The periodical assessment of both knowledge and professional competence should help to keep track of developments and emerging needs. In fact, the firm is required to provide specific training for any new product and continuous training for the "appropriate qualification" (Guideline 20). Where a member of staff providing a specific financial service does not possess the appropriate qualification or the appropriate experience or both, the guidelines require that he may operate only under supervision by another competent and properly qualified member of staff. The maximum time frame by which any member of staff needs to acquire the appropriate qualifications and experience to transition out of supervision is set to 4 years, leaving to national competent authorities the possibility to set a shorter timeframe.

Compliance with the ESMA guidelines has to be assessed by the national designated competent authorities, which are public entities according to Article 67 of the MiFID II Directive. In order to further clarify the details of compliance, the national competent authorities need to produce "an appropriate list of qualifications that meet the criteria of the guidelines" (Guideline 21) and clarify the minimum amount of time

"required to gain appropriate experience", the maximum time an advisor may work under supervision and whether the annual review of experience and qualification will be carried out internally or not. For instance, CONSOB, one of the designated competent authorities for the MiFID I and II implementation, has released a first report on the Guidelines released by ESMA, where it retains the 4-year time frame for maximum supervision and defines that an appropriate time for a firm to assess the competence and knowledge of a member of staff is 6 months. For what concerns the list of necessary qualifications CONSOB suggests that advisors should be required to be enrolled in the national advisory registry (which is already a necessary qualification) and hold a degree in economics or finance, or an alternative equivalent qualification.

The MiFIR regulation does not specifically address any issue related to the provision of financial advice but presents very important rules regarding trading venues, transparency, data access, along with rules regarding derivative instruments.

2.3.4 MiFID II: Challenges and Opportunities

MiFID II currently represents a challenge and an opportunity for the entire financial market industry. The challenge lies in the radically different approach that the Directive introduces regarding the cost structure of the provision of financial services, including financial advice. By distinguishing clearly between independent and non-independent advice and providing a clear normative framework for both in terms of costs, the Directive clarifies the terms of the choice that could be made by many financial advisors. They may become independent, charge for a truly independent advice and give up on all sorts of inducements or remain non-independent and reorganize the fee and cost structures in order to make explicit the added benefit generated by the advice provided. Both choices have pros and cons and ultimately the decision will depend on the specific pre-MiFID II characteristics of the advisor/firm. In this sense, compliance with the Directive will require to profoundly reconsider the business model of many financial intermediaries in the industry.

The introduction of this Directive is not just a challenge but represents an important opportunity for the entire industry of financial advice to

complete the historical transition from "salesmen" to finance professionals. In fact, if MiFID I legally established financial advisory as a financial service, MiFID II implies establishing clearer boundaries and increasing the inherent professionality of the sector. The requirements regarding knowledge and competence of the personnel providing financial advice are necessary due to the increased informational requirements that financial advisors must abide by, but is also a chance to radically improve the average qualification level of the entire sector and increase the perceived professionalism of the financial advisory service. Over time, this aspect will contribute to the creation of a more accessible rationale to determine the value of such service, making it easier both for clients and for advisors (independent or not) to determine a consistent fee structure compliant with the normative requirements and with the practice of the profession.

2.3.5 Implementation of MiFID II Across the Member States

The legislation at European level represents a normative framework characterized by minimum standards and practices that the member states must abide by, but in many cases, this does not prevent them from mandating tighter requirements, if they so wish. The regulation of European financial market is one of the cases in which the Directive text explicitly mentions that member states have to interpret the provisions as minimum requirements (MiFID I for instance). The different European States that are part of the European Union are still characterized by different traditions and practices that continue to coexist with the harmonized regulation.

This partial heterogeneity in the application of the new normative requirements introduced at European level implies that some member states are further along the path to compliance with some of the provisions included in MiFID II. A case in point is the United Kingdom, where tighter requirements than those provided for in MiFID I were already introduced in the Retail Distribution Review (RDR), put forward by the Financial Services Authority, the institution that was responsible for overseeing financial markets in 2012. In 2013 the Financial Services Authority was replaced by two bodies, sharing the responsibility

of overseeing the UK financial markets: the Financial Conduct Authority, regulating financial services firms, and the Prudential Regulatory Authority, which regulates banks, building societies, credit unions, insurers and designated investment firms. The Financial Services Review introduces two important characterizations of the UK financial advisor: the first one is the distinction between "independent" and "restricted" advice (Financial Services Authority 2012) and the second one is the ban on commissions (Financial Conduct Authority 2013). The standard for advice to be considered independent requires that "the personal recommendation is based on a comprehensive and fair analysis of the relevant market and is unbiased and unrestricted", whereas all advice services that do not meet these criteria are defined as restricted advice.

The RDR address the issue of conflict of interest by banning commissions and mandating that all advisers charge their clients in a transparent way, in which all costs are clearly communicated in writing and correspond to ongoing services (Financial Conduct Authority 2016).

Given the national laws, the UK seems much further along than other states on the road to compliance with the MiFID II requirements, although this country represents a very interesting case because in June 2016 a popular referendum decreed that the UK was to leave the European Union. Following the resignation of the then prime minister, the Financial Conduct Authority announced that until the official withdrawal from the Union the process of implementation of MiFID II would continue as planned to meet the July 3, 2017, deadline for the transposition into UK law. The FCA released a policy paper to guide the implementation process in March 2017 (Financial Conduct Authority 2017) and at the time of writing is currently pursuing its initial timetable for compliance.

3 Financial Advisory Practice: Regulation and Behavioural Considerations

3.1 Rationale

The previous section has shown that regulation has played an important role in helping establish financial advisory as a distinct profession compared to other forms of salesmanship, with specific rules of conduct.

Formal regulation incorporates policy goals that address the weakness of systems and societies. The financial crisis shattered the confidence in the infallibility of financial markets and models and has made investor protection even more of a central area of concern for the financial regulator.

As shown in Part I of this book, investors are very different than the standard theories of rationality would like them to be. There is a reason to be curious about the behavioural effectiveness of solutions that work well in conventional frameworks. Moreover, recall that Chap. 3 concluded that the financial advisors' main contribution to the welfare of the clientele is non-monetary and is best expressed in a relationship based on trust.

This section explores the empirical effectiveness of the solutions proposed by the new regulation of financial advisory proposed in the MiFID framework, in order to understand how well they fit with the picture of financial advisory practice drawn in Chap. 3.

3.2 Implementing the Suitability Requirement

The relevance of MiFID for financial advisors is twofold: on one hand, it formally describes financial advice as one of the financial services that financial intermediaries can provide. This may seem like a small step, but it must be remembered that the profession has always struggled against the perception of advisors as salesmen. Under MiFID financial advice per se is a service, despite the products that are then sold to comply with that advice provision.

On the other hand, MiFID introduces formal requirements for the provision of financial advice that put sthe advisor in charge of verifying that the information provided is effective given the features of the specific retail client. This implies being able to assess properly the risk and preference profile of each client and to be able to adapt the information provided to these specific features.

Obviously, the assessment of suitability is a key element, but financial intermediaries are largely left alone to implement it. In fact, the informational requirements spelled out in the MiFID Directive (Levels-1 and 2) provide only a general framework regarding the key areas to address but leaves to the single investment firms the burden of defining a precise

suitability and appropriateness questionnaire. Given the interest of this book in financial advisory practice and given the fact that only the suitability questionnaire is formally necessary for the investment service to be provided in the first place, the discussion will focus on this specific tool.

There are two potential sources of issues in the implementation of the MiFID Directive prescription regarding suitability: the first and more obvious one lies in the fact that the Directive does not suggest a specific and precise way of eliciting the information required and tends to be rather general even in defining what should be known from a client before financial advice is provided. In fact, the Level-2 Directive regarding risk simply specified that "preferences regarding risk taking (and) risk profile" (Article 35(4)) should be elicited. The review presented in Chaps. 1 and 2 has shown that risk is considered objectively measurable only in standard models that assume perfect rationality, but these models do not find a lot of empirical support. Risk is inherently subjective, often domain-specific and risk preferences can be affected by a large number of factors, some emotional, some psychological and some drawn from economic conditions.

The more reasonable interpretation of the informational requirements regarding risk can be summarized by the notion of risk tolerance, or the degree of risk that an investor is willing to bear. Risk tolerance is considered a "complex psychological concept" (Hallahan et al. 2004), whose determinants span across different areas and include both beliefs and emotions. Hallahan et al. (2004) show that subjective and objective evaluations of risk tolerance differ somewhat, with the former generally underestimating the latter, and investigate the demographic determinants of risk tolerance. Their findings are in partial agreement with related literature and identify, for instance, that gender, income, and wealth are positively related to risk tolerance.

Research like this can provide a useful starting point to define the content of the suitability questionnaire and overcome the first issue of identification, but brings forward the second source of complexity in the implementation of the Directive: the definition of a questionnaire. In fact, the literature relevant to the determinants of risk tolerance is extremely large and diversified and spans across different disciplines (behavioural economics and finance, psychology). Moreover, there are

specific techniques regarding wording, the order of the questions and the validation procedures that need to be taken into account to develop an effective questionnaire. Are financial intermediaries sufficiently well equipped to navigate in this complex framework?

ESMA, which is the authority in charge of overseeing the implementation and respect of MiFID prescriptions (2011), has provided guidelines for the development of suitability questionnaires. These guidelines highlight specific aspects of the implementation of the Directive and address both the issue of identification and that of operationalization. Many guidelines refer to the need to pay particular attention to which type of information should be collected, with specific reference to the fact that the information collection should be modulated according to the type of service to be provided. ESMA refers to this principle as *proportionality* and also provides examples as to which information is needed with specific investment frameworks. In particular, it addresses explicitly the issue of operationalization, suggesting that personnel be evaluated for the necessary skills and expertise to collect the correct information.

