

FINANCE THEORY AND FINANCIAL ADVICE: IS COMMISSION A NECESSARY EVIL?**Abstract**

This paper surveys relevant literature to establish that:

1. Financial advice is beneficial to the recipients.
2. Fee-based advice reaches only a minority of people.
3. Commission-based financial advice is potentially imperfect, but can reach people that fee-based advice will not reach.
4. Many of those in need of financial advice will not seek it.

The existing literature will be surveyed in order to examine the following hypotheses:

1. Financial advice increases participation in financial planning and improves the quality of financial planning.
2. Fee-based financial advice reaches only a minority of people, so that commission-based advice is needed to broaden the coverage of financial advice.
3. Payment by commission incentivises selling rather than advice. Advisers have conflicts of interest that compromise the quality of advice.
4. Those most in need of financial advice are those least likely to seek it.

The evaluation of these hypotheses will be based on the premise that financial advice has the following three objectives:

1. Communication of the need for financial planning, e.g. explaining a life cycle view.
2. Provision of information about optimal approaches, e.g. diversification, relative asset returns, the meaning of risk, the relationship between risk and investment horizon, tax efficiency, investment charges, active versus passive funds, and the costs of delaying the commencement of retirement saving.
3. Overcoming the cognitive limitations and biases of clients.

Financial advice increases participation in financial planning and improves the quality of financial planning.

Communicating the Need for Financial Planning

Financial advice might increase participation in financial planning by communicating the need for financial planning. Explanation of a life-cycle perspective could be part of the process. Although there may be some other reasons for long term saving, such as funding children's education or provision of a legacy to pass on to one's heirs, the most important is the provision of a retirement income. In order to communicate the scale, of what is involved for an individual, consideration might be given to the case of someone expecting to fund 20 years retirement income from 40 years work. Suppose that the aim is to maintain the standard of living at the level achieved during the working life. In the absence of a prospective real rate of return on investments, one-third of the income received while working needs to be saved in order to provide the retirement income.

The point about zero real return is important here. The example based on expected zero investment return could shock a client out of complacency but could also serve to discourage the client. The next step might be to illustrate the costs entailed when there is a positive real rate of return. See appendix 1.

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.

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.

The evidence on the roles of financial education and financial advice seems to support the hypothesis that they increase participation in financial planning and the quality of financial planning. This evidence is also consistent with the view that there is a positive relationship between financial education and participation in financial planning. Conversely those who are the least financially aware are the least likely to participate, which is consistent with the hypothesis that those most in need of financial advice are those least likely to seek it.

Since some intellectual challenge is involved, the less motivated and the less intelligent could be deterred by that challenge.

Behavioural Perspectives on Annuity Purchase

Arguably one aspect of personal financial planning for which advice is very useful is the purchase of annuities. It is standard financial advice for retirees to purchase annuities. The main argument in favour of annuity purchase is that it provides insurance against outliving the person's assets. If the alternative is seen as steadily drawing on assets during retirement, that alternative entails the risk that the person will outlive the assets so that in advanced old age the person has no means of support other than state benefits.

One way of avoiding outliving one's assets would be to always budget for remaining life. In other words the retiree may withdraw decreasing amounts from the retirement fund in order to ensure that something always remains for future years. This has two disadvantages relative to annuity purchase.

First the retiree could face a declining standard of living as the sums withdrawn decline over time.

Second some money will remain unspent at death, so the retiree would not have been able to fully use accumulated assets to finance expenditure during retirement.

So it is to be expected that buying an annuity at retirement would provide insurance against outliving one's assets, could prevent a decline in the standard of living, and would ensure that people on average fully utilise their assets for financing retirement spending. Nonetheless people are often reluctant to buy annuities at retirement, and behavioural finance indicates some reasons for this (Hu and Scott 2007).

One issue is that many people see annuities as sources of risk rather than as means of insurance (Brown and Warshawsky 2004). Annuities are often seen as gambles on longevity. If the person dies early there is a loss since the accumulated receipts are less than the sum paid for the annuity. If someone sees an annuity as a source of risk then, even when the actuarial expectation is that receipts equal payments, a risk-averse person will refuse to buy an annuity. If an annuity were seen as insurance against outliving assets, so that the annuity is seen as reducing risk, a risk-averse person would buy an annuity.

Prospect theory indicates that losses are weighted more than twice as heavily as gains. This loss aversion suggests that the prospective loss from dying early is weighted more heavily than the potential gain from living longer than average. The substitution of statistical probabilities by decision weights, according to prospect theory, entails an exaggeration of small probabilities. In consequence the small probability of dying soon after retirement becomes exaggerated, thereby further disinclining people from annuity purchase.

Vividness also plays a part. The possibility of early death has greater vividness than the distant prospect of outliving assets, and is therefore likely to have a greater impact on decision making. There is also the possibility that people add together the chances of early death from various different causes, ignoring the fact that one would preclude the others (Hu and Scott see this as a manifestation of the conjunction fallacy).

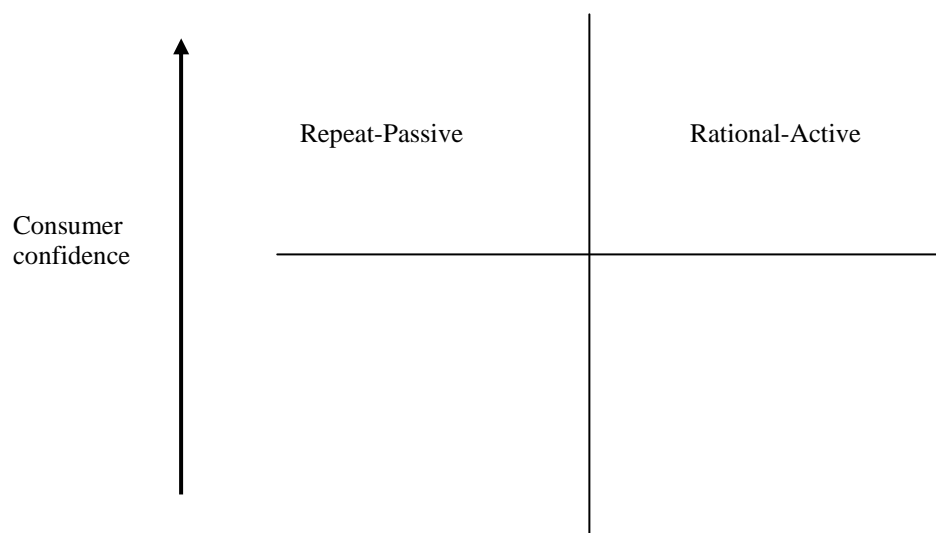
Hyperbolic discounting, which leads to the present having a disproportionate weighting in decisions relative to later periods, may also have a role in deterring people from buying annuities. The purchase of an annuity entails giving up a sum of money in the present for a stream of cash payments stretching into the distant future. The endowment effect might provide part of the explanation for the unpopularity of annuities. According to the endowment effect people identify with their existing possessions, such that their existing possessions are seen as part of their concepts of self. People sometimes say that they are 'worth' a particular sum of money, meaning that they own such a sum. They may feel that the ownership of the wealth adds to their status and it may give them a feeling of self-respect. Buying an annuity entails loss of the money.

