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Portfolio Management and Disposition Effect Empirical Evidence From Pakistan.

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Abstract

Kahneman and Tversky's approach to preference under uncertainty is aversion to loss realization. This paper is an attempt to highlight this phenomenon with a unique approach. In order to beat the market fund managers are required to manage their portfolio at regular intervals. The tendency to sell the winners too early and ride the losers for long "disposition effect" can affect the Management decision of fund managers. This paper investigates the mediating role of disposition effect between mental accounting, aversion to regret, self control and portfolio Management. For this purpose we use the extended version of Shefrin and Statman framework and include Dyl's tax consideration and Fama and French style tilts as controlling variables. In order to provide empirical evidence survey has been conducted from mutual fund managers. CFA and Cronbach's alpha is used to test the reliability of the instrument. AMOS is used to test the structure equation model for disposition effect and portfolio Management. Results confirmed that disposition effect plays significant role of mediator between mental accounting, aversion to regret, self control and portfolio Management. However tax consideration has direct loading on forward Management. It means that disposition effect plays significant role in decisions of fund managers, however investors are aware of tax consideration.

Key words: Disposition effect. Portfolio Management. Mental accounting. Aversion to regret. Self control

Portfolio Management and Disposition Effect Empirical Evidence From Pakistan

It has been well known truth now that market is not mean variance efficient, individual decision makers do not behave in line with the maxim of expected utility theory. In certain situations rational decision making is not a tough call. Problem in decision making arises in uncertain situations. Research work by (Kahneman and Tversky [1979]), Machine and many other scholars have tried to develop a theory which describes the behavior of individual investors when they are confronted with multiple choice of uncertainty. Work of (Kahneman and Tversky [1979]) was focused on gamblers, specifically those who incurred losses in their recent history. Their study was performed in more controlled environment, somewhat experimental in nature. Economist and financial analyst are more reluctant to adopt theories that are based on controlled environment, the stochastic nature of market makes economist reluctant to base their decisions on theories that are developed in controlled environment. That is why it is important to look at actual market behavior in order to discover whether, same behavior pertain in market settings or not. This paper is an attempt to shed light on behavior of fund manager in market settings rather than laboratory settings. More specifically, focus is given to primary data so that it can be determined that whether, fund managers tilt their portfolio toward short term winners and are reluctant to realize losses. This phenomenon can be defined as, disposition to "ride losers for long period of time". In this regard, this study is based on study of Constantinides [1983], Shefrin and Statman [1985]. Both studies focused character of individual investors in respect of realizing gains or losses.

This study is different from that of Constantinides, he focus on immediate realization of losses; moreover he focused on trade where transaction cost is absent while this study focuses on portfolio managers decisions in presence of transaction cost and capital gain tax. This study

differentiates itself from (Shefrin and Statman [1985]), he focused on secondary data while this study generates primary data from fund managers through questionnaire based survey. Following the work of Shefrin and Statman on disposition effect, this study adopted the positive theory of capital gain and loss realization by individual investors. However the model is not taken for granted. Tax consideration has been added to their model. It has been investigated that why fund managers tilt their portfolio "sell winners too early and ride losers too long", relative to the concept of normative theory presented by Constantinides. This study differentiates itself from tax based studies on disposition effect like that of Dyl [1977], Odean, [1998] by including three more factors in addition to tax consideration in its framework.

In order to highlight the disposition effect of individual investors this study employed adapted version of theoretical framework of Shefrin and Statman [1985], which is based on their work on dividends in previous year. Their model was based on four elements: mental accounting; self control; prospect theory; and regret aversion. All these four elements contribute a unique aspect to this study. Prospect theory is playing role of forecaster, it predicts a disposition to sell winners early and ride losers for long. At the same time investors are preparing an account in their mind, this account is created on the assumption that if, disposition effect holds, he will invest the proceedings in alternative less risky option "Swap". Account creation for different assumption is carried out by mental accounting. Answer to the question that why investors sell winners early and ride losers long is provided by regret aversion. Finally, self control is used by investors to provide rational for the assumed account in their mind. In order to make the theory more descriptive rather than normative a fifth element is added, tax consideration. In order to control the rationale behind Management this study controls the effect of style tilts of Fama and French.