The first published assessment regarding the effectiveness of the suitability questionnaires looked at the French experience three years after the full entry into force of the Directive (De Palma and Picard 2010). Looking at 14 different suitability questionnaires produced by 10 different intermediaries, the authors of the French report look qualitatively at the content of the questionnaire and provide also an assessment of its effectiveness using a "standard" questionnaire developed ad hoc on the basis of the empirical findings of behavioural finance. The authors found a large variability in the structure of the different questionnaires, which can be largely explained by the vagueness of the Directive requirements. On the other hand, it also confirms that banks made considerable effort to comply with the provisions included in the suitability assessment. The report focuses on risk assessment, which has become a crucial component of the suitability questionnaire and is explicitly called upon in Article 34(4) the Level-2 Directive. Overall, most of the questionnaires show coherence with the spirit of the Directive and try to assess risk-taking preferences, but are not always successful in doing so and only a third try to explicitly quantify risk aversion. The report suggests that most questionnaires do not provide attention to important aspects, not mentioned

explicitly by the Directive but crucial in implementing its main message. The use of subjective evaluations—asking clients directly what they would do—and of hypothetical situations—the examples clients need to evaluate for the assessment—for instance, represent choices that are likely to lead to biased evaluations. Behavioural finance has shown that individuals behave differently when engaged in situations with real or hypothetical implications and risk profiles are better approximated by revealed preferences—what individuals actually do—rather than what they say they would do. Moreover, the report suggests that assessing risk tolerance may require time: different economic conditions may affect what clients report and should be filtered out, which is only possible in the presence of repeated reports. Focusing on quantitative tools, the report compares the risk score calculated with the benchmarking questionnaire against the scoring rules calculated by the questionnaires that have some form of quantitative tool to assess risk tolerance. Despite being largely compliant with the requirements of MiFID, the questionnaires are not very good at describing risk tolerance and categorizing clients in a way consistent with the benchmark classification.

The effectiveness of the risk tolerance questionnaire developed to comply with MiFID requirements has also been assessed empirically in the Italian experience. Linciano and Soccorso (2012) look at the questionnaires developed by 20 Italian retail banks and highlight important limitations that may hamper the effectiveness of such tools in pursuing the goal they were originally targeted to. This report follows a similar structure compared to De Palma and Picard (2010), as it describes how the different MiFID requirements in the questionnaires have been implemented in comparison with the relevant suggestions coming from the behavioural finance literature. Just as in the French example, the study finds that compliance with MiFID requirements does not always translate into the production of effective questionnaires. In the Italian case, most of the questionnaires include questions that address the three key MiFID areas: knowledge and experience, financial situations and financial objectives. Nevertheless, they are often prepared by internal staff with no specific training on how a questionnaire should be redacted, and both the structure of the wording and the topics covered by these questions are not able to incorporate insights from behavioural economics and finance. For instance, the elicitation of risk preferences (more dependent on psy-

chological and demographic factors) and investment objectives (naturally affected by economic contingencies) takes place at the same time, and even knowledge and experience are assessed in connection with specific financial instruments and not with regard to specific topics. Only two of the questionnaires analysed seem to be sufficiently effective in assessing risk in an unambiguous and clear manner; the rest of the questionnaires lack clarity and precision and do not seem able to incorporate the messages coming from behavioural economics and finance regarding risk. The Italian experience reviewed seems not to have passed the test regarding either identification (MiFID topics are not addressed using the variables that relevant theories suggest should be used) or implementation.

3.3 Conflict of Interest

The client–advisor relationship is a fiduciary relationship, in which the two parties are often subject to different monetary incentives. The client wishes to increase financial returns and expects the advisor to select financial assets that pursue this goal. Depending on how the advisor is compensated for his services, he may or may not select the assets that would be optimal given the client's characteristics.

Regulators are aware of the fact that the advisor–client relationship is not equally balanced in terms of information: advisors are better informed both about asset allocation and financial products and about their compensation structure. This understanding is the basis of the significant process of normative review that has strengthened the transparency and informational requirements advisors must comply with when dealing with clients.

This section focuses explicitly on understanding how the new mandatory requirements are likely to affect the nature of the individual incentives that advisory practice faces. The overall effectiveness of the Directive depends on how the proposed changes interact with the fiduciary features of the advisor–client relationship.

One of the first models to address the conflict of interest faced by financial advisors is by Krausz and Paroush (2002), who introduce a simple model in which an investor needs to allocate his resources between a risky and a riskless asset, using the investment suggestion of an advisor.

The advisor faces a conflict of interest because he gains a commission only after the purchase of the risky asset, which may not always be the best choice for the investor. A penalty system is in place in order to avoid continuous exploitation of the investor by the advisor. The modelling structure formalizes the idea that the risk attitudes of the investors determine the amount of deception they are likely to receive from the advisors: in order to convince a very risk-averse individual to invest in a risky asset, overly optimistic valuations need to be conveyed. A way to correct for this risk of exploitation is the introduction of high penalties for this type of consumer, understanding that different categories of investors are likely to require different protection levels and tools. The study also uses empirical data to support the findings of the model, looking at what happened to the Israeli financial system between 1993 and 1994, which experienced a financial bubble that was partly attributed to the behaviour of banks. Interestingly, the authors report that most of the lawsuits that ensued after the bubble involved very risk-averse individuals (retirees or widows) who had received overly optimistic information.

In their seminal contribution Inderst and Ottaviani (2009) formally address the conflict of interests that advisors face when they have to "prospect for new clients and provide product advice": an agent who sells products exerts effort in trying to interest clients into his products and is compensated according to the level of sales; this implies that an agent is endogenously incentivized to suggest the purchase even when the said products are not very suitable to the needs of the clients. The very source of the conflict lies in the different incentives that underlie the pursuit of the two goals of the agent: sell and gain an economic return, provide good advice and maximize the welfare of the client. Inderst and Ottaviani propose a formal model where the source of the conflict is endogenous and arises from the compensation structure set by the firm the agent works for. The authors argue that understanding the drivers for mis-selling is a necessary step for the organization to protect itself from the unintended but likely consequences of this practice—reputational effect, reduction in the clientele or even lawsuits. The relevance of this theoretical contribution to the discussion on financial advisor normative framework is twofold. On one hand, the modelling framework allows us to understand that agency plays a very important role in mis-selling: in order to guarantee a specific suitability standard of the products an agent

suggests to buy, the firm must transfer a positive rent to the agent—a benefit associated with sales that go uncontested by the client. This is necessary to guarantee that the agent exerts the effort required and would not be needed if the firm did not require the services of an agent and sold the products directly. In other words, implementing a higher suitability standard that reduces mis-selling induces increasing marginal costs to the firm, and results in a lower suitability level in equilibrium with agency than in the equilibrium without agency. To reduce the amount of mis-selling a firm may introduce penalties, assuming it has the power and the credibility to enforce them or disclose the compensation scheme (wage and sales bonus). In the latter case, the authors show that under this transparency condition the resulting equilibrium level of the suitability standard is higher than without transparency. For this to hold true, transparency must be credible, in the sense that clients must be able to monitor it effectively, to avoid the temptation to deviate to a suboptimal level of suitability standard.

These two results from the Inderst and Ottaviani model are very coherent with the normative evolution of the financial advice industry described in the previous paragraph for the European Union. One suggestion of the model is that mis-selling can be more effectively addressed at regulatory level rather than at individual firm level, as the regulator is definitely more credible in introducing a requirement (be it a penalty or a new standard) and enforcing it. In this sense, the normative evolution of the European system is very coherent to this suggestion, as it does not only come from the highest authority in the Union, but it supports pursuing consumer protection (and welfare) by increasing and standardizing the necessary information to be provided in order to make investments. Along the same lines, the model suggests that transparency regarding the fee structure can also be beneficial to reduce mis-selling and increase the welfare of the consumer. In this sense, the ban of retrocessions for some categories of advisors (independent advisors and portfolio managers) and the need to link fees to benefits produced by the advice (for non-independent advisors) seem to fulfil this goal.

Moreover, the model allows for attaching a precise economic value to agency, supporting the argument that a truly independent advisor is under a set of incentives that are much more aligned with those of his clients. Recall that the effectiveness of the transparent framework relied on its cred-

ibility, and again, the strict requirements imposed by MiFID II to guarantee the true independence of advice (no commissions from third parties, large range of financial products proposed) perfectly address this point.

In another contribution by the same authors (Inderst and Ottaviani 2012) the incentive problem the advisor faces is further investigated together with the effects of different policies. In the model proposed, the authors show that, unless the commissions paid for two different products are the same, the advice will be biased towards the product that generates higher commissions, and the more this is so, the less the advisor cares about the suitability of the given product to the client's needs. The authors assess the effect of disclosure of commissions on the advice given when clients are wary and when they are naïve, discussing the implication for market prices and recommendations. When clients are wary about commissions and commissions are disclosed, clients will expect that the product with higher commissions will be suggested more often. Thus, incorporating this expectation will push down the price of the product that produces more commissions, compared to a situation where commissions are not disclosed. In other words, in equilibrium commissions are higher without disclosure than with. Different firms have different price reduction possibilities and this may generate unintended negative effects on the market after the introduction of mandatory disclosure. In fact, firms that pay the highest commissions are in the general the most efficient and often those with the largest market share. Such firms will have more difficulties in reducing the price, because the price reduction applies to a large number of potential clients, and they are not likely to reduce it significantly compared to less efficient firms. Nevertheless, their product may tend to be recommended more often than would be optimal. Overall, the mandatory disclosure of commission may have positive or negative net effects depending on how much advisors care about suitability: if they care a lot about suggesting appropriate products to their clients, disclosure reduces efficiency for the reasons described above. If on the other hand, advisors care very little about suitability, mandatory disclosure can be beneficial.

Advisors can exploit naïve consumers because they do not realize that recommendations are steered by commissions, and attach to higher product prices higher expected returns that are not consistent with reality. In their case, mandatory disclosure needs to work as an "eye-opener" to be beneficial; otherwise, disclosure would be largely inefficient, because it

may lead to information overload and not be factored into the decision anyway, or reduce the moral burden of providing biased advice, or increase adherence to the advice received, because not following advice under full transparency of costs signal distrust in the advisor. The model proposed in this contribution suggests that the same policy intervention may have very different effects according to the market structure (efficiency of product firms, relative market shares, etc.) and the characteristics of clients (relative share of naïve versus wary investors) and advisors (depending on how much they care about providing suitable advice).

The alternative to disclosure that could reduce the moral hazard inherent in the client–advisor relationship bypasses disclosure, to opt for a radically different remuneration scheme, is the fee-based system, which is formally introduced in MiFID II under the name of independent advisory. It is interesting to look at how investors may perceive the switch to this new form of remuneration. An interesting empirical investigation addressing the determinants of the choice of adopting a fee-based remuneration system focuses on about 500 clients of a large German retail bank participating in an online study (Hoffmann et al. 2012). Interestingly, among various dimensions including features of the relationship with the advisor and the service provider, the only significant positive impact on the choice to switch to such a remuneration scheme lies in the perceived advantages of such a move. Despite the fact that clients were asked to state intentions that did not necessarily represent their choices, were they to make a decision for real, the study suggests that clients are in principle ready to attach a monetary value to financial advice, once they receive the appropriate information. This is good news, especially if one considers that German investors have been receiving financial advice for decades without directly observing the remuneration process involved.