Notwithstanding these points indicating that the reluctance to buy annuities may be driven by irrational psychological biases, it is necessary to point out two clearly rational reasons. One is the loss of liquidity. If one's life savings are used up in the purchase of an annuity, the ability to meet an unexpected large expenditure (e.g. major house repairs) is lost. The second is the loss of the facility of making a bequest, for example leaving money for one's children in a will. However these are probably arguments for not using all of one's assets for the purchase of an annuity, rather than for not buying an annuity at all.

Fee-based financial advice reaches only a minority of people, so that commission-based advice is needed to broaden the coverage of financial advice.

Classifying Investors

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 1.



No Purchase

Relational-Dependent



Involvement

Table 1

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.

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.

Fee-based financial advice would reach the ‘Relational-Dependent’ group but is unlikely to reach the others. The ‘No Purchase’ and ‘Repeat-Passive’ groups need advice but are likely to be reluctant to make explicit payments. People with low involvement in financial matters are relatively unlikely to be willing to make explicit payments for financial advice. Commission-based advice, which entails no explicit payment of fees, is more likely to reach such groups. Even if commission-based advice is not perfect advice, it is better than no advice at all.

The Keller and Siegrist classification is shown in table 2.

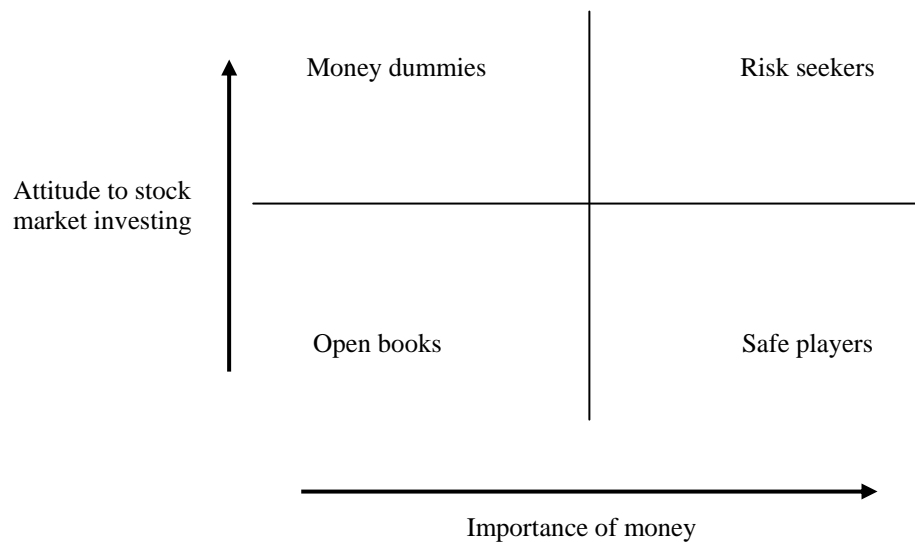


Table 2

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). These groups are unlikely to be willing to pay explicit fees for financial advice, since financial matters are not very important to them. There is more chance that they would be receptive to advice that does not involve explicit payment. Commission-based advice has a role in providing for these groups.

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. These groups, who see money as important, are relatively likely to be prepared to pay fees for financial advice.

Tables 1 and 2 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. It is possible that this apparent difference between the groups arises from the Keller and Siegrist questionnaire, which asked about attitudes to the morality of stock market investing rather than its complexity or risk.

Payment by commission incentivises selling rather than advice. Advisers have conflicts of interest that compromise the quality of advice.

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. Some evidence that commission affects the recommendations of financial advisers comes from research by Jones, Lesseig and Smythe (2005). 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 supporting information and rejection of opposing information, 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.

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).

What is perceived as mis-selling by a client is not perceived as mis-selling by the financial adviser. This is not solely due to the effects of self-interest on the perceptions of the adviser. It may result from a misunderstanding of risk on the part of the client. Many people find it difficult to accept that chance substantially affects outcomes. If personal financial plans turn out less favourably than expected, many people feel that someone must be to blame. The financial adviser is likely to be blamed. In other words, investors can be reluctant to accept that taking risk entails the possibility that outcomes are less favourable than they hoped. The disappointing outcome is not seen as a consequence of their risk-taking in a world of uncertainty, it is seen as the result of errors or bad behaviour of the financial adviser. This is an aspect of the illusion of control. The illusion of control is a cognitive bias identified by behavioural finance. It is a belief that events and outcomes are more controllable, and more predictable, than they actually are. This is supported by the hindsight bias, which causes people to believe that outcomes were more predictable than they actually were. After the event, and with the benefit of hindsight, outcomes are seen as having been predictable. Disappointing outcomes may also result from over-optimistic expectations.

The potential for influencing investors can be seen from research on advertising. Jordan and Kaas (2002) investigated the potential of using behavioural finance biases in the construction of advertisements. They found that the anchoring bias could be used to influence expectations of fund returns. Including a high percentage in the advertisement, even if the percentage is not related to

investment returns, will raise the consumers' expectations of fund return. They found that the representativeness bias could be used. Representativeness entails the use of stereotypes, and if the investment company is reputable and well known it conforms to a positive stereotype. Funds managed by the company are seen as representative of the company. Jordan and Kaas found that funds managed by reputable, well-known, investment companies were seen as relatively less risky. They also investigated the affect heuristic, which is the effect of positive feelings towards a product. They found that, if advertising could engender positive emotions associated with a fund, the fund would be seen as relatively less risky. It was found that advertising could be effective, in using the behavioural biases, on both knowledgeable and naïve investors. The effects were greater in the case of naïve investors.

There is considerable evidence that, on average, actively managed funds fail to outperform stock indices. Furthermore although some funds outperform (as would be expected on the basis of chance), there appears to be no reliable way of forecasting which will outperform except by observing fund charges. In particular funds with high charges show no superior (pre-charges) performance to low-cost funds. In consequence, on average, funds with low charges tend to outperform high-cost funds by the amount of the difference between the levels of charges. Evidence on market timing abilities of professional investment managers also indicates that, on average, they fail to profit from market timing. Appendix 2 indicates some of the evidence on fund management performance.

Commission-based financial advisers may tend to ignore the evidence and thereby operate contrary to the best interests of their clients. First low-cost funds may pay low commission (low charges reduce the money available for commission payments) and this could lead to advisers selling funds with high charges (see appendix 3 on the effects of fund charges and appendix 4 on investment bonds). Second churning (frequently switching between investments), whilst providing commissions each time switches occur, burden investors with new front-end charges each time while adding nothing to investment performance. Third actively-managed funds, whilst normally paying more commission than index-tracking funds, add an extra dimension of risk. This risk is known as active risk (or as management risk). It is the risk that an investor's chosen funds will under-perform relative to the average fund.

