

FINANCIAL ADVISERS AND THEIR CLIENTS: CAN THERE BE A MEETING OF MINDS?**Abstract**

In the UK the last two decades have witnessed a number of ‘mis-selling scandals’ in which financial advisers have been accused of mis-selling to their clients. The general presumption has been that malevolent, or incompetent, advisers have cheated or failed their clients. This article uses the principles of behavioural finance to suggest that many cases of apparent mis-selling may have entailed neither malevolence nor incompetence. The suggestion is that the process of communication between adviser and client contains many imperfections, which could be responsible for clients feeling that they have been mis-sold financial products. Even when a competent adviser attempts to honestly and fully satisfy the needs of a client, the client may feel or recall that mis-selling has occurred.

In the United Kingdom financial advice has come under considerable scrutiny over the last two decades. In particular there is a widespread belief that financial advisers have sold products such as pensions and endowment policies in ways that are unacceptable. One charge is that the advisers, driven by the desire to earn commission from sales, have misled their clients.

Whilst it is possible that some financial advisers have consciously put their own interests ahead of those of their clients, or have demonstrated incompetence, it is likely that many of the accused have been neither consciously dishonest nor incompetent. The point to be made here is that apparent mis-selling can arise even when advisers cannot be faulted on the grounds of either conscious dishonesty or incompetence.

Financial advisers paid by commission have a conflict of interest. The products that are best for the client are not necessarily those that pay the highest commission. It might be argued that advisers should have sufficient integrity to consider only the interests of their clients, but even the highest integrity does not eliminate bias. Research into the behaviour of auditors has indicated that the psychological processes involved in conflicts of interest can occur without any conscious intention to indulge in corruption (Moore, Tetlock, Tanlu and Bazerman 2006). Confirmation bias, which entails a focus on information and arguments that support one’s interests and rejection of opposing information and arguments, is not a conscious process. Montier (2007) has referred to the notion that people are able to

exclude self-interest in decision-making as the Illusion of Objectivity. Biases from motivated reasoning are widespread; evidence exists for their presence amongst medics and judges. The human mind is not a disinterested computer; its operation is affected by moods, emotions, motives, attitudes and self-interest. However hard an adviser might try to exclude personal interest, it is not possible to do so.

The inclination of financial advisers (and everyone else) to consider their own interests is often referred to as the self-serving bias. Most people try to be fair and objective, and like to feel that others see them as acting fairly and objectively. However attempts to be fair and objective are undermined by psychological factors of which people are unaware. The self-serving bias inclines people (unconsciously) to gather information, process information and remember information in such a way as to satisfy their self-interest. Evidence that supports self-interest may be accepted without question whilst contradictory evidence is closely scrutinised (Koehler 1993). The self-serving bias, as other behavioural biases, tends to be stronger in situations characterised by complexity and uncertainty (Banaji, Bazerman and Chugh 2003).

Often people will rationalise unethical behaviour in order to preserve a self-image of being ethical. Rationalisation is alternatively known as self-justification. Anand, Ashforth and Joshi (2005) described some types of rationalisation. They included denial of responsibility; e.g. "It is not my choice, it is the way the business operates" or "The client makes the final decision" or "All my actions are guided by God" or "The law allows it, so it is the fault of the government." Another rationalisation is denial of injury; e.g. "I know the fund charges are high, but the good fund management will more than compensate." There is denial of victim; e.g. "The client does not pay the commission, the life assurance company pays it" or "Customers are clever, they are not fooled." There is appeal to higher loyalties; e.g. "I have a family to keep." Another form of rationalisation is the metaphor of the ledger; e.g. "The value of my advice is greater than the value of the commission".

Although good intentions are necessary for ethical behaviour, they are not sufficient. Cognitive limitations and biases, including the self-serving bias, can lead to unethical behaviour even when the intention is to be ethical. Many people accidentally blunder into unethical behaviour (Prentice, 2007). A complicating issue is the tendency for people to be overconfident about their ethical standards. The

self-enhancement bias not only leads people to believe that they are above average in their abilities, but also that they are above average in the maintenance of ethical standards (Jennings 2005). If people are overconfident about their ethical standards, they may be less inclined to critically examine their behaviour; “I am a good person, so what I do must be ethical”.

Colleagues and authority can undermine someone’s ethical standards without the person being aware of the process. There is a conformity bias whereby people conform to the values and behaviours of those around them, including colleagues. A person could unconsciously adopt the unethical behaviour of others. Obedience to authority figures, such as employers and managers, can be a strong tendency. Even when explicit instructions are not given they may be inferred (Tetlock 1991). Strong emphasis on sales targets could be taken as implying that sales volume is more important than other factors such as business ethics. The conformity bias can result in groupthink (Janis 1982, Sims 1992). Groupthink entails a uniformity of thought and values within a group. In business settings bonding activities such as awaydays reinforce groupthink. If the thinking of the group were unethical, a new member would tend to adopt the unethical thinking. The concurrence of other group members in a set of values could lead to the belief that those values are ethical.

Risky shift is the tendency for a group to take bigger risks than individuals within the group (Coffee 1981). Group action dilutes an individual’s feelings of responsibility (Schneyer 1991). The increased risks include increased ethical risks. Clients might be advised to make risky investments. Such a tendency would be reinforced by the optimism bias. This can manifest itself in an understatement of risk (Smits and Hoorens 2005) and an exaggeration of profit potential. The optimism reflects genuinely held beliefs on the part of the financial adviser. Corporate insiders may provide over-optimistic forecasts because they really believe them, rather than because they intend to deceive investors (Langevoort 1997). The same may be true of investment analysts (Prentice 2007) and financial advisers.

MacCoun (2000) suggested that the chances of removing cognitive biases from people’s thinking are very low. The implication is that regulation, to protect consumers from cognitively biased advisers, is necessary. The principles of behavioural finance throw light on the effectiveness of specific regulatory

measures. For example in the UK financial advisers are required to tell clients how much commission the advisers expect to receive. Laboratory studies have indicated that clients follow the advice of advisers to nearly the same extent as they would in the absence of knowing about the conflict of interest. Also advisers seem to feel less compelled to be impartial when the conflict of interest has been revealed. The presumed increased scepticism on the part of the client is seen as reducing the need to be impartial (Bazerman and Malhotra 2005; Cain, Loewenstein and Moore 2005).

Even if a commissioned-based financial adviser were to achieve the impossible, and exclude personal interest from their advice, there is still considerable scope for apparent mis-selling to arise as a result of communication difficulties. What the adviser says and what the client hears can be very different.

Differences in Perception

Differences in perceptions can cause communication failures between advisers and their clients.

Advisers may give what they see as good advice, when the advice is viewed in the light of their own perceptions. The clients interpret what they hear in the light of their perceptions, and their interpretations could differ from those of the advisers. In consequence clients may feel that they were misled (mis-sold), whilst the advisers believe that their advice was good.

Risk could be regarded as uncertainty that can be measured and which has significance for a person.

The dimensions of risk might be seen as (Sitkin and Weingart 1995; Loewenstein, Hsee, Weber and Welch 2001):

1. The expected variance of the probability distribution of possible future outcomes. A high variance indicates high risk. More sophisticated expectations might encompass skewness and kurtosis.
2. The significance of the outcomes (including emotional significance). Low significance is associated with low perceived risk.
3. The perceived controllability of the outcomes. Perceived controllability reduces risk.
4. The person's confidence in their estimates of the previous three dimensions. Low confidence entails high risk. Low confidence is also reflected in a high expected variance of the probability distribution.

What is seen by one person as a major risk may be perceived by another as a minor risk (Ricciardi 2008). People vary considerably in terms of all four of the dimensions. Sjöberg (2000) found variations in general risk sensitivity; some people show considerable concern about a wide range of potential hazards whereas others appear oblivious to all risks. Cultural theory (Douglas and Wildavsky 1982; Dake 1991) suggests that people vary in terms of the type of risk that concerns them most. This theory classifies people into four categories: individualists, egalitarians, hierarchists and fatalists. The individualists are the group most likely to be concerned with stock market risk whereas egalitarians tend to be primarily concerned with environmental risk, hierarchists with the risk of crime and fatalists are relatively indifferent to risk.

Risk means different things to different people. Investment decisions are often taken in consultation with a financial adviser. However what the adviser understands by risk may differ from what the client understands by risk. Diacon (2004) found that advisers were less fearful of losses (less loss-averse) than investors, and less likely to see financial services products as complicated. He also found that advisers were more willing to trust the providers of financial products and to trust regulators.

According to MacGregor, Slovic, Berry and Evensky (1999, p. 84): “More than two decades of research on the psychology of risk perception in domains other than finance have revealed that the prospects for effective risk communication between professionals and non-professionals are exceedingly dim when they do not share a common definition of risk.”

Experts tend to think of risk as objective and measurable, and to have a narrow definition of risk.

Individual investors are more likely to have a subjective and multi-dimensional view of risk.

MacGregor, Slovic, Berry and Evensky, based on a survey of financial advisers, suggested that the narrow and objective measure of risk was present in the tests for risk-aversion administered to clients rather than in the minds of the advisers. Their finding was that advisers saw risk as multi-dimensional, as did their clients. They expressed the view that representing risk-aversion as a uni-dimensional index may make communication between advisers and clients more difficult.

The risk perceptions of individual investors may be widely shared as a result of social interaction. Non-experts may demand certainty of expectations, which experts know cannot be provided. Uncertainty of expectation could be frustrating for the clients of advisers. The differing perceptions of risk, between adviser and client, could be responsible for some of the mis-selling claims in the UK during the 1990s and 2000s. The adviser may not fully communicate the potential range of variability of investment outcomes, possibly because of a failure to understand the extent of a client's misunderstanding of risk. Diacon suggested that it might be useful to include consideration of risk perception and behavioural finance in the training of financial advisers (behavioural finance is the application of psychology to the understanding of financial decision-making).

One problem is that verbal questioning requires very good communication with the client. If clients have a poor understanding of risk, and are unclear about their own feelings towards risk, the process of measuring their attitudes to risk can be difficult. There is considerable scope for a failure of communication (Callan and Johnson, 2002). The alternative of using questionnaires is also open to difficulties. There is the problem of whether a questionnaire accurately measures attitude towards risk. Yook and Everett (2003) found that different questionnaires produced very different results; so at least some of the questionnaires were inaccurate. Confidence in the questionnaires was also undermined by the observation that the relationships between questionnaire responses and investment decisions appeared to be weak.

Finance professionals may measure risk as the expected standard deviation of returns on an investment. The standard deviation of returns is a measure of volatility. It is assumed by conventional finance models, such as the Markowitz portfolio diversification model, that volatility and perceived risk are closely related. However research has found that there can be substantial differences between volatility and perceived risk. Choices appear to be better explained by perceived risk than by volatility (Jia, Dyer and Butler, 1999). Perceived risk, in contrast to volatility, incorporates affective (emotional) reactions to uncertainty (Loewenstein, Weber, Hsee and Welch, 2001). The distinction between volatility and perceived risk was reinforced by Weber, Siebenmorgen and Weber (2005). They found that presentational factors that affected expected volatility had no effect on perceived risk, and that

perceived risk had more effect on investment choice than expected volatility. The familiarity of asset names, which may be expected to elicit emotional responses, had strong effects on risk perception and investment choice. This is consistent with the other evidence relating to the familiarity bias.

Vividness appears to be a factor in the incorporation of emotion into the perception of risk. Vividness refers to the emotional interest or excitement engendered by an event (Plous 1993). Stock market bubbles and crashes are examples of vivid events. The effects of vividness on attitudes and behaviour are not necessarily reasonable but are not permanent (Grable, Lytton, O'Neill, Joo and Klock, 2006).

Among non-experts risk is perceived as greater if the person lacks information about, or control over, outcomes. Lack of information and control in regard to investment outcomes leads to mistrust of providers of financial services and mistrust of financial advisers (Sjoberg, 2001). The mistrust of financial advisers may be based on a perceived affiliation bias whereby advisers are seen as being too trusting of the providers of financial services. Also experts tend to think in terms of an average consumer, whereas individuals are concerned specifically with their own case.

A report produced jointly by Distribution Technology and The Pensions Institute in the UK (Distribution Technology, 2005) put investors into three categories. The first category, which accounted for more than a half of people, was distinguished by 'loss avoidance'. This category was characterised by a refusal to take any risk. The second category (the smallest) was distinguished by 'extreme loss aversion'. Whilst prepared to take some risk, the compensation required to take risk (in terms of expected additional return) was extremely high. The third category (the second largest) was distinguished by 'moderate loss aversion'. It is among this group that realistic views of long-term investment were found. The third category tended to have relatively high levels of general education and to be relatively young.

It is common for financial advisers to measure attitude towards risk, typically using a set of questions, before providing advice to a client. However another factor identified by Grable, Lytton and O'Neill throws the usefulness of such risk measures into doubt. They found that recent stock market performance influenced attitudes to risk; a finding confirmed by Yao, Hanna and Lindamood (2004). A

recent rise in share prices makes people more tolerant of risk whereas a recent fall causes them to be more averse to risk. The consequence is that attitudes to risk change over time and that measurement of attitude to risk at a single point in time may produce an unrepresentative result.

People are constantly bombarded with information about situations and events around them. Perception is not an exact recording of information relating to an object, event or situation. Perception is an interpretation that is unique to an individual and may differ substantially from objective reality (Luthans 1998). It is the selection and organisation of information to provide an experience with meaning for a person. The individual searches for the best explanation of information based on that individual's knowledge, experience, values, motivations and feelings. A perception may be based on the person's past experience of a similar event, situation, activity or object (Ricciardi 2008). There is a tendency to make new information match what is already known and understood. The mind interprets information with the result that different people can perceive very different things on the basis of the same objective information.

Litterer developed a model of perception in which external information is subject to three internal processes (Litterer 1965; Kast and Rosenzweig 1970). The three internal processes of perception formation are selectivity, interpretation and closure. Selectivity is the means of dealing with information overload. The individual selects only part of the information available from the objective environment. The second process, interpretation, depends on a person's past experience and the person's system of values. The same objective information can be interpreted and perceived in different ways by different people. The third mechanism, closure, concerns the tendency of individuals to create a complete picture or story in relation to a situation. The individual may perceive more than the objective information provides. When external information is being processed additional information is attached in order to achieve completeness and significance. The interpretation and closure stages feed back to selectivity and affect the subsequent functioning of selectivity.

One consequence of these processes is that what an individual perceives may not actually exist, or may be a distortion of what exists. This is important since behaviour is based on the perception of reality; not on reality itself.