Moving from a purely modelling to a more empirical perspective, it is useful to review recent experimental papers that address potential solutions to the moral hazard problem that permeates the client–advisor relationship.

Ismayilov and Potters (2013) provide an experimental test of the introduction of mandatory disclosure in a simple sender–receiver game, where the sender represents the advisor and has to send a purchase suggestion to his client (the receiver). The authors introduce two different treatments; the receiver learns what each suggestion entails for the sender but not his own payoff. The treatments are then further varied to include the effect

of high and low stakes and to allow for endogenous selection of disclosure (the receiver may decide if they wish to know the sender's payoffs). The authors test a "moral-licensing hypothesis" under which lying under disclosure would be more likely than without and find that experimental results do not support it: there is no significant increase of bad advice with disclosure than without.

Angelova and Regner (2013) introduce an experimental setup to test whether voluntary contributions from clients to advisors are an effective way to induce the latter to provide advice that maximizes the client's welfare. They find that when advice is paid for voluntarily, advisors tend to provide more truthful advice than when compensation is obligatory. Clients are more likely to follow the advice received when they voluntarily paid for it, regardless of payment level, rather than when they were forced to pay for it. Moreover, the authors find that honesty is favoured by the possibility for reciprocation: in another experimental treatment clients pay voluntarily for advice, but they can also transfer a bonus after advice is received and payoffs realized. The authors show the frequency of truthful advice is very stable over time in this treatment, where the trustworthiness of the advisors can be repaid through the bonus, despite the fact that not all clients choose to pay the bonus.

In the debate on whether disclosure of the fee structure can be a suitable avenue to increase investors' protection, this article presents a different alternative based on an ex-post bonus without requiring full disclosure, which proves effective in increasing the share of truthful advice provided.

4 Summary and Conclusions

This chapter explicitly addressed the role of compensation structures in the financial advisory industry to understand how the current and planned normative requirements interact with the features of the fiduciary relationship that links clients and advisors.

A first section described the evolution of the profession of financial advisors in the US and in the EU to show how the normative process has helped to establish advisory practice as a separate profession from other

types of salesmanship. The European regulation has been analysed in detail to understand the evolution of the financial advisor.

Using the European example as a case in point, this chapter has shown some preliminary evidence that a too tight regulation of the conflict of interest through full disclosure may produce unintended consequences that may even hurt, rather than foster, investors' welfare.

Under the lens of behavioural theories, increasing transparency requirements puts both advisors and clients to the test: the former because they need to objectify a relationship where non-monetary benefits are crucial; the latter because it ignores the cognitive limitations in information processing, which may hamper the effectiveness of increasing transparency.

The next few years will be crucial to understanding if these potential negative effects will outweigh the benefits brought about by the new regulations, but this review advocates the need to further study the potential behavioural implications of such normative changes.

Notes

1. http://www.finra.org/industry/suitability.
2. This provision is assumed as true in the case of a professional client.
3. http://eur-lex.europa.eu/legal-content/EN/NIM/?uri=CELEX:32014L0065.

References

Angelova, Vera, and Tobias Regner. 2013. Do Voluntary Payments to Advisors Improve the Quality of Financial Advice? An Experimental Deception Game. *Journal of Economic Behavior and Organization* 93: 205–218. https://doi.org/10.1016/j.jebo.2013.03.022.

Brandon, E. Denby, and H. Oliver Welch. 2009. *The History of Financial Planning: The Transformation of Financial Services*. Ed. E. Denby Brandon and H. Oliver Welch. Hoboken, NJ: Wiley.

Burke, Jeremy, and Angela Hung. 2015. *Financial Advice Markets: A Cross-Country Comparison*. RAND Working Paper.

Commission of the European Communities. 1998. Financial Services: Building a Framework for Action, Communication of the Commission. http://ec.europa.eu/internal_market/finances/docs/actionplan/index/fs_en.pdf

———. 1999. Financial Services: Implementing the Framework for Financial Markets: Action Plan. Vol. COM(1999)2. http://ec.europa.eu/internal_market/finances/docs/actionplan/index/action_en.pdf.

———. 2006a. Commission Directive 2006/73/EC of 10 August 2006. *Official Journal of the European Union* 49 (L241): 26–58.

———. 2006b. Single Market in Financial Services Progress Report 2004–2005, Commission Staff Working Document, pages 1–18. http://ec.europa.eu/internal_market/finances/docs/progress-report/report2004-2005_en.pdf

CONSOB. 2016. Attuazione degli Orientamenti emanati dall' ESMA, nel quadro della Direttiva 2014/65/UE (c.d. MiFID II), in materia di valutazione delle conoscenze e competenze delle persone fisiche che, per conto dell' intermediario, forniscono ai clienti. http://www.consob.it/documents/46180/46181/cons_20161222.pdf/a13a5856-8d6a-4f5b-b198-d1b9b74e8893

De Palma A., and N. Picard. 2010. Evaluation of MiFID Questionnaires in France Study for the Autorité des Marchés Financiers. http://www.amf-france.org/en_US/Publications/Rapports-etudes-et-analyses/Epargne-etprestataires?docId=workspace%3A%2F%2FSpacesStore%2Fe09db90a-b5b1-4c8d-85ac-de898f1bdb1f

European Commission. 2005. White Paper on Financial Services Policy 2005–2010. http://ec.europa.eu/internal_market/finances/docs/white_paper/white_paper_en.pdf

European Parliament and Council. 2004. Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004. *Official Journal of the European Union* 145: 1–44.

European Parliament and Council of the European Union. 1993. Council Directive 93/22/EEC. http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1993L0022:19980926:EN:PDF

———. 2014a. Directive 2014/65/EU on Markets in Financial Instruments and Amending Directive 2002/92/EC and Directive 2011/61/EU. http://eur-lex.europa.eu/legalcontent/EN/TXT/?uri=celex%3A32014L0065

———. 2014b. Regulation 600/2014 on Markets in Financial Instruments. http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014R0600

European Security and Markets Authority. 2011, December. Consultation Paper: Guidelines on Certain Aspects of the MiFID Suitability Requirement. https://www.esma.europa.eu/press-news/consultations/consultation-paper-guidelines-certain-aspects-mifidsuitability

———. 2016. List of Competent Authorities to Carry Out the Duties Provided for by the Directive 2004/39/EC on Markets in Financial Instruments. https://www.esma.europa.eu/sites/default/files/library/ncas_under_article_48_1_and_2_mifid.pdf

———. 2017, January. Guidelines for the Assessment of Knowledge and Competence. https://www.esma.europa.eu/sites/default/files/library/esma71-1154262120-153_guidelines_for_the_assessment_of_knowledge_and_competence_corrigendum.pdf

Financial Conduct Authority. 2013, September. Guidance consultation Supervising retail investment advice: inducements and conflicts of interest. https://www.fca.org.uk/publication/guidance-consultation/gc13-05.pdf

———. 2016. Financial Advice Market Review, no. March. https://www.fca.org.uk/static/fca/documents/famr-final-report.pdf.

———. 2017, March. Markets in Financial Instruments Directive II Implementation – Policy Statement I. https://www.fca.org.uk/publications/policy-statements/ps17-5-mifid-ii-implementation

Financial Services Authority. 2012, June. Finalised Guidance Retail Distribution Review: Independent and Restricted Advice. https://www.fca.org.uk/publication/finalised-guidance/fg12-15.pdf

Guiso, L. 2010. A Trust Driven Financial Crisis. *EEAG Report on the European Economy 2010*. http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:trust+driven+financial+crisis#1.

Hallahan, Terrence A., Robert W. Faff, and Michael D. McKenzie. 2004. An Empirical Investigation of Personal Financial Risk Tolerance. *Financial Services Review* 13: 57–78. https://doi.org/10.1038/nri2781.

Hoffmann, Arvid O.I., Heiner Franken, and Thijs L.J. Broekhuizen. 2012. Customer Intention to Adopt a Fee-Based Advisory Model: An Empirical Study in Retail Banking. *International Journal of Bank Marketing* 30 (2): 102–127. https://doi.org/10.1108/02652321211210886.

Inderst, Roman, and Marco Ottaviani. 2009. Misselling Through Agents. *American Economic Review* 99 (3): 883–908.

———. 2012. Financial Advice. *Journal of Economic Literature* 50 (2): 494–512. https://doi.org/10.1257/jel.50.2.494.

Ismayilov, Huseyn, and Jan Potters. 2013. Disclosing Advisor's Interests Neither Hurts Nor Helps. *Journal of Economic Behavior and Organization* 93: 314–320. https://doi.org/10.1016/j.jebo.2013.03.034.

Krausz, Miriam, and Jacob Paroush. 2002. Financial Advising in the Presence of Conflict of Interests. *Journal of Economics and Business* 54 (1): 55–71. https://doi.org/10.1016/S0148-6195(01)00057-1.

Linciano, N., and P. Soccorso. 2012, July. *Assessing Investors' Risk Tolerance*. CONSOB Discussion Paper 4.

Mullainathan, Sendhil, Joshua Schwartzstein, and Andrei Shleifer. 2008. Coarse Thinking and Persuasion. *Quarterly Journal of Economics*, no. May: 577–619.

U.S. Securities and Exchange Commission. 2011, January. Study on Investment Advisers and Broker-Dealers, Study by the Staff of the U.S. Securities and Exchange Commission.

———. 2013. Regulation of Investment Advisers, no. March: 12. https://www.sec.gov/about/offices/oia/oia_investman/rplaze-042012.pdf.

Part III

Behavioural Financial Advisory Practice

5

Behavioural Financial Advisory Practice

Abstract This chapter addresses how behavioural finance has translated the findings of behavioural sciences regarding human decision-making into financial advisory practices.

The different approaches to the existence of biases (eliminating or limiting biases) and their implications are reviewed, looking in particular at the foundations of behavioural portfolio theory and to how it can be translated into specific practices.

The chapter also discusses how framing the advisor–client relationship as a fiduciary relationship is consistent with the behavioural approach to portfolio theory. This is due firstly to the fact that the existence of trust allows reducing the information transmission and the resulting possible cognitive overload. Moreover, trust allows for increased delegation, reducing the risk to incur behavioural biases and achieving piece of mind.