Psychological research has indicated that there are biases in decision-making. These biases have implications for the decisions as to whether to invest in stock market related products, the extent of such investment, and the nature of the investments. The biases could cause investors to make poor decisions; or financial advisers to give poor advice. If investors understand the psychological biases to which they may be prone, they may be able to compensate for them when making investment decisions. If a financial adviser knows the psychological biases that affect clients, the adviser can try to offset those biases by appropriate information and advice. Whilst a financial adviser should discover and accept a client's preferences, the adviser should attempt to dispel misperceptions and misjudgements that arise from the client's psychological biases. Simultaneously advisers should guard against the biases to which they themselves may be prone.

If a function of a financial adviser is to reduce the psychological biases identified by behavioural finance, the desire to sell might conflict with the performance of this function. Some behavioural biases render it more likely that a client will agree to a product. Advisers focused on selling may fail to reduce and may even seek to enhance the outcome bias, the illusion of control, the illusion of knowledge and the familiarity bias. They may also exploit the variability of risk aversion and the proneness to frame dependence.

A 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 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.

The illusion of control is the tendency to believe that chance events are amenable to personal control (Langer, 1975). People often behave as if they have influence over uncontrollable events (Presson and Benassi, 1996). This may take the form of investors believing that they can forecast price movements, which are unpredictable. The illusion of control can cause an underestimation of risk. If events are seen

as controllable, they will be seen as less risky (Gollwitzer and Kinney, 1989). De Bondt (1998) suggested that one manifestation of the illusion of control was the belief of many investors that they would be sufficiently astute to sell before a large fall in prices. This belief that they would be able to avoid losses by selling in time causes such investors to underestimate the risks of their investments.

According to Langer, 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.

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 outperformers. The illusion of control, together with overconfidence, 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. 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. Presson and Benassi showed that choice, task familiarity, information, and active involvement foster the illusion of control.

A factor that fosters the illusion of control is the acquisition of information. Increased information increases the illusion of control and the degree of overconfidence. This has been called the illusion of

knowledge (Nofsinger 2005; Peterson and Pitz 1988). The information may or may not be relevant to the investments. Particularly for investors with little knowledge of investment, information does not give them as much understanding as they think because they lack the expertise to interpret it. They may be unable to distinguish relevant and reliable information from irrelevant and unreliable information.

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.

The familiarity bias 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.

Related to the 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 investments with high brand recognition.

Finance professionals typically 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.

Investment decisions tend to be 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.

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.

Benartzi and Thaler (1999) found that pension plan participants responded considerably more positively to stock investments when longer-term returns were presented than when one-year returns were shown. They described the framing effect from the presentation of one-year returns as myopic loss aversion. Loss aversion is high sensitivity to losses relative to gains and myopia refers to excessive frequency of monitoring investment returns. The result is excessive sensitivity to short-term losses, which disinclines participants from investment in equities (shares).

Commission-based financial advisers may be tempted to exploit heuristic simplifications such as representativeness. Heuristic simplification arises from the limitations of people's cognitive powers (such as memory and thought). It involves the process of using shortcuts to deal with complex decisions. Rules-of-thumb are examples of heuristic simplification. Such shortcuts can produce a tainted perception of the situation being thought about.

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. 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.

Another result of representativeness is a tendency to assume that good companies are good investments. Good firms are often seen as representing good investments. The issue of whether a share is a good investment depends upon whether it is over-, under-, or fairly-priced. Shares of a good company may be overpriced, and hence would not represent a good investment. Shares of a weak company may be under-priced, and hence are attractive as an investment. An example of this error was the enthusiasm for the 'nifty-fifty' stocks (actually 76 stocks) in the US in the early 1970s. The firms were seen as so good that their shares were considered to be a good buy at any price (Fesenmaier and Smith, 2002). The demand pushed the stock prices up to unrealistic levels. Subsequently, as the

mispricing was gradually corrected, the nifty-fifty stock prices showed relative declines and most of them under-performed the market over the following decades (Wal-Mart was an exception).

The findings of Cooper, Dimitrov and Rau (2001) can be interpreted as evidence of representativeness. They investigated companies that added '.com' or '.net' to their names between June 1998 and July 1999 (a period during which the internet stock bubble was developing). They found that those companies provided an average return, between 15 days before the name change to 15 days after, that was 142% above that of similar companies. For the companies whose business had no relation to the internet, the figure was 203%. It would appear that investors saw companies with .com or .net in their names as representative of potentially highly successful companies. Cooper, Gulen and Rau (2005) found that mutual funds (unit trusts) can increase the flow of investment funds from retail investors by changing their names to something that reflects recently successful investment styles.

The effects of representativeness on thinking and decision-making can be illustrated by the following example. A man has recently been convicted. You are told that he is aggressive, short-tempered, and has a history of violence. You are asked to guess whether his conviction was for murder or speeding. It is likely that many people would guess murder. This is because the description fits the popular image, or stereotype, of a murderer. The man is seen as representative of murderers. However, since speeding convictions vastly outnumber murder convictions, it is much more likely that the conviction was for speeding.

Next 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 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.

Another 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).

Another bias is Retrievability (alternatively known as Availability), which suggests that more attention is given to the most easily recalled information. Retrievability 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 Retrievability 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. Retrievability 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.

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.

The tendency to buy following a stock market rise, and to sell following a fall, can also be explained in terms of changes in attitude towards risk. 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.

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.

The effectiveness of financial advice, whether from fee-based or commission-based advisers, is likely to depend on the expertise of the advisers. 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 qualifications 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.

Those most in need of financial advice are those least likely to seek it.

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.

Habitual Non-Savers

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.

Self-Control, Personality Traits and Social Mood

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.

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 (1999) 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.

Saving and Self Control

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.

Deaves, Veit, Bhandari and Cheney (2007) identified a propensity to plan. They found that pension contributions were positively correlated with the propensity to plan. They also found that those with a high propensity to plan had high tolerance of risk. They interpreted this relationship in terms of planners acquiring financial expertise, and hence learning that acceptance of risk is part of financial planning. This may indicate that training programmes would help personal financial planning. However Mandell and Klein (2007) found that the acquisition and retention of financial expertise depended heavily on motivation. Deaves, Veit, Bhandari and Cheney cited studies indicating that financial training could enhance motivation, in the sense of the propensity to plan (Bernheim, Garrett and Maki 2001; Mann, Beswick, Allouache and Ivey 1989).

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 (Ainslie 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 (2001) 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).

It has often been wondered why many investors prefer cash dividends in preference to selling shares as a means of turning capital gains into cash. Selling part of a shareholding as a means of turning a capital gain into cash may have tax advantages relative to receiving dividends. Nonetheless investors frequently prefer to receive cash dividends. This appears to be irrational from the perspective of maximising income. It may be explicable in terms of rules-of-thumb employed to help willpower. One such rule-of-thumb is 'never touch the capital'. The capital, be it a sum of money in a bank deposit or a holding of shares, is treated as being untouchable. This piece of self-discipline ensures that the capital remains intact in order to provide income in the future.

