INFLUENCES OF BEHAVIOURAL BIASES ON RETAIL INVESTORS - EVIDENCES FROM INDIA

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Abstract

This study is carried out to understand the behavioural biases of individual investors in the Indian capital markets. Three behavioral biases namely, conservatism bias, overconfidence bias and recency bias have been chosen for this study. Individual investors' behaviour often deviates from logic and reason, and investors display various behaviour biases that influence their investment decision-making processes. This study describes some common behavioural biases and suggests how to mitigate them. By avoiding behavioural biases investors can more readily reach impartial decisions based on available information and logical processes. The main issue study is how to minimize or eliminate the psychological biases in investment decisions of the investors.

Keywords: Behavioural finance, behavioural biases, conservatism bias, recency bias, overconfidence bias JEL classifications: G02 G10 G11

Introduction

According to traditional finance theories, individual investors are rational in their investment decisions. In the efficient markets, individual investors are assumed to be rational, consistent and unbiased. These investors make correct investment decisions without any influence of their psyche and emotions (Hayat et al 2006). However, most of the times, emotions and psyche influence the individual investors, causing them to behave in an irrational way. Theoretical and experimental works of two psychologists, Daniel Kahneman and Amos Tversky, who contributed to the psychology literature in 1970s served as a foundation and gave rise to a new paradigm in the 1980s called 'Behavioral Finance', which focuses on 'how people actually behave in a financial setting'. Behavioral finance is a part of finance that studies how the behavior of the investor in the financial market is influenced by psychological factors and the resulting influence on decisions made while buying or selling in the market, thus affecting the prices. The science aims to explain the reasons why it's reasonable to believe that markets are inefficient. According to Sewell , "Behavioral finance is the study of the influence of psychology on the behaviour of individual investors and the subsequent effect on capital markets." The science deals with experiments and theories focused on what happens when investors make decisions based on hunches or emotions.

Need for the study

This study is carried out to understand the behavioural biases of individual investors in the Indian capital markets. The behavioural biases of investors which have an impact on their investment decisions need to be analysed. This will benefit both the investors and the corporate world which mobilizes funds continuously for business expansion and diversification. New pension scheme announced by the Government of India, called as National Pension System (NPS), extends an option to the subscribers to decide how much of their contributions are to be invested in Government bonds, corporate bonds and equities. However, their contributions in equities should not exceed 50% of their investment. Individual investors are very reluctant to open this pension scheme and even the subscribers to this scheme have not shown interest in choosing the equity option available. Therefore, there is a need to understand whether psychological aspects of the individual investors influence their investment decisions.

From 2002, Indian stock market experienced a structural bull market. This was followed by an equally abrupt downturn beginning March 2008. The Bombay Sensitive Index (SENSEX) rose by 350% during the period 2002 to March2008. By January 2009, the index had lost half of its market value compared to its peak in March 2008. The National Stock Exchange index, NIFTY, also lost in the same proportion during this period. Investments made by the individual investors during the years 2007, 2008 or later 2015 incurred losses and were finding it is very difficult to recover their losses. Hence, investors are very scared to invest substantial sums in stocks. But they are continuing their systematic investment plans to protect their investment from volatility. Most of the investors were lured by the record high of the stock market during 2007-08 and 2013-14 periods. There were also many new fund offers from the mutual fund companies during this period. Since stock market was moving up without any major corrections, investors were very overconfident and invested large sums of money in the stock market. A few of the investment analysts predicted a collapse of the stock market but very few investors were ready to book profit. With the sudden fall of the market during 2008, many of the investors lost more than 50% of their life savings. It was worse for those investors who committed their investments in infrastructure, energy stocks or any sectoral theme funds. At this juncture, investors were either withdrawing from equity investments or stopping their systematic investment plans. They moved towards debt instruments where the coupon rate was about 9%. Here also, the investors were committing big mistakes by making wrong asset allocations by way of withdrawing money from stock markets when it was at its bottom. Hence a study is required to investigate the, behavioural aspects and behavioural biases of individual investors across their demographic profile in the Indian capital market.