Keywords Behavioural portfolio theory • Biases management • Trust • Money doctors

C. Cruciani, *Investor Decision-Making and the Role of the Financial Advisor*,
https://doi.org/10.1007/978-3-319-68234-1_5

1 Introduction

The evidence presented so far in this book leaves little doubt as to the importance of going beyond the traditional economic models of decision-making under uncertainty. Heuristics, emotions, and cognition all interact to paint a much more complex picture of the human mind than what models of economic rationality do.

Part I has focused on the investor's mind, showing that real investors are very different from the idea of homo economicus—a cognitively unlimited, consistent individual with stable preferences and attitudes—posited by conventional theories of economic rationality. Emotions and feeling are key elements alongside cognitive processes in the decision-making process. Understanding how individuals think and feel in decision-making is crucial to understand the complexity financial advisors face every day when dealing with clients. Part II provided an assessment of the roles these professionals may play in the advisor–client relationship, gauging their effectiveness through a review of the available empirical studies. The evidence presented suggested that the success of an advisor might significantly depend on how he manages to address the emotional load that investing generates and some related literature showed the importance of building trust. The evolution of the profession of the financial advisor in a normative context showed that some of the new developments are aligned with a rationalistic interpretation of the investor that may be out of tune with reality, warranting further research in the behavioural implications of normative frameworks.

This chapter will tie together all the evidence reviewed in previous chapters to provide an operative guidance to practitioners working in the field and to suggest avenues for future development. This chapter will focus on how behavioural finance has addressed the empirical challenge to provide realistic models of behaviour in financial decision-making, highlighting the open questions that still need to be addressed.

The financial crisis of the late 2000s has radically affected the way in which both investors and regulators look at the opportunities of

financial markets. It is the right time to consider how the message of behavioural finance can be translated into new practices, able to better guide the investor.

2 Operationalizing Behavioural Finance

There are two main traditional approaches to dealing with the complexity of the investor's mind: the first one is focused on minimizing the impact of influences that are external to the realm of the rational and will be summarized with the term *debiasing*. Another line of research looks at ways to incorporate behavioural and psychological insights into the financial-advising process.

2.1 Debiasing Approaches

Some scholars like Larrick (2004) frame the *debiasing* option in an attempt to involve Kahneman's System 2 into the decision process in situations where System 1 is usually more active and responsible for decision mistakes. The dichotomy between System 1 (more unconscious and automatic) and System 2 (more deliberative and conscious) was popularized by Kahneman (2011) and represent the point of arrival of the heuristics and biases program initiated some thirty years earlier by Kahneman and Tversky. According to Larrick (2004), *debiasing* can unfold through strategies that may be adopted directly by the individuals or by strategies that are enforced by external agents. Both are ways to affect the decision environment in order to minimize the contextual cues that make biases more likely to occur.

Among the first group, the debiasing tools include providing better incentives or holding individuals accountable for their choices. Both strategies require that the individual already possesses the cognitive ability to select the optimal course of action and simply needs to remind himself to do so. This represents a limit of these strategies because, as the authors report, there are few decisions that can be improved by more effort.

Other strategies for individual debiasing include cognitive tools like "consider the opposite", whereby an individual tries to avoid decision biases by forcing himself to consider alternative extreme hypotheses before deciding. Another cognitive strategy considered proposes to train oneself to avoid falling prey of cognitive biases. The authors review empirical evidence supporting the effect of training, but one must remember also the studies reviewed in Chap. 3 regarding financial literacy and the rapid decay of the acquired new knowledge.

The intervention of external agents is another way to affect the decision environment to avoid biases. This approach relies on a notion of libertarian paternalism (Thaler and Sunstein 2003) and was later formalized in a very popular book by Thaler and Sunstein (2008). The authors claim that individual choices are affected by the architecture in which the decision task is performed. Given that choices need to be framed in a context and that the choice of context is not neutral, a paternalistic external agent with the power to influence the choice architecture can affect choices significantly. Thaler and Sunstein's libertarian paternalistic agent may even affect choices without compromising the freedom to choose. In the book, they review several different choice architectures and assess their effect in terms of reducing the suboptimal behaviour. In the financial domain, they detail the popular "Save more tomorrow (SMarT™)" plan, by which individuals can opt in and out of a voluntary saving plan, where contributions increase with future rises in wages. The plan exploits the tendency to procrastinate in saving for retirement: contributions will increase in the future, not immediately, and since they are tied to future pay rises they will not be felt as losses, but as a reduction in future gains—keeping the negative effects of loss aversion at bay. Thaler and Benartzi (2004) report the results of the first three cases in which the program was implemented, showing that the large majority of individuals to which the plan was offered decided to join (78%) and stayed in the program for at least four pay rises, increasing the average saving rate almost fourfold (from 3.5% to 13.6%).

Nudges and other examples of libertarian paternalism are instances in which biases are not directly addressed, but the natural behavioural and emotional tendencies of individuals are exploited through a smart

choice architecture. The option to affect such architectures in the context of financial advice rests with the regulator, which is responsible for shaping available opportunities and formal requirements for engaging in financial markets. Chapter 4 reviewed the recent developments in the regulation regarding financial advice and the sale of financial assets in both the United States and the European Union. The review has shown that one of the main effects of the financial crisis has been the increased requirement in terms of transparency and investor protection. Chapter 4 has already discussed how the new regulatory requirements are not based on behavioural and emotional biases, as they rather tend to increase the cognitive load for investors. The main goal of increasing transparency in the advisor–client relationship is to provide investors with the necessary information to make a choice, and evening out possible a priori differences across investors in terms of financial literacy, ability or experience. Nevertheless, increasing transparency comes at a cost—increasing the cognitive load—and cannot be considered an example of a nudge.

2.2 Managing Biases

Many of the players involved in financial markets such as financial advisors or fund and asset managers do not have the power to change the choice architecture in which investors operate. Moreover, Chap. 3 showed that advisors tend to cater to investor biases rather than reduce them (Mullainathan et al. 2012).

Moreover, the idea of *debiasing* implies that biases are seen as irrational responses that should be at least avoided. An alternative way focuses on the ecological rationality of heuristic behaviour and sees that biases are a natural component of how individuals think, and cannot be fully eliminated. In this light biases could be used to construct arguments that are more behaviourally understandable to clients. This line of reasoning is on the basis of approaches like Behavioural Portfolio Theory (Shefrin and Statman 2000) or the Moderate and Adapt approach (Pompian and Longo 2005; Pompian 2006) that will both be detailed in the following sections.

3 Behavioural Portfolio Theory

3.1 The Antecedents of Behavioural Portfolio Theory

Individuals investing in financial markets are mainly concerned with creating and maintaining a set of investments (a portfolio) that allows the pursuit of their goals and objectives. Understanding the rational benchmark for the construction of portfolios represents the starting point to develop behavioural theories of financial decision-making.

Just like Expected Utility Theory has been the cornerstone of most theories of decision-making under uncertainty, Harry Markowitz's Modern Portfolio Theory or Mean-Variance analysis (MPT) (1952a) has been the leading paradigm in portfolio management. Markowitz's theory was developed in the 1950s and steadily gained support, especially since Markowitz was awarded the Nobel Prize in Economics in 1990. In his theory, Markowitz suggests that an efficient portfolio should take into account simultaneously both the expected return and the risk of an asset, measured by its variance. Given a desired level of risk, it is possible for an investor to understand which level of expected return is attainable. The impact of adding one more asset to a portfolio cannot be evaluated simply by its expected return and risk, but its effect on the risk of the overall portfolio should be understood. This effect can be gauged by looking at how the risk of the new asset varies with respect to the risk of the assets that already make up the portfolio. In other words, the volatility of a portfolio can be measured by the covariance between the different assets that are part of it. MPT allows describing a mean-variance efficient frontier that represents different combinations of the portfolio that allow achieving the highest return given the risk aversion of the individual.

MPT relies on assumptions that make it a model of rational choice: individuals are risk-averse and will accept a higher level of risk only if the expected return is sufficiently high to compensate it. According to Curtis (2004), MPT is a descriptive theory of how capital markets work: firms in the same industries are likely to suffer the effects of the same shocks, thus diversifying investment across industries that are not affected by the same variables is a way to exploit the inevitable ups and downs of financial markets.

MPT is not able to account for behavioural inconsistencies that have been reviewed in this book: individuals react emotionally to market fluctuations and are not very likely to stick to the investment plan suggested by it.

A crucial aspect of MPT is the nature of implied risk preferences: individuals are *always* assumed to be risk-averse. Convergence on the idea that a stable risk profile is not empirically reasonable has already been presented earlier in this book. Prospect Theory defined a utility function able to describe risk aversion in the domain of gains and risk seeking in the domain of losses and explain a long-standing empirical puzzle for finance scholars—the insurance lottery puzzle[1] originally discussed in Friedman and Savage (1948). These authors were the first to suggest that individuals may have sound reasons to exhibit varying patterns of risk aversion, represented by a "wiggly" utility curve. The rationale for the alternating profiles of risk preferences, where concave traits indicate risk aversion and convex ones represent risk seeking, is that individuals may be risk-averse at heart, but "jump" at the opportunity to take a gamble that promises to pull them out of poverty, even if the odds of succeeding are very small. Under this interpretation the different traits—concave or convex—of the curve represent different "social classes" and the alternative risk patterns would not need to be explained by any irrationality: in some cases, individuals are aware of the odds but decide to act out of the aspiration of succeeding.

Curiously, in the same year in which he published the paper describing Mean-Variance Portfolio Theory, Markowitz extended the argument of Friedman and Savage, in order to overcome some unreasonable predictions of the Friedman and Savage utility function. Markowitz's utility curve includes alternating convex and concave traits, but anticipates the different role of gains and losses, placing one of the inflection points indicating the present wealth between the convex and the concave trait of the utility curve at the axis origin (1952b). Although Markowitz concludes by saying that further evidence should be provided to prove beyond doubt the validity of his theory, the reader will recognize that it features some of the key elements of Prospect Theory, like the reference point represented by current wealth and the role of gains and losses.[2]

Prospect Theory, introduced in 1979 by Kahneman and Tversky (1979), represents the final step in the formalization of the idea that investors may be at once looking for chances to become richer and wary of losing one's position. Prospect Theory implies that individuals dealing with risky choices classify potential options as gains or losses from a reference point, usually represented by their current wealth level. Besides reclassifying outcomes as gains and losses, Prospect Theory implies that stated probabilities are transformed dealing with a fourfold pattern of risk preferences. Small probabilities are in general overweighted, while larger ones are underweighted; moreover, being in the domain of gains makes individuals risk-averse while being in the domain of losses makes them risk-seeking. A more refined version of Prospect Theory was introduced in Tversky and Kahneman (1992), a cumulative version of probability weighting, but the key elements of the theory remain. For a more detailed analysis of Prospect Theory, the reader should refer to Chap. 1 of this book.