Distribution Technology and The Pensions Institute (Distribution Technology, 2005) found that most retirees with pension funds choose annuities (retirement incomes) that start at a high level, but without rises, in preference to annuities that start lower but rise over time to compensate for inflation. This is consistent with a preference for immediate expenditure.

Evidence on the factors that determine participation in pension schemes is consistent with the view that people with knowledge of financial services are more likely to participate in pension schemes. Jacobs-Lawson and Hershey (2005) investigated psychological determinants of retirement saving behaviour. They found that the existence, and extent, of saving for retirement was related to three psychological characteristics. One of those characteristics is 'future time perspective', which is a measure of the extent to which people focus on the future (it is alternatively known as 'future orientation'). A number of studies (Burtless 1999, Hershey and Mowen 2000, Lusardi 1999) found that future time perspective is positively related to the tendency to save for retirement.

Another characteristic that Jacobs-Lawson and Hershey found to be related to saving for retirement was knowledge of financial planning for retirement. A number of studies have indicated that financial knowledge is positively related to levels of retirement saving (Ekerdt, Hackney, Kosloski and DeViney

2001; Grable and Lytton 1997; Hershey and Mowen 2000; Mitchell and Moore 1998; Yuh and DeVaney 1996). The third characteristic investigated by Jacobs-Lawson and Hershey was risk tolerance. Grable and Joo (1997), and Yuh and DeVaney (1996), found that risk tolerance was positively related to the level of retirement saving.

The findings of Jacobs-Lawson and Hershey were consistent with the results of previous studies in that higher levels of retirement saving were associated with greater degrees of future time perspective, knowledge of financial planning for retirement, and financial risk tolerance.

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 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.

The evidence on retirement saving is consistent with the hypothesis that financial education and financial advice increase participation in financial planning and increase the quality of financial planning. The hypothesis that those most in need of financial advice are those least likely to seek it also receives support from these findings. Financial inhibition factors such as mistrust of advisers and extreme fear of risk help to explain the failure to participate in financial planning, including the failure to seek advice. Other factors may be involved.

APPENDIX 1

Life Cycle Analysis Of Pension Funding

Computer software models exist for estimating the level of saving (as a percentage of earnings) required for a pension. The relevant variables (determining factors) are:

The required pension as a percentage of pre-retirement income.

Whether the required pension is measured in money or real terms.

The expected period of retirement (based on the expected retirement age and actuarial projections of longevity).

The period over which pension fund contributions will be paid.

The expected real rate of return on investments prior to retirement.

The expected rate of return on the investments that fund the annuity payments.

The amount of the pension requirement provided by state benefits.

The amount of the pension requirement provided by existing personal and occupational pension rights.

Two approaches to determining the desirable level of retirement income are: (1) using a proportion of pre-retirement income, for example planning for a pension that is two-thirds of pre-retirement income, and (2) planning for a pension that maintains the pre-retirement standard of living. The method of calculation differs between the two approaches.

Fixing a Proportion of Pre-retirement Income

The calculations in this case involve two stages. First the size of the pension fund required for the retirement income is calculated using the annuity equation. Secondly the level of annual saving required to produce that pension fund is calculated using the endowment equation.

The annuity equation is:

$$p = M / \left[\frac{1 - (1+r)^{-T}}{r} \right]$$

where p is the annual income, M is the size of the pension fund, r is the relevant rate of (redemption) yield on government bonds, and T is the period for which the annuity is expected to be paid.

The equation for an endowment is:

$$p = (M \times y) / [(1 + y)^t - 1]$$

where p is the annual investment, M is the sum to be accumulated, y is the expected rate of return on the endowment fund, and t is the number of years until retirement.

It is to be noted that the expected retirement lifespan is an actuarial average. The individual is assumed to live for the average period. Some people live for longer, and others for shorter, retirement periods. Since a life assurance company provides annuities (pensions) for a large number of people, it can assume that those living shorter lives balance those living longer lives. In effect those that die before the average retirement period subsidise those that live longer lives. This allows the life assurance

company to calculate each person's pension fund requirement on the basis of an average retirement lifespan.

Example 1

Suppose that someone expects to earn £30,000 a year for the next 40 years and anticipates 20 years of retirement. Further assume that the person expects zero real interest (interest net of inflation). How much should be saved for retirement on two-thirds income?

The person needs £400,000 at retirement in order to fund £20,000 a year for 20 years. In order to accumulate £400,000 the person must save £10,000 a year for the 40 years of work.

It can be noted that the level of expenditure (consumption) in this case is the same before, and after, retirement. In other words this rate of saving achieves not only the desired proportion of income but also the maintenance of a constant level of consumption (a constant standard of living). There is a permanent income of £20,000 p.a.

Example 2

Consider the case in example 11.1 but with an expected real rate of interest of 5% p.a.

The annuity equation:

$$£20,000 = M / [\{ 1 - (1.05)^{-20} \} / 0.05]$$

should be solved for M.

$$£20,000 \times [\{ 1 - (1.05)^{-20} \} / 0.05] = M$$

$$M = £249,244$$

The sum of £249,244 needs to be accumulated.

The next step is to find the rate of saving that would achieve that sum.

The endowment equation needs to be solved for p.

$$p = [£249,244 \times 0.05] / [(1.05)^{40} - 1]$$

$$p = £2,063$$

It can be seen from these two examples that a rate of return on the invested funds makes a considerable difference to the amount that must be saved. With zero real interest £10,000 a year needs to be saved, with 5% p.a. real interest the required annual saving is just £2,063.

Fixing a Constant Consumption Stream

If the aim is to have the same standard of living in retirement as before, the calculations should seek to ensure that the level of expenditure (consumption) could be maintained into retirement. The calculation involves equating the present value of expected income with the present value of planned expenditure. The constant level of expenditure (consumption) calculated in this way is sometimes referred to as 'permanent income' (Friedman 1957). The equation is:

$$\sum C/(1+r)^t = \sum Y_t/(1+r)^t \quad (1)$$

C is the constant expenditure per annum (permanent income) throughout the lifetime of the individual. Y_t is the level of (after tax) income in period t. Y_t is not necessarily the same in every period. The rate at which the cash flows are discounted to the present is shown by r.

Example 3

Suppose that someone expects to earn £30,000 a year for 40 years, and then to have 20 years of retirement. What would be that person's permanent income if interest rates were expected to be 5% p.a.?

Answer

$$\sum C/(1+r)^t = \sum Y_t/(1+r)^t$$

These can be treated as two annuities, and the annuity equation can be rewritten as:

$$M = p \times \{ [1 - (1+r)^{-T}] / r \}$$

where M is the present value of the annuity.