Review of literature

The study of the behaviour of the individual investor is important for two main reasons (De Bondt 1998). First, individual investment behavior affects the well-being of households. Households are increasingly responsible for their own financial future. So the question of how they fare is more relevant than ever. Second, individual investor's behavior appears systematic (Barber 2009a) and therefore, affects prices (Barber 2009b). Given this importance, it is surprising that the number of studies on individual investor behavior and performance is not vast. Although these studies indicate high heterogeneity in both individual investor behavior and performance, some important facts emerge. Many of the behaviors have negative impacts on outcomes. In line with the findings of Grinblatt & Keloharju and Odean showed that the stocks American investors bought underperformed the stocks they sold (Odean 1999). He also reported that stocks that Finnish investors bought exhibited a weak future performance. Barber and Odean also found that the average American individual investor earned very low risk-adjusted returns(Barber and Odean2000). Barber (2009c), who analysed all stock market trades in Taiwan, indicated that individual investors lost as much as 3.8% per year, whereas professional investors gained from trading. Bauer et al (2009) provided evidence that online traders from Netherland underperformed, especially those who traded in futures and options.

In the year 1912, Selden wrote a book titled' Psychology of the Stock Market'. This book is based upon the belief that the stock price movements dependent to a very considerable degree on the mental attitude of the individual investors. In 1956, the US psychologist, Amos Tversky & Daniel Kahneman described heuristics that are employed when making judgments under uncertainty (Tversky & Kahneman 1974). Tversky & Kahneman (1986) argued that the rational theory of choice did not provide an adequate foundation for a descriptive theory of decision making. Yaari (1987) proposed a modification to the expected utility theory and develops a so-called 'dual theory' of choice under risk. De Bondt & Thaler (1987) reported additional evidence that supported the overreaction hypothesis. Samuelson & Zeckhauser (1988) performed a series of decision-making experiments and found evidence of status quo bias. Poterba & Summers (1988) investigated transitory components in stock prices and found positive autocorrelation in returns over short horizons and negative autocorrelation over longer horizons, although random-walk price behaviour could not be rejected at conventional statistical levels. Kahneman, Knetsch and Thaler (1990) reported several experiments that demonstrated that loss aversion and the endowment effect persisted even in market settings with opportunities to learn and conclude that they were the fundamental characteristics of preferences.

Methodology

Descriptive research design has been employed for the present study. It is chosen for the present study in order to understand the impact of investment decision of investors. Among the different cities in the southern state of Tamil Nadu, including the state capital Chennai city has been purposively selected for the present study. The investors have been selected by adopting random sampling technique. The data and information have been collected from 500 individual investors. The Structural Equation Model (SEM) has been employed to analyse the structural relationship between demographics and investment biases.

Data analysis and interpretations

It is observed that 80 % of investors agree that they prefer to hold the stock which is a loser and sell the profit making stock too soon to book profit. They found that individual investors were much more distressed by prospective losses than they were happy by equivalent gains. It is concluded that individual investors typically consider the loss of $100 twice as painful as the pleasure received from a $100 gain. It is observed that 82% of investors agree that they do have full control in picking investments that will outperform the market. This also indicates the tendency of overconfidence among the individual investors in the Indian capital market.

It is clear that 54 % of investors agreed that they are ready to take new investments themes like ecommerce companies for better return. It is also observed that 70% of investors agree that if a reputed business news channel reported a breaking news on possibility of getting new order for an infrastructure company, but the same company reported certain loss of business due to delay in project execution, they will ignore the previous bad news . Here investors extrapolate patterns and make projections based on historical data that are too small to ensure accuracy. Investors who forecast future returns based too extensively on only a recent sample of prior returns are vulnerable to purchasing at price peaks. These individual investors tend to enter into investments at the wrong time and losing their investments. This will cause an investor to ignore fundamental value and to focus only on recent upward price performance. By focusing only on price movements of the investments and not on valuation, individual investors tend to loss the principal. This emotional phenomenon can cause individual investors to ignore proper asset allocation. Professional investors know the value of proper asset allocation, and they rebalance whenever necessary in order to maintain proper allocations. These individual investors often possess concentrated portfolio. Proper asset allocation is crucial to long term investment success.

It reveals that 82 % of investors agree that they will monitor their investments with a long term investment horizon more often today compared with the period before the market decline in the year 2007 to 2009 and 2011 to 2012. It apparent that 89 % of investors strongly agree that the successful investments of them are because of the skills and knowledge they possess. Self-enhancing bias represents people’s propensity to claim an irrational degree of credit for their successes. The investor takes too much of credit for their successes. This leads them to become overconfident. Overconfident investor trades too aggressively, thereby increasing trading volume and volatility while lowering their expected returns from the investments.

