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BEHAVIOURAL PERSPECTIVES ON INDEX FUNDS

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Abstract

The article identifies a number of behavioral advantages of index funds, when compared with actively-managed funds. Index funds have advantages with respect to the perception of loss, realism of expectations, appropriateness of choice criteria, diversification, net dividend income, and the emotional attachment to investments. Index funds may also have benefits for relationships between financial advisers and their clients. Concepts used include loss aversion, disappointment aversion, regret aversion, overconfidence, outcome bias, hindsight bias, illusion of control, illusion of knowledge, representativeness, availability, familiarity bias, ambiguity aversion, default option bias, mental accounting, choice bracketing, and the status quo bias.

Introduction

The issue of whether retail investors should invest in index funds or actively-managed funds has long been debated. The majority of academic opinion is probably that (a) the average actively-managed fund under-performs index funds, (b) there is at best only short-term persistence in the relative performance of individual actively-managed funds, and (c) there is no reliable, and readily useable, means of forecasting relative performance. (For surveys on these matters see Redhead, 2008.)

Although there has been a substantial amount of empirical research concerning the relative performance of actively-managed and index funds there does not seem to have been any attempt to provide behavioral perspectives. Whilst there have been behavioral analyses of structured products bought by retail investors (Shefrin and Statman 1993) and of strategies followed by retail investors, such as dollar-cost averaging (Statman 1995), behavioral considerations have not been applied to the topic of index funds.

The use of index funds could help to avoid:

1. The perception of loss.
2. Unrealistic expectations.
3. Inappropriate choice criteria.
4. Poor diversification.
5. Loss of dividend income.
6. Emotional attachment to investments.

Index funds also have implications for the significance for the relationships between financial advisers and their clients.

The Perception of Loss

There is a considerable behavioral finance literature concerning loss aversion, disappointment aversion and regret aversion centered on prospect theory. On average, people find the pain of losses to be about 2.25 times as intense as the pleasure from gains. Given an even chance of winning or losing, people on average require the prospect of a £225 win to balance the prospect of a £100 loss.

Gains and losses are measured with respect to a reference point. The reference point is subjective, but is likely to be influenced by one or more past values. Possibilities include the purchase price of the investment, the highest price seen, or an average of observed previous values.

Lin, Huang and Zeelenberg (2006), from a survey of investors, concluded that multiple reference points could be present simultaneously. The most important was the outcome from not investing at all. Two other significant reference points were the expected outcome, and the outcome from the best-performing alternative. The outcome from the worst performing alternative was not a significant reference point; the observation that the outcome could have been worse did not appear to provide any comfort.

Olson and Riepe (2009) were concerned with the relevance of reference points (which they called subjective performance benchmarks) for the relationships between financial advisers and their clients. They highlighted two of the reference points examined by Lin, Huang and Zeelenberg. In relation to the expected outcome they suggested that there was an optimism bias. Clients had expectations that were

unrealistically high. They also highlighted the outcome from the best-performing alternative or, more generally, performance compared to what might have been. A third subjective performance benchmark discussed was performance compared to that experienced by others. There is likely to be a tendency to discuss investment performance with family, friends and colleagues. Performance reported by such people is likely to produce a reference point. Since people are more likely to talk about their successes than about their failures, the resultant reference points are likely to be tilted towards the upper end of performance possibilities. This imparts a social dimension to the formation of reference points.

Since reference points are subjective values they are susceptible to psychological biases. An important feature of reference points is that they appear to be influenced by the form in which information is presented, in other words according to how a situation is framed. For example telling an investor that a portfolio has risen in value by 5% might give the feeling that the reference point has been exceeded whereas saying that it has underperformed a benchmark by 5% could cause a perception of loss, whilst both statements may record the same outcome. The latter framing is likely to raise the reference level.