With an interest rate of 5% p.a., equating the present values of the two annuities gives:

$$C \{ [1 - (1.05)^{-60}] / 0.05 \} = £30,000 \{ [1 - (1.05)^{-40}] / 0.05 \}$$

Solving for C gives:

$$C = \frac{\text{£}30,000 \{1 - (1.05)^{-40}\}/0.05}{\{1 - (1.05)^{-60}\}/0.05}$$

$$C = \text{£}30,000 \frac{\{1 - 0.1420456\}}{\{1 - 0.0535355\}}$$

$$C = \text{£}30,000 \times \frac{0.8579543}{0.9464645} = \text{£}30,000 \times 0.9064833 = \text{£}27,194.5$$

The person has a permanent income of £27,194.5; in other words the income of £30,000 a year for forty years can finance consumption at £27,194.5 a year for sixty years. By saving £30,000 – £27,194.5 = £2,805.5 a year whilst working, the level of expenditure enjoyed during the person's working life can be maintained during retirement. The annual level of consumption of £27,194.5 is achieved both during the working life and in retirement.

This permanent income approach is challenged by evidence that many people fail to maintain their consumption levels into retirement. Banks, Blundell and Tanner (1998) found that many people experienced a drop in consumption at retirement. This evidence suggests that it is often the case that people do not save enough to smooth consumption levels over their lifetimes, with the effect that their living standards fall when they retire.

Variations on the Basic Equation

The basic equation can be varied in order to encompass real life circumstances. For example suppose that an individual expects a state pension in addition to his/her own provision. Equation 1 would be amended as follows:

$$\sum C/(1+r)^t = \sum Y_t/(1+r)^t + \sum P_t/(1+r)^t$$

P_t is the expected state pension in year t (P_t will be zero prior to the state retirement age).

Estimated Effects of Delaying Pension Fund Contributions

Byrne, Blake, Cairns and Dowd (2006) estimated the effects of delaying the start date for contributions to a defined contribution pension scheme in the UK. Realistic assumptions were made about the pattern of earnings during a person's lifetime, about the prospective growth rates of pension funds, and of annuity rates available at retirement. The outcomes were measured in terms of replacement rates, defined as level annuities as a proportion of income immediately prior to retirement. It was assumed that retirement occurs at age 65 and that 10% of income is contributed to the pension fund (which is about average). Table 3 selects some figures, for men, from the study. Two of the investment alternatives used in the study were 100% equities (shares) and a life-cycle fund, which invests 1 – age (1 minus the person's current age) in equities and the remainder in bonds. Table 4 provides figures for women who take a career break.

<u>Age at Start</u>	<u>Fund Strategy</u>	<u>Replacement Rate</u>
25	100% equity	39%
	Life-cycle	35%
35	100% equity	33%
	Life-cycle	30%
45	100% equity	23%
	Life-cycle	21%
55	100% equity	11%
	Life-cycle	10%

Table 3

<u>Contribution Period</u>	<u>Fund Strategy</u>	<u>Replacement Rate</u>
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25-65	100% equity	38%
	Life-cycle	35%
25-30; 40-65	100% equity	30%
	Life-cycle	27%

Table 4

A few points need to be noted. The pensions are level annuities, which are not index-linked and hence are susceptible to erosion by inflation. The replacement ratios are averages (medians) of distributions of possible outcomes. The dispersions of those distributions are greater for the 100% equity funds than for the life-cycle funds.

APPENDIX 2

PERFORMANCE OF INSTITUTIONAL INVESTMENTS

One issue facing retail investors who are looking to buy an institutional investment is whether to invest in an actively managed fund or in an index-tracker fund. If markets were efficient actively managed funds cannot be expected to consistently outperform the market and so it is pointless to pay their management fees. An implication of informational efficiency is that neither stock selection nor market timing can enhance investment returns.

If markets were efficient, individual investors should invest in low-cost index-tracker funds. However the evidence from behavioural finance and studies of market anomalies throw doubt on the efficient market hypothesis.

If markets are not informationally efficient, should investors choose to invest in actively managed funds on the grounds that it is possible to outperform the market?

Malkiel (2003a) argued that even if market efficiency is not accepted, retail investors should still choose index-tracker funds. One point is that investment out-performance and underperformance is a

zero-sum game. If some investment managers out-perform the market, others must under-perform the market.

Obviously, in aggregate, the market performs in line with the market. Index-tracker funds perform in line with the market. The aggregate market minus index-tracker funds must therefore perform in line with the market. Actively managed funds are the aggregate market minus index-trackers. So actively managed portfolios, in aggregate, must perform in line with the market.

If some actively managed portfolios outperform others must under-perform. On average, actively managed funds perform in line with the market before their costs are considered. When costs are taken into account actively managed funds, on average, could be expected to under-perform the market.

The implication is that individual investors should invest in index-tracker funds rather than waste money on management fees whilst taking the risk that their particular managers are relatively poor performers. However these considerations do not preclude the possibility that some fund managers are better than others, and that the better fund managers are able to out-perform the market.

Some funds do outperform the stock market. Is such out-performance due purely to chance, since chance would generate out-performers as well as under-performers, or is investment management skill involved?

If skill were involved, it would be expected that there is persistence in relative performance; in particular more funds would show continued out-performance than would be expected on the basis of chance. If relative performance of actively managed funds arises from chance rather than skill, the implication remains that retail investors should choose index-tracker funds.

If any persistence in out-performance were the result of investment management skill, one more condition should be met before individual investors choose actively managed funds; there should be means of ascertaining which investment managers demonstrate the skill that leads to persistent out-performance.

Furthermore the techniques for ascertaining which managers have skill should be easy to use, and should give precise results (it is of little use to an individual investor if the technique merely changes a 50:50 chance of correctly choosing to a 55:45 chance of correctly choosing).

There is also the risk that if everyone identifies the out-performers, so much money would be switched to the out-performers that they are unable to continue the out-performance.

EMPIRICAL EVIDENCE ON PERFORMANCE

The research has aimed to answer the questions: Do funds, on average, beat the stock market? Does the relative performance of funds persist? Is persistence predictable?

Do funds, on average, beat the stock market?

Returns are not the only dimension of performance. Risk should also be considered. High returns with high risk are not necessarily better than low returns with low risk. One approach is to compare fund returns with a benchmark return, which is adjusted for risk.

Jensen's Alpha

This derives a benchmark rate of return using the Securities Market Line from the Capital Asset Pricing Model. The securities market line provides a theoretical rate of return comprising two components.

The first component is a risk-free rate of return (e.g. the interest on bank deposits), the second component is a reward for accepting risk. The reward for accepting risk is the product of the portfolio beta (the beta of the portfolio being evaluated) and the market excess return.

The market excess return is typically taken to be the difference between the return on a stock index portfolio, and the return on risk-free assets.

$$R_b = R_f + \beta_p(R_m - R_f)$$

R_b is the expected rate of return on the assessed portfolio, R_m is the return on the stock index portfolio,

R_f is the risk-free rate of return, and β_p is the beta of the portfolio being assessed.

By using the beta of the portfolio under assessment, comparison of the observed and expected returns provides a risk-adjusted evaluation.

The differential return is expressed as $R_p - R_b$. If this is positive the realised return on the fund being evaluated exceeds the benchmark rate of return and the fund is viewed as out-performing. Conversely a negative value indicates under-performance.