The results show that about 73 % of investors disagree on selling the loss making stock and acknowledge the loss. Investors are reluctant to book the loss. This is cognitive dissonance and can cause investors to hold losing securities position that they otherwise would sell because they want to avoid the mental pain associated with admitting that they make a bad decision. The results indicate that 57% of investors are neutral with the statement they wish to buy a stock which is purchased by their peer group in office or investment associations. It is clear that 63% of investors neither agree nor disagree with the statement, ‘a mutual fund manager need to outperform the market at least 2 to 3 years before considering that manager is skilled investor'. Individual investors look at the success of a mutual fund manager's past few recommendations. It is apparent that about 72% of investors agree that, to earn above-average returns, they are ready to take more risk.

Behavioral biases of investors

Conservatism Bias

The results show that about 47 % of investors agree with on hearing a bad news (like rating agency downgrade), they convert all their stock into cash and other safe investments. Conservatism biased individual investors can relate to an underlying difficulty in processing new information. This is because investors experience mental stress when presented with new set of information. So investor will stick on to the prior belief. It is observed that about 71% of investors agree that they prefer to invest more in domestic mutual funds and stocks rather than global fund of funds schemes and equities. Conservatism can make individual investors to process new information about investments. Because conservatism biased individual investors experience mental stress when presented with complex information.

Recency Bias

The results reveal that about 56% per cent of investors agree that they prefer to have well diversified portfolio. It is clear that about 62.40 per cent of investors agree that in the investment process, they generally place more weight on events in the recent past and give less emphasis to the distant past. Recency biased investors may ignore fundamental value and focus too much on recent upward price movements. When a return cycle peaks and recent performance figures are most attractive, it is a tendency of individual investors to invest in the same stock. Stocks at many times become overvalued. By focusing only on price movements and not on a fundamental valuation, individual investors risk their investments. It is apparent that about 54% of investors agree that they feel that in stock market investments, the speed of information passes, expected market impact and anticipated market surprise are rated more important than the reliability of the source and the accuracy of information. Recency bias can cause individual to think more on available information rather than verifying the source and correctness of the information. This can cause individual investors to ignore proper asset allocations. Individual investors may not know the correct value of the asset allocation and they will not rebalance when necessary in order to maintain proper asset allocations. Proper diversifications and asset allocations are important for long term investment success.

Overconfidence Bias

The results show that about 53% of investors agree that they are more confident that they can always make enough profit from the capital market. Overconfident investors overestimate their ability to evaluate an organisation as a potential investment. As a result of these, individual investors negate any bad information about the organisation.

The results indicate that about 61% of investors are confident about their ability to identify potential winners in the capital. Overconfident investors are prone to trade excessively as a result of believing that they possess right kind of skills that others don't have. This behaviour of individual investor has proven to lead to poor returns over time. It is apparent that about 64% of investors strongly agree that as an investor they take decisions based on rules of thumps and often based on trial and error under uncertainty. Overconfident investors often ignore downside risks of any investment they make. As a result, their portfolio normally underperform when compare to broader market performance. These investors hold under diversified portfolios, thereby taking undue risk without commensurate change in risk tolerance.

Structural relationship between demographics and investment biases

The structural relationship between demographics and investment biases is analysed by employing SEM and the standardized structural coefficients are presented in Table 1.

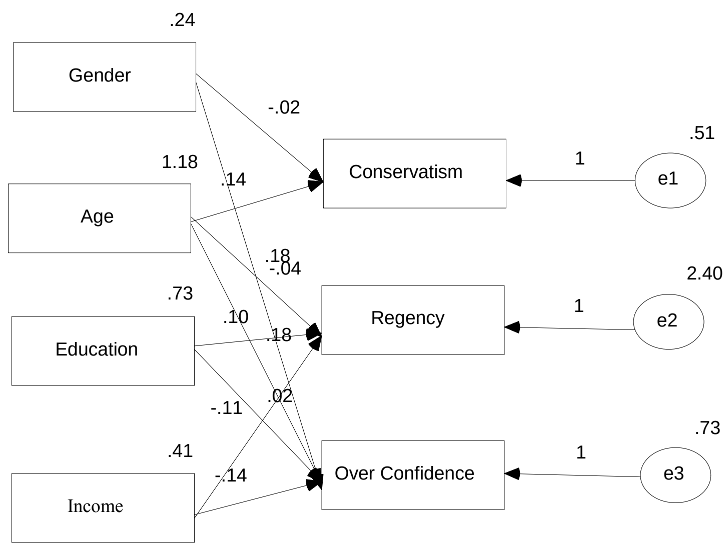
Standardized Structural Coefficients of the Relationship between Demographics and Investment Biases