By now the reader should be accustomed to the convergence between different social sciences and shall not be surprised in learning that the behavioural alternative to traditional portfolio theory models merges finance and psychology.

Rengifo et al. (2014) traces the roots of behavioural portfolio theories to the Safety-first Portfolio Theory, developed by Roy (1952). According to the safety-first principle, investors primarily want to avoid being "ruined". What qualifies as ruinous depends on the individual, but determines the individual-specific subsistence level, below which the individual would not want to fall. Individuals choose investments that minimize the probability of the occurrence of disastrous outcomes. Roy claims that the portfolio allocation achievable through Safety-First Portfolio Theory lies on the mean-variance efficient frontier determined also by Markowitz's model, but Shefrin and Statman (2000) present proof that it is not the case.

Similar to the Safety-First Theory is the Security/Potential Aspiration Theory introduced by Lopes (1987). In her model, Lopes introduces a model integrating "a dispositional tendency to seek either security or potential with situationally-driven aspiration levels" (p. 23). The dispositional

factor is called Security/Potential and explains why individuals are risk-averse in some circumstances and risk-seeking in others. This factor incorporates the desire for security and the corresponding fear of not achieving—inducing risk aversion—and the desire for potential and the corresponding hope to achieve—inducing risk-seeking.

Fear and hope affect the way in which a situation is evaluated through weighing up respectively the worst and the best outcomes. Fear and hope jointly affect outcome probabilities and the magnitude of the outcomes. Weights describe goals and aspirations: weighing up a good outcome does not mean that the probability of the bad one is perceived as smaller than it is—it simply testifies of one's desire to achieve the good outcome.

The situational factor determines when individuals switch from different risk profiles. It is represented by the attractiveness of the opportunities that present themselves and by the constraints faced by the individuals. This situational factor is called Aspiration and is affected by considerations of what is reasonable to hope for, what are the alternatives and what is the context in which a choice is made (e.g. towards the end of a game individuals may become more risk-seeking, especially when they have already incurred losses).

Although Security/Potential and Aspiration may be somewhat related, the two factors work independently and sometimes in contrast with each other. The first source of conflict in the model arises already inside the first factor: choosing to pursue security naturally implies foregoing potential somehow. The second source of conflict arises when there is disagreement between Security and Aspiration, and pursuing the first does not also achieve the second.

The Security/Potential and Aspiration (S/PA) framework can be extended to portfolio management through a simple example proposed by Lopes. Subsistence farmers can choose between planting high-expected return cash crops and low-but-stable priced food crops: the literature agrees that planting food crops up to subsistence level and cash crops above that level maximize two objectives: survive and strive to get out of poverty. This behaviour accommodates both a risk-averse tendency for security and a risk-seeking attempt to realize potential.

3.2 Behavioural Portfolio Theory

Shefrin and Statman (2000) have developed Behavioural Portfolio Theory (BPT) by introducing mental accounting in a framework similar to Lopes's SP/A model. In the single-account version of BPT, labelled BPT-SA, investors look at their portfolio as a whole, and care about the covariances among the different assets, just like investors would do in Mean-Variance Portfolio Theory. Also, BPT-SA shares with M-VPT the existence of an efficient frontier, but the way it is defined is radically different across the two models. While in M-VPT the efficient frontier is defined by combinations of assets that maximize returns keeping risk (variance) fixed, in BPT-SA the frontier is defined by maximizing expected wealth levels given the probability of achieving a determined level of wealth. The reader will surely recognize this latter feature as a form of aspirational level, which was a key feature of the SP/A model.

BPT-SA allows for describing investors that have one aspirational level to pursue, be it becoming rich or avoiding poverty. In reality, it is much more likely that investors have multiple goals at the same time, including both aiming for riches and avoiding economic pitfalls. Different from the single account version, the multiple-account version of Behavioural Portfolio Theory (BPT-MA) does not require that investors integrate different assets in a unique portfolio and keep track of the covariances. Through mental accounting, different assets are segregated in separate accounts which all combine into a global pyramidal structure characterized by different layers. Each layer from bottom to top pursues different goals, in general going from more basic, poverty-avoiding ones to more aspirational ones towards the top.

Covariances are not a feature of BPT-MA. Shefrin reviewed the empirical literature supporting the idea that individuals find cognitively cumbersome to deal with covariances—a key feature of both M-VPT and BPT-SA (Shefrin and Statman 2000).

In the multiple-account version of BPT, one investor can be represented by three "entities": two of them are "doers", one with a high and the other with a low aspirational level and both representing a separate mental account, and the third on is a "planner" that balances and combines the goals of the two doers by dividing total wealth among the two accounts.

Mental accounts are not integrated directly, which explains why very different positions may be taken in the two accounts even in a simple two-security setup. The planner's utility function includes the utility functions of the two doers weighting them differently: the weight attached to the high-aspiration doer is much greater. Nevertheless, the planner cares about safety first, as his utility is zero if the aspiration of the low-aspiration doer is not met. This implies that the low aspiration is met first to then make the choices that allow better pursuing the high aspiration.

Investors may appear more conservative when it comes to maximizing the probability of meeting a low aspirational level pertaining to safety but can look much more risk-seeking in other layers, where more ambitious goals are represented. Risk profiles are in a sense a function of the aspirations and not vice versa: risk aversion is driven by the desire to increase the possibility of avoiding ruin more than individual preferences. Since individuals harbour more than one aspiration, they are characterized by different "plans of action" for each one.

Optimal portfolios in BPT will not generally lay on the efficient frontier defined by the M-VP framework, although they may do so in some cases.

Behavioural Portfolio Theory provides a framework where the lack of a consistent risk profile is not a problem and allows pursuing different goals that may even be partially in contrast. The convergence from psychology adds to these empirically founded models a further layer of explanatory power: individuals want to avoid being broke but at the same time cultivate the hope of becoming richer, as safety and potential are both drivers of human decision-making. Such strong emotions are profoundly ingrained in behaviour provide a further motivation for the existence of financial advisory: besides providing financial services like portfolio management, advisors help their clients navigate in a sea full of potential pitfalls that cannot be avoided.

One of the implications of BPT-MA is that only a subset of the efficient frontier defined through it corresponds to solutions that would be selected through MPT. This necessarily implies a trade-off between financial results and peace of mind: investors may prefer a behavioural portfolio that generates less profit than a portfolio based on MPT and adapted to his risk preferences because they feel more at ease with sticking with a plan that accounts for their natural tendencies.

Incorporating behavioural insights into finance has proven useful in two different respects. It allows for a better description of the investor's mind and provides a definition of rationality, which is both more empirically sensible and does not requires adopting a patronizing approach with the client. Emotions are not a disturbance in the advisor-client relationship, but represent another good reason to have an advisor.

This behavioural understanding of the client is matched with a behavioural framework of portfolio selection, in which advisors must learn to operate. The next section will look more in details at how financial advisors may decline the key features of behavioural theories into practical suggestions.

4 Behavioural Financial Advisory Practices

4.1 The Rationale

Financial advisors have the opportunity to assess the presence of different motives in their clients quite often. Interviews with practitioners conducted by the author of this book confirm that the emotional ups and downs and the gut reactions to news are a key concern of these professionals just as discussing financial products and providing advice is.

Accepting that emotions have a profound effect on purchasing behaviour explains why investors are not attracted to specific assets just because of their utilitarian characteristics (e.g. risk and return). Value-expressive characteristics attract investors through promises of status and image and represent a very fertile ground for emotions to affect decision-making.

Financial advisors need to address both sources of value to the client to provide effective solutions. Statman (1999) suggests that financial advisors already bundle financial advice with money management and that this effectively addresses both value-expressive and utilitarian characteristics. According to Statman, counselling is both providing information on

available assets and helping clients refrain from purchases that respond to status-seeking motives. Nevertheless, his approach is not ascribable to the debiasing approach previously discussed. The new starting point for both scholars and practitioners is that biases are ordinary features of the "normal investor" (Statman 2005). Such an investor always existed but used to be not fully represented in formal models. New behavioural models in finance like the BPT-MA have now managed to formally describe this investor thanks to behavioural regularities and decades of empirical analyses.

Moreover, as Pompian points out, practitioners sometimes find themselves at odds with behavioural theories because of lack of clarity on how the relevant information—nature of biases and implications for portfolio management—should be collected and used (Pompian and Longo 2005). Chapter 4 discussed the informational requirements regarding clients' profiles that financial advisors must comply with in the current and prospective regulatory frameworks. The discussion has shown how the general principles introduced in the Directives have been translated in very different ways across countries and financial institutions.

If it is evident that correcting all biases is not a reasonable option for advisors, what type of guidance do behavioural models offer to practitioners when it comes to navigating biases? The following sections explore different ways of dealing with investor biases that build on the knowledge provided by behavioural models of decision-making.

4.2 Minimizing the Impact of Biases

In a very popular book, Michael Pompian (2006) provides a useful framework to deal with investors' biases. Pompian devises a useful fourfold pattern of portfolio management that has the investor's financial wealth and the predominance of emotional or cognitive biases as key dimensions. His approach does not completely rule out the possibility for the advisor to correct biases and eliminate their impact on decision-making but is selective on where the advisor's effort should be spent. Biases that cannot be effectively addressed must be accounted for in the portfolio

definition: such biases are mainly emotional ones like regret or anxiety. On the other hand, Pompian contends that cognitive biases can be more easily addressed in a sort of educational process whereby advisors manage to help clients correct them.

The possible attitudes towards biases lend themselves to name Pompian's approach, defined as "Moderate or Adapt". This approach does not require fully adapting portfolio selection to emotional biases or moderating completely the effect of cognitive biases. A mix of the two actions is allowed and even recommended, once the financial wealth of the client and the specific details of the investment scenario are taken into account. Looking at the financial situation of the client, wealthier clients have less to lose in terms of safety from wrong investment decisions, and their biases may be more accommodated in the definition of the portfolio. On the other hand, clients that invest for retirement need to be more safeguarded from bad decisions. This reduces the degree of adaptation that should be allowed.

The moderating component of the approach requires the advisor to provide correct information and invest time and effort in discussing with the client the nature of the bias and its implications for the investment process. Pompian suggests that advisors should be careful in how they phrase their comments, as stark criticism may hamper the relationship with the client.