$R_p - R_b$ is often referred to as Jensen's alpha.

Studies of fund performance have used means of risk adjustment, such as the Jensen measure. This ensures that risk, as well as return, is considered.

Evidence from empirical research

There have been numerous studies of the performance of mutual funds. Performance is measured in terms of total return; that is dividend yield plus capital gains.

Generally these studies have found that (1) on average funds under-perform stock indices, (2) funds with low charges and low portfolio turnover tend to outperform those with high charges and high turnovers, (3) past relative performance is not a good guide to future relative performance (i.e. there is little persistence).

Studies that have found that actively-managed funds, on average, fail to outperform stock indices include: Friend, Brown, Herman and Vickers (1962), Sharpe (1966), Jensen (1968), Firth (1978), Malkiel (1988), Ippolito (1989), Elton, Gruber, Das and Hlavka (1993), Blake, Elton and Gruber (1993), Malkiel (1995), Daniel, Grinblatt, Titman and Wermers (1997), Wermers (2000), and Shukla (2004).

Some studies indicate that fund managers have poor investment skills. Volkman (1999) investigated the stock selection and market timing abilities of U.S. mutual fund managers. It was found that, on

average, there was no ability to identify under-priced shares. Attempts to time the market were found to have, on average, negative effects on performance.

Blake and Timmermann (2005) examined the performance of UK-based international-equity pension funds over the period 1991-1997 by decomposing performance into stock selection and market-timing elements. They found that both elements usually made negative contributions to performance. The losses from poor stock selection were seen as possibly resulting from information asymmetries between U.K. and overseas investment managers whereby investors have an information advantage when investing in their own country. Correspondingly there is a relative disadvantage when investing in a country other than one's own.

Dasgupta, Prat and Verardo (2006) investigated the purchases and sales of U.S. institutional investors during the period 1983 to 2004. They distinguished stocks according to the persistence of buying and selling. If there had been net buying for each of the most recent five quarters a value of 5 was assigned, net buying in each of the most recent four quarters gave a persistence value of 4, net selling in each of the previous three quarters produced a value of -3, and so forth.

It was found that the most persistently sold stocks were subsequently the best performers, and the most persistently bought stocks turned out to be the worst performers. The researchers also found herding to be present amongst the institutional fund managers. These findings are consistent with the view that herd buying by institutions causes overpricing, and subsequent poor returns. Herding with respect to sales pushes prices down to unjustifiably low levels, and the under-pricing provides subsequent high returns as fundamental values are restored.

Research by Henriksson (1984) also cast doubt on the effectiveness of market timing. Studies of U.S. mutual funds by Daniel, Grinblatt, Titman, and Wermers (1997) and by Wermers (2000) found no timing ability. Kon (1983); Chang and Lewellen (1984); and Coggin, Fabozzi, and Rahman (1993) found that fund managers had negative market-timing skills. Jiang, Yao and Yu (2007) published a study indicating that there could be market-timing ability depending upon how performance was measured.

Many studies suggest that funds with high expenses tend to provide investors with low returns (Elton, Gruber, Das and Hlavka 1993, Reichenstein 1999; Indro, Jiang, Hu and Lee 1999; Bogle 1998; Carhart 1997); but one study points the other way (Shukla 2004). Evidence shows that high stock turnover (hence high brokerage costs) causes low net returns (Elton, Gruber, Das and Hlavka 1993; Carhart 1997).

Bogle (2002) compared the performance of high-cost U.S. mutual funds (top quartile, 1.8% p.a.) against the performance of low-cost mutual funds (bottom quartile, 0.6% p.a.) over 1991-2001. He found that the low cost funds outperformed the high-cost funds by more than the cost differential (by 2.2% p.a.). The low-cost funds also exhibited lower risk than the high cost funds. The strongly performing low-cost funds included index-tracker funds.

The relative advantage of index-tracker funds was enhanced by the absence of front-end fees and by the fact that many poorly performing actively-managed funds had been withdrawn or merged into other funds with the effect that some weak funds were removed from the data when average performance was calculated.

Malkiel (1995) and Elton, Gruber and Blake (1996) suggested that many studies had overstated the true performance of actively-managed mutual funds because of survivorship bias. Most data sets used have included records of all surviving mutual funds. Mutual funds that were taken off the market due to poor performance (or were merged with other funds in order to bury their poor records) do not appear among the surviving funds. The removal of weak funds artificially boosts the apparent average success of funds.

There are theoretical reasons to suppose that fund management skills would tend to produce just enough out-performance, on average, to cover management charges leaving no net out-performance for retail investors. Grossman and Stiglitz (1980) and Cornell and Roll (1981) suggested that market equilibrium should provide some incentive for analysis. If no analysts were operating, the market would be inefficient and large profits would be available for the first analysts.

As more analysts, attracted by the profits, enter the market efficiency improves and profits fall. The number of analysts expands to the point where the market efficiency is such that returns from analysis merely match the costs of analysis. There is then no further incentive for new analysts to enter the market.

Does the relative performance of funds persist?

Although on average mutual funds under-perform stock indices, some funds will provide better returns than indices. The question arises as to whether some funds persistently provide superior returns.

A fund shows persistence of performance if its relative performance is consistently good, or consistently bad, from year to year. The market consists (in large part) of investment professionals trying to outperform the market. Since in aggregate professionals are (most of) the market, their attempts to outperform the market amounts to professionals attempting to outperform each other. They cannot all be successful. The question arises as to whether any of them are persistently successful, and whether any success is due to skill rather than to luck.

If there is no persistence of relative performance, past performance is not a guide to future performance. Knowing how well fund managers have performed in the past is of no use for investment choice.

Although a few studies have suggested some persistence in relative performance in the short-term (up to 3 years) there is probably a consensus that there is no long-term persistence (Hendricks, Patel and Zeckhauser 1993; Kahn and Rudd 1995; Jain and Wu 2000). Rhodes (2000) carried out a survey of previous studies and provided some original research. The conclusions were that there was no persistence in the performance of actively-managed funds after 1987, although there was evidence of repeat performance before then.

Hendricks, Patel and Zeckhauser (1993) found the strongest consistency to be among the weakest performers. Carhart (1997) found that there was some persistence of relative performance across fund

managers, but that it was largely due to charges and costs rather than investment returns. There was consistent inferior performance resulting from high management charges and high trading costs (as would result from high portfolio turnover).

Studies of UK pension funds have been conducted by Brown, Draper and McKenzie (1997); Blake, Lehmann and Timmermann (1999), and by Gregory and Tonks (2006). Overall their findings were that there was some persistence of performance but that it was small and short-lived.

In the U.S., studies by Lakonishok, Shleifer and Vishny (1992) and Malkiel (1995) on mutual funds found some evidence of persistence. However this persistence did not apply to all periods and in some cases was susceptible to alternative explanations. Jan and Hung (2004) also found evidence that indicated persistence of relative performance.