Particulars	Standardized Coefficients	C.R.	P-Value
Over Confidence← Education	.016	.366	.715
Conservatism ← Gender	-.018	-.277	.782
Recency ← Age	.177	5.780	***
Over Confidence← Gender	-.043	-.544	.587
Over Confidence← Age	.179	5.091	***
Conservatism ← Age	.136	4.643	***
Recency ← Education	.099	1.227	.220
Over Confidence ← Income	-.144	-4.422	***
Recency ← Income	-.108	-5.007	. ***

*Note: *** indicates significant at one per cent level*

The coefficient for age against recency is 0.177 with p-value of 0.000 and the coefficient for age against overconfidence is 0.179 and the co-efficient for age against conservatism is 0.136 with p-value of 0.000. The coefficient for income against over confidence is -0.144 and the coefficient for income against regency is -0.101 with p-value of 0.000. The results indicate that the age is positively and significantly related to recency, over confidence and conservatism biases. The income is negatively related to over confidence and recency biases.

The structural relationship between demographics and investment biases is presented in Figure



It indicates an excellent fit with chi-square statistic of 1.77. The Goodness of Fit Index (GFI) is 0.98 and Comparative Fit Index (CFI) is 0.98. These GFI and CFI indicate the best and perfect fit. The standardized Root Mean Residual (RMR) is 0.02 and Root Mean Square Error of Approximation (RMSEA) is 0.01 indicating excellent fit.

Findings and discussions

Behavioural finance is an emerging and fastest growing field that combines the understanding of behavioural and cognitive psychology with investment decision making process. Behavioural finance propagates that markets are not efficient, especially in the short duration. Individual investors do not make rational decisions to maximise profits. They are susceptible to various behavioural anomalies.

This may become counter-productive to the maximization of wealth leading to irrational behaviour. Prime saving objective of the respondents is tax planning which is followed by children's education and marriage. The results show that the female respondents are more careful when compared to male respondents.. The respondents of the older age group are more careful while investing than the younger respondents. Similarly the respondents of the older age group are more confident as well as anxious about their investments.

Age has relationship with all the three biases, whereas income has relationship with overconfidence and recency biases. This indicates that older people possess overconfidence, recency and conservatism biases. People with higher income are overconfident in their investment abilities. Higher income people are prone to recency bias. These investors tend to invest in various asset classes at the wrong times and end up in making huge losses.

Implications of the study

Individual investors are prone to behavioural biases. This has serious implications in their short term and long term investment decisions. The asset allocation by the individual investors is also based on various behavioural aspects they possess. Wrong asset allocations hamper the investment goals of individual investors. The individual investors, therefore, need to guard against their biases to avoid the investment losses. Correct asset allocation and well diversified portfolio are essential to achieve the long term investment goals. Investors with conservatism bias react slowly to new information. Equity investors are required to act fast on any new development in the economy or company specific information. Hence, there is a requirement for proper investor education on asset allocations among the individual investors. The financial sector companies like mutual funds, insurance and investment intermediaries are to educate the individual investors for the purpose of proper investment decisions, resulting in investment gains and vibrant economy.

Implications to Financial Advisors

Evidence from this study in behavioural finance indicates that investors often prone to behavioural biases. There are proper methods to be followed regarding how choice under risk is actually made. This study provides the implications of such observations for improving asset allocation decisions. The evidence on limited computational ability implies that investors will have difficulty making optimal choices when information requires complex processing, such as aggregating risks across investments or time. The implication for investment advisors is that information should be processed and presented in a format that simplifies optimal choices. Individual investments could be aggregated into portfolios instead of presented separately. The results of this study suggest that the ways financial advisors should provide all the information including risks about the various asset classes. Long-term financial planning is extremely important for lifetime financial security, but it is also exceptionally difficult for most individual investors. Investors' earnings, savings and investment choices determine their consumption and wealth across their lifetime. Individual Investors face the "portfolio problem" when selecting investments as they save for future consumption. For many individual investors, long term investment plans need proper advice from financial advisors. Among other things, financial advisors decide the investment options offered to investors, the advice given to investors, and how that advice is tailored for individual investors. Appropriate advice requires, at a minimum, an expert understanding of the basic portfolio problem and an understanding of how investors make decisions in the real world.