Frederick (2005) has presented evidence that the accuracy of the perception of risk, and risk tolerance, are related to a personality characteristic referred to as 'cognitive reflection'. Cognitive reflection is the ability to resist the first impulse or intuition. It is the tendency to reflect and think about a problem rather than following initial inclinations. People who are high in cognitive reflection tend to be good at evaluating risky investment situations, and tend to be willing to take risks.

Cognitive reflection appears to be similar to the process that Kahneman (2003) has called reasoning. Kahneman distinguished between two modes of thinking: namely intuition and reasoning. Reasoning is carried out deliberately and with effort. Intuition is spontaneous without conscious search, calculation or other effort. The process of intuition is similar to the process of perception. Intuition accounts for most thoughts and actions.

Stanovich and West (2000) labelled these two forms of cognitive process 'System 1' and 'System 2'. The operations of system 1 (intuition) are fast, automatic, effortless and likely to be influenced by emotion. They are also subject to habit and hence difficult to modify, so that change as a result of learning would be slow. The operation of system 2 (reasoning) is slow, deliberate, controlled and requires effort. It is relatively amenable to change through learning. Since a person's capacity for mental effort is limited, attempts at reasoning are not easily done simultaneously with each other whereas intuitions can be simultaneous with each other and with reasoning since intuition requires very little mental capacity.

It was not suggested that intuitive thinking is always, or even typically, bad thinking (Klein 1998). However intuitive thinking can lead to errors and system 2 may monitor intuition to some extent in order to detect potential errors. If a potential error is detected reasoning may be used to correct it. There is evidence that the monitoring role of system 2 is impaired by pressure of time, by simultaneous involvement in another reasoning task and by good moods, with the effect that the ability to avoid errors of intuitive judgment is impaired (Finucane, Alhakami, Slovic and Johnson, 2000; Gilbert 2002; Isen, Nygren and Ashby 1988). Reasoning (system 2) is positively correlated with intelligence and with whether the person enjoys thinking (Stanovich and West, 2002; Shafir and LeBoeuf, 2002).

Table 1 indicates possible differences between financial advisers and their clients in relation to perceptions, including the perception of risk. This draws on psychological factors identified by the literature on behavioural finance. It assumes that the adviser is highly informed and rational whilst the client is uninformed and irrational (evidence for the relative rationality of advisers comes from Nofsinger and Varma, 2007). Although this is an extreme position, it is probably a reasonable approximation to many interactions between adviser and client. This is not to say that advisers are unaffected by the behavioural biases mentioned. In addition they may have some of their own, for example assumptions about constancy of preferences and homogeneity of clients. Everyone has a tendency to simplify in order to manage the plethora of information with which they are faced.

Table 1

Mis-selling or miscommunication? Apparent mis-selling of financial products may be the result of different perceptions between advisers and clients.

<u>ADVISER</u>	<u>CLIENT</u>
Symmetrical view of risk	Prone to loss aversion
Objective probability	Decision weighting
Risk is objective	Risk is subjective
Objective	Frame dependent
Objective benchmarks (e.g. stock index)	Personal benchmarks
Objective	Availability bias
Objective	Home bias
Objective view of investments	Attachment bias/ego-involvement
Flexible	Endowment effect
Flexible	Prone to anchoring
Objective	Disposition effect
Objective	Decisions influenced by emotion and mood
Detached	Influenced by social mood
Detached	Susceptible to rumours

Accepting of uncertainty	Unable to accept randomness
Accepting of uncertainty	Illusion of control
Accepting of uncertainty	Prone to representativeness
Rational	Superstitious (conjunction fallacy)
Realistic	Outcome biased
Realistic	Overconfident
Objective expectations	Hindsight biased expectations
Focus on appropriate horizon (e.g. 20 years)	Focus on inappropriate horizon (e.g. 1 month)
Focus on relevant risk (e.g. income risk)	Focus on irrelevant risk (e.g. capital risk)
Financial products understood (familiar)	Financial products complicated (unfamiliar)
Financial products understood (familiar)	Information overload
Future orientated/ Decisive	Hyperbolic discounting/ Procrastination
Concerned with typical client	Heterogeneous
Assumes constant risk aversion	Risk aversion variable
Focus on whole portfolio	Mental accounting/ goals based
Focus on whole portfolio	Choice bracketing
Focus on whole portfolio	Focus on individual investments

Diacon and Ennew (2001) identified five dimensions of risk that were of particular importance to retail investors: distrust of the product and/or provider and/or adviser; the seriousness of adverse consequences; volatility of return/value; poor knowledge and/or poor transparency; and regulatory failure.

An exchange between contracting parties, such as that between client and financial adviser, requires trust. Clients must be confident that advisers will not exploit the relative ignorance of the clients (the asymmetric information). Trust requires that the client has confidence in the competence and benevolence of the adviser. Risk perception is magnified when clients feel that they cannot trust advisers and providers. Clients find many products difficult to understand, and are therefore dependent

upon the advice of an expert. Clients will perceive high levels of risk if advisers or providers are not trusted.

The seriousness of adverse consequences relates to the loss aversion identified by prospect theory, wherein the pain of loss exceeds the pleasure of gain. According to prospect theory people are concerned with gains and losses more than with levels of wealth, and there is a particular fear of loss. This is known as loss-aversion. Diacon and Ennew found that loss-aversion was present alongside risk-aversion, which is the dislike of volatility (i.e. price variations) irrespective of direction.

Poor knowledge and understanding was a risk factor that affected a number of financial services products such as personal pensions, endowment policies, and investment bonds. These products often lack transparency with the effect that the consumer may be unclear about the nature, operation and performance of the product.

Research by MacGregor, Slovic, Berry and Evensky (1999) suggested that, although risk perceptions have more dimensions than simply volatility of prospective returns, judgments of volatility correlate with judgments of risk under many circumstances. However their findings throw doubt on whether investors think in terms of a risk-return trade-off. They provided evidence that investors merge expected return and perceived risk into a single measure of 'goodness', with expected return being the dominant element perhaps because it is more clearly defined and measured than risk.

Symmetrical view of risk versus Prone to loss aversion

On average, people find the pain of losses to be about 2.25 times as intense as the pleasure from gains. Given an evens chance of winning or losing, people on average require the prospect of a £225 win to balance the prospect of a £100 loss. This relatively large fear of loss, known as loss aversion, will tend to deter retail investors from stock market related investments. The ratio of the pain of loss to the pleasure of gain is about 70/30. The ratio of years in which the stock market falls to the number in which it rises is about 30/70. If investors checked the market more frequently than once a year, the ratio of losses to gains would be higher. Loss aversion could be a strong inhibitor of stock market

investment. Loss aversion may explain the popularity of guaranteed equity funds, which guarantee that the original investment cannot be lost whilst providing gains from rises in share prices.

According to prospect theory gains and losses are measured against a reference point (Kahneman and Tversky 1979, 1982). The reference point is subjective, but is likely to be influenced by one or more past values. Possibilities include the purchase price of the investment, the highest price seen, or an average of observed previous values. Heath, Huddart, and Lang (1999) concluded, on the basis of evidence from the exercise of employee stock options, that the most likely reference point used is the highest price of the previous twelve months. It appears that people periodically update the reference point to reflect unrealised profits. However the study of the Boston housing market by Genesove and Mayer (2001) is consistent with the purchase price constituting the reference point.

Lin, Huang and Zeelenberg (2006), from a survey of investors, concluded that multiple reference points could be present simultaneously. The most important was the outcome from not investing at all. Two other significant reference points were the expected outcome, and the outcome from the best-performing alternative. The outcome from the worst performing alternative was not a significant reference point; the observation that the outcome could have been worse did not appear to provide any comfort. The direction of deviation from a reference point was more important than the size of deviation in the generation of feelings of regret or pleasure. Contrary to prospect theory, no asymmetry between upward and downward deviations was found. Upward and downward deviations from reference points appeared to have equivalent effects on feelings of regret and gratification.

It has been suggested that reference points may evolve over time with the result that loss aversion is accompanied by disappointment aversion (Ang, Bekaert and Liu, 2005; Fielding and Stracca, 2007). Under loss aversion an investor has a fixed reference point, which might be the current level of stock prices or the current value of personal wealth. Gains and losses are evaluated against the reference point. The reference point could evolve according to the investment horizon. If reference points change over time there could be a disappointment aversion in addition to a loss aversion. In the case of disappointment aversion the pain or pleasure is brought about by deviations from expectations. The disappointment related to outcomes below expectations is stronger than the pleasure related to

outcomes that exceed expectations. Although losses on investments may occur only in the short term, there may be disappointments in the long term. Although there may be gains in the long term, they would result in negative feelings if they fell below expectations. Whether loss aversion and disappointment aversion are alternatives or coexist, the tendency for the pain of loss or disappointment to exceed the pleasure of exceeding reference points could deter investors from risky investments such as stocks.

Objective probability versus Decision weighting

In relation to perceived probabilities, the biases identified by prospect theory (Kahneman and Tversky 1979, 1982) are tendencies to exaggerate small and large probabilities and under-weight medium ones. See figure 1.

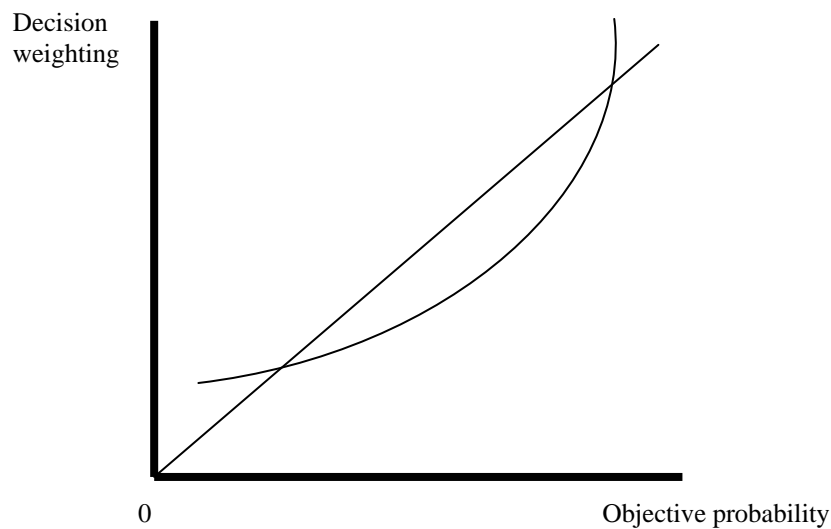


Figure 1

In figure 24.2, subjective (perceived) probabilities are referred to as decision weightings. When plotted against actual probabilities the decision weights are too high at low and high probabilities and too low at medium probabilities. The exaggeration of high probabilities suggests that highly likely (but not certain) events are treated as being certain. This is consistent with the idea of overconfidence. Investors can become overconfident about their forecasts to the extent that they forget that markets are uncertain.

Risk is objective versus Risk is subjective

A feature of representativeness is that it can lead investors to the belief that an investment that is good in one respect will be good in other respects (Shefrin, 2001a). As a result investors may see low risk as associated with high returns, and high risk as associated with low returns. This runs counter to generally accepted expert opinion. It is similar to the halo effect, which suggests that something with some positive characteristics will be expected to have other positive characteristics (and something with some negative characteristics would be expected to display other negative features).

Perceptions of risk based on affect (feelings and emotions) are referred to as subjective risk. Risk that is measured in terms of standard deviations is objective risk. High subjective risk is associated with low expected returns (the halo effect) whereas high objective risk is associated with high expected returns (Statman, Fisher and Anginer; 2008).

The findings of Byrne (2005) are relevant to this point. It was found that people with expertise in investments expected high risk to be associated with high return whereas novices tended to see risk and return as unrelated. Neither experts nor novices saw a relationship between risk and return when considering property investments. Evidence of an inverse relationship between perceived risk and expected return in relation to financial investments comes from MacGregor, Slovic, Berry and Evensky (1999), Ganzach (2000), Diacon and Ennew (2000), Jordan and Kaas (2002) and Byrne (2005).

Objective versus Frame dependent

In relation to investment decisions, it has been found that the way information is framed will influence choices. For example different stock indices can change at different rates. At the time of writing, the FTSE All-Share Index has risen substantially more than the FTSE 100 Index over recent years. If the performance of a fund is presented in relation to the FTSE 100, it would appear to be much more impressive than if its performance is presented relative to that of the FTSE All-Share Index. As another example it has been found that if stock market returns averaged over thirty years are presented, people

are more likely to invest than if thirty single year returns are presented. Many single year returns are negative, but no thirty-year period has yielded negative returns.

Small differences in how risks are presented can have substantial effects on how they are perceived (Slovic, Fischhoff and Lichtenstein 1980). The differences in presentation could arise in two ways: from variations in the context of a decision and from changes in the wording of the problem (Kahneman and Tversky 1979). Diacon and Hasseldine (2007) investigated framing effects and found that the presentation format of prior performance affected investment fund choice. They found that presenting past information in terms of fund values as opposed to percentage yields significantly affected investment choices. The alternatives were charts one of which showed the accumulated growth in the value of a fund over time relative to a base value, such as 100, and the other showed a series of vertical lines indicating the growth in each year. The charts of cumulative value growth evoked considerably more positive response than series of growth rates. The presentation of a series of vertical lines indicating annual growth rates produced perceptions of greater risk.

Since reference points are subjective values they are susceptible to psychological biases. An important feature of reference points is that they appear to be influenced by the form in which information is presented, in other words according to how a situation is framed. For example telling an investor that a portfolio has risen in value by 5% might give the feeling that the reference point has been exceeded whereas saying that it has underperformed a benchmark by 5% could cause a perception of loss, whilst both statements may record the same outcome. The latter framing is likely to raise the reference level. A statement that share price gains have outweighed losses may cause a different reference level than a statement that some losses have held back the overall profit. The former statement, which is positive, is likely to engender a more positive perception of the outcome than the latter statement, which is negative.

An example of how the framing of information influences perceptions is the line often used by financial advisers when attempting to sell regular savings schemes: a share price rise is good because you become richer but a fall is also good because your money buys more shares (these are both positive statements). A client is less likely to be told: a share price rise is bad because your money buys fewer shares but a fall is also bad because you become poorer (negative statements).

Objective benchmarks (e.g. stock index) versus Personal benchmarks

In relation to investment (financial asset) risk, investors could see risk in relation to three possible benchmarks. One benchmark is zero; an investor may primarily be concerned with the possibility of a return below zero, a loss in absolute terms. Another possible benchmark relates to an alternative investment, for example performance relative to a stock index such as the FTSE 100; underperformance may be regarded as an opportunity loss. A third benchmark could be a predetermined personal goal; underperformance indicates that personal financial planning is not proceeding in line with expectations.