Section II presents main elements of disposition effect, section III discuss Management decision of fund managers section IV provides empirical evidence from the market, section V presents concluding remarks.

II. Presenting four elements in shape of theory

Prospect theory

Prospect theory acts as descriptive theory of choice under uncertainty (Kahneman and Tversky [1979]). Prospect theory appose traditional concept of riding losers for long. According to prospect theory, the disposition effect arises because of number of factors. It passes through many stages, it the first stage, individual form a frame of choice in front of them called the "editing stage." In editing stage, investors frame all future aspects of their transaction as potential gains or losses. Investors use a reference point to compare their choice. This reference point is simultaneously linked with the account created by the individual through mental accounting. The reference point is then evaluated through S shaped utility function in "evaluation stage" (Shefrin and Statman [1984]). The concave side of utility function represents potential gains and losses are represented by the convex side. Suppose, fund managers original position's worth at time (t) is (x). After some time say (t+1) his position may change his worth. It can fall to (X-Y) or it can increase to (X+Y), where Y is change in value of securities due to noise or any stochastic change. In case value fall to (X-Y), fund manager will not liquidate his position and will wait for time (t+2) hoping that securities will revert their worth to X. Since, the choice is associated with the convex side of S-shaped utility function, thus, it leads managers to disposition effect. They will still wait for (t+2), hoping that, the security will revert its value at least to near x.

Mental Accounting

Prospect theory emphasis on why investors are reluctant to realize loss, it fails to grasp the aspect of tax swaps. If the investor assumes market to be efficient with no transaction cost and does not vary his portfolio. with the above assumption in mind he will only sell a stock to gain benefits from tax differences. Tax difference arises because of downward moment in a stock in preceding period. Moreover, the swap is possible if almost near alternatives are available for the stock that experienced loss. But, in reality market imperfection and stock repurchase regulations make it difficult for managers to engage themselves in the swap. Thus, they will continue with the stock that has experienced loss. His decision to move with the stock is not knowingly taken; rather he has been guided by a mental account. Reference point plays in important role in framing the riding decision. This phase of decision making is known as editing stage. Keeping in mind the importance of editing stage and reference point Thaler [1984] constructed a framework known as mental accounting. Basic idea behind mental accounting is the creation of different mental accounts that are not mutually exclusive in nature. Creation of these mental accounts itself creates hindrance in reducing disposition effect, rather they increase the tendency to ride losers for long. Recall the swap example and tax consideration. Fund managers will be reluctant to liquidate the stock with value X-Y and use the proceedings to purchase a similar stock. This process involves dealing with two mental accounts. Fund manager has to close mental account for stock X with loss, and create another mental account for possible swap in shape of stock Z. Fund manager will not close the account with loss in mind. Thus, the regret in mind compels them to ride losers for long period. They do so because they didn't want to prove their first judgment wrong.

Regret Aversion

Thaler [1980], Kahneman and Tversky [1979] discussed the regret associated with a decision that encounter loss. Closing a mental account with loss in mind is difficult because of the regret that he will have in front of his friends or other companions. Similarly, positive counterpart of this theory is pride. The pursuit for pride also directs the investor to disposition effect. Different studies argue in favor of both regret and pride, but in practice regret is stronger tendency as compare to pride as discussed by (Thaler [1980], Kahneman and Tversky [1979]). Pride is relatively less important because with the passage of time pride can change in to regret. Suppose a stock initially performs well and the owner sells it. He will continue to monitor its performance. If the stock further increases its alpha the pride of investor will change into regret.