It has been suggested that reference points may evolve over time with the result that loss aversion is accompanied by disappointment aversion (Ang, Bekaert and Liu, 2005; Fielding and Stracca, 2007). Under loss aversion an investor has a fixed reference point, which might be the current level of stock prices or the current value of personal wealth. Gains and losses are evaluated against the reference point. The reference point could evolve according to the investment horizon. If reference points

change over time there could be a disappointment aversion in addition to a loss aversion. In the case of loss aversion the pain of losses exceeds the pleasure of gains, when the gains and losses are of the same magnitude. In the case of disappointment aversion the pain or pleasure is brought about by deviations from expectations. The disappointment related to outcomes below expectations is stronger than the pleasure related to outcomes that exceed expectations. Although losses on investments may occur only in the short term, there may be disappointments in the long term. Although there may be gains in the long term, they would result in negative feelings if they fell below expectations. If there were a strategy of investing in index funds, the corresponding stock index could be the reference level. Investment in index funds should avoid any significant loss relative to the reference point.

Regret aversion is related to the ideas of loss aversion and disappointment aversion. There is a relationship between regret and the level of responsibility for a choice (Statman 1995). If a person does not feel responsible for a decision, that person is less likely to feel regret if the decision proves to have been a bad one. A strategy of investing in index funds removes responsibility for selecting investments and can thereby reduce the risk of regret.

Unrealistic Expectations

Overconfidence

Overconfidence is the tendency for people to overestimate their knowledge, abilities and the precision of their forecasts. Overconfidence arises partly from self-attribution bias. This is a tendency on the part of investors to regard successes as arising from their expertise whilst failures are due to bad luck or the actions of others. This leads to

excessive confidence in one's own powers of forecasting. The excessive confidence is capable of explaining a number of types of apparently irrational behaviour. For example it can explain why some investors hold poorly diversified portfolios. If investors are highly confident about their selection abilities, they will not feel the need to reduce risk by means of diversification. Overconfident investors are also likely to underestimate the risk of their portfolios. A strategy of investing in index funds ensures that an investor's portfolio is as well diversified as, and no riskier than, the corresponding stock index.

Overconfidence could also explain why some investors trade very frequently, to the point where transaction costs cause their investment behavior to be loss making. Overconfidence can explain why some investors churn their portfolios; that is persistently sell and buy. A confident belief in one's ability to forecast price movements increases the likelihood of frequently buying expected winners and selling expected losers. This behavior entails a new set of transaction costs (initial charges, commissions, spreads, taxes) each time with the effect that the investors lose. Barber and Odean (2000) found that the investors who churned the most under-performed the market by about 10% p.a. because of transaction costs. The churning may be recommended by overconfident financial advisers. Overconfidence is likely to affect investment professionals as well as private individuals. Slovic, Fischhoff and Lichtenstein (1980) pointed out the overconfident behavior of professionals, including overconfidence in their theories. In particular when experts use intuitive judgment, rather than statistical data, they are prone to the same biases and errors as non-experts. Investing in index funds precludes switches between stocks and the transaction costs incurred by such switches.

Olson and Riepe (2009) suggested two ways in which overconfidence could adversely affect the relationship between financial adviser and client. They summarized the first as “I can do it, but don’t have the time”. This attitude gives the client an inflated view of their own investment ability. This produces an unrealistic expectation of what the financial adviser should be able to do. Advisers’ performances are judged against illusory benchmarks based on what the overconfident clients imagine they could do themselves (if they had the time). They summarized the second as “I can’t do it, but you can”. In this case the client is overconfident about what the adviser can achieve. Again the adviser is judged against an unrealistically high benchmark. A strategy of investing in index funds simultaneously establishes the benchmark and ensures its achievement. Underperformance of unrealistic benchmarks is avoided.

Outcome Bias

The outcome bias 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. Excessive confidence in expectations could be based on excessive belief in one’s own forecasting talents or on the belief that events will turn out to be favorable. In both cases investors may overestimate the accuracy of their forecasts and underestimate risk when making investment decisions. The result could be portfolios that are concentrated in favored stocks and hence poorly diversified. Poorly diversified portfolios carry avoidable levels of risk. Index funds ensure that the portfolio is as well diversified as the index.