Objective versus Availability bias

Another bias is availability (alternatively known as retrievability), which suggests that more attention is given to the most easily recalled information. The ease with which specific information can be recalled from memory affects judgments about the relative frequency and importance of events. This causes overestimation of the probability of well-publicised, vivid and recent events (Schwartz 1998). People are more likely to remember occurrences that induce emotions, are very dramatic and have been experienced recently. Availability is consistent with the over-reaction hypothesis, one dimension of which is the over-emphasis on recent information and recent events when making investment decisions.

In terms of investments, one source of information is press coverage. If availability operates, stocks that receive (favourable) press coverage are relatively likely to be bought in large numbers and hence more likely to be over-priced. Gadarowski (2001) confirmed this by demonstrating that shares with extensive press coverage subsequently performed poorly (there was a relative decline from excessively high prices). Katona (1975) indicated that what the media reports could have considerable influence on social learning. The behaviour of large segments of population can change suddenly in response to news. Availability can also lead people to the belief that investment skills are more common than they actually are. Press coverage of successful fund managers such as Warren Buffett and George Soros greatly exceeds press coverage of poor managers. In consequence the retrievability of such coverage can result in the impression that many investment managers are capable of out-performing stock

markets. Stock market crashes are vivid and dramatic events capable of invoking emotions. They also tend to receive considerable media coverage. In consequence many investors may have an exaggerated view of the likelihood of crashes.

Objective versus Home bias

Ambiguity aversion (alternatively known as familiarity bias) suggests that investors prefer to invest in companies that they feel they understand. Over 90 per cent of the equity investments of investors in the US, UK and Japan is in companies in their own countries. This home bias exists despite the demonstrated benefits of international diversification. The preference for the familiar results in the holding of portfolios that are insufficiently diversified. In consequence investors bear more risk than is necessary.

Objective view of investments versus Attachment bias/ego-involvement

Emotions can be particularly important when there is 'ego-involvement', which entails investors identifying with their investment choices (Dweck and Leggett, 1988). Investors become emotionally attached to some investments. There is evidence that such people may hold on to particular investments too long (Sandelands, Brockner, and Glynn, 1988). Ego-involvement is also likely to magnify the effects of stress (Riess and Taylor, 1984) and thereby reduce the quality of investment decision-making.

Baker and Nofsinger (2002) suggest an attachment bias, whereby investors become emotionally attached to particular investments. Emotional attachment can cause investors to focus on good features and ignore bad ones. Bad news may be ignored. This could hinder the incorporation of information into a share price. If investors ignore bad news, the share price may fail to fully reflect that bad news. Baker and Nofsinger suggest that one way to avoid the effects of emotion, and perhaps other psychological biases, is to invest in index tracker funds. Arguably investors are relatively unlikely to become emotionally attached to index tracker funds.

Flexible versus Endowment effect

This is consistent with the 'endowment effect' (Thaler 1980). People often require much more to sell something than they were originally prepared to pay for it (Kahneman, Knetsch and Thaler 1990, 1991). This is seen as being associated with the pain of giving something up.

Samuelson and Zeckhauser (1988) suggested the existence of a status quo bias (alternatively known as the endowment effect). People have a tendency to hold the investments they already have and exhibit some reluctance to change them. Status quo bias appears to increase as the number of investment options increases. The more complicated the investment decision, the greater the likelihood that the investor chooses to change nothing. Kempf and Ruenzi (2006) confirmed this finding. They found that, when choosing a mutual fund (unit trust), individuals tended to choose one that they had chosen previously. This tendency to repeat choices was found to strengthen as the amount of choice increased.

Lin, Chuang, Kao and Kung (2006) found that the strength of the endowment effect (status quo bias) depended on the emotional state of the investor. They found that the endowment bias only occurred when people felt happy, and it was absent when they felt sad. Lerner, Small and Loewenstein (2004) found that two negative emotions, sadness and disgust, had opposing effects on the endowment bias. Disgust enhanced the endowment effect, whereas sadness reduced it. These studies indicated that emotion and mood could affect cognitive biases and hence decisions.

Flexible versus Prone to anchoring

People are heavily influenced by past, or suggested, prices when forming judgments about appropriate prices. The past, or suggested, price acts as an anchor that becomes the basis for forming a judgment. Montier (2007) suggested that market forecasts are used as anchors, even when they lack credibility. First impressions and rough calculations can anchor subsequent thinking (Hammond, Keeney and Raiffa 1998).

A belief, irrespective of where it comes from, can constitute an anchor. The belief is used as an initial reference point and it is slowly adjusted to arrive at a final judgment. Even when people know that they are anchoring, they find it difficult to free themselves of the anchor (Piatelli-Palmarini 1994).

Considered re-evaluation will not completely remove the original anchor. Anchors tend to be amended gradually rather than replaced completely.

Objective versus Disposition effect

The disposition effect is the willingness of investors to sell investments that show gains but not investments that show losses. Odean (2001) found that investors using a discount brokerage held losing stocks for an average of 124 days and winning stocks an average of 102 days. He also found that an average of 15% of gains were realised against only 10% of losses. Further evidence for the disposition effect comes from Ferris, Haugen, and Makhija (1987) and from Schlarbaum, Lewellen, and Lease (1978).

Odean (1998) found that, on average, investors are approximately 50% more likely to sell a winner than a loser. Grinblatt and Keloharju (2001) found that if a share outperforms the market by 10%, the likelihood of sales increases by 26%, whereas an underperformance of 10% decreases the likelihood of sales by 14%. It is not just private individuals; professional investors such as institutional fund managers are also prone to the disposition effect (Frazzini 2006). Investors seem to prefer to sell winners rather than losers.

Grinblatt and Keloharju found that a large positive return in one week increased the likelihood of a sale the following week. A large decrease reduced the likelihood of a subsequent sale. The effects were most pronounced for investment behaviour which occurred very soon after the price moves. The results were common to both individual investors and institutional investors (institutional investors include pension funds, insurance funds, and mutual funds such as unit trusts).

Statman, Thorley and Vorkink (2006) found that turnover in a particular stock was positively related to recent returns (price movements) on that stock. This is consistent with the disposition effect proposition that investors are more willing to sell following a price rise. They found the relationship to be stronger in the cases of small-capitalisation stocks and earlier time periods, which they saw as evidence that individual investors may be more prone to the disposition effect than institutional investors. Barber, Lee, Liu and Odean (2007) found a disposition effect in the Taiwan Stock Exchange, where investors appeared to be about twice as likely to sell a stock showing a gain than a stock showing a loss. However institutional investors (specifically mutual funds) did not demonstrate the disposition effect.

Genesove and Mayer (2001) examined the disposition effect in the Boston housing market during the 1990s. They found that owners who faced selling at a loss tended to set their asking prices too high. To the expected selling price, they added 25-35% of the difference between the property's expected selling price and their original purchase price. As a result their houses were on the market for a relatively long time before being sold.

Shefrin and Statman (1984) interpreted the disposition effect in terms of the fear of regret and seeking pride. Selling a loss-making investment triggers feelings of regret. There is a realisation that the decision to buy it was bad. Selling an investment at a profit validates the decision to buy, and produces a feeling of pride. In consequence investors prefer to sell investments whose prices have risen rather than those whose prices have fallen. People want to feel good about themselves and hence take decisions that provide pride and avoid regret. The sale of an investment that has risen in price produces the pleasant feeling that the investment decision was a good one. The sale of an investment that has fallen in price produces the unpleasant feeling that the original investment choice was a bad one. By realising successes through selling successful investments, and not realising failures, an investor can preserve the self-image of being a good investor. In consequence investors are more likely to sell investments showing gains than investments showing losses. The disposition effect is reinforced by the tendency for many investors to treat 'paper losses' differently to realised losses. While the position is still held prices could rise; when it is sold the loss is confirmed.

The disposition effect appears to be absent when share price movements are general rather than specific to individual company shares. Nofsinger (2001) found that asset price rises and falls, resulting from news about the general economy, did not result in the disposition effect. This could be interpreted in terms of the significance of personal decision-making. Pride and regret arise when profits and losses can be seen as resulting from one's own decisions. Those feelings are less likely when profits and losses are seen as arising from events outside one's control (Clarke, Kruse, and Statman 1994).

The question arises as to whether psychological biases reflect an investor's personality, whether the biases can be reduced by learning, and whether interaction with others can affect the biases. These

matters have implications for financial advisers when dealing with clients who are subject to the biases. Weber and Welfens (2006) have researched these issues in relation to the disposition effect. They tested for individual differences, stability of the bias, and the effects of learning.

They found that there were substantial individual differences in proneness to the disposition effect. While most people appeared to exhibit the disposition effect, some behaved in the opposite manner. Loss realisation aversion (the reluctance to sell investments that were making losses) was found to be much more common than the tendency to sell investments that had risen in price. Investors exhibiting a strong tendency to sell profit-making investments were not necessarily the same as those reluctant to sell loss-making investments. The study suggested that the two sides of the disposition effect were unrelated.

Weber and Welfens found that investors who were prone to the disposition effect in one choice situation were also subject to the effect when making other choices. For example, an investor prone to the disposition effect when making stock market decisions tended to be prone to the effect when making housing market decisions. The strength of the effect was also stable over time. Someone with a strong disposition effect at one point in time would tend to have a relatively strong disposition effect at a later point in time. There appeared to be individual stability of the effect across different decisions and over time. These observations are consistent with the view that the disposition effect reflects stable personality traits. It was also found that interaction between investors reduced the individual stability of the effect. This suggests that social influences can affect the extent of individual psychological biases.

They found that learning reduced the extent of the disposition effect. The tendency to be affected by the disposition effect was stable when considering the relative strength of the effect between individuals, but the absolute size of the effect was reduced by learning. This is consistent with the view that the effect is the result of a lack of knowledge of investment.

According to prospect theory, people in a position of gain become increasingly risk-averse and unwilling to accept gambles. When people are in a position of loss they become more inclined to accept risk. This may help to explain the disposition effect. The disposition effect is the inclination,

when selling part of a portfolio, to sell assets that have risen in price relative to their purchase prices rather than assets that have fallen in price. The disposition effect can move share prices away from their fair values. Prices rise too slowly because of sales, and fall too slowly because of lack of sales. Prices thus fail to reflect all relevant information. They can be slow to adjust to new information.

There is evidence from mutual funds supportive of the prospect theory proposition that risk-taking increases following losses, and declines following gains. Elton, Gruber and Blake (2003) studied mutual fund managers who were paid incentive fees; in other words whose fees were related to the performance of the funds managed by them. They observed that mutual fund managers, when paid incentive fees, were more likely to increase risk after periods of poor performance and to decrease risk following periods of strong performance. Incentive fees mean that the fund manager has a personal financial interest in fund performance and the findings of Elton, Gruber and Blake may be dependent upon the presence of incentive fees. This dependence is suggested by a study from Ammann and Verhofen (2007) who found that the behaviour of mutual fund managers seemed to contradict prospect theory. They found that strong prior performance led to increased risk taking (for example increased beta and more small capitalisation stocks) whereas poor performance tended to lead to the adoption of passive strategies, which exhibit lower risk.

The increased risk taking in a loss-making situation is consistent with the idea of an escalation bias (Shefrin, 2001). An escalation bias leads to 'averaging down' whereby as the price falls the investment is treated as being an increasingly good bargain. The thinking is that if a share was a good buy at £2, it is a fantastic bargain at £1 and more should be bought. It is psychologically difficult to consider the possibility that the initial purchase was at an excessively high price. The rational behaviour would be to consider the possibility that an item of bad news justifies the price fall. The investor's psychology makes it difficult to look for the bad news and its implications for the value of the share.

The psychological difficulty in considering the possibility that the initial purchase was at an excessively high price could be seen as an example of cognitive dissonance. Evidence that beliefs or decisions are wrong causes mental stress. This may result in the reluctance to admit an error. Holding

a poorly performing investment too long is an aspect of the reluctance to admit that the investment was a mistake.

A report produced jointly by Distribution Technology and The Pensions Institute in the UK (Distribution Technology, 2005) found that pension fund investment was consistent with prospect theory. In the context of pre-retirement financial planning, investors who are underfunded and anticipating a low retirement income tend to take a high level of investment risk in an attempt to remedy the underfunding. This is consistent with the observation that people in a loss-making position are more willing to accept risk than people in a profit-making position.

Objective versus Decisions influenced by emotion and mood

Harrison, Waite and White (2006) investigated attitudes to retirement saving by the use of focus groups. One finding was that positive or negative feelings about ageing and retirement have effects on saving. Some people dislike the thought of growing old whereas others relish the prospect of being free of the need to work. It is possible that the fear of old age is dealt with by putting the future out of mind, and that is likely to put preparation for the future out of mind. Those looking forward to retirement may be more inclined to prepare for it. Three other factors found to deter saving for retirement were (1) the view that pension savings would be offset by reduced state benefits, (2) a mistrust of financial advisers, and (3) social pressures that encourage current spending.

Neukam and Hershey (2003) suggested that 'financial inhibition' and 'financial activation' were important determinants of retirement saving. Financial inhibition encompasses fear-based factors that deter saving. Such factors include the negative thoughts about growing old, as identified in the Harrison, Waite and White study. If old age is associated with images of poor health and faded looks, people may be reluctant to prepare for it. Thoughts of old age evoke feelings of fear and anxiety. Little thought is given to retirement since such thought has unpleasant connotations. Financial activation relates to goal-based motives that encourage saving. If old age were associated with leisure and freedom to choose how to use time, there would be a greater incentive to save for retirement.

Financial inhibition is fear-based and financial activation is goal-based. They are two distinct characteristics rather than two ends of the same dimension. Neukam and Hershey found that the people who saved most were those with the strongest financial goals and the lowest level of fear. The goals and fears were not only related to visions of old age, but also to the planning process. The personal characteristics interact. For example a strong drive towards saving (planning) for retirement could be offset by a high level of fear about the planning process; a strong desire to accumulate wealth for retirement could be offset by a fear of stock market risk or a distrust of the financial services industry. This latter point is close to the Harrison, Waite and White observation that mistrust of financial advisers can deter retirement saving. The importance of fears concerning the saving (retirement planning) process relates to the Jacobs-Lawson and Hershey findings that financial knowledge and risk tolerance are positively related to retirement saving.

Evidence on the possibility of negative effects of emotions and moods on investment decision-making comes from research on expert systems. Expert systems are computer programmes that use relationships, provided by experts, to make decisions. Camerer (1981) found that expert systems frequently out-performed the experts whose knowledge had been used in their creation. This phenomenon is known as bootstrapping. It may be the case that the superior performance of the computer arises from the absence of the effects of emotions and moods. Loewenstein, Hsee, Weber and Welch (2001) pointed out that emotional reactions to risks can differ from, and conflict with, cognitive evaluations of those risks. Emotion can dominate reason, and can lead to a failure to learn from experience. The effect of emotions increases with the complexity and uncertainty surrounding the decision. Decisions about complex and uncertain matters are particularly influenced by emotions (Forgas 1995). Investment decisions can be affected by unrelated emotions (Loewenstein, Weber, Hsee and Welch 2001; Slovic, Finucane, Peters and MacGregor 2002). A favourable sports result or good news about a friend can engender a good feeling, and the good feeling can affect investment decisions.