Self control

Most of the traders are prone to liquidate their stocks with losses. At the same time if investors came to know about a stock that can immediately earn some return, investors will quit the market with positive returns in hand and pride in mind Glick [1957]. It is control of mind which constitutes the basic problem. Question arises to what extent self control enhances disposition effect? Thaler and Shifren [1985] address this issue in very interesting way. They called self control as an interpersonal agent between a rational player called principal and an irrational player the doer. The principal player acts as planner. It keeps in mind the future outcomes and overall objective of decision making. While, the agent (doer) is guided by emotions. As soon as the investor sees profit both the players create mental accounts. But the agent (doer) is more powerful, thus it defeats the planner and investors liquidate the position so that he may be able to

enjoy the pride. Reasons for weakness of principal (planner) are discussed by (Thaler and Shefrin [1985]).

Family problems, domestic problems and tax motivated transactions are key factor which contribute to the strength of doer (the irrational player). Studies by Branch [1977], Keim [1983], Givoly and Ovadia [1983] have contributed much to conclude that tax loss in yearend plays key role in the strength of doer. Here at this point I can postulate that fund managers are more likely to posses the problem of self control. If the fund is not performing well for significant period of time fund managers can face pressure from investors. This pressure can compel the manager to tilt his portfolio despite the fact that Management at that particular period of time may not be rational. Management decision is discussed in section below

III. Management a portfolio

Fund managers are acting as arbitragers. Their main objective is to construct a portfolio in the best interest of investors. In order to beat the market they are supposed to tilt their portfolio at regular intervals. In the mean variance efficient market managers tilt their portfolios to stocks with high return less risk profile. Numerous evidences of market inefficiency suggest that fund managers must add style tilts to their portfolios. Style tilts add unique risk to the portfolio, but it the same time it increase the probability of fund managers to beat the market. Style tilts has the ability to generate higher returns (Fama and French [1992; 2010; 2012]). Adding style tilt is based on rational part of Thaler and Shefrin [1981] framework “Principal (Planner)”. Question arises where the irrational part “doer (Agent)” of this framework initiates the manager to tilt his portfolio. This issue is discussed by Shefrin and Statman [1985] in his positive theory of disposition effect.

Suppose a fund is not performing well. Its manager will be pressurized by fund unit holders. In such case fund managers are asked to provide higher returns. Fund managers have to tilt their portfolio to generate extra returns. Management may involve inclusion of new securities or it may be to liquidate one more of current assets and replace them with some other alternatives. Disposition to sell winners and ride loser at this situation is more likely to happen. Prospect theory predicts the tendency of the manager that he will liquidate the security and will held the proceeding he realized, rather to invest it in some other assets. It makes sense because fund manager need some cash to pay dividend to unit holders. Another reason for selling winner is mental accounting. Suppose, manager decides to tilt his portfolio by excluding some assets that are not performing well, for this purpose he has to close the account for losers. It is quite difficult to close an account with losses in mind. Reason for this difficulty is another behavioral aspect that is aversion to regret. Aversion to regret provides a very important base for riding losers. Self control strategy provides basis for selling the winners too early. Investors tilt their portfolio by selling the winners to have pride in their mind. Another reason for selling winners is to show high performance in short run to attract more investors.

Theoretical Framework

The theoretical framework this study used is the extended version of Shefrin and Statman [1985] and Constantinides [1983] behavioral model, this study hypothesized that prospect theory; mental accounting, aversion to regret and self control are key variables underlying disposition effect. The disposition to sell winners too early and riding losers too long can affect the Management decision of fund managers. On the basis of above discussion this study develops a unique model for disposition effect and portfolio Management and will test the hypothesis that, Disposition effect plays mediating role between mental accounting, aversion to regret, tax

consideration, self control strategy and Management decision. Here in this model Management is categorizes into forward Management and Stock retention. Forward Management refers to liquidating the winners too early and Stock retention refers to riding losers too long. In recent years significant focus is given to style tilts (Fama and French [1992; 2012]). This study includes style tilts in its framework but controls the effects of style tilts i.e. Size and B/M value.