When looking at the strategy of using the most consistent out-performers from the past in order to choose funds, Malkiel found that the strategy was not useful for long-term investing.

Even if fund managers do not differ in terms of investment skill so that skill cannot produce consistent out-performance, it might be thought that differences in quantity and quality of information might distinguish fund managers. To the extent that fund managers visit companies, and interview the management of those companies, the resulting information gathered might be expected to provide differences in fund management performance.

Montier (2007) suggested that there are behavioural factors indicating that the process of interviewing company managements would not provide information that supports out-performance. One problem is that company managements would be subject to the same psychological and social biases as anyone else. If they lack an unbiased perception of their own company's prospects, they would not be able to communicate an accurate perception.

A second problem is confirmation and assimilation bias on the part of the fund manager. There is a tendency to seek, and emphasise, information that accords with one's previously held opinions. There is also an inclination to interpret information in a way that supports pre-existing views.

A third factor is the tendency to believe stories (such as explanations and forecasts) particularly when they come from people in authority and/or are presented with confidence. Finally human beings are not good at knowing when they are being lied to.

Many companies would regard the process as a matter of investor relations. The operation of investor relations is similar to that of public relations, but focused on investors. Like public relations it aims to give the most favourable possible view of the company.

One certainty is that the process of visiting companies adds to fund management costs, particularly when overseas companies are visited.

Financial journalists often make play of the idea of star funds that have performed exceptionally well over a past period. However the laws of probability suggest that a few funds will show consistently good performance, but purely as a matter of chance.

If there is a 50% chance of beating the average in any year, it is to be expected that a fund has a $(0.5)^{10} = 0.1\%$ chance of outperforming the average every year for ten years. So out of 1,000 funds one can be expected to outperform every year for ten years, purely as a matter of chance.

The corresponding figure over five years is 31 funds $[(0.5)^5 \times 1000]$. Since there are thousands of funds available to investors, it is not surprising that a few will appear to be star funds with consistently high returns.

Marcus (1990) looked at the performance of the Magellan fund. That fund had out-performed the S&P 500 index in 11 out of 13 years up to 1989, and seemed to be a star performer. Using computer

simulations Marcus found that, in a sample of 500 funds, there is a 99.8% chance that the best performing fund would beat a stock index in 11 years or more.

Evidence consistent with the existence of star performers comes from Kosowski, Timmermann, Wermers and White (2006). They employed a distribution of returns that provided a better representation of experienced returns than the normal distribution. They concluded that there were more top-performing fund managers than would be expected on the basis of chance.

They found that in a sample of 1,788 U.S. domestic equity mutual funds, 29 met their criterion of superior performance as opposed to the 9 that would have been expected on the basis of pure chance. However they found that the superior returns apparently resulting from skill mostly occurred before 1990.

If any persistence in out-performance were the result of investment management skill, one more condition should be met before individual investors choose actively managed funds. There should be means of ascertaining which investment managers demonstrate the skill that leads to persistent out-performance. Furthermore the techniques for ascertaining which managers have skill should be reasonably easy to use, and should give reasonably precise and unambiguous results.

Harlow and Brown (2006) found that, by identifying causes of persistence in relative performance, it was possible to successfully identify future high performers with nearly 60% accuracy. However it is debatable as to whether their methodology is readily useable by individuals or their advisers. It is also questionable whether 60% accuracy is useful (after all random selection gives a 50% chance of choosing an above average fund).

Why Do Retail Investors Buy Actively-Managed Funds?

The question arises as to why investors predominantly buy actively-managed funds if the evidence tends to suggest that index-tracking funds are likely to perform better. One explanation comes from behavioural finance. Investors incorrectly perceive their ability to select funds that will perform well.

Goetzmann and Peles (1997) measured the recollections of investors in relation to the recent performance of their mutual funds. They investigated two groups of private investors and found that both groups over-estimated the absolute performance, and performance relative the market. These over-estimates were substantial; both groups over-estimated performance relative to the market by around 5% p.a.

It was suggested that memory adjusts in such a way as to improve the recalled performance. Cognitive dissonance has been suggested as an explanation (Baker and Nofsinger 2002). If people like to see themselves as wise investors, their memories of investment performance adjust to confirm their self-image. If reality conflicts with self-image, the memory of reality changes in order to be consistent with the self-image. Those distorted memories lead to investors being overconfident about their ability to choose funds that perform strongly.

APPENDIX 3

The Effects of Fund Charges

It is worth illustrating the potential effects of charges on investment funds over long periods of time. Investment managers charge fees. These fees cover the costs of investment analysis, portfolio management, marketing and administration. Sometimes the annual management charge is related to fund performance, but this is the exception rather than the norm. The payment of such charges reduces the returns to investors. The charges levied by fund managers vary considerably. In relation to unit trusts the cheapest tend to be index tracker funds (which aim to parallel a stock index). Tracker funds (index funds) typically have no front-end or exit charge and annual management charges of as little as 0.25% or 0.5%. Conversely actively managed funds tend to have initial charges of 5-7% and annual management charges of up to (and sometimes exceeding) 1.5% p.a. These differences in charges can have considerable effects on investment returns over time. (Comparison of management charges actually understates the difference in total annual costs since actively managed funds tend to trade shares more frequently and hence incur greater brokerage fees than index tracker funds.)

In addition to management charges there are stockbroker commissions. Each time that shares are bought or sold commission is paid to stockbrokers. For many funds such commissions can add well

over 1% per year to the costs of operating the fund. This is particularly true for funds with high portfolio turnover (high churning). A portfolio turnover of 100% means that, on average, shares are bought and sold once a year. Some shares would be kept for several years whilst others are held for a fraction of a year, but the average holding period is one year. The average holding period is given by:

$$\text{Average Holding Period} = \frac{12 \text{ Months}}{\text{Portfolio Turnover}/100}$$

So an annual turnover of 100% gives an average holding period of 12 months and an annual turnover of 200% implies that shares, on average, are held for six months. High rates of turnover, and low average holding periods, entail high brokerage costs. As with other costs, unless there is an offsetting improved investment performance, the costs will reduce the rate of return obtained by investors in the funds. Index tracker funds have relatively low rates of portfolio turnover, and hence low brokerage costs, compared with actively managed funds.

There are three figures commonly used for the purpose of making cost comparisons between funds. First, there is the annual management charge (AMC). Second, there is the total expense ratio (TER), which is the annual management charge plus other fees such as audit and custody fees. However TER does not necessarily include brokerage and other share dealing costs. Nor does the TER take account of initial charges. The reduction in yield (RIY) shows the effect of the TER costs, plus any initial or exit charges, on the percentage yield from the investment. The calculated RIY is very sensitive to the assumed period of investment. The normal practice is to assume a ten-year investment. Shorter investments have higher RIYs since the initial (and/or exit) charge would be spread over a smaller number of years. Conversely longer investments have lower RIYs. If published RIYs are based on ten-year investments, they can be misleading for investors with different investment horizons.