Studies by psychologists have found that mood appears to affect predictions about the future. People in a good mood are more optimistic about the future than people in a bad mood (Wright and Bower 1992). The impact of mood on financial decisions has been referred to as the 'misattribution bias' (Nofsinger 2005). If a person is in a good mood, there will be a tendency to be optimistic when evaluating an

investment. Good moods may cause people to be more likely to make risky investments (for example choosing shares rather than bonds).

Weather and the length of daylight are factors that can affect mood. The effects of such factors on investment decisions have been researched. Hirshleifer and Shumway (2003) investigated the effects of sunshine on stock market returns. When the sun is shining people feel good. This may increase optimism and affect investment decisions. It may be the case that investors are more likely to buy shares when the sun is shining. The purchases would cause stock prices to rise. Stock markets in 26 cities were examined. It was found that stock market returns (price increases) were higher on sunny days. When comparing the sunniest days with the worst days, it was found that there was an annualised difference of 24.6% on average. This evidence further indicates a relationship between mood and investment decisions.

Kamstra, Kramer, and Levi (2003) looked at the relationship between hours of daylight and stock market returns. They found that stock markets performed relatively poorly during the autumn as the hours of daylight fell. This was most marked for the more northerly stock markets. Consistent with the theory was the observation that the effect occurred over October to December in the northern hemisphere, and over April to June in the southern hemisphere. This study is consistent with the view that sunlight affects mood and mood affects investment decisions. Sunlight enhances optimism about the future and the prospective future returns from investments.

Detached versus Influenced by social mood

According to the socio-economic hypothesis (Prechter, 1999; Nofsinger 2005) moods can be transmitted through social contact and a widely shared, or social, mood emerges. Contact between people conveys mood as well as information. Collectively shared moods influence individual decisions, with the effect that trends emerge. At times mood can dominate reason in the decision-making process. It has been found that people in depressed moods are less willing to take risks (Yuen and Lee, 2003) and a negative mood is associated with a desire for asset preservation and safety (Kavanagh, Andrade, and May 2005). Positive mood renders people more trusting (Dunn and Schweitzer, 2005), and for many people trust in the financial services industry is a big issue when considering investments. Positive

social mood results in perceptions of trustworthiness, low risk and high returns whilst negative social mood is associated with low trust, high perceived risk and low anticipated returns (Olson, 2006).

It has often been suggested that investors in institutional investments such as mutual funds (unit trusts and OEICs) have a tendency to buy when the market has risen and to sell after the market has fallen. The tendency to buy when prices are high, and to sell when they are low, could be explained by social mood. As social mood reaches its peak the level of optimism in society draws more people into investment. The optimistic social mood causes, normally very risk-averse, investors to begin investing. They buy at the peak of social mood, which coincides with the peak of the stock market. Conversely the pessimism associated with low social mood leads to the selling of investments, just when the stock market is at its lowest. This helps to explain the tendency for many investors, particularly retail investors, to buy at high prices and sell at low prices. Buying at high prices and selling at low prices results in losses.

Personality traits are not immutably fixed, and can be influenced by external factors. One such factor is social mood, which is mood that is pervasive within society. Prechter posited that, during periods of negative social mood, people are more likely to display the characteristics of low self-control. Negative social mood appears to be associated with distress, anxiety, antagonism, conflict, and reduced interest in work and achievement. For those who do save, social mood could influence the way in which the savings are invested. Negative social mood is likely to be associated with caution and risk-aversion, and hence the avoidance of stock market investments. Positive social mood is thought to engender engagement, including engagement with the high-return high-risk investments associated with stock markets.

Users of pricing models are likely to be professionals. Shiller (1984) pointed out that most non-professional investors do not have knowledge of pricing models and investment analysis. They are likely to be noise traders affected by rumour and social mood. Social mood is a collectively shared state of mind (Prechter 1999, Nofsinger 2005, Olson 2006). Investors with no knowledge of analysis are particularly likely to be influenced by social mood when making investment decisions. DeLong, Shleifer, Summers and Waldmann (1990) posited a class of investors whose expectations were not

justified by fundamentals; they referred to them as noise traders. Unjustified expectations are referred to as investor sentiment. When sentiment is shared amongst investors, stock prices can deviate from fundamental values for long periods.

Lee, Shleifer and Thaler (1991) found that investment trust (US closed-end fund) discounts were not affected by macroeconomic factors. Those findings imply that the discounts are not affected by economic fundamentals. The researchers observed that investment trusts were particularly popular among small investors, as were smaller company stocks and new issues (initial public offerings). They found that movements in investment trust discounts, small company share prices, and the volume of new issues were correlated. They interpreted this as evidence for the influence of sentiment among small investors.

Detached versus Susceptible to rumours

Kimmel (2004) points out that rumours emerge in conditions of uncertainty, which are frequent in financial markets. Rumours are particularly prone to emerge when emotions, especially feelings of fear, are high. In a situation of change people may be unable to understand the changes. The resulting uncertainty generates fear and the need for information relevant to the future. Uncertainty about the future creates stress, and interacts with stress, to produce a need for information which can be used to guide actions.

Rumours are more likely to circulate if they are credible. Rumours received from trusted sources are more likely to be believed. In addition to the plausibility, and source, of a rumour its frequency of repetition affects its acceptability. The more often a rumour is heard, the more likely it is to be believed. Repetition fosters belief.

It appears that in financial markets the most prevalent rumours concern short-term events; it is the immediate future that is of greatest concern. Kimmel and Audrain (2002) found that the number of rumours was related to the importance of their content, to the accuracy of previous rumours, and to levels of anxiety. They also found that rumours, which subsequently turned out to be true, became more precise over time. In contrast, false rumours became increasingly distorted.

Rumours, true or false, have an impact on market prices. For example DiFonzo and Bordia (1997) showed that rumours affect investment decisions, even when the rumours come from sources that lack credibility. They found that price changes resulting from rumours tend to follow trends that exhibit persistence. There is evidence that people make decisions based on stories constructed around information, rather than on the information itself (Mulligan and Hastie, 2005). If a rumour is consistent with such a story, or provides a story (an explanation of events), it may be more readily believed. People are prone to accept information from unreliable sources if such information is believable and consistent with their existing perceptions of events (Evans and Curtis-Holmes, 2005). Apart from their specific 'information' content rumours can have a further effect on markets by influencing market sentiment. Rumours can generate feelings of optimism or pessimism.

Accepting of uncertainty versus Unable to accept randomness

Consider a coin being tossed five times. If there were five heads would you take the view that the coin is biased? Many people might take that view since a run of five heads would be seen as representative of biased coins. Five successive heads does not fit the image or stereotype of randomness. However there is a 3.125% chance that an unbiased coin would produce a run of five heads. Since the number of unbiased coins is vastly greater than the number of biased coins, it is much more likely that the coin is an unbiased one that has produced five heads purely by chance.

Next consider a unit trust (mutual fund) that has beaten the average performance of similar trusts in five successive years. Do you consider the fund manager to have investment skills that are superior to the average? Bearing in mind the wealth of evidence that past performance is no guide to future performance, and that relative performance in successive years appears to be random, perhaps the appropriate conclusion is that the run of five successive good years has occurred by chance. However many people are likely to conclude that the fund manager has superior investment skills. There is evidence that a run of successes tends to attract a lot of investors to a unit trust. A unit trust with a recent run of success is seen as representative of long-term strong performers. People can be reluctant to believe that a run of good performance could be the result of chance.

Representativeness helps to explain why many investors seem to extrapolate price movements. Many investors appear to believe that if prices have been rising in the past then they will continue to rise, and conversely with falling prices. For example Byrne (2005) found that, amongst retail investors, provision of past performance information created an expectation of future returns around the same level as the past returns. The concept of representativeness suggests that this is because those investors see an investment with recent price increases as representative of longer-term successful investments, conversely with price falls. DeBondt and Thaler (1985) argued that because investors are subject to the representativeness bias, they could become too optimistic about past winners and too pessimistic about past losers. Trading that is influenced by the representativeness bias can move share prices away from the levels that accurately reflect all relevant information.

Everyone uses heuristics. Heuristics are rules-of-thumb that help people to make sense of the deluge of information with which they are bombarded. Social psychology has established that we tend to judge people by appearances. If someone, who is newly encountered, resembles a person one has known then it is assumed that the new acquaintance has a similar personality to the older acquaintance.

Representativeness entails the tendency to evaluate something with reference to something else, which it resembles. A share price pattern that was followed by a price rise in the past may be seen as indicating a price rise in the future.

One aspect of representativeness is often referred to as the law of small numbers. It is a belief that random samples will resemble each other more closely than the principles of statistical sampling theory would predict. People tend to have an image of what a random sample should look like, and take the view that samples that differ from the image are not random. Consider the following two sequences of coin tossing:

THTHHT

and

TTTHHH

Both sequences are equally likely but when asked which is more likely most people will say the first. The first series fits the image of a random sequence whereas the second does not.

Accepting of uncertainty versus Illusion of control

Another cognitive bias is the illusion of control. In some circumstances people behave as if they were able to exert control where this is impossible or unlikely; such control includes the ability to identify future out-performers. The illusion of control could extend to what is expected from financial advisers. Advisers may be expected to be able to identify the funds, which will outperform in the future. The illusion of control may explain why so many investors choose actively managed funds when tracker funds outperform them and have lower charges. A study by the Financial Services Authority has confirmed the findings of academic studies which found that the relative past performance of actively managed funds is no indicator of future relative performance (Rhodes, 2000). It may be that overconfidence in their own selection abilities, and the illusion of control provided by the facility of choosing between funds, cause investors (or their financial advisers) to select actively managed funds when tracker funds offer better potential value. (Of course financial advisers might be influenced by the fact that actively managed funds typically pay higher commissions.)

According to Langer (1975), people often find it difficult to accept that outcomes may be random. Langer distinguishes between chance events and skill events. Skill events entail a causal link between behaviour and the outcome. In the case of chance events, the outcome is random. People often see chance events as skill events. When faced with randomness, people frequently behave as if the event were controllable (or predictable). If people engage in skill behaviour, such as making choices, their belief in the controllability of a random event appears to become stronger. There is considerable evidence that investment managers are unable to consistently out-perform stock markets. This suggests that the outcome of investment management is random. However since the investment managers engage in skill behaviour, analysis and choice, they tend to see portfolio performance as controllable. Retail investors and financial advisers are also likely to see the performance of their investment choices as controllable; the act of choosing enhances the illusion of control.

The illusion of knowledge is the tendency for people to believe that additional information always increases the accuracy of their forecasts. It is the belief that more information increases the person's knowledge and hence improves decisions (Peterson and Pitz, 1988). For example people often believe that knowledge of previous drawings of lottery numbers improves their ability to predict future lottery

numbers. Some information is irrelevant, or may be beyond a person's ability to interpret, but the person may still regard the information as improving their ability to forecast. Tumarkin and Whitelaw (2001) found that, despite providing no useful information, website message board postings increased trading volume in the respective shares. Despite the absence of useful information from the messages, as indicated by subsequent price movements, it appeared that some investors believed that it added to their knowledge and expertise (and traded as a result). The illusion of knowledge causes investors to be overconfident and to misinterpret the amount of risk from an investment. Investors, who overestimate the accuracy of their forecasts, underestimate the risks taken.

Accepting of Uncertainty versus Prone to Representativeness

According to the representativeness bias people are inclined to develop detailed generalisations about an event or situation based on a very few characteristics of the event or situation (Tversky and Kahneman 1971, Busenitz 1999). The mind assumes that events or situations (or objects or people) with some similar characteristics are identical, even though they may be different with respect to other characteristics (Eaton 2000). The representativeness heuristic proposes that people have an inclination to make judgments based on the similarity of items, or make forecasts on the basis of a small amount of information (Ricciardi 2008). In the process of forming opinions of events (or situations, or objects or people) on the basis of similarities to other events relevant information is ignored, and closure would add extraneous information in order to make the perception more complete.

Representativeness, like other heuristics, helps to render complex problems manageable. In so doing it may reduce the level of perceived risk. Busenitz found that the business people who took relatively high risks (entrepreneurs) were the ones with relatively high use of representativeness, and other heuristics such as overconfidence. This is consistent with the view that heuristics reduce the level of perceived risk. The tendency to assume that new situations are identical to previously experienced situations could introduce some inflexibility into thinking and hinder adaptation to change (in this way the representativeness bias can reinforce the conservatism bias).

Rational versus Superstitious (conjunction fallacy)

Investors not only have feelings, they are also prone to superstitions. Kahneman and Tversky (1983) suggested the existence of a 'conjunction fallacy'. The conjunction fallacy is the belief that contiguous events have a causal relationship. Unrelated, but simultaneous, events in two markets might be seen as causally linked whereas they are actually unrelated. Also events in successive time periods may be seen as forming a pattern when in reality they are independent events.

Realistic versus Outcome biased

A behavioural bias based on optimism is the outcome bias, which causes people to expect to get what they want. Decisions are made in the expectation that what is wanted to happen will happen; in other words, wishful thinking. An investor may expect a high return on an investment because a high return is what is wanted. This could generate overconfidence (excessive confidence in expectations) and an underestimation of risk. Overconfidence could be based on excessive belief in one's own forecasting talents or on the belief that events will turn out to be favourable. In both cases the investor may underestimate risk when making investment decisions.

Realistic versus Overconfident

Overconfidence causes people to overestimate their abilities and to overestimate the accuracy of their forecasts. Overconfidence arises partly from self-attribution bias. This is a tendency on the part of investors to regard successes as arising from their expertise whilst failures are due to bad luck or the actions of others. This leads to excessive confidence in one's own powers of forecasting.

Overconfidence appears to be greater when feedback on decisions is deferred or ambiguous (Fischhoff, Slovic and Lichtenstein 1977). Financial markets are characterised by delayed feedback, since anticipated price adjustments can take a considerable amount of time. The feedback is also ambiguous (are outcomes to be judged in absolute terms, or relative to a benchmark - and what benchmark is appropriate?). Noise trading in financial markets can cause feedback to be inconclusive (might apparently successful forecasting merely be the accidental result of noise?).