IV. Empirical evidence from the market

This study is concerned with the decision of mutual fund managers. Focus is given to Stock retention and forward Management. In order to provide evidence for disposition effect this study conducts survey of mutual fund managers. Only top rank managers are investigated who are actually involve in active portfolio management and are Management their portfolio on regular intervals. Survey is conducted in collaboration with SECP. Survey includes items that were asked about mental accounting, regret aversion, prospect theory and self control. These items are based on the adapted version of items discussed in Michael M. Pompian "Wealth of Nation, how to build optimal portfolios that account for investors biases". The questionnaire used is adapted version but still this study passes it through multiple tests to insure its validity and reliability. Exploratory factor analysis, confirmatory factor analysis and reliability analysis have been used to group more relevant and reliable items under one construct. Once the authenticity of questionnaire is finalized, then data is collected from managers operating in open end mutual funds sector. As, discussed above this study developed a unique model for disposition effect and Management decision. It was not realistic to test the set of multiple hypotheses with simple multivariate analysis. The nature of relationship is complex in nature that's why, this study use structure equation model and tests the set of hypotheses through AMOS. The nature of relationships and final path diagram for disposition effect, underlying variables and Management

decision are shown in tables 1 in appendix and 2 and 3 in the body. The point of concern for this study is the time period for Management a portfolio. Forward Management period is taken as six months. Time period encouraged by SECP for tax benefits. Stock retention refers to time period more than one year. In order to make the study more realistic this study counts for tax consideration as well. We checked that whether tax consideration is the only factor underlying disposition effect or there may be more reasons as hypothesized by our theoretical framework.

We start our analysis with (Schlarbaum [1978]). He used panel information about individual traders for six years time period. We are considering data from 2006 to December 2012. Round trip duration was used for analysis. It is the time period an investor will consider for holding a stock before he sills it.

We catagorise the duration for round strip into three catagories. One month or less, one month to six months and above one year. We catagoriese these time period based on taxation law provided by SECP. Data reveals that in one month round duration, number of realization due to losses were high as compared to six months or above period. If we consider capital gains, round trip provide different results. Number of realization due to losses are very few as compare to large number of realization due to capital gain in 6 months duration trip. Our results are same to Shefrin and Statman and thus we will quote their justification for such behavior.

"what are we to conclude from this? One possible inference is that tax induced trades form a minor portion of all trades. (It might well be that most trades are motivated by considerations of liquidity and/or information.) another possible inferences is that the significant contribution of investors who engage in tax-motivated trades is offset by those who typify the

disposition effect. However, it cannot be argue that investors are ignorant of the tax option, since we know from Dyl and others that investors are generally aware of this tax option (P, 787)."

Results: Scale validity and reliability

In order to test the role of disposition effect as mediator between prospect theory, regret aversion, mental accounting and self control and Management decision this study used two steps analysis following the methodology of Anderson and (Gerbing [1988]). First step focus on measurement and the second is for identifying different relations. In order to test the construct validity confirmatory factor analysis (CFA) is employed. Two CFA's were run separately for four dimensions of disposition effect as the independent variables. Similar procedure is repeated for backward and forward integration as well. The results in table 1 in appendix confirm the significant loading of respective items on their respective construct. Overall model fit and items loadings are indicated by (RMSEA, NFI, NNFI, and CFI). Their values show that there is acceptable uni dimensionality and convergent validity for the four variables measures (Bollen, [1989]; Bagozzi et al., [1991]; Hoskisson, [1993]). For reliability analysis Cronbach's reliability is used. Its value is well above the acceptance region "0.70" thus it can be concluded that all the items shows satisfactory reliability for their respective construct (Nunnally, 1978). Three items are deleted from the survey because they have very poor loading path and reliability score following the methodology of (McDermott and Stock [1999]).