Individual investors feel that they have full control in picking investments that will outperform the market. But in reality more than 50% of time stock picking is proved to be wrong. Here financial advisors need to guide the investors on proper stock pickings. Financial advisors can help the individual investors in making optimal financial decisions. By improving decisions, financial advisors can improve lifetime financial security of individual investors. On the other hand, advice that is difficult to understand or advice that does not account for the behavioural decision-making processes of investors may actually make them worse off. In order to assist investors, it is important to understand how they process information and how they make investment decisions.

Implications to Individual Investors

This study confirms that most of the individual investors are subject to behavioural biases, which imply that their investment decisions need not to be fully rational. Even though the individual investors able to recognize the effects of behavioural biases, they should also recognize that adequate knowledge may not guarantee right investment behaviour. Individual investors are ready to take new investments themes for better return, but while taking a new theme individual investors be very careful. This is because not all new themes can be a successful one like information technology sector. There are many new investment themes went right from tulip mania in 1637 in Europe to present day failures of many such new investment ideas.

There is no uniform investment plan which is suitable for everyone, investment plan has to be drawn as per the requirement of individual investors risk appetite, age, income etc. The wrong choice is never about the investments rather, it is about a mismatch between the investment and the risk profile of the individual investor. The wrong choice is also due to the past performance of investments made. Behavioural biases like overconfidence, conservatism and recency will influence the investment decisions of individual investors. Individual investors feel that they are confident that stock market is the right kind of investments and they will be successful in their trading activities. But many times individual investor loses heavily from the stock investments. One reason for this danger is many times individual investors are subjected to biases and various big five personality traits. Sometimes individual investors overestimate the correctness of the information they have, while at times individual investors hold on to some prior beliefs even when new information is available. Also, they either under react or over react to economic and market realities at different times.

Behavioural Finance and Investment Decisions

Behavioural finance seeks to find how investor's emotions and psychology affect investment decisions. It is the study of how people in general and investors in particular make common errors in their financial decision due to their emotions. It is nothing but the study of why otherwise rational people rely on thumb rule to take investment decisions. Decision making is a process of choosing best alternatives among a number of alternatives. This decision has come out after a proper evaluation of all the alternatives. Decision making is the most complex and challenging activity of the individual investors. Every investor differs from the others in all aspects due to various factors like demographic factor, socioeconomic background, educational level, gender, age and ethnic and religious background. An optimum investment decision plays an active role and is a significant consideration. Investor is a rational being who will always act to maximize his financial gain. Yet individual investors are not rational. An integral part of humanness is the emotion among the investors. Indeed, investors make most of their life decisions on purely emotional considerations. In the financial world, investor's sometimes base their decisions on irrelevant figures and statistics, e.g., some investor may invest in the stock that have witnessed considerable fall after a continuous growth in recent past. They believe that price has fallen which is only due to short term market movements, creating an opportunity to buy the stock cheap. However, in reality, stocks do quite often decline in value due to changes in their underlying fundamentals.

Conclusion

This study on behavioral finance provides explanations for why investors make irrational investment decisions. It demonstrates how emotions and cognitive errors influence investors in the decision making process. The various causes that led to behavioral finance are conservatism bias, overconfidence bias, recency bias, over and under reaction and loss aversions. In essence, behavioural finance approach investigates the behavioural patterns of investors and tries to understand how these patterns guide investment decision. Behavioral finance offers many useful insights for investment professionals and thus, provides a framework for evaluating active investment strategies for the investors. Capital markets are growing all over the world. Every nation needs to attract capital for its growth and capital market is the best route to raise necessary capital. Individual investors play a major role in the capital market. So it is important to understand the behaviour of these individual investors so that one can manage their perception and, thereby, control the volatility in the capital market.