Pompian reviews the emotional and cognitive biases that investors may be prone to, suggesting practical ways for their assessment by the advisor. For example, to understand the role of frame, he suggests rephrasing the same question in two different ways or proposes sets of questions to present to clients to detect loss or regret aversion.

The analysis of specific case studies presented in the book suggests practical ways in which the Moderate or Adapt approach can be implemented, but Pompian proposes a very flexible recipe for portfolio management that spans from traditional mean-variance portfolios to more behavioural portfolios that could be adapted to any situation.

A similar approach in the detection of potential biases and potential fixes is presented by Statman in another popular book (2010), where he highlights the financial implications of different biases and suggests way in which advisors can cope with them.

4.3 Bypassing Biases: Financial Advisors as Money Doctors

4.3.1 The Rationale

One crucial element in Pompian's approach needs to be further discussed: the advisor–client relationship. As the author suggests, moderating or adapting to clients' biases requires that advisors can "bank" on a stable relationship. The state of the relationship with a client determines the degree at which criticism is considered acceptable. Although Pompian does not explicitly use the word, what needs to be established and carefully maintained is trust between the advisor and the client.

Chapter 3 in this book presents trust as a way to establish the right environment for the advisor to deploy most of his functions: in a fiduciary relationship, advisors perceived as "money doctors" (Gennaioli et al. 2015) or "financial physicians" (Statman 2002) are left in charge of the difficult decisions and are able to steer clients away from potential pitfalls. As Gennaioli and colleagues have shown, trust can theoretically also be used by advisors to increase their commissions, by making clients choose riskier assets than they would if left alone to decide. Nevertheless, this exploitation of trust has positive implications for clients, as it leads to higher returns and engages in trading in financial markets individuals that would be too risk-averse to do it without the advisor.

In Pompian's framework, trust provides the buffer advisors can bank upon when they must make criticisms or argue against a client's position or decision. This is an important implication of trust, to which Gennaioli's framework adds a further layer of effectiveness. In fact, in Gennaioli's framework, trust makes the portfolio definition a delegated process, where the client mainly follows suggestions from the advisor. The likelihood that biases emerge is reduced by the fact that the client is less subject to the stimuli that may generate biases if he delegates decisions or tends to follow the advisor's suggestions.

The construction of a behavioural portfolio has a strong appeal in light of the evidence presented throughout this book. It must be pointed out that constructing a behavioural portfolio is not an easier task compared to building a traditional MPT portfolio. First of all, the advisor must

discuss goals and expectations, learn about the financial situation of the client, and understand which biases he may be more prone to. The pyramidal framework for safety- and upside-potential mental accounts may help to frame the discussion, but some goals may be hard to state out loud or may change more rapidly than one would like to admit. A well-functioning relationship between the advisor and the client is of paramount importance for the definition of an appropriate portfolio, especially a behavioural one.

Given the important role of trust, a natural next question is what trust depends upon and what advisors can do to build it and promote it over time. The next section looks at the literature on the determinants of trust and presents the results of a large study of Italian financial professionals.

4.3.2 Modelling Trust

Trust has no single precise definition. Trust and risk are necessarily linked, as trusting implies making oneself vulnerable to the decisions of others, who in many cases are not formally obliged to reciprocate the trust received. Trust has been defined the "bond of society" by philosopher John Locke and the "lubricant" of the economy by Kenneth Arrow, testifying of the significant effort to understand trust that different social disciplines have expanded over the centuries.

One useful distinction across the different studies is the perspective in which trust is studied: some scholars look at trust as a disposition of the individual, whereas others look at trust as an interactive phenomenon, in which different dispositions are at play.

Psychology is more concerned with the first perspective and has focused on creating attitudinal measures of trust through the definition of trust scales. Such scales see trust as a feature of the individual and are defined through questionnaires that focus on individual perceptions and attitudes towards others. Trust can be directed to a specific category (i.e. family, friends, strangers) or be more generally addressed.

Questionnaire-based trust measures have also become very popular outside the realm of psychology. A very popular measure that is often used in social studies is drawn from the World Values Survey, which asks

respondents to answer the following question: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" (WVS website).

The trust sentiment expressed through scales like this has been proven to play an important role in financial contexts, as suggested by Guiso and colleagues (2008). The authors show that higher trust, measured to the previously mentioned WVS question, is able to explain a higher stock market participation: individuals who trust more are more likely to invest in the stock market and also tend to invest a larger fraction of their income in stocks. Guiso argues that a sharp decline of the trust in financial institutions has been a key element in the recent financial crisis (2010). He suggests the misconducts shown by some operators at the onset of the crisis have shattered the confidence in the integrity of financial operators, even before the real concern of investors shifted to bank solvability. To corroborate further the role of trust, Guiso also cites a study commissioned by Unicredit, one of the largest Italian banks, which shows very similar results in terms of drop in trust towards financial advisors and the financial systems. It is noteworthy that among the ways in which Guiso suggests trust can be rebuilt, tighter regulation and increased transparency are considered broadly ineffective. Distrust is rooted in the perception of the risk of being cheated, which is inherent to all fiduciary situations but has been exacerbated or rendered more evident by the misconducts mentioned earlier. Individuals in the panel who show a more significant drop in trust are, perhaps not surprisingly, the ones calling more often for tighter regulation. Nevertheless, Guiso argues that this mechanism can be successful to rebuild trust only provided that individuals are able to understand the extra information they receive—an assumption that the financial literacy literature and the existence of cognitive biases make at least questionable.

The existence of a trust deficit has been frequently pointed at as the explanation for staggering economic growth, making the headlines of economic newspapers like the *Wall Street Journal* (2017).

Nevertheless, the idea that trust still plays an important role in the advisor–client relationship remains strong in the perception of investors. A 2013 CFA/Endelmann survey of Retail and Institutional Investors in

the US, UK, Hong Kong, Canada, and Australia showed that the first reason to choose a hire a financial advisor is that he is "trusted to act in my best interest", chosen by 39% of the sample, with the ability to generate high returns in second place by a large margin, chosen by 17% of the sample (CFA Institute and Endelman 2013).

A recent report by CONSOB, the National Authority of the Italian Stock Market, paints an interesting picture regarding the role of trust in financial advisory (CONSOB 2016). The report interviews Italian investors and shows that 22% of them identifies in lack of trust a reason to not have a financial advisor. Among the features that may help increase trust in advisors, 15% of interviewees identify formal certifications, but another 15% consider trust to be a subjective perception. It is also noteworthy that 60% of the Italian investors interviewed were unable to precisely say which are the main strengths of a financial advisor.

Moving to an interactive perspective, Pettit recalls three possible interpretations of the word: trust as the confidence that other will treat one well; trust as the confidence that some categories will treat one well in case one's well-being was in their hands; and trust as the confidence that other do treat one when one's welfare is indeed placed in their hands (1995). Pettit develops a concept of interactive trust—*trust responsiveness*—describing conditions under which a manifest act of trust is believed more likely to induce reciprocation. Trust must be manifest, possibly expressed with facts rather than words, as this provides further reasons for trust to be reciprocated: be it because trust testifies of the trustor belief that the trustee is loyal, or virtuous, or afraid of the long-term consequences of breaching trust, making trust manifest triggers a response in the one who receives it. Moreover, since people desire others to like them, making trust manifest offers the trustee a further reason to reciprocate, as this raises the utility from proving trustworthy. Trust is a risky investment, but potential losses do not accrue only to the trustor if trust is not reciprocated: the trustee will also see his credibility shattered and this may have significant costs.

Pelligra (2006, 2007) further builds on this topic, reviewing the historical roots of responsive trust and Guerra and Zizzo (2002) show that the responsive trust hypothesis is robust to different experimental manipulations.

From an economic perspective, trust represents another violation of standard tenets of rationality. When money is at stake, utility maximization implies that individuals always choose the option that is best for them, and there is no direct or indirect consideration of the well-being of others. Trust implies that an individual willingly puts some of his resources at risk, exposing them to the decision of others without any strong commitment to reciprocation.

The workhorse for the study of the implications of trust in economically relevant interactions is the Trust Game (Berg et al. 1995) depicted in Fig. 5.1. The game involves two players, an Investor, and a Trustee, and only the former is endowed with some currency. The Investor must choose how much of his endowment to transfer to the Trustee knowing that he may transfer any amount between zero and the total endowment. The Investor at the end of the game keeps any amount that is not transferred. The Investor knows that any amount transferred will be invested, with a sure return guaranteed by the experimenter equal to three times the amount invested. The Trustee has to divide between himself and the Investor the result of the investment. Any amount between zero and the total final investment can be returned. The structure of the game is such that any positive amount x indicates trust, while any positive amount y indicates trustworthiness.

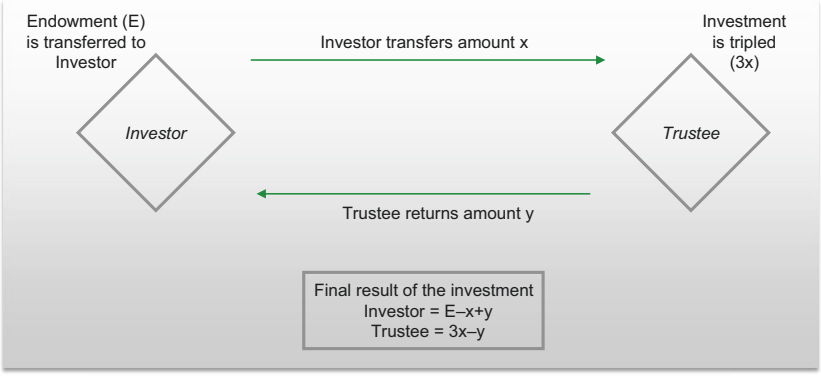


Fig. 5.1 The structure of the Trust Game

It is evident that any welfare-maximizing Investor would refrain from transferring any amount to the Trustee, anticipating he would not return anything. No transfers should occur if individuals were both rational utility maximizers. Any deviation from this state of things indicates that individuals want to trust each other and are prepared to risk some monetary amount to do it.

Not surprisingly, individuals playing the Trust game send on average about 50% of their endowment and receive back the amount they transferred or a little less (Camerer 2003). The Trust game has been replicated many times introducing variations in the experimental setup that change the size of the endowment or the rate of return on the investment. Johnson and Mislin provide a systematic meta analysis of 162 replications of the game (Johnson and Mislin 2011).