Hindsight Bias

The hindsight bias is similar to the overconfidence bias except that it relates to evaluations of the past rather than the future. Fischhoff (1982) explains that with the hindsight bias people consistently exaggerate what could have been anticipated.

People tend to view what has happened as having been inevitable, and see it as having been predictable before it happened. People even misremember their own predictions; memory is fallible. Azar (2000) suggested that, if people cannot remember their original judgement, they would reconstruct the recollection of the original judgement in the light of subsequent information.

‘I knew that would happen’ and ‘I knew it all along’ are statements that characterize the hindsight bias. The hindsight bias entails the inability to correctly remember one’s prior expectations after observing new information. The hindsight bias prevents people learning from their own mistakes, since they are unable to remember those mistakes. People are unable to recognize their own errors. There is self-denial about past errors. If someone has a self-image of being a clever investor, past errors in forecasting may be subject to distortions of memory aimed at maintaining the self-image. Memory is never a faithful recollection of the past; it is amended by the human mind. Shiller (2000) reported that when the Japanese stock market was at its peak, 14% of Japanese investors said that they expected a crash. After the crash had happened, 32% said that they had expected it.

Good decision-making in financial markets relies on learning from the past. Learning may entail the comparison of new information with previous expectations. This

requires an accurate recall of previous expectations. The hindsight bias involves the contamination of recollections of expectations by new information. The recalled expectations of an outcome are biased towards information about the outcome. The person remembers forming an expectation that is close to what subsequently happened. Hindsight bias causes people to believe in illusory powers of prediction and to be overconfident about their predictions of the future. They believe they were right in the past and conclude that they will be right with respect to new predictions.

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

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

Hindsight bias can create problems for the relationships between clients and their financial advisers. Clients, who believe that past investment events were predictable, may question why their advisers failed to foresee the events. A strategy of investment in index funds removes the possibility of switching between stocks. Clients cannot

reproach their advisers for having failed to switch between stocks to take advantage of (apparently foreseeable) events. Such stock selection is not expected of the adviser.

Illusion of Control and Illusion of Knowledge

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. This illusion of control, together with overconfidence, may explain why so many investors choose actively managed funds when index funds outperform them and have lower charges. 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 index funds offer better potential value.

According to Langer (1975), people often find it difficult to accept that outcomes may be random. Langer distinguishes between chance events and skill events. Skill events entail a causal link between behavior 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 outperform stock markets. This suggests that the outcome of investment management is random. However since the investment managers engage in skill behaviour, analysis and choice, they tend to see portfolio performance as controllable. Retail investors

and financial advisers are also likely to see the performance of their investment choices as controllable; the act of choosing enhances the illusion of control.

The illusion of 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. The degree of illusion of control can be affected by the individual's environment (Taylor and Armor, 1996). Competitive and stressful environments can produce illusion of control (Friedland, Keinan, and Regev, 1992). Fenton O'Creevy, Nicholson, Soane and Willman (2005) found that traders in financial markets were subject to the illusion of control. They also found that the illusion of control was associated with poorer performance.

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 can cause investors to be overconfident and to underestimate the amount of risk from an investment. Investors, who overestimate the accuracy of their forecasts, underestimate the risks taken. Investment in index funds can avoid the distorting effects of the illusion of control and the illusion of knowledge. If investors do not have a realistic understanding of their stock selection and market timing abilities, it is best to impose a strategy that prevents the mistakes that can occur as a result of such misunderstanding.

The illusion of knowledge can be used by financial advisors as a means of encouraging clients to invest. King (2009) found that that client trust was enhanced if an adviser provided educational materials, market information, and information about financial products. There was increased client satisfaction, increased likelihood of the client recommending the adviser, and greater loyalty as measured by the time that the client remained with the adviser. Higher trust is associated with lower perceived risk.