Discriminant validity is tested with the method used by (Ahire [1996]). All the four variables are arranged in pairs and then subjected to CFA. The preliminary correlations were estimated two times with both constrained and unconstrained models. The statistical significance of chi square at 0.01 probability value verified the validity of each variable. Harmann's single factor test

suggested by Podsakoff and Organ [1986] was used to ensure that the data collected from fund managers has no response bias. Factor scores were calculated from the items so that composite scores can be obtained for further analysis. Before testing our major hypothesis for mediation of disposition effect normality of data has been checked through skewness and kurtosis. Their values are in acceptable range (-1≤ ≥+1 and less the 7 respectively).

Preliminary correlation analysis

Bivariate (Pearson) correlation is used as preliminary step in the analysis. The correlation coefficients for prospect theory, self control, mental accounting and regret aversion are at medium level. It suggests the coexistence of different types of behavioral biases underlying disposition effect. The results also confirm that relationship exist even among those variables located in orthogonal positions i.e. mental accounting leads to regret aversion. However the values are not that much strong which can create issue of multicollinearity that can affect the results of path analysis (Tabachnick and Fidell, 2007).

Table 2: Correlation analysis

		Mean	S.D	TC	ATR	MA	SC	DE	FI	R
1	Tax consideration	4.35	0.82	1.00						
2	Aversion to Regret	4.37	0.83	0.59**	1.00					
3	Mental Accounting	3.89	0.78	0.55*	0.51**	1.00				
4	Self control	3.98	0.89	0.54*	0.46**	0.54**	1.00			
5	Disposition effect	4.78	0.81	0.49**	0.48**	0.48**	0.52**	1.00		
6	Forward Management	3.39	0.84	0.44**	0.51*	0.41**	0.58**	0.54**	1.00	
7	Retention	3.63	0.83	0.47**	0.53*	0.42**	0.46**	0.58**	0.21**	1.00
	Note: Significance at	*P ≤	0.05,	**P ≤	0.01					

Structure equation modeling

Set of multiple hypothesis are tested simultaneously using Structure equation model "SEM". In addition to Dyl's tax consideration three underlying behavioral biases are considered as

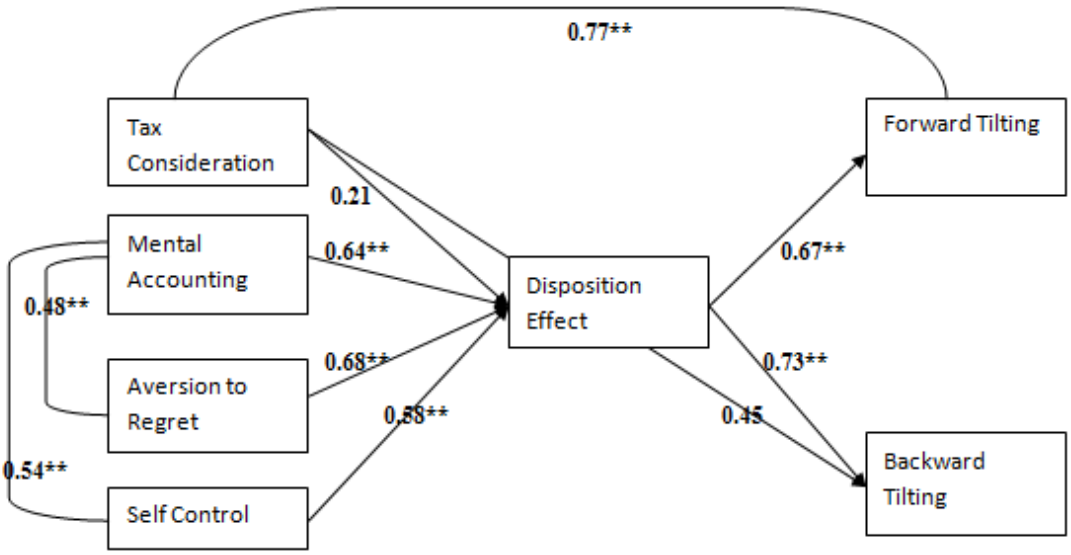
independent variables and two measures of portfolio Management are considered as dependent variables. Disposition effect has been placed in between the set of these two variables as mediating variable. A total of two controlling variables "