Overconfidence is capable of explaining a number of types of apparently irrational behaviour. For example it can explain why some investors hold undiversified portfolios. If investors are highly confident about their stock selection abilities, they will not feel the need to reduce risk by means of

diversification. It could also explain why some investors trade very frequently, to the point where transaction costs cause their investment behaviour to be loss making (Barber and Odean 2000, 2001).

Odean (1998a) has shown that one of the effects of overconfidence is that turnover of investments tends to be high, that is people trade shares more as a result of overconfidence. Barber and Odean (2000) have shown that as turnover rises net profits tend to fall. Psychological research has found that men tend to be more overconfident than women. Barber and Odean (2001a) found that single men trade 67% more than single women. Correspondingly single men on average experienced investment returns 3.5% per year lower than single women.

To the extent that some investors attribute their profits from rising markets to their own talents, rising markets could be self-perpetuating. Overconfident investors may be encouraged to invest further and thereby reinforce an upward movement in stock prices. Conversely a falling market reduces confidence and investing. This is consistent with the view that markets exhibit over-reaction.

In one study of overconfidence Lichtenstein and Fischhoff (1977) gave people market reports on 12 stocks and asked them to forecast the direction in which their prices would move. Whereas only 47% of the predictions were correct, on average people were 65% confident that their forecasts would be correct.

As a result of the confirmation bias investors pay more attention to evidence that supports their opinions than to evidence that contradicts them. This can bolster overconfidence and cause investors to persist with inappropriate investment strategies. Investors are likely to look for information that confirms their opinions. There is evidence that people give more credence to believable conclusions from illogical reasoning than to unbelievable conclusions based on logical reasoning (Evans and Curtis-Holmes, 2005). In other words prior beliefs can dominate reason when evaluating alternative conclusions. There is evidence for an assimilation bias whereby the same information receives different interpretations according to previously held views (Carlson and Russo, 2001). Two sides of an argument may both interpret a piece of information as supportive of their position. There is evidence that people tend to make decisions based on stories constructed around facts rather than upon the facts themselves (Mulligan and Hastie, 2005). This could lead people to favour information, which is

consistent with their stories (explanations of events). Confirmation bias and assimilation bias can cause a client to misinterpret what is heard from an adviser.

Objective expectations versus Hindsight-biased expectations

The hindsight bias relates to evaluations of the past. Fischhoff (1982) explains that with the hindsight bias people consistently exaggerate what could have been anticipated. People tend to view what has happened as having been inevitable, and see it as having been predictable before it happened. People even misremember their own predictions; memory is fallible. Azar (2000) suggested that, if people cannot remember their original judgement, they would reconstruct the recollection of the original judgement in the light of subsequent information.

‘I knew that would happen’ and ‘I knew it all along’ are statements that characterise the hindsight bias. The hindsight bias entails the inability to correctly remember one’s prior expectations after observing new information. The hindsight bias prevents people learning from their own mistakes, since they are unable to remember those mistakes. People are unable to recognise their own errors. There is self-denial about past errors. If someone has a self-image of being a clever investor, past errors in forecasting may be subject to distortions of memory aimed at maintaining the self-image. Memory is never a faithful recollection of the past; it is amended by the human mind.

Good decision-making in financial markets relies on learning from the past. Learning may entail the comparison of new information with previous expectations. This requires an accurate recall of previous expectations. The hindsight bias involves the contamination of recollections of expectations by new information. The recalled expectations of an outcome are biased towards information about the outcome. The person remembers forming an expectation that is close to what subsequently happened.

Self-deception is increased by the distorting effects of memory. Memory is not a factual recording of past events. Memories are influenced by many personality and emotional factors. To some extent people remember what they want to remember. Inaccurate memories can lead to poor decisions. Goetzmann and Peles (1997) and Moore, Kurtzberg, Fox and Bazerman (1999) investigated the recollections of investors. They found that investor memory of the past performance of their

investments was better than the actual performance of those investments. People tend to have a self-image of being good investors and want to believe that their investment decisions have been good. The mind perceives the past in such a way as to be consistent with the self-image. The mind feels uncomfortable with information that contradicts the self-image. This is known as cognitive dissonance. The mind will adjust memory in order to reduce cognitive dissonance and maintain the positive self-image.

It is not just memory that adjusts in order to maintain a positive self-image. Planning might be adjusted. For example a young person with a self-image of being fit and attractive might avoid saving for a pension since the idea of retirement produces a self-image of being old in the future.

The hindsight bias can lead to overreaction by investors. People may form expectations by averaging outcomes with their previous expectations of those outcomes. For example, expectations of future returns could be formed by averaging realised investment returns with previously expected returns. Hindsight-biased investors, when forming such averages, incorrectly remember their prior expectations. They amend their memories in the light of realised returns. New information about returns thus becomes over-weighted, and hence has excessive influence on the formation of expectations. Expectations change too much. The result is overreaction to the new information. Hindsight bias is not limited to naïve investors; Biais and Weber (2006) found that market professionals were prone to hindsight bias.

Hindsight-biased investors may underestimate volatility. This is because they amend their recollected expectations into line with observed outcomes. A rational investor, upon observing a return that is substantially different from the previously expected return, would raise the expectation of volatility. A hindsight-biased investor would not be aware of the substantial discrepancy, and would therefore under-estimate volatility. Hindsight-biased investors form distorted expectations of future returns and risk, and as a result construct inefficient investment portfolios. Hindsight bias, by distorting expectations of return and risk, can prevent share prices from reflecting relevant information.

Focus on appropriate horizon (e.g. 20 years) versus Focus on inappropriate horizon (e.g. 1 month)

Another dimension of narrow framing is the focus on the short term even when the investment horizon is long term. It is not rational for an investor accumulating assets for retirement 25 years hence to be concerned about the week-to-week performance of the portfolio. Yet long-term investors do focus on short-term volatility. Studies have shown that when, in experimental situations, people have been presented with monthly distributions of returns they are less likely to invest than when they are shown annual distributions (with the annualised volatility being the same in both cases). The implication is that focus on short-term volatility deters investment. It appears that people do not appreciate the effects of time diversification.

By time diversification is meant the tendency for good periods to offset bad periods with the effect that the dispersion of investment returns does not increase proportionately with the period of the investment. Investors who focus too much on short term fluctuations over-estimate stock market risk and allocate too little of their money to stock market investment. Figure 2 shows the effect of compounding returns over time and figure 3 illustrates the tendency for risk to rise less than proportionately to the length of the investment period (risk is measured as standard deviation of asset value).

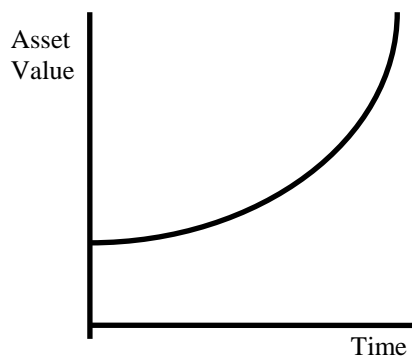


Figure 2

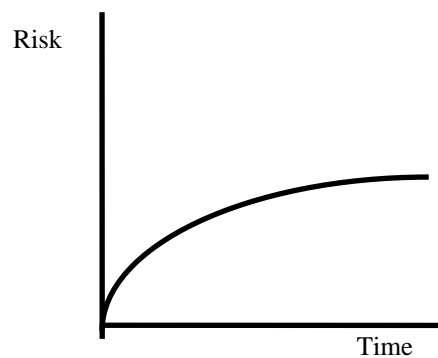


Figure 3

Swank, Rosen and Goebel (2002) argued that even the curve of figure 3 may exaggerate the rise in the risk from holding stocks for increasing periods of time. They provided evidence that returns on stocks had some tendency towards mean reversion, which means that there is some tendency for price movements to subsequently reverse. It is slightly more likely that a good period will be followed by a bad period, and vice versa. The curve of figure 3 is based on the price change in each period being unrelated to that of previous periods. A tendency towards mean reversion increases the time diversification effect such that risk (standard deviation) rises more slowly than figure 3 shows.

The effects of time diversification have been illustrated by Fidelity, which is a major investment management company (Fidelity International 2005). Examining the period 1985 to 2005, they found that the UK stock market (as measured by the FTSE All-Share Index) produced a profit in 77% of one-year periods, where a one-year period is 12 consecutive months (e.g. June 1986 to May 1987, March 1992 to February 1993). There was a profit in 81% of five-year periods, where a five-year period is 60 consecutive months (e.g. September 1988 to August 1993). Every ten-year period (120 consecutive months) showed a profit. An international portfolio of stocks (as measured by the MSCI World Index) produced figures of 71%, 81%, and 100% respectively.

Swank, Rosen and Goebel argued that, since many occupational pension plans have an unlimited future investment period (no foreseeable termination date), they should hold 100% of their assets in the form of shares. There seems to be virtually no risk that shares (equities) would under-perform other investments over such a long investment horizon. They suggest that the failure to hold 100% in shares partly arises from short-term unpredictability of stock market performance, which could require the company (or other pension provider) to fund shortfalls in some years. There is also the career risk of investment managers, who could find that a few years of poor investment returns result in the loss of their jobs. The time horizons of providers and managers may be shorter than the investment horizon of the pension fund.

Figure 3 uses the conventional (amongst finance academics) approach to defining risk, which is as standard deviation. However some researchers (Payne 1973; Olsen 1997; Fortuna 2000) report that most investors define risk as the chance of losing money. When risk is defined in this way, equity risk

(stock market risk) declines with the length of the investment horizon. This is partly because of the rise in the expected values of investments over time and partly because of the behaviour of standard deviation, which reflects the effects of time diversification (Mukherji, 2002). There are slowly-growing deviations from a rapidly-growing value with the result that the chance of a negative outcome declines over time.

Historically the real (inflation-adjusted) net rates of return on bank and building society accounts have been only a little above zero, on average. The achievement of high real net rates of return has required investment in stocks. So the attainment of good investment returns has necessitated acceptance of the risk associated with investment in stocks. That risk needs to be seen from a long-term perspective. If risk is defined in terms of the likelihood of making a loss, or underperforming a low-yield investment, then risk declines to low levels as the investment horizon lengthens.

Consideration of time diversification leads to the standard recommendation of financial advisers; bank deposits for short-term investments and shares for long-term investments. By extending the analysis to bonds, whose returns and risks are generally believed to fall between those of deposits and equities, the recommendation becomes: deposits for the short term, bonds for the medium term and stocks for the long term. An increase in the investment horizon reduces the probability of making losses from equity investments; in other words it reduces the likelihood of shares under-performing an investment with zero return. Likewise a long investment horizon reduces the probability of equities under-performing other investments with lower returns than stocks, such as deposits and bonds (although the probability of under-performance is greater than in the case of a zero-return investment). Correspondingly an increase in the length of the investment horizon reduces the chance of a medium-return and medium-risk investment, such as bonds, under-performing a low-return and low-risk investment such as bank deposits.

Mukherji pointed out that individual investors need to bear horizon risk in mind. A 25-year old may have a retirement horizon of 40 years and anticipates investing over that period. However personal circumstances can change and could shorten investment horizons. So even if it is accepted that equities

are appropriate for a 40 year investment, horizon risk could lead to the holding of some deposits and bonds in a portfolio.

Focus on relevant risk (e.g. income risk) versus Focus on irrelevant risk (e.g. capital risk)

Market risk is the risk that the value of an asset falls because of a generalised decline in asset prices. For example the price of a share may fall as part of a general decline in the stock market. Market risk is a form of capital risk. Capital risk is the risk of a reduction in the value of an investment. Market risk is alternatively known as systematic, or non-diversifiable, risk.

Non-systematic risk is the risk that the value of an investment may fall as a result of factors specific to that investment. For example the price of a company's shares may fall because a competitor begins to offer a superior product. Non-systematic risk is alternatively known as specific, or diversifiable, risk. It is called diversifiable risk because a well diversified portfolio of shares should eliminate such risk (strong performances tending to offset weak ones).

An increase in interest rates tends to be accompanied by declines in asset prices. This relationship is particularly reliable in the case of long-dated bonds. A bond is an investment that typically pays the investor a constant sum (the interest or coupon) each year and then repays the original investment on a maturity date. If interest rates on other investments rise, bonds become relatively less attractive and their prices fall. The impact of interest rate changes increases with the maturity (strictly speaking the duration) of a bond. This is a form of capital risk.

Interest rate changes are also associated with income risk. Income risk is the risk that the income receipts from an investment will fall. A long-dated bond has little income risk since the coupon receipts are known with certainty until the maturity date of the bond. On the other hand a bank or building society deposit has high income-risk. As short-term interest rates fluctuate so too will the interest payments to investors. Investors who need income from investments should be more concerned with income risk than with capital risk. However they might focus on capital risk, perhaps because of the emotional effect of price falls.

Financial products understood (familiar) versus Financial products complicated (unfamiliar)

Research on the psychology of expert knowledge has indicated that changes in the level of someone's knowledge can result in adjustments to that person's perception of risk (Ricciardi 2008). Novices may have higher perceptions of risk than experts. People who, due to a low level of knowledge, find investment products difficult to understand could have an increased level of anxiety and fear concerning those investments.

According to the familiarity bias, people tend to prefer things that seem familiar to them.

Correspondingly investors prefer investments with which they feel familiar. Familiarity appears to reduce the perceived risk. Arguably the most familiar investments are those in the company for which the investor works. A study by John Hancock Financial Services (Driscoll, Malcolm, Sirull and Slotter 1995) found that a majority of employees believed that shares in their own company were less risky than a diversified portfolio. Benartzi (2001) reported the findings of a survey which indicated that only 16.4% of respondents believed that shares in their own company were more risky than the stock market as a whole. Kilka and Weber (2000) found that Americans believed the US stock market would perform better than the German stock market whereas Germans believed that their stock market would be the stronger performer. Generally the evidence indicates that people view familiar stocks favourably, expecting them to deliver both higher returns and a lower level of risk. The result is that portfolios are biased towards investments that seem familiar. Tourani-Rad and Kirkby (2005) confirmed the familiarity bias in New Zealand, in that they found that the portfolios of New Zealand investors contained a disproportionate amount of New Zealand stocks but they did not confirm that it was the result of higher optimism with regard to the future performance of New Zealand stocks.

Ambiguity aversion suggests that increased knowledge (or the feeling of increased knowledge) about an asset renders investors more prepared to invest in it. Benartzi and Thaler (1999) found that people are more willing to invest in a stock when an explicit distribution of potential outcomes is provided. An illustration of ambiguity aversion is the observation that people are more willing to bet on the colour of a ball drawn from a tub when they know the proportions of the coloured balls in the tub than when they do not.