Inappropriate Choice Criteria

Representativeness

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. For example Byrne (2005), when researching the behavior

of retail consumers of institutional investments, found that the provision of past performance information appeared to create an expectation of future returns around the same level as the past returns.

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 stocks 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 could increase the flow of investment funds from retail investors by changing their names to something that reflected recently successful investment styles.

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 mutual fund that has beaten the average performance of similar funds 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 mutual fund. A mutual fund 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).

The representativeness bias can adversely affect both the construction of mutual fund portfolios, and the choice between funds. The bias leads to the use of inappropriate criteria when picking stocks and when picking funds. The use of index funds can avoid these investment errors.

Availability

Another bias is availability (alternatively known as retrievability), which suggests that more attention is given to the most easily recalled information. The ease with which specific information can be recalled from memory affects judgments about the relative frequency and importance of events. This causes overestimation of the probability of well-publicized, vivid and recent events (Schwartz 1998). People are more likely to remember occurrences that induce emotions, are very dramatic and have been recently experienced. Information that feels personal has more influence on decisions than impersonal information (Olsen 1998). Frequency of occurrence, and the familiarity that results from such frequency, also increase availability.

Ciccotello (2009) provided anecdotal evidence that illustrates the availability bias. It is based on graduate students studying a personal financial planning course. He

compared the attitudes of a 1999 cohort of students with those of a 2003 cohort, suggesting to both cohorts that financial plans should be based on the long-term average stock market returns of 8-10% p.a. In 1999 stock markets had experienced four consecutive years of strong performance. The students tended to reject the recommended 8-10% p.a. and chose 20-25% p.a. instead. The 2003 cohort of students had witnessed large market falls in each of the previous three years and those students were reluctant to use any positive market rate of return. Both groups of students had expectations of stock market returns, which were heavily influenced by recent experience.

One source of information about investments is press coverage. If availability operates, stocks that receive (favorable) 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 stocks with extensive press coverage subsequently performed poorly (there was a relative decline from excessively high prices). Availability can also lead people to the belief that investment skills are more common than they actually are. Press coverage of successful fund managers such as Warren Buffett and George Soros greatly exceeds press coverage of poor managers. In consequence the retrievability of such coverage can result in the impression that many investment managers are capable of out-performing stock markets. This can generate an unjustified faith in the ability of active fund managers. A strategy of investing in index funds can deter investors from investing in costly actively-managed funds whose performances, net of costs, are on average weaker than that of index funds.

Heuristics arise because people have limited intellectual capacity. Even the most intelligent people have a limit to how much their brains can process. There is a limit to how much an individual can pay attention to. Attention is given to salient items, which are those that are prominent in some way. The availability bias causes people to pay attention to salient information since such information is able to attract their attention. Information that is less prominent or less vivid is overlooked. A factor that can be disregarded is the motivation of people who present information. Klibanoff, Lamont and Wizman (1999) found that firms tended to present positive information in a salient way whilst they presented negative information in a non-salient way, and that investors failed to take this tendency into account. By not paying attention to the motivation of information providers, investors tend to fail to take account of the relative degrees of salience. The investor becomes subject to manipulation (Daniel, Hirshleifer and Teoh, 2002). Active fund managers publicize their successes and avoid mention of their failures, thereby promoting excessively favorable impressions of their abilities. Retail investors can avoid such manipulation by a strategy of investing in index funds.

Familiarity Bias and Ambiguity Aversion

Familiarity bias suggests that investors prefer to invest in companies that they feel they understand.

The preference for the familiar results in the holding of portfolios that are insufficiently diversified. In consequence investors bear more risk than is necessary.

Frieder and Subrahmanyam (2005) found that individual investors prefer stocks with high brand recognition.

Related to 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.