REFERENCES

Ackert & Deaves 2010, 'Behavioral Finance; Psychology, Decision-Making', and Markets, South-Western Cengage Learning, Mason, USA.

Bailard, TE, Biehl, DL & Kaiser, RW 1988, Personal money management 5th ed. Chicago: Science Research Associates

Baltussen, G & GT Post, 2011, 'Irrational Diversification: An Examination of Individual Portfolio Choice', Journal of Financial and Quantitative Analysis, vol. 46, pp.1463-1491.

Barber, BE & Odean T 2000, "Trading is Hazardous to your Wealth: The Common Stock Investment Performance of Individual Investors", Journal of Finance, vol. 55, pp. 773-806.

Barber, BM & Odean T 2008, 'All That Glitters: The Effect of Attention and News on the Buying Behaviour of Individual and Institutional Investors', Review of Financial Studies, vol. 21, pp.785-818.

Barber, BM, Lee YT, Liu YJ & Odean T 2009c, 'Just How Much Do Individual Investors Lose by Trading?', Review of Financial Studies vol.22, pp.609-632.

Benartzi, S & Thaler RH 2002, 'How Much Is Investor Autonomy Worth?', Journal of Finance vol.57, pp.1593-1616.

Bhattacharya, UA, Hackethal, S. Kaesler, B. Loos & Meyer S 2012, 'Is Unbiased Financial Advice to Retail Investors Sufficient? Answers from a Large Field Study', Review of Financial Studies vol.25, pp.975-1032.

Byrnes, JP, Miller, DC & Schafer WD 1999, Gender differences in risk taking: A meta analysis, Psychological bulletin, vol.125, no. 3, pp. 367-383.

Cheng, S 2008, 'Board size and the variability of corporate performance', Journal of Financial Economics vol.87, pp.157-176.

Costa PT Jr & McCrae RR 1995, 'Domains and facets: Hierarchical personality assessment using the revised NEO personality inventory', Journal of personality assessment, vol.64.no.1 pp.21-50.

Coval, JD & Moskowitz TJ 1999, 'Home Bias at Home: Local Equity Preference in Domestic Portfolios', The Journal of Finance vol.54, pp.2045-2073.

De Bondt, WFM 1993, 'Betting on Trends: Intuitive Forecasts of Financial Risk and Return', International Journal of Forecasting vol.9, pp.355-371.

De Bondt, WFM 1998, 'A Portrait of the Individual Investor', European Economic Review vol.42, no.3, pp.831-844.

Fama, EF & MacBeth JD 1973, 'Risk, Return and Equilibrium: Empirical Tests', Journal of Political Economy vol.81, pp.607-636.

Fama, EF & French K 2010, 'Luck versus Skill in the Cross-Section of Mutual Fund Returns', Journal of Finance vol.65, pp,1915-1947.

Fama EF 1970,'Efficient capital markets: a review of theory and empirical work', *Journal of Finance*, vol. 33, no. 4, pp. 75-83.

Glaser, M & Weber M 2007, 'Overconfidence and Trading Volume', Geneva Risk and Insurance Review vol.32, pp.1-36.

Goetzmann, WN & Kumar A 2008, 'Equity Portfolio Diversification', Review of Finance vol.12, pp.433-463.

Graham, B & Dodd, DL 1962, *Security Analysis,* 4th edition, McGraw-Hill, New York.

Grinblatt, M & Keloharju M 2001, 'What makes Investors Trade?', Journal of Finance vol.56, pp.589-616.

Guiso, L, Sapienza,P & Zingales, L 2008, 'Trusting the Stock Market', Journal of Finance vol.63, pp.2557-2600.

Hausman, JA & Taylor, WE 1981, 'Panel Data and Unobservable Individual Effects', Econometrica vol.49, pp.377-1, 398.

Heath, C & Tversky A 1991, 'Preference and Belief: Ambiguity and Competence in Choice under Uncertainty', Journal of Risk and Uncertainty vol. 4, pp.5-28.

Hirshleifer, DA, Meyers, JN Meyers, LA & Teoh, SH 2008, 'Do Individual Investors Cause Post-Earnings Announcement Drift? Direct Evidence from Personal Trades', Accounting Review vol.83, pp.1521-1550.

Huberman, G 2001, 'Familiarity Breeds Investment', Review of Financial Studies vol.14, pp.659-680.