Related to ambiguity aversion (familiarity bias) are findings that investors may be affected by the image of a company or sector. For example pharmaceutical companies may have an image of 'health and beauty' whereas chemicals companies might have an image of 'dirty and polluting'. MacGregor, Slovic, Dreman, and Berry (2000) showed that image affected investment decision-making. They found that a positive image enhanced judgements of recent performance, expectations of future performance, and the willingness to invest. Frieder and Subrahmanyam (2005) found that individual investors prefer stocks with high brand recognition.

Financial products understood (familiar) versus Information overload

Information overload can deter retirement saving (Turner 2006). If the choice between investment alternatives is too large and too complex, many employees take a default option. The default option may be to do nothing. One remedy is to provide default options other than non-participation. Automatic enrolment in pension schemes (with the right to withdraw) makes the default option one of participation. This is likely to bring into a pension scheme both those who wish to save but fail to take action, and those who give little or no thought to financial matters. Another dimension of positive default options is to have a default fund that would be suitable for the average employee. A suitable contribution rate might be provided as the default rate, perhaps with an element of automatic escalation over time. Alternatives to the default options could be provided for the employees who wish to exercise choice. Turner (2004) reported that in Sweden's mandatory scheme 82% of new entrants allowed their entire contributions to be paid into the default fund whilst more than 600 other funds were available. Mitchell and Utkus (2006) provide evidence that pension fund participants like to be at the average and like to avoid extremes when making choices. This is consistent with the observation that plan participants tend to accept default options, which may be seen as the average (middle-of-the-road) options.

Future orientated/Decisive versus Hyperbolic discounting/Procrastination

Thaler and Shefrin (1981) describe the self-control problem as the interaction between a person's two selves: the planner and the doer. The doer wants to spend now rather than later, and delays unpleasant tasks. The planner is inclined to save for the future and get unpleasant tasks dealt with quickly. There is

a conflict between desire and willpower as a result of the influence of both short-term emotion and long-term rational concerns.

Akerlof (1991) concluded that most people succumb to the desire of current expenditure during their peak earning years and delay saving for retirement. Pension plan administrators often find that the most difficult step is to get people to start contributing. People tend to procrastinate. In the UK, the government is considering a change in company pension regulations so that employees join pension schemes automatically. The decision of the employee is thus one of whether to leave the scheme rather than one of whether to join. Procrastination would leave employees in the pension scheme. Madrian and Shea (2000) concluded that automatic enrolment plans are successful in increasing participation rates. In studying a plan that was changed to automatic enrolment, they found an increase in the participation rate from 49% to 86%. However most participants chose the minimum contribution level; the analysis of Madrian and Shea indicated that many participants would have chosen a higher contribution rate if they had explicitly chosen to opt into the scheme. Choi, Laibson, Madrian and Metrick (2001) found that people who would otherwise have contributed more into a pension scheme accept the default contribution rate when enrolment is automatic. So whilst automatic enrolment increases the number of members, those who would have joined anyway contribute less than they would have done in the absence of automatic enrolment.

When making decisions involving the present there is a tendency to procrastinate. For example most people would rather receive £50 now than £100 in two years (foregoing a 41% p.a. return) whereas £100 in six years is preferred to £50 in four years. From a finance perspective the two choices are the same, except one is deferred (Ainsle 1991). People seem to view the present very differently to how they view the future. The attitude to the present appears to be characterised by strong desire and weak willpower.

Choi, Laibson, Madrian and Metrick found that many low savers actually wanted to save more. They found that two-thirds of their sample recognised that they were saving too little. The problem was one of willpower. They also found that whereas a third of the people surveyed intended to increase their

savings rates in the near future, most of those well-intentioned people (86%) did not do so.

Procrastination was present; the intended increase in saving was postponed.

Rabinovich and Webley (2007) focused their study on people who had expressed an intention to save. In this way they separated the implementation of an intention from the formation of the intention (arguably the two behavioural processes behind intentional saving). The factors that increase the likelihood that saving intentions are implemented may be different to the factors that lead to the formation of intentions to save. The study identified those who succeeded in implementing their saving intentions as the “plan-and-do” group and those who failed to implement their saving intentions as the “plan-in-vain” group. Time horizon and expenditure control techniques were found to be important factors in the successful implementation of saving intentions.

Puri and Robinson (2007) found that people who exhibited optimism were more likely to save than pessimistic people, so long as the optimism was not extreme. Their research indicated that optimists saved more and exerted greater self-control. Moderately optimistic people appear to have a heightened appreciation of the future and hence are more inclined to save for the future. However extreme optimism is associated with the feeling that the future will take care of itself (‘something will turn up’) and a low inclination to save.

Time horizon, the inclination to think ahead, has a positive effect on both the intention to save and the implementation of the intention. Rabinovich and Webley found significant differences in time horizon between plan-and-do and plan-in-vain groups. The tendency to think ahead is associated with the successful implementation of saving intentions. The expenditure control techniques, which were found to help the successful implementation of saving plans, made the saving process automatic and partially independent of willpower. Automatic deduction of saving from salary is an example of an automatic process. Use of mental accounting can also facilitate the implementation of saving intentions. If money to be saved were transferred to a separate account, psychology would give it a different status. The account containing savings is perceived differently to an account for expenditure, and the designation of a separate mental account for savings reduces the likelihood of spending from that account.

To help with willpower people employ rules-of-thumb and environmental controls (Thaler and Shefrin 1981; Hoch and Loewenstein 1991; Nofsinger 2002). Environmental controls include automatic deductions from salary and monthly standing orders into savings or pension plans. Thaler (1994) found that most people, who invested in a pension plan one year, contributed again the following year. They form a habit to help their willpower. However people tend to leave pension contributions until close to the last possible date (Shefrin and Thaler, 1992); they seem to need a deadline in order to assert self-control. Thaler (1994) suggested that people find it easier to save from lump sum payments than from regular income. Saving money from a monthly salary requires more self-control (Thaler and Shefrin, 1981).

Frederick (2005) presented evidence that the accuracy of the perception of risk, and risk tolerance, are related to a personality characteristic referred to as 'cognitive reflection'. Cognitive reflection is the ability to resist the first impulse or intuition. It is the tendency to reflect and think about a problem rather than following initial inclinations. Low cognitive reflection is associated with a tendency to yield to immediate impulses by making quick decisions with little thought and deliberation. People who are high in cognitive reflection tend to be good at evaluating risky investment situations, and tend to be willing to take risks.

Nofsinger and Varma (2007) cited evidence that suggests a link between cognitive reflection and relative immunity from behavioural biases. They also carried out a survey, which found that professional financial advisers (personal financial planners) were above average in terms of cognitive reflection. Frederick had presented evidence that suggests a link between hyperbolic discounting (i.e. overemphasis on the present) and low cognitive reflection. Nofsinger and Varma provided evidence to support that observation. People with low cognitive reflection fail to see the interest rate implicit in a choice between two different sums of money at different points of time (the present and a future date). Arguably personal financial advisers should be able to see the implicit interest rates in order to provide good advice to their clients. Evidence presented by Frederick and by Nofsinger and Varma also suggested that low cognitive reflection is associated with proneness to the disposition effect (and to loss aversion).

Concerned with typical client versus Heterogeneous

The management of risk is based on an investor's attitude to risk. An investor who is tolerant of risk would accept levels of risk that would be deemed unacceptable by someone with a strong aversion to risk. Attitudes towards risk vary considerably between people. Grable, Lytton and O'Neill (2004) found that men were more tolerant of risk than women. They also found that people with high incomes were more willing to accept risk than those on low incomes. Hallahan, Faff and McKenzie (2004) found that risk tolerance is greater for men, young people, well-educated people, those on higher incomes, those with higher wealth, and single people.

Scottish Widows, the UK financial services company, carries out an annual survey into pensions saving behaviour. The 2005 survey (Scottish Widows 2005) concluded that about 17% of people with sufficient income to save do not do so; this is consistent with the British Household Panel Survey, which suggests that about 18% of people are persistent non-savers (Department of Work and Pensions, 2003). The Scottish Widows figure is possibly an under-estimate since anyone in a defined-benefit pension scheme (i.e. an occupational pension that relates the pension to salary and years of service) is seen as saving, irrespective of whether they save outside the pension scheme, and it excludes people under 30. The non-savers are consistent and habitual non-savers. Differences in income levels do not seem to substantially affect this group; the proportion of non-savers remains fairly constant as income levels rise (considering the 30-50 age group the Scottish Widows survey found that 14% of those earning £30,000 to £40,000 were non-savers, and 12.5% of those earning over £40,000 were non-savers). However the proportion of non-savers declines past the age of 50.

The Scottish Widows survey identified a number of characteristics that appeared to distinguish habitual non-savers from savers. Non-savers are more likely to take a negative view of other people. Non-savers see themselves as relatively less happy, less healthy, less emotionally secure, and as having a worse romantic and social life. Non-savers are more likely to want a complete change in their lives. They are more likely to feel that they are unable to control, and cope with, their situation in life. They are less able to plan ahead. Non-savers are much more likely to be smokers. The main reason given for not saving is that they cannot afford it (even though many have high incomes), and many say that they could not reduce their spending without significantly affecting their life styles. Somewhat

paradoxically, non-savers are more likely to believe that they will be able to live comfortably on a low income in retirement.

Non-savers are less likely to own their own homes, and those who do own their homes tend to have less valuable properties than savers (note that the survey was constructed so as to eliminate income and age as explanatory factors). Non-savers are more likely to have non-mortgage debts; they are less likely to see themselves as responsible in their borrowing and in their use of the borrowed money.

The Scottish Widows findings are broadly consistent with the results of the 'Family Resources Survey 2003-04', carried out by the Department for Work and Pensions (Department for Work and Pensions, 2005), which found that 27% of households had accumulated absolutely no savings. It is not surprising that the Scottish Widows survey found that non-savers were less happy, less satisfied and less able to cope with their situations in life. It has been found that debt has a negative effect on psychological well-being (Brown, Taylor and Price 2005) and that people in (non-mortgage) debt are prone to stress, depression and anxiety (Citizens Advice, 2003). It would seem reasonable to presume that, if debt causes stress and psychological disorders, the existence of accumulated savings would improve psychological well-being. Possession of accumulated savings provides a buffer against adversity. Possession of money gives a degree of control over the effects of unforeseen adverse events, and control reduces feelings of stress. Events, which require expenditure to deal with problems, cause much more stress when the required money is not available. Accumulated savings provide a sense of independence, security and control. However the study by Brown, Taylor and Price indicated that it was regular saving, rather than accumulated wealth, that had a beneficial effect on psychological well-being.

Watson (2003) researched the relationship between materialism and saving behaviour. It was found that highly materialistic people were more likely to see themselves as spenders, and were more inclined to borrow. In particular they were favourably disposed towards borrowing for non-essential purposes and luxury items. People with low levels of materialism were more likely to save, and were more likely to own financial investments such as shares and mutual funds (unit trusts).

The complicated nature of the factors that affect the accumulation of debt (and possibly, by extension, saving behaviour) has been highlighted in a study conducted by Stone and Maury (2006). They developed a model capable of predicting indebtedness. The factors used in the prediction included demographic, financial, economic, psychological and situational aspects.

The results of both the Scottish Widows survey and the Stone and Maury study suggested that saving behaviour could be related to aspects of personality. Olson (2006) reported that the most prominent classification of personality types is the five factor model. The five factors are extraversion versus introversion, agreeableness versus antagonism, conscientiousness versus heedlessness, emotional stability versus neuroticism, and openness-to-experience versus closed-to-experience. Some researchers have concluded that the five factors can be divided into two groups, thus making a two-factor model. Olson posited engagement and self-control as the two factors. Engagement encompasses extraversion and openness to experience, whereas self-control covers emotional stability, agreeableness and conscientiousness. Low scores on the self-control traits have been found to be associated with stealing, drug and alcohol abuse, absenteeism from work, bad behaviour towards other people, and poor handling of stress. Research has found that deficiencies in self-control are linked to addiction, crime, domestic violence, bankruptcy and academic failure; and negative emotions appear to impair self-control (Tice, Bratslavsky and Baumeister, 2001). The characteristics of low self-control people seem to be broadly consistent with the characteristics of non-savers identified in the Scottish Widows study.

Classifying Investors

Many of the predictions of behavioural finance are mutually inconsistent. Some behavioural biases predict overreaction whilst others predict under-reaction, some indicate underestimation of risk whereas others suggest overestimation, and some lead to excessive trading whilst others entail inertia. Other opposing predictions can be deduced from the principles of behavioural finance. Behavioural biases cannot apply equally to all investors. People differ in their susceptibility to particular psychological biases. Different biases impact different investors to varying extents. The question arises as whether people can be categorised in terms of which behavioural biases are most influential in their decision-making.

Categorisations of savers and investors have been proposed by Beckett, Hewer, and Howcroft (2000) and by Keller and Siegrist (2006). The Beckett, Hewer and Howcroft classification is shown in table 2.

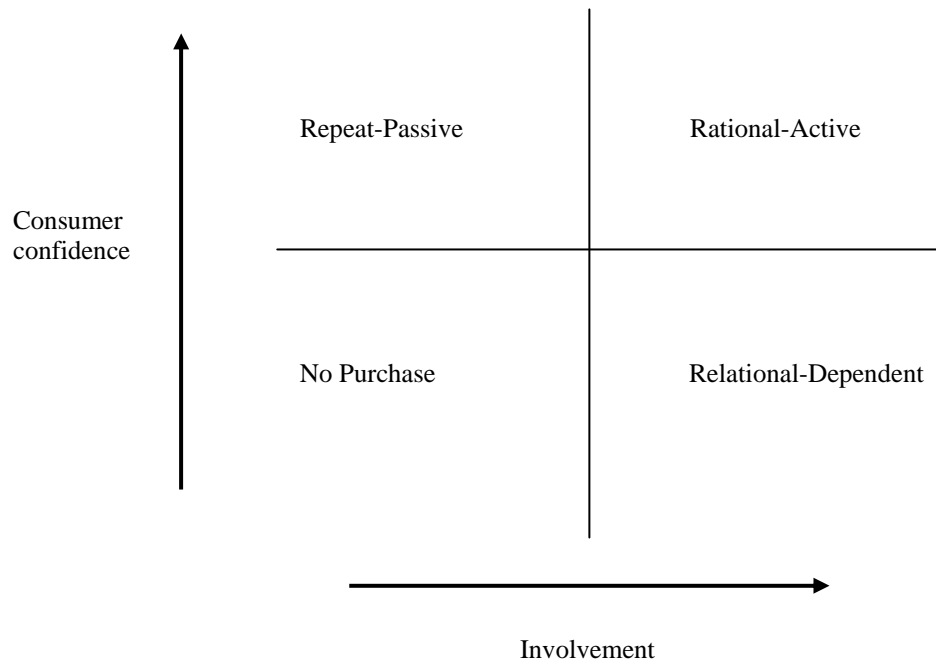


Table 2

The term 'Consumer confidence' covers a number of attributes: uncertainty, perception of risk, complexity and knowledge. The term 'Involvement' encompasses control, participation and contact.

The 'No Purchase' group makes no investment. This group is characterised by low confidence and low involvement. The group includes people who leave large sums of money on deposit rather than investing more profitably. A survey by the Financial Services Authority (2000) found that many people said that they were confused by financial services products. The same survey found that only about 10% of respondents said that they would like more information about financial services products. The general apathy towards financial services was also found in a survey by the Association of Unit Trust and Investment Funds (2000), which discovered that about two-thirds of the people surveyed were not interested in learning about financial subjects.

The 'Repeat-Passive' group takes little interest in the investment process (has low involvement) but has sufficient confidence to take some risk. This group persistently invests in the same shares or funds. Its members show loyalty to the particular shares or funds, which they repeatedly invest in.

The 'Rational-Active' group comes closest to the investors of conventional (non-behavioural) finance theory. This group demonstrates the inclination, and has sufficient confidence in its ability, to actively choose between investments. These investors are willing to accept risk and to exercise control over their own investments.

The 'Relational-Dependent' group contains the investors who seek professional advice. They take an interest in the investment process but do not have sufficient confidence, in their ability to understand investment choices, to make their own evaluations of the alternatives. Byrne (2005) found, amongst retail investors, that those using financial advisers tended to have less investment expertise than those who made their investments directly.

The Keller and Siegrist classification is shown in table 3.

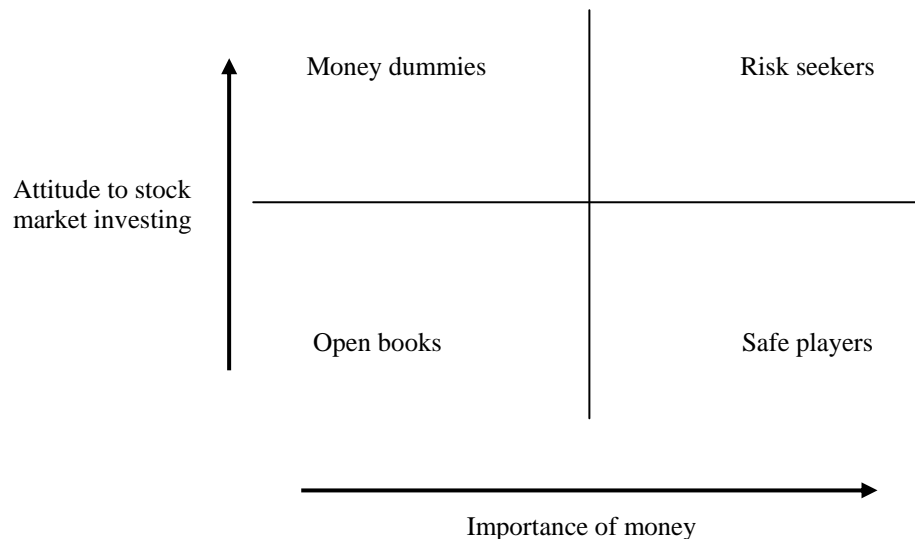


Table 3

Keller and Siegrist make the (often overlooked) point that many people are not interested in saving, investing and wealth accumulation. Money is not very important to members of the 'money dummies' and 'open books' clusters. Possessing money and increasing wealth are not important goals for them. They show low interest and involvement in matters of personal finance. However 'money dummies' are more favourably disposed towards stock market investing than 'open books' (partly because 'open books' tend to see stock market investing as immoral).

The investment of money is important to members of the 'risk seekers' and 'safe players' clusters. Possessing money and increasing wealth are important goals for them. They are more inclined to save than the 'money dummies' and 'open books'. They differ in their attitudes to stock market investing. 'Safe players' are more likely to keep their money on deposit rather than investing in stocks. 'Risk seekers' are more favourably disposed towards stock market investments and are relatively tolerant of risk. They are more confident about managing money than the other groups.

Tables 2 and 3 have been intentionally drawn to show parallels between the two classifications. Although the correspondence is far from perfect, there is a degree of correspondence between the quadrants in the two tables ('Repeat-passive' with 'money dummies'; 'no purchase' with 'open books'; 'rational-active' with 'risk-seekers'; 'relational-dependent' with 'safe players'.)

Possibly the weakest correspondence is between 'relational-dependent' and 'safe players'. Both are concerned with saving and investing. However, with regard to stock market investments, the 'relational-dependent' group are probably more concerned with the complexity of the choices such that they seek professional advice. The 'safe players' have a tendency to avoid stock market investment because it is seen as immoral. This apparent difference between the groups probably arises from the Keller and Siegrist questionnaire, which asked about attitudes to the morality of stock market investing rather than its complexity or risk. A link between the 'relational-dependent' and 'safe players' groups could be (tentatively) established by reference to the ideas of Sjöberg (2000). Sjöberg linked risk perception to attitude, e.g. opponents of nuclear power are inclined to see nuclear power as risky. The attitude helps to determine the perception of risk. So people who see stock market investment as immoral might also be inclined to see it as risky and complex.

It is not difficult to assign behavioural biases to the four quadrants. Investors in the top left hand quadrant are more likely to exhibit conservatism, status quo bias and familiarity bias. The bottom left hand quadrant would tend to contain the non-savers and procrastinators. The top right quadrant would be expected to contain the investors with a tendency towards overconfidence. The bottom right quadrant could contain a significant proportion of the investors for whom the complexity of choice is a problem.

The more loss-averse investors are probably in the bottom quadrants. Investors in the lower quadrants may be subject to biases that cause exaggerated perceptions of risk, such as the retrievability (availability) bias and the narrow framing that leads to excessive focus on short-term volatility.

Assumes constant risk aversion versus Risk aversion variable

It has often been suggested that small investors have a tendency to buy when the market has risen and to sell when the market falls. Karceski (2002) reported that between 1984 and 1996 average monthly inflows into US equity mutual funds were about eight times higher in bull markets than in bear markets. The largest inflows were found to occur after the market had moved higher and the smallest inflows followed falls. Mosebach and Najand (1999) found interrelationships between stock market rises and flows of funds into the market. Rises in the market were related to its own previous rises, indicating a momentum effect, and to previous cash inflows to the market. Cash inflows also showed momentum, and were related to previous market rises. A high net inflow of funds increased stock market prices, and price rises increased the net inflow of funds. In other words, positive feedback trading was identified.

This buy-high / sell-low investment strategy may be predicted by the 'house money' and 'snake bite' effects (Thaler and Johnson 1990). After making a gain people are willing to take risks with the winnings since they do not fully regard the money gained as their own (it is the 'house money'). So people may be more willing to buy following a price rise. Conversely the 'snake bite' effect renders people more risk-averse following a loss. The pain of a loss (the snake bite) can cause people to avoid the risk of more loss by selling investments seen as risky. When many investors are affected by these

biases, the market as a whole may be affected. The house-money effect can contribute to the emergence of a stock market bubble. The snake-bite effect can contribute to a crash.

Clarke and Statman (1998) reported that risk tolerance fell dramatically just after the stock market crash of 1987. In consequence investors became less willing to invest in the stock market after the crash. MacKillop (2003) and Yao, Hanna and Lindamood (2004) found a relationship between market prices and risk tolerance. The findings were that investors became more tolerant of risk following market rises, and less risk tolerant following falls. The implication is that people are more inclined to buy shares when markets have been rising and more inclined to sell when they have been falling; behaviour which reinforces the direction of market movement. Shefrin (2000) found similar effects among financial advisers and institutional investors. Grable, Lytton and O'Neill (2004) found a positive relationship between stock market closing prices and risk tolerance. As the previous week's closing price increased, risk tolerance increased. When the market dropped, the following week's risk tolerance also dropped. Byrne (2005) found that a positive outcome history from risky investments such as equity-related mutual funds led to higher risk propensity amongst retail investors; in other words investment success encouraged further investment in such assets. Since risk tolerance affects the willingness of investors to buy risky assets such as shares, the relationship between market movements and risk tolerance tends to reinforce the direction of market movement. During market rises people become more inclined to buy shares, thus pushing share prices up further. After market falls investors are more likely to sell, thereby pushing the market down further.

Projection bias is high sensitivity to momentary information and feelings such that current attitudes and preferences are expected to continue into the future (Loewenstein, O'Donoghue and Rabin, 2003). Mehra and Sah (2002) found that risk tolerance varied over time and that people behaved as if their current risk preference would persist into the future. In other words the current level of risk tolerance was subject to a projection bias such that it was expected to continue into the future. Grable, Lytton, O'Neill Joo and Klock (2006) pointed out that this interacts with the effects of market movements on risk tolerance. A rise in the market enhances risk tolerance, projection bias leads to a belief that current risk tolerance will persist, people buy more shares, share purchases cause price rises, price rises

increase risk tolerance, and so forth. A virtuous circle of rising prices and rising risk tolerance could emerge. Conversely there could be a vicious circle entailing falling prices and rising risk aversion.

Focus on whole portfolio versus Mental accounting/ goals based

Mental Accounting is the process of separating financial decisions rather than seeing them in aggregate (Thaler 1985). Someone who simultaneously has a bank deposit with a low interest rate and a debt at a high interest rate exhibits mental accounting. Perhaps the bank deposit is regarded as saving for the deposit on a house, and the debt was incurred for the purchase of a car. By separating the two financial decisions the person is losing money. It would have been better to finance the car purchase by taking money (i.e. borrowing) from the house deposit money and then making repayments into that bank account. There would have been a net saving of interest.

Someone may have a portfolio of investments but allocate investments to various mental accounts. This leads to a focus on components of the portfolio rather than the whole portfolio. For example a person may have investments in a pension fund and simultaneously hold investments in Individual Savings Accounts (ISAs). In order to achieve a well-diversified portfolio of investments, the person should take account of the nature of the pension fund investments when deciding upon the ISA investments. If the pension money is invested in a UK growth fund, it may be appropriate to invest the ISA money in a different fund. Diversification reduces dependence upon one fund, or type of fund, and hence reduces the potential effect of relative under-performance on the person's total wealth. The investor should see the investments in aggregate rather than allocate them to mental accounts, which are then considered in isolation.

Mental accounting can cause investors to overestimate risk by failing to take the risk reduction effects of diversification into consideration. Combining assets into a portfolio reduces risk since poor performances from some investments may be offset by good performances from others. If an investor separates investments into different mental accounts, the potential risk reduction of such offsetting is ignored. In consequence total risk is overestimated.

People are prone to mental accounting, with different investments being allocated to different purposes (Kahneman and Tversky, 1982). For example one portfolio may be for the purpose of funding retirement whilst another is for financing children through university. Mental accounting keeps these two portfolios separate so that neither is subsidised by the other. It may be that in aggregate the two portfolios are showing strong gains whilst one is showing a loss. The mental accounting will cause the perception of loss, in relation to a portfolio, despite the overall profit. One frequent rule for self-control is 'never touch the capital'; this means that dividends and interest, but not the capital sum, should be used to finance spending. A low dividend may lead to a forced withdrawal of capital. There may have been a strong capital appreciation, but the mental accounting that separates capital and dividends could result in feelings of failure and loss.

Shefrin and Statman (1984a) have argued that investors account for dividends, and capital gains/losses, separately at some times and together at other times. In the event of a small fall in share prices an investor may combine the capital loss with dividends in order to be able to see an overall gain. In the event of a large fall in share prices, the investor may separate them in order to be able to feel that there is a gain in relation to dividends. An implication of this ability to switch mental accounting is that investors prefer a combination of dividends and capital growth to receiving the whole benefit in the form of capital gains.

Goals-Based Investing

Goals-based investing is a structure for personal investment management that draws on both traditional investment principles and behavioural finance (Nevins, 2004). It has been suggested that it is a useful framework for financial advisers to use when dealing with clients. The central behavioural finance principle involved is mental accounting. The proponents of mental accounting suggest that many people do not see their wealth as forming a single portfolio. Instead finances are divided into separate accounts; the separation may take the form of distinct, observably separate, pools of assets or the separation may merely be in the mind of the investor. Each account has its own portfolio and is related to its own specific goal. It is likely that each account has its own investment horizon.

Nevins suggests measures of risk that differ from the conventional one of standard deviation. He points out that prospect theory sees people as loss-averse rather than risk-averse; that is people are primarily

concerned with losses. Correspondingly risk should be measured in terms of the likelihood and severity of loss. The conventional standard deviation measure is concerned with a single time period and ignores price movements within the period and the potential cumulative effect of losses in successive periods. Conventional measures of return and risk are concerned with annualised measures whereas measurement that relates to the whole investment horizon may be more appropriate.

If risks are measured in terms of the violation of investor goals, the prospective achievement of goals could override attitudes to risk. A risk-tolerant investor need not hold a risky portfolio if a low risk portfolio would meet a goal. Conversely if a conservative portfolio could not meet a goal, a higher yielding risky portfolio must be accepted even by a highly loss-averse investor. For example portfolios whose goal is the provision of a pension would normally need to hold risky assets.

Conventionally investment advice begins with ascertaining the client's attitude to risk, using verbal questioning and/or a questionnaire, in order to obtain a single measurement of risk aversion/tolerance. In the case of goals-based investing, several measurements of risk are required; one for each mental account. Each measurement of risk would be related to a specific goal, and would be measured against a reference value expressed in terms of the goal. For example, when saving for retirement the goal may be in terms of retirement income and risk would then be measured in terms of deviations from the desired level of retirement income.

The approach of conventional portfolio management is to treat the investor's portfolio as a single entity, and to measure attitude to risk in relation to the whole portfolio. The behavioural finance alternative is to allow for multiple investment strategies, each relating to a separate mental account (Shefrin and Statman, 2000; Brunel, 2003). Each strategy is linked to the goal encompassed by a mental account, on the basis that there would be a separate mental account for each goal. Arguably mental accounting should be seen as a preference rather than as a bias, such that the adviser should accommodate to the preference rather than treating it as an aberration that should be eliminated. Mental accounting may be a useful technique for organising personal finances, and for achieving self-control in financial matters. Mental accounting may also be necessary for equity investment. If an investor reacts to a £1,000 loss in a pension fund in the same way as to a £1,000 loss from one month's salary,

the investor could be overwhelmed by short-term pension fund losses. Without mental accounting no risk would be taken when accumulating long-term savings.

Goals-based investing may not be suitable for investors who do not have precise goals, but where goals are clear to the investor it may be an appropriate approach. There are alternative ways of describing goals. One approach is to link them to life-cycle factors such as saving for a deposit on a home, saving for children's education, and saving for a retirement pension. Shefrin and Statman suggest that mental accounts might be differentiated in terms of risk; for example between low-risk funds that are intended to ensure that poverty is avoided through to funds that can be risked in the hope of very large gains. Chhabra (2005) took the view that investors divide their portfolios according to three types of risk; specifically a personal risk concerned with the avoidance of loss, the market risk of conventional theory, and aspirational risk concerned with the prospect of falling behind other people in terms of wealth. Correspondingly there may be a holding of risk-free assets to satisfy safety risk, a balanced portfolio for the market risk, and an aggressive portfolio aimed at high growth to satisfy aspirational risk. Chhabra suggests that risk allocation precedes asset allocation. Brunel suggested that there are four fundamental goals: liquidity, income, capital preservation, and growth. It could be the case that an individual separates mental accounts in terms of their investment horizons; for example long-term, medium-term, and short-term pools of assets.

It may be that an investor would feel more comfortable with a goals-based investment strategy than with a single-portfolio strategy. One problem in the financial services industry has been the tendency for many people to terminate savings plans early (such as pension plans and endowment policies). If goals-based investing makes them feel more comfortable with their savings plans, they may be more likely to persist with them. For an asset allocation to be useful, the investor must adhere to it even in falling markets. Feelings of regret may cause an investor to abandon a strategy in adverse conditions. Brunel refers to this as 'decision risk'.

The goals-based investing proposed by Brunel would entail a separate sub-portfolio to meet each of the four fundamental goals. For example, liquidity may be achieved with a bank deposit; income by a mixture of value stocks and corporate bonds; capital preservation by government bonds; and growth by

a portfolio of value and growth stocks. The proportions of the four sub-portfolios in the total portfolio would reflect the goals and risk attitude of the investor. Brunel's argument implies that a portfolio comprising such a set of sub-portfolios could be more resilient and robust to decision risk in the face of adverse developments. The investor might remain more committed to it than to a traditional portfolio, which does not have goals based sub-portfolios.

A problem with goals-based investing is its complexity. From the perspective of a financial adviser, several measures of risk may need to be made and several investment strategies devised and implemented. The task could be simplified by the creation of a variety of institutional investment products suited to different goals. Structured products can be created to meet investment goals that cannot be otherwise achieved. The adviser can then customise an investment portfolio for an individual by choosing the institutional investments that best match the investment goals of the individual.

Focus on whole portfolio versus Choice bracketing

Choice Bracketing could be defined as 'a series of local choices that each appear to be advantageous but which collectively lead to a bad global outcome' (Read, Loewenstein and Rabin, 1999). People are seen as making appropriate decisions within narrow frames but, when these decisions are aggregated, the overall outcome is not the best possible. For example if each new investment is made without regard to the overall portfolio, whilst each investment seen in isolation may seem rational the resulting portfolio may be unbalanced and poorly diversified. Another example relates to investment horizons. If an investor uses a short horizon, such as one month, for evaluating the risk-return characteristics of investments the resulting portfolio may not be the best from a longer-term perspective. Evaluating investments on a month-by-month basis may lead to the choice of bank deposits in order to avoid the high short-term volatility of stock market investments. However if the objective is to accumulate a pension fund over 35 years, bank deposits would be a poor choice since they provide a low long-term return compared to stock market investments. The investor should consider the risk-return characteristics of investments from a 35-year perspective, not from a one-month perspective.

Focus on whole portfolio versus Focus on individual investments

Narrow framing refers to the tendency of investors to focus too narrowly. One aspect is focus on the constituents of a portfolio rather than the portfolio as a whole. Since individual investments tend to be more volatile than the investor's portfolio as a whole, such narrow framing causes investors to overestimate price volatility. This could cause people to invest too little.

The Management of Biases

Montier (2003/2004) offered advice on how to counter some of the errors, which arise from psychological biases. His points (somewhat paraphrased) included:

1. You know less than you think.
2. Be less certain in your views.
3. Listen to those who do not agree with you.
4. You did not know it all along; you just think you did.
5. Do not take information at face value; consider how it is presented.
6. Do not confuse good firms with good investments.
7. Easily recalled events are less likely than you think.
8. Be prepared to sell your losers and hold your winners.

It has been suggested that financial advisers should educate their clients not only about financial products, but also about the psychological biases that the clients may exhibit. Farrow (2006) suggested that financial advisers should recognise the role emotions play in the decision-making of their clients and should help them to manage those emotions. Attempts at eliminating negative behaviour on the part of clients can be an important part of an adviser's service. Farrow proposed that the recommendation of index-tracker funds could be useful to such a process. However there is a danger that an adviser who attempts to correct psychological biases, and to remove emotion from decision-making, may find that clients go to another adviser who treats the biases as preferences to be accommodated.

The Roles of Financial Advice and Financial Education

Most people have little expertise in personal finance matters, and many have little interest in financial decision-making. The question arises to whether people should seek professional personal finance advice. There is also an issue of the need for increased education in matters of personal finance.

In the UK experiences of financial advice have been mixed, and there is widespread distrust of financial advisers. The regulator, the Financial Services Authority, and the financial services industry are attempting to increase levels of trust. One aspect of this is the elevation of education, training and qualifications requirements of financial advisers with a view that in future all advisers should have chartered status, which reflects levels of training and qualification on a par with other professionals such as accountants and solicitors. Many UK consumers of financial products have unpleasant memories of the 1980s and 1990s when unqualified financial advisers sold, on a commission basis, financial products without full understanding of either the products or the needs of their customers. One result was a spate of mis-selling scandals, and another was widespread distrust of financial advisers and of the financial services industry. This distrust is now holding back the general level of participation in financial services, such as pensions, with the result that many people have inadequate provision.

The US appears to be ahead of the UK in terms of both levels of adviser expertise, and consumer confidence. The development of financial services training and qualification for advisers in recent years is reflected in a generation gap amongst US consumers. Elmerick, Montalto and Fox (2002) examined the use of financial planners (advisers) by US households. They found that people under 35 were more likely to consult financial planners than those over 35. The use of professional financial advisers was also found to be higher amongst consumers with higher levels of education and income. A distinction is made between specialist financial advice and comprehensive advice. Specialist advice is concerned with just one aspect of personal finance; some advisers would be concerned only with mortgage advice, others only with investments, and others only with insurance. Comprehensive advice covers the full range of financial services. The findings of Elmerick, Montalto and Fox with respect to the influence of factors such as age and income relate primarily to the use of comprehensive financial advice.

Black, Ciccotello and Skipper (2002) highlight the need for a theoretical basis for personal financial planning. Comprehensive financial advice allows for the application of portfolio theory, such as Markowitz diversification, to the management of personal finances. Comprehensive financial planning also gives considerable scope for the management of the psychological biases identified by behavioural

finance. In particular comprehensive financial planning can avoid the mental accounting tendency to put different aspects of personal finance into separate compartments whose interrelationships are ignored.

Byrne (2007) examined the behaviour of members of a UK defined contribution pension scheme. It was found that those members who had received professional advice about their pension were more likely to be aware of their saving needs, to have more investment knowledge, and to take more interest in their investments. An interesting finding was that UK pension scheme members avoided the common US error of including a substantial amount of their own company's shares in their pension funds. This error is commonly assigned to a familiarity bias, which leads people to invest in what they feel they understand. However there appeared to be a bias towards property investment amongst the UK pension scheme members. This may also be due to a familiarity bias, and can result in an over-weighting of property in investors' portfolios. To the extent that advice can offset the biases identified by behavioural finance, such as familiarity biases, its importance is enhanced.

Dolvin and Templeton (2006) demonstrated the benefits of financial education to pension scheme members in the US. They found that those who attended seminars on financial education subsequently rebalanced their pension fund portfolios in a manner that rendered those portfolios more efficient, when compared to the portfolios of those who did not attend. In particular portfolio diversification was improved.

Quality Assurance in Investment Services

Many people take the view that in the UK competition has failed to consistently ensure good quality for retail consumers of financial products and services. They take the view that this has been evidenced by the mis-selling of unsuitable pensions; they point to the tendency for many consumers to cancel policies before they mature, which suggests that the products were unsuitable; and point out that many endowment policies have failed to satisfy customers since they have not met the consumer expectation that they would be sufficient to redeem mortgage debts at maturity.

Quality could be seen as the satisfaction of the retail investor with the service provided. This is dependent upon whether the expectations of the investor are met. One problem in the investment service industry is that the outcomes of investment decisions are largely beyond the control of investment advisers and investment managers. The behaviour of financial markets is the main determinant of whether expectations, in the sense of desired investment returns, are met. The quality assurance role of the investment professionals may be limited to ensuring that the investments of their clients perform at least as well as the average.

Karapetrovic and Willborn (1999) suggest that quality could be defined in terms of the perception of the retail investor about achieving satisfactory returns under acceptable risks within a planned time. However investment professionals can only be responsible for returns relative to benchmarks determined by market performance. The quality assurance role of investment advisers may entail managing customer expectations. In particular investment advisers may need to ensure that the expectations of clients are clear and realistic (Ojasalo 2001). Investment advisers may need to explain the nature of market risk to their clients. The need for professional integrity is considerable since some clients may withdraw when they understand the risks. Advisers need to be willing to explain risks even though it could cause them to lose clients.

Quality assurance involves providing confidence to clients that their requirements for quality are met. In quality assurance the word 'quality' is used in the sense of conformity, or compliance, of product (or service) specification to a standard. Product, or service, specification can be defined in terms of the function of the product or service, in terms of its structure, or in terms of the manner of production or provision (Grocock 1998).

For function to be used for the specification, it is necessary for the product to have a specific outcome. For example a bank deposit offering a fixed rate of interest over a specified number of years would promise a specific future sum of money. If the investor receives that sum of money, the function of the investment would have been performed and the investor's expectations met. The possibility that the bank will fail to pay the investor is a remaining weakness in the quality assurance. To complete the

quality assurance the investor would need to define the product specification in terms of the manner of production, perhaps by choosing a large, well-capitalised bank.

Specification of function cannot be used for products for which it is not possible to specify the future sum of money to be received by the investor. In such a case specification of structure may be appropriate. For example the specification of structure might, for a mutual fund such as a unit trust, include details of the investment strategy (e.g. diversified portfolio of UK shares); the investment managers (e.g. Acme Portfolio Management plc); the charges (initial, annual and terminal); and the dates and nature of periodic reports. It would be easy for a regulator to check that these features had been complied with. This may appear to be assurance of form rather than content but, when dealing with financial markets characterised by uncertainty, it is not possible to assure content in the sense of a specific future monetary value.

Product, or service, specification defined in terms of the manner of production or provision tends to entail a much larger set of prescriptions in the form of long rule books. Such a rule book would cover aspects such as: the training and assessment of investment professionals; requirements for independence and unbiased 'best' advice; and requirements for financial advisers to know their clients and to conduct fact-finds for that purpose. Ascertaining the investment goals and financial circumstances of the client is crucial for an adviser. This is necessary to ensure that the goals are appropriate and achievable. The adviser should determine the client's net worth, income and expenditure. Projections of future income (both level and stability) and expenditure are also necessary.

Accountability could be a component of quality assurance, and of regulation. If financial advisers have to document their reasons for their recommendations, inappropriate criteria such as commission rates may be used less. Hilton (2001) suggested that giving explanations could force decision-makers to make assumptions explicit and to examine other options more closely. Hilton pointed out that experimental research had shown that if people know that they will have to justify their decisions, they would use more information and be less subject to confirmation bias. Confirmation bias is the behavioural finance bias that involves ignoring information that contradicts a person's existing views. Reduction of confirmation bias entails the consideration of a wider range of alternatives. There are

risks to such accountability requirements; advisers may make recommendations on the basis of what is most easily defended, which may not necessarily be the ideal advice for the client. Accountability could produce excessive conformity and conservatism.

Victim Culture

The development of the mis-selling 'scandals' in the UK seems to have been premised on the view that financial advisers are to blame and that their clients have been their victims (and hence should be compensated). This could be seen as an aspect of a victim culture wherein one's misfortunes are blamed on others. Typically the clients claim to have been deceived by their advisers. Another example can be seen in the case of mortgage defaults and subsequent repossessions (foreclosures) wherein the client claims that the adviser never explained that interest rates could go up and property prices go down. Other examples of victim culture have been seen in medical compensation claims, divorce proceedings (with respect to pre-nuptial agreements), and criminal cases in which the accused claims mitigation on the basis of abuse in childhood.

The process tends to remove responsibility from the client. Arguably clients should have some knowledge of financial risk even before taking advice. It might seem reasonable that a financial adviser can presume that a client knows that stock markets can fall, that property prices can fall and that interest rates can vary.

Mis-selling claims are bedevilled by the role of memory. Memory is fallible. People are prone to hindsight bias. Bad past decisions can be incompatible with a self-image of being astute. The resulting cognitive dissonance can be reduced by means of shifting the blame on to someone else (the adviser). The moulding of memory towards blaming someone else is likely to be enhanced if there is a possibility of compensation. This adjustment of recollections towards one's self-interest could be entirely unconscious such that the client feels genuinely aggrieved.

Accurately remembering one's own thought processes is virtually impossible when they were never made explicit. It may be the case that the client presumed that recent market trends would continue indefinitely (due to a representativeness bias). It could be that the client was risk tolerant at the time of

agreeing a purchase, and presumed that the risk tolerance was permanent due to projection bias. At the time of claiming mis-selling the client's risk tolerance may be much lower (perhaps because of stock market or property market falls). It would be impossible to accurately recall one's risk tolerance at a point in time in the past.

Arguably compensation for the mis-selling of financial products has largely been based on four disputable premises. The first is that it is reasonable to accept that consumers of financial products are ignorant of financial risk. The second is that such ignorance of risk is the fault of their financial advisers. The third is that consumers have perfect recall (sometimes going back many years) of conversations with advisers and of their own knowledge and attitudes at the time. The fourth is that consumers are impartial witnesses uninfluenced by their financial interests and unaffected by their desire to maintain their self-esteem.

Maintenance of self-esteem can cause difficulty in admitting to past mistakes. It is always easier to blame someone else for one's mistakes, particularly when the prevailing social mood favours a victim culture. Arguably the victim culture has been supported by regulators, the media, and the judiciary.

Conclusion

Financial advice is a precarious business due to psychological biases that weaken communication and recollection. If something goes wrong, it is not necessarily the fault of the adviser. The client may be at fault (but reluctant to accept fault). The process may be at fault since communication can never be perfect. There is a tendency to assume that, if something goes wrong, somebody must be to blame. It may be that no-one is culpable; the advice process is imperfect and hence its outcomes will often be imperfect.

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