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

Ambiguity aversion suggests that increased knowledge (or the feeling of increased knowledge) about an asset renders investors more prepared to invest in it. Benartzi and Thaler (1999) found that people are more willing to invest in a stock when an explicit distribution of potential returns is provided. This is an extension of the principle established by Ellsberg (1961) who found that many people prefer to bet on a single ball drawn from a tub known to contain 50 black and 50 red balls than on a ball drawn from a tub with 100 balls of unknown proportions of black and red balls (the former situation may be seen as providing risk and the latter as providing uncertainty).

Index funds have two advantages from the perspectives of familiarity bias and ambiguity aversion. First, an index portfolio avoids excessive concentration on stocks with which the investor feels familiar. Second, investors may be inclined to buy index funds if the indices are familiar. It is frequently suggested that people are too reluctant to save and invest. Since stock indices receive considerable publicity in the media they are likely to be familiar to people. That familiarity with indices may increase the willingness to invest in index funds.

Default Option Bias

Information overload can deter retirement saving (Turner 2006). If the choice between investment alternatives is too large and too complex, many employees take a default option. The default option may be to do nothing.

Turner (2004) reported that in Sweden's mandatory scheme 82% of new entrants allowed their entire contributions to be paid into the default fund whilst more than 600 other funds were available. Mitchell and Utkus (2006) provided evidence that pension fund participants like to be at the average and like to avoid extremes when making choices. This is consistent with the observation that plan participants tend to accept default options, which may be seen as the average (middle-of-the-road) options.

Benartzi and Thaler (2002) found that there appeared to be an "avoid extremes" heuristic in investment fund choice. They also found that people tended to prefer the expected return distribution of an average choice to that of their own choice (without knowing that the expected outcomes they were comparing were the expected outcome of their choice and that of the average choice). Benartzi and Thaler drew the implication that investors do not have well-defined preferences. An investor might

choose a default fund because of the absence of a clear preference for any other fund. The findings concerning the inclination towards default funds are consistent with the Thaler and Sunstein (2009) view that the status quo bias inclines people towards a preference not only for what they already have but also for default options.

Index funds are likely to be suitable as default funds. In a situation where investors are deterred by choice, perhaps to the extent of doing nothing, index funds could be provided as the only option (or as the default option). Index funds can satisfy the preference for default funds, and can meet the desire to avoid extremes.

Poor Diversification

Mental Accounting and Choice Bracketing

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

Someone may have a portfolio of investments but allocate individual investments to various mental accounts. This leads to a focus on components of the portfolio rather

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

Mental accounting helps to explain the preference for high dividend yield shares on the part of many investors (Statman, 1997). Some investors take a 'never touch the capital' approach when investing for income. Capital growth could be converted into income by selling shares, but this is not allowed by the mindset. Although cashing in on capital growth by share sales is an alternative source of income to dividends, the investor feels that it would be reducing the capital. Reduction of capital is seen as reducing the source of income, and hence prospective future income. The only acceptable source of income comes from dividends. This separation of dividends and capital is a manifestation of mental accounting.

Mental accounting can lead to a 'never touch the capital' approach to investing. Shares in a mutual fund are seen as the source of income. Sale of some of those shares would be seen as jeopardizing the future income. Money in the form of investments

has a different mental account to money in the form of dividend receipts; the former cannot be spent whereas the latter is for spending.

The annual charges on a mutual fund have a very large impact on the level of assets seen as available for financing spending. Whereas an annual management charge of 1.5% is that percentage of the capital, it could be more than 50% of the dividends and hence over 50% of the money regarded as available to finance household spending. This consideration underlines the advantage of low annual charges exhibited by most index funds.