Economists traditionally identify two main motives for these deviations from standard rationality: a reciprocating motive and the respect of a social norm. The former indicates that Investors are trustworthy because they expect that this will induce Trustee to want to reciprocate. This motive may be particularly strong when the interaction is repeated and is based on monetary concerns. In that case, Trustees are likely to be trustworthy to induce Investors to continue trusting in the following interaction to preserve the possibility to receive further monetary transfers.[3]

Social norms are unwritten rules of conduct that are shared by a reference group and deemed appropriate for a given situation. In general, norms are enforced through sanctions or penalties for non-compliance, which may also be informal ones. In the case of social norms, non-compliance may induce a cost in terms of reduced social identity or indirect sanctions. In the Trust Game, the social norm to trust and be trustworthy may depend on individual beliefs or on context. Bicchieri et al. (2011) finds in a laboratory setting that trust cannot be considered a social norm, but trustworthiness is: in a laboratory setting, individuals who do not reciprocate trusting behaviour are sanctioned, but those who do not trust are not. This provides support to the idea that trust hinges on the norm to reciprocate, whose existence makes trusting rational in an ecological sense. Trusting becomes rational when there is the founded expectation that trust will be reciprocated.

4.3.3 Trust and Financial Intermediaries

Social norms are frequent in real life: patients trust their doctors even when they do not understand completely the prescribed therapy.

The reader will recognize this argument from Chap. 3, where it was a supporting argument for the "money doctors" model (Gennaioli et al. 2015). In the model, investors are willing to pay a "trust premium" to invest with an advisor. In exchange the advisor is able to increase the frequency and the riskiness of trades, gaining higher commissions. Overall, the investor is better off because he manages to be involved in riskier investment than he would have chosen alone, thus gaining higher expected returns. In some cases, the presence of the trusted advisor is necessary to even get some investors, whose risk aversion is very high, to trade at all.

The "money doctors" model of Gennaioli and colleagues provides the theoretical foundation underpinning the idea that trust is a key element in the advisor–client relationship and that a trust premium can eventually deploy benefits to both parties.

Kostovetsky (2016) presents a very detailed empirical analysis of the impact of trust in portfolio management, looking at fund performance after ownership changes. In the "trust hypothesis", fund managers are not chosen solely based on the past and future performance, but also because of their perceived reliability and trustworthiness. After ownership changes, funds lose about 7% of their assets, mainly because of increased redemptions, supporting the idea that clients do not wish to stay invested when their trusted manager is no more in charge. Moreover, funds that experience high levels of litigation before the merger or acquisition suffer more outflows compared to firms who do not, which confirms that the level of trustworthiness of the acquiring firm is a significant factor in the decision to stay in the fund. Retail clients are the ones driving both of these results, suggesting that trust plays a major role, especially for less literate categories.

The evidence presented confirms that trust plays a key role in shaping financial relations and consequently financial participation and wealth. Trust may be even considered a driver for the success of an advisor: this

suggests that building and fostering trust should become one of the goals of a financial advisor.

Despite the crucial importance of this task, there are only a few studies to date that address the nature of the relationship between advisors and client in order to understand the role of trust. Looking at the investor side, Kanagaretnam et al. (2012) use an experimental setting to set ways in which the power of the investor and the investee can be balanced to avoid potential for betrayal by the investee. They find that when the investor can veto the decision of the investee, trust, measured by transfers in a trust game, increases significantly. The mere presence of a veto triggers increased reciprocation so that vetoes are rarely exercised. The approach followed in this study addressed trust changing the structure of the game from one where trust is needed, to another where trust is not needed anymore. Eliminating the unbalance in the reciprocal power of the two parties almost eliminates the risk that is on the basis of a trusting relationship.

Another study investigating the formation of trust between financial advisors and investors looks at trust as an ecologically rational heuristic to explain levels of trust in real investors from an Italian Cooperative Bank (Monti et al. 2014). Ecological rationality is a form of rationality proposed by Gigerenzer, where the features of the context define strategies. In total, 20 professional financial advisors and 99 clients were involved in the study. The results show that clients trust the bank and the advisor far more than they do the banking system, with the large majority (77%) looking for full delegation of the portfolio decisions. Clients seem aware of the fact that they are not able to fully understand all the information transmitted by the advisor and rely on honest signals to ascertain their trustworthiness. Honest signals are signals that are largely unconscious, and thus cannot be manipulated and are exemplified for instance by friendliness and communication style. Relying on honest signals is ecologically rational, given that clients feel they need the help of an advisor but are also aware of their cognitive limitations.

The study by Monti shows that focusing on the relational features of the advisor–client interactions may provide interesting insights on the underlying trust process. The author of this book and other colleagues at the University of Venice ran a large-scale study of trust in the advisor–client relationship, which involved over 1500 professional

financial advisors belonging to three different networks; the Italian national network of professional financial advisors (ANASF), a group of cooperative banks (BCC) and the national mail service (Poste Italiane group).

The study focused on understanding the drivers of trust from the perspective of the financial advisors, looking in particular at the evolution of trust over time and at the role of different theoretical explanations of trustworthiness. The study involves only financial advisors, and the data were collected through a questionnaire developed specifically to address how the professional, relational and individual features of the advisors help establish the trustworthiness of these financial professionals.

Financial advisors belonging to ANASF represent the bulk of the sample: almost 70% of the interviewees belong to this network, compared to 24% belonging to Poste Italiane and the rest to the BCC group. The three sub-samples differ across important structural features—namely maturity and nature of professional relationship between the group and the advisors belonging to it. The BCC group is a traditional cooperative bank with strong ties to the community and a long history as a financial intermediary, where advisors are formally employed by the bank and are mostly paid through retrocessions. Poste Italiane expanded its range of operations to include financial advisory in 2007 and its advisors are all employees of the group. Despite being a new player in the financial advisory arena, Poste Italiane has a strong tradition and reputation for what concerns savings. ANASF is the more diversified group, as it includes financial advisors that work for different networks, with varying degrees of maturity. All associates of ANASF are professionals that are not formal employees of a bank but have agency agreements.

The three groups also differ in terms of average individual characteristics of the advisors: ANASF and BCC have mainly male advisors, while Poste Italiane has a prevalently female population of advisors.

The study introduces the concept of direct and indirect trust, measured respectively as the perceived trustworthiness of the advisor[4] and the average share of wealth invested with the advisor. Indirect trust is assessed both with respect to new clients (initial indirect trust received) and to clients acquired by over a year (continued indirect trust received), in order to understand what determines the evolution of trust. For the entire

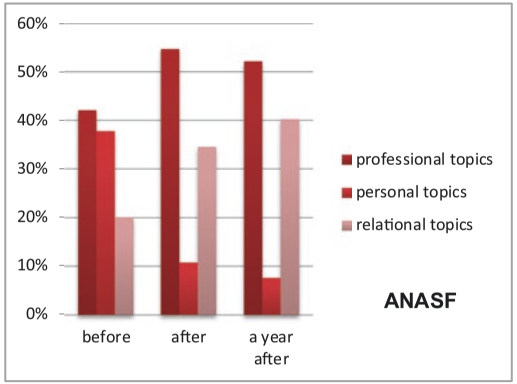
sample there exists a significant statistical difference (Wilcoxon signed-rank test, $z = -28.411$, Prob > $|z| = 0.0000$) between the initial and the continued indirect trust, with the former being significantly lower across the whole sample. This suggests that trust is an evolving process.

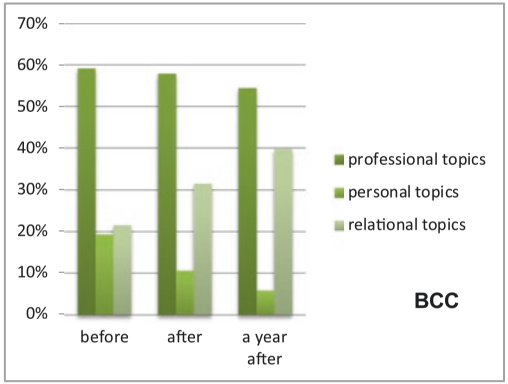
Direct and both initial and continued indirect trusts are also significantly different, which suggests that direct perception is not entirely supported by the empirical trustworthiness.

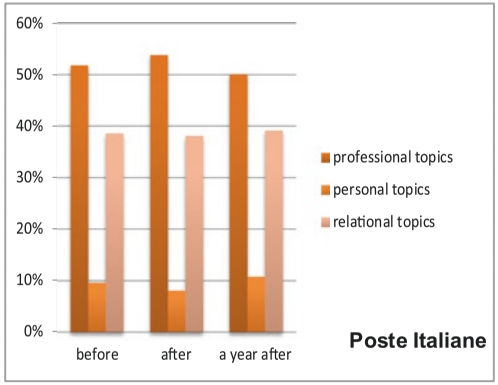
The study focused in particular on relational features of the advisor–client relationship, looking at discussion topics and introducing different professional, personal and relational topics. Professional topics include discussing the bank/network the advisor represents, discussing financial products and investment and about the financial market, economic and political developments. Personal topics include the advisor's own experience in the bank/network and in general, the advisor's continued education. Relational topics refer to discussing non investment-related issues (family, sports, hobbies, culture) or discussing investment choices that the client does not make with the advisor (e.g. mortgage).

Figure 5.2 shows that different organizations seem to adhere to different relational practices: relational features become more frequent both for ANASF and BCC, while the composition of the three sets of discussion topics remain the same for Poste Italiane.

A more detailed study of the ANASF subsample[5] shows that the determinants of indirect initial and continued trust are radically different: initially, the trust received depends positively on word of mouth and size of the clientele but is unaffected by relational aspects. When the relationship with a client becomes more mature, the relative importance of professional success becomes less important as relational features gain in significance. In particular, the frequency of meetings with the client and being of high conscientiousness, coupled with indirect assurance regarding one's competence and professionalism[6] significantly explain the trust received. Naturally, performance does not disappear completely, but the focus is on financial results accrued to the client (in terms of gains) rather than on absolute performance, and the size of the portfolio is negatively related to trust, suggesting that once the relationship with a client is established there is no need to offer many different products, but it is best to personalize the portfolio with fewer assets.