Consider the investment of £1,000 in each of fund A and fund B. Suppose that the investments in both funds grow at an average of 7% p.a. in real terms (that is, in excess of what is needed to compensate for inflation). This growth rate is in line with historical experience of equity funds and incorporates both capital gains and net dividend income. The figure of 7% p.a. does not take account of management charges.

Suppose that A is an index tracker fund with no front-end charge and an annual management fee of 0.5%. All of the investors' money is invested and the charge reduces the average annual return to 6.5%. Suppose that B is an actively managed fund with a front-end charge of 6% and an annual management fee of 1.5%. Such a fund would also experience transaction costs from share dealing. If half the fund is traded each year at an average bid-offer spread of 1%, annual costs would increase by a further 0.5% to a total of 2%. An investor in B would find that only £940 is invested and that average annual returns, net of costs, are 5%. Table 5 shows the expected value of the two funds over various time periods.

Investment Horizon	A	B
5 years	£1,370	£1,200
10 years	£1,877	£1,531
15 years	£2,572	£1,954
20 years	£3,524	£2,494
25 years	£4,828	£3,183
30 years	£6,614	£4,063

Table 5

The transaction costs of the actively managed fund are likely to be even higher than 0.5% p.a. since brokerage fees and taxes (stamp duty) need to be added.

Another way of looking at the effects of fund charges is to consider the situation of an investor who is holding an investment for the purpose of providing an income (for example to supplement a pension). Consider the holder of a fixed-income (i.e. bond) unit trust. If the bond portfolio held by the unit trust yields 5% p.a. and fund charges are 1.25% p.a., the investor loses a quarter of the income to fund charges. It would be worth considering the possibility of holding bonds directly. This possibility may be attractive in the light of the lower risk-reduction benefits of diversification in the case of bonds (particularly government bonds) when compared to shares. Besides government bonds can be bought in relatively small quantities quite cheaply through post offices (in the UK).

Reichenstein (1999) examined bond fund returns in the US for the period 1994-1998 and found a strong inverse relationship between expenses and net returns. Low-cost funds consistently ranked among the best over the five-year period. The negative relationship between expenses and net returns was virtually one-to-one, suggesting that investors obtained no benefits from the payment of high charges. Any increment in expenses was at the cost of reduced net returns for investors.

Example 4

A fund has an expected average growth rate of 8% p.a. (before charges) over the next 35 years. Estimate the fund value, at the end of the 35 years, arising from a £10,000 investment in the fund with (a) no initial charge and a 0.5% annual charge, (b) no initial charge and a 1.5% annual charge, and (c) a 5% initial charge and a 1.5% annual charge.

Answer

$$(a) \quad £10,000 \times (1.075)^{35} = £125,689$$

(The figure of 1.075 is used because the net rate of return is expected to be $8\% - 0.5\% = 7.5\%$ p.a. The value of $(1.075)^{35}$ can be calculated using the power function of a pocket calculator.)

$$(b) \quad £10,000 \times (1.065)^{35} = £90,623$$

$$(c) \quad £9,500 \times (1.065)^{35} = £86,091$$

Are Investors Deterred by High Charges?

For most goods and services consumers prefer to pay low prices. The question arises as to whether this is also the case for mutual funds. Do retail investors prefer to invest in funds with low charges? It may be the case that retail investors do not appreciate the impact of charges on the long-term performance of mutual funds.

Barber, Odean and Zheng (2005) investigated this issue in the US. They found that investors were deterred by initial charges (front-end loads) but not by high annual charges. They found that initial charges were associated with lower demand, particularly from experienced investors. However investors, even experienced investors, appeared to be unaffected by the level of annual charges. This implies that mutual fund managers are able to raise annual charges without adversely affecting the sales of their funds.

This may help to explain the increase in annual charges over time. Bogle (2005) reported that, in the US, the six decades after 1945 experienced nearly a doubling of charges as a proportion of the value of funds. This is despite strong economies of scale in mutual fund management as found by Latzko (1999).

Latzko took the view that mutual fund charges could be divided into three major categories. There are fees paid to investment managers. These fees normally rise less than proportionately to the increase in fund size. The second category is administrative expense, which can also be expected to rise less than proportionately to the size of the fund. The third category is the cost of marketing, which need not rise in proportion to the size of funds under management. Latzko found that the cost of operating mutual funds rose at a slower rate than the size of the funds.

The implication seems to be that retail investors do not appreciate the impact of fund charges on investment performance. In consequence retail investors are prepared to pay high charges, and the mutual fund industry has taken advantage by raising charges. Barber, Odean and Zheng took the view that investors undergo a learning process. Although many have learned to avoid initial charges, few have learned to avoid high annual charges (which can be avoided by investing in low-cost index-tracker funds).

APPENDIX 4

Ignoring Tax Implications

The possibility that commission-remunerated advisers may recommend high-cost actively managed funds because of their generous commission payments is probably generic in that the adverse effects of

charges, churning and active risk are present in all countries. Some factors that lead to sub-optimal advice may be country specific, for example tax considerations.

One particular issue in the United Kingdom has been the widespread recommendation of investment bonds despite their tax disadvantages (for most investors) relative to other forms of mutual fund such as unit trusts and OEICs. Specifically investment bonds pay capital gains tax on their funds whereas most investors are below the capital gains tax threshold such that they would not be liable to the tax. In other words investors indirectly pay capital gains tax when investing in investment bonds whereas they would not pay that tax when investing in unit trusts or OEICs. However investment bonds pay relatively high commission (and correspondingly impose relatively high charges).

One disadvantage of investment bonds relative to unit trusts, investment trusts and OEICs arises from the tax treatment of capital gains. In the cases of unit trusts, investment trusts, and OEICs a capital gains tax liability arises only if the individual investor has gains above the exemption limit (and only when the investment is sold). In contrast investment bonds pay tax on capital gains within the fund with the effect that investors suffer the effects of tax on capital gains irrespective of whether they, as individuals, fall below or above the threshold at which capital gains tax becomes payable. Since the taxation of investment bonds treats capital gains as income, the taxation occurs as gains are realised. Although it is the fund rather than the investor that is taxed, the effect is the same from the perspective of the investor.

Another relative disadvantage of investment bonds is that that they tend to have relatively high initial charges (it is not unusual for as much of 7% of the initial investment to be lost in payment of up-front charges). Part of the high initial charge is used to pay relatively generous commission to the financial adviser; in consequence financial advisers could recommend investment bonds even though they may not be the most suitable investment for their clients.

The Financial Times on 16 July 2005 (Knight 2005, based on figures provided by Hargreaves Lansdown) compared direct investment in unit trusts with investment in the same funds within a single

premium investment bond (provided by Skandia). Table 6 shows the results of £10,000 invested in a unit trust, and in an investment bond, over a period of 15 years.

<u>Fund</u>	<u>Unit Trust</u>	<u>Investment Bond</u>
Fidelity Special Situations	£73,886	£51,024
Framlington Equity Income	£38,244	£29,803
Henderson Preference and Bond	£39,526	£29,787
Invesco Perpetual High Income	£81,407	£54,940

Table 6

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