At the time of writing the average UK equity mutual fund has a yield of 3% p.a. net of annual charges (Money Management, January 2010). The dividend yields (and annual charges) on three large UK FTSE All-Share Index funds are 3.7% (1% annual charge), 4.3% (0.45% annual charge), and 4.8% (0.1% annual charge). Whereas the yields, gross of annual charges, vary between 4.7% and 4.9% p.a. the yields after charges vary between 3.7% and 4.8% p.a. the difference between the highest and lowest annual charges accounts for nearly 20% of the annual income from the investments. Comparing the cheapest index fund (0.1% annual charge) with the typical UK equity mutual fund (1.5% annual charge), the difference in charges accounts for about 30% of the income yield. Whereas a 1.4% p.a. difference in charges may appear small relative to capital, it is massive relative to the assets regarded as available to finance household spending.

Choice bracketing could be defined as ‘a series of local choices that each appear to be advantageous but which collectively lead to a bad global outcome’ (Read,

Loewenstein and Rabin, 1999). People are seen as making appropriate decisions within narrow frames but, when these decisions are aggregated, the overall outcome is not the best possible. For example if each new investment is made without regard to the overall portfolio, whilst each investment seen in isolation may seem rational the resulting portfolio may be unbalanced and poorly diversified.

Investment in index funds can provide a means of avoiding the biases introduced by mental accounting and choice bracketing. If an index fund is used in each mental account intended for long-term investment, and for each investment choice intended for long-term investment, the problem of a poorly diversified portfolio can be avoided. The portfolio that results would be the index portfolio.

Emotional Attachment to Investments

Samuelson and Zeckhauser (1988) suggested the existence of a status quo bias (alternatively known as an endowment bias). People have a tendency to hold the investments they already have and exhibit some reluctance to change them. This could be seen as deriving from two aspects of prospect theory. First, people are concerned about changes in what they own more than in the total quantity. Second, losing something has more emotional effect than gaining something equivalent. Hence the endowment effect wherein people require a higher price for parting with an investment than for buying the same investment. Status quo bias is also related to procrastination and regret theory. Procrastination is the inclination to delay action if any form of immediate cost is involved (the cost could be the effort of making a decision). Avoidance of change could arise from fear of regret. Regret would ensue if a new investment turns out to be inferior to the old one. Regret of commission tends

to be greater than the regret of omission; feelings of regret are stronger in relation to actions taken than in relation to actions not taken. Benartzi and Thaler (2007) found that changes in the allocation of existing funds within a pension scheme were rare, whereas it was not unusual for new contributions to be allocated differently to existing funds. Ameriks and Zeldes (2000), in a study of pension scheme members, found that the reluctance to change investments was stronger in relation to investments already made than with regard to new contributions. About half of scheme members made changes to future contributions but only about a quarter changed past accumulated investment allocations.

Status quo bias (the endowment effect) appears to increase as the number of investment options increases. The more complicated the investment decision, the greater the likelihood that the investor chooses to change nothing. Kempf and Ruenzi (2006) confirmed this finding. They found that, when choosing a mutual fund, individuals tended to choose one that they had chosen previously. This tendency to repeat choices was found to strengthen as the amount of choice increased. This can result in poor diversification.

It has been suggested that financial advisers should educate their clients not only about financial products, but also about the psychological biases that the clients may exhibit. Farrow (2006) suggested that financial advisers should recognise the role emotions play in the decision-making of their clients and should help them to manage those emotions. Attempts at eliminating negative behaviour on the part of clients can be an important part of an adviser's service. Farrow proposed that the recommendation of index-tracker funds could be useful to such a process. People may

be less likely to feel emotional attachment to index funds than to individually-chosen investments. Furthermore if the status quo bias causes investment decisions to be repeated, repeating the purchase of an index fund would not be detrimental to good portfolio diversification.

Conclusions

Not only does empirical research, in the standard finance tradition, point towards the desirability of index funds in preference to actively-managed funds but also behavioral considerations tend to favor index funds. This has implications for financial advisers. An acceptance of index funds as the norm would allow the process of financial planning to focus entirely on strategies and asset allocation without the distraction of attempting to predict the winners amongst actively-managed funds.

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