Professional topics (1,4,8); Personal topics (2,3,9,10)
Relational topics (5,6,7)

1. The bank you belong to
2. your professional experience with that bank
3. Your professional experience in general
4. Investments and assets
5. Family, health and free time activities
6. Other financial issues (investments with other intermediaries, mortgages, etc.)
7. Culture and sports
8. Market performance and future political and economical developments
9. Being part of the national network of financial advisors
10. Certifications and training

Fig. 5.2 Discussion topics over time and across organizations

The study is currently in progress to include also the clientele, in order to try to provide a description of the entire circle of trust and match the impressions of the advisors with the perceptions of the clients. Nevertheless, some interesting conclusions may already be drawn. The difference between the determinants of initial and continued indirect trust confirms that it is the result of an evolutionary process where different features are important in the different phases. As the relationship progresses, relational features assume greater importance: this process seems to provide support for the "money doctor" hypothesis, whereby financial advisors are trusted professionals, who also provide peace of mind. This is also suggested by the evolution in the discussion topics: as the relationship evolves, the conversation shifts away from traditionally financial topics.

5 Summary and Conclusions

This chapter has addressed how behavioural finance has translated the findings of behavioural sciences regarding human decision-making into financial advisory practices.

The different approaches to the existence of biases (eliminating or limiting biases) and their implications have been reviewed, looking in particular at the foundations of Behavioural Portfolio Theory and to how it can be translated into specific practices. Once again, behavioural portfolios incorporate a tradition that spans across different disciplines, merging finance and psychology and providing a sound basis for these models.

The chapter also discussed how framing the advisor–client relationship as a fiduciary relationship is consistent with the behavioural approach to portfolio theory. This is due firstly to the fact that the existence of trust allows reducing the information transmission and the resulting possible cognitive overload. Moreover, trust allows for increased delegation, reducing the risk incurred in behavioural biases and achieving peace of mind.

Looking at the empirical literature, this chapter has shown that trust remains a fascinating topic worthy of further investigation, given its significant potential for the financial sector. In a time of uncertainty and scepticism towards the ability of financial markets to increase the welfare of investors, recovering a climate of trust in financial advisory is a very interesting possibility that deserves to be explored.

Notes

1. Many individuals buy lottery tickets and insurances at the same time. From the point of view of a risk profile consistency, this is irrational: buying lottery tickets implies preferring a risky situation (winning a large prize with a small probability or losing a small amount with a much larger probability) to the certainty of the status quo, while insurances imply the willingness to pay for the certainty of being reimbursed in the case in which a small-probability event occurs.
2. Markowitz utility function is able to accommodate the empirical evidence that people do not like symmetric bets (bets where with equal probability one could win or lose the same amount), which was implied in the shape of the Friedman and Savage utility function. He posits that the utility curve should be steeper "to the left of the origin", where the origin is the kink at the current wealth level—a clear anticipation of the "losses loom larger than gains" implication of Prospect Theory.
3. Anticipated reciprocation is very different than the trust responsiveness presented earlier: the former is grounded in monetary concerns, while the other taps into an idea of social norm of reciprocation.
4. This is a self-assessment of the advisor in a scale from 1 to 7.
5. The study is currently forthcoming in the Journal *Bancaria*.
6. Measured by a dummy variable indicating whether the advisors writes regularly on a blog or website. This is considered a signal of competence because the articles are not sent to specific individuals but are available to a wider audience that does not exclusively restricts to clients.

Bibliography

Berg, Joyce, John Dickhaut, and Kevin McCabe. 1995. Trust Reciprocity and Social History. *Games and Economic Behavior* 10: 122–142. https://doi.org/10.1006/game.1995.1027.

Bicchieri, Cristina, Erte Xiao, and Ryan Muldoon. 2011. Trustworthiness Is a Social Norm, but Trusting Is Not. *Politics, Philosophy and Economics* 10 (2): 170–187. https://doi.org/10.1177/1470594X10387260.

Camerer, Colin. 2003. *Behavioural Game Theory*. Princeton: Princeton University Press.

CFA Institute and Endelman. 2013. Investor Trust Study. http://www.cfapubs.org/doi/pdf/10.2469/ccb.v2013.n14.1

CONSOB. 2016. Report on Financial Investments of Italian Households, Statistics and Analyses Series Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2008. *Trusting the Stock Market the Journal of Finance* LXIII (6).

Curtis, Gregory. 2004. Modern Portfolio Theory and Behavioural Finance. *The Journal of Wealth Management* 7: 16–22.

Friedman, M., and L.J. Savage. 1948. The Utility Analysis of Choices Involving Risk. *The Journal of Political Economy* LVI (4): 279–304.

Gennaioli, Nicola, Andrei Shleifer, and Rw Vishny. 2015. Money Doctors. *The Journal of Finance* LXX: 1–40. https://doi.org/10.1111/jofi.12188.

Guerra, G., and D. Zizzo. 2002. *Trust Responsiveness and Beliefs*. Working Paper Series No. 99. Department of Economics, University of Oxford.

Guiso, L. 2010. A Trust Driven Financial Crisis. *EEAG Report on the European Economy 2010*. http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:trust+driven+financial+crisis#1.

Johnson, Noel D., and Alexandra A. Mislin. 2011. Trust Games: A Meta-Analysis. *Journal of Economic Psychology* 32 (5): 865–889. https://doi.org/10.1016/j.joep.2011.05.007.

Kahneman, Daniel. 2011. *Thinking Fast and Slow*. New York: Farra, Starus and Giroux.

Kahneman, Daniel, and Amos Tversky. 1979. Prospect Theory: An Analysis of Decision under Risk. *Econometrica: Journal of the Econometric Society* 47 (3): 263–291. https://doi.org/10.1111/j.1536-7150.2011.00774.x.

Kanagaretnam, Kiridaran, Stuart Mestelman, S.M. Khalid Nainar, and Mohamed Shehata. 2012. The Impact of Empowering Investors on Trust and Trustworthiness. *Journal of Economic Psychology* 33 (3): 566–577. https://doi.org/10.1016/j.joep.2011.11.002.

Kostovetsky, Leonard. 2016. Whom Do You Trust?: Investor-Advisor Relationships and Mutual Fund Flows. *Review of Financial Studies* 29 (4): 898–936. https://doi.org/10.1093/rfs/hhv053.

Larrick, Richard P. 2004. Debiasing. In *Blackwell Handbook of Judgement and Decision Making*, ed. Derek J. Koehler, Nigel Harvey, and Richard P. Larrick, 316–337.

Lopes, Lola L. 1987. Between Hope and Fear: The Psychology of Risk. *Advances in Experimental Social Psychology* 20 (C): 255–295. https://doi.org/10.1016/S0065-2601(08)60416-5.

Markowitz, Harry. 1952a. Portfolio Selection. *The Journal of Finance* 7 (1): 77–91. https://doi.org/10.1111/j.1540-6261.1952.tb01525.x.

———. 1952b. The Utility of Wealth. *Journal of Political Economy* 60 (2): 151–158. https://doi.org/10.1086/257177.

Monti, Marco, Vittorio Pelligra, Laura Martignon, and Nathan Berg. 2014. Retail Investors and Financial Advisors: New Evidence on Trust and Advice Taking Heuristics. *Journal of Business Research* 67 (8): 1749–1757. https://doi.org/10.1016/j.jbusres.2014.02.022.

Mullainathan, Sendhil, Markus Noeth, and Antoinette Schoar. 2012. *The Market for Financial Advice: An Audit Study*. NBER Working Paper Series, 1–32. http://www.nber.org/papers/w17929.

Pelligra, V. 2006. *Trust Responsiveness: On the Dynamics of Fiduciary Interactions*. CRENOS Working Paper No.15.

———. 2007. *I paradossi della fiducia. Scelte razionali e dinamiche interpersonali*. Bologna, Italy: Il Mulino.

Pettit, Philip. 1995. The Cunning of Trust. *Philosophy & Public Affairs* 24 (3): 202–225. https://doi.org/10.1111/j.1088-4963.1995.tb00029.x.

Pompian, Michael M. 2006. *Behavioral Finance and Wealth Management: How to Build Optimal Portfolios That Account for Investor Biases*. *Wiler Finance*. https://doi.org/10.1007/s11408-007-0065-3.

Pompian, Michael M., and John M. Longo. 2005. Incorporating Behavioral Finance into Your Practice. *Journal of Financial Planning* 18 (3): 58–63. http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=16401771&site=ehost-live.

Rengifo, Erick W., Rossen Trendafilo, and Emanuela Trifan. 2014. Behavioral Portfolio Theory and Investment Management. In *Investor Behavior: The Psychology of Financial Planning and Investing*, ed. H. Kent Baker and Victor Ricciardi, vol. 22, 421–438. Hoboken, NJ: John Wiley & Sons, Inc. https://doi.org/10.2469/faj.v22.n4.91.

Roy, A.D. 1952. Safety First and the Holding of Assets. *Econometrica: Journal of the Econometric Society* 20 (3): 431–449. https://doi.org/10.1177/002795018109800105.

Shefrin, Hersh, and Meir Statman. 2000. Behavioral Portfolio Theory. *The Journal of Financial and Quantitative Analysis* 35 (2): 127. https://doi.org/10.2307/2676187.

Statman, Meir. 1999. Behaviorial Finance: Past Battles and Future Engagements. *Financial Analysts Journal* 55 (6): 18–27. https://doi.org/10.2469/faj.v55.n6.2311.

———. 2002. Financial Physicians. AIMR Conference Proceedings, 5–11.

———. 2005. Normal Investors, Then and Now. *Financial Analysts Journal* 61 (2): 31–38.

———. 2010. *What Investors Really Want*. New York: McGraw-Hill Education.
Thaler, Richard H., and Shlomo Benartzi. 2004. Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving. *Journal of Political Economy* 112 (S1): S164–S187. https://doi.org/10.1086/380085.
Thaler, Richard H., and Cass R. Sunstein. 2003. LIbertarian Paternalism. *American Economic Review* 93 (2): 175–179. https://doi.org/10.1177/147787850300100 1003.
———. 2008. *Nudge: Improving Decisions about Health, Wealth and Happiness*. New Haven, CT: Yale University Press.
Tversky, Amos, and Daniel Kahneman. 1992. Advances in Prospect-Theory – Cumulative Representation of Uncertainty. *Journal of Risk and Uncertainty* 5 (4): 297–323. https://doi.org/10.1007/Bf00122574.
Financial Therapy Association. https://www.financialtherapyassociation.org. Accessed 3 July 2017.
Wall Street Journal. https://www.wsj.com/articles/SB10001424127887323854904578264161278400462. Accessed 16 July 2017.
World Values Survey website. http://www.worldvaluessurvey.org/WVSOnline.jsp. Accessed 16 July 2017.

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[1]Note: Page numbers followed by 'n' refers to notes.

C. Cruciani, *Investor Decision-Making and the Role of the Financial Advisor*,
https://doi.org/10.1007/978-3-319-68234-1