Huberman, G & Sengmueller, P 2004, 'Performance and Employer Stock in 401(k) Plans', Review of Finance vol. 8, pp. 403-443.

Huberman, G & Jiang, W 2006, 'Offering versus Choice in 401(k) Plans: Equity Exposure and Number of Funds', Journal of Finance vol.61, pp.763-801.

Hurst, E & Lusardi, A 2004, 'Liquidity Constraints, Household Wealth, and Entrepreneurship', Journal of Political Economy vol. 112, pp. 319-347.

Hvidkjaer, S 2008, 'Small Trades and the Cross-Section of Stock Returns', Review of Financial Studies vol. 21, pp. 1123-1151.

Jensen, MC 1967, 'The Performance of Mutual Funds in the Period 1945-1964', Journal of Finance vol. 23, pp. 389-416.

Kahneman, D 2002, 'Maps of Bounded Rationality: a Perspective on Intuitive Judgment and Choice', Nobel Prize Lecture, downloaded from: http:// www. nobelprize. org/nobel_ prizes/economics /laureates/ 2002/ kahnemann-lecture.pdf.

Kahneman D 2011, 'Thinking Fast and Slow' Farrar, Straus and Giroux, New York.

Kahneman, D & Lovallo, D 1993, 'Timid Choices and Bold Forecasts: A Cognitive Perspective on Risk Taking', Management Science vol. 39, pp. 17-31.

Kahneman D & Tversky, A 1979, 'Prospect theory: an analysis of decision under risk', *Econometrica*, vol. 47, no. 2, pp. 263-291.

Kahneman D & Riepe, MW 1998, 'Aspects of Investor Psychology. Beliefs, Preferences, and Biases Investment Advisors Should know about', Journal of Portfolio Management vol. 24, pp.52-65.

Kahneman, D, Slovic, P & Tversky A 1982, Judgment under Uncertainty: Heuristics and Biases, Cambridge University Press, Cambridge

Markowitz, HM 1952b, 'The Utility of Wealth' Journal of Political Economy vol. 60, pp. 151-158.

Oskamp, S 1965, 'Overconfidence in Case-Study Judgments', Journal of Consulting Psychology, vol. 29,pp. 261- 265.

Pompian MM 2006, Behavioral Finance and Wealth Management: Building Optimal Portfolios that account for investor biases. Hoboken, NJ: John Willey & Sons, Inc.

Pompian MM & John Longo 2004 'A new paradigm for practical application of behavioural finance: creating investment programs based on personality type and gender to produce better investment outcomes', Journal of wealth management, vol.2, no. .3, pp143-165

Samuelson, W & Zeckhauser, R 1988, 'Status Quo Bias in Decision Making', Journal of Risk and Uncertainty vol. 1,pp. 7-59.

Samuelson, P 1965 'Proof that Properly Anticipated Prices Fluctuate Randomly', Industrial Management Review, vol. 6 pp.4-12.

Schlarbaum, GG, Lewellen WG & Lease, RC 1978a, 'Realized Returns on Common Stock Investments: The Experience of Individual Investors', Journal of Business, vol. 51, pp. 299-325.

Shapira, Z & Venezia, I 2001, 'Patterns of Behavior of Professionally Managed and Independent Investors', Journal of Banking and Finance vol. 25, pp. 1573-1587.

Shefrin, H & Statman, M 1985, 'The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence', Journal of Finance vol. 40, pp. 777-790.

Statman, M, Fisher, KL & Anginer, D 2008, 'Affect in a Behavioral Asset Pricing Model', Financial Analysts Journal vol.64,pp. 20-29.

Thaler, RH 1985, 'Mental Accounting and Consumer Choice', Marketing Science vol.4, pp.199- 214.

Thaler, RH 1987, Anomalies-the January effect, Journal of economic perspectives, vol. 1, no.1, pp.197-201.

Tversky, A & Kahneman D 1974, 'Judgment under Uncertainty; Heuristics and Biases', Science, vol.185, pp.1124-1131.

Tversky, A & Kahneman D 1986, 'Rational Choice and the Framing of Decisions', Journal of Business vol.59, pp.251-278.

Tversky, A. & D. Kahneman 1992, 'Advances in Prospect Theory: Cumulative Representation of Uncertainty', Journal of Risk and Uncertainty, vol. 5, pp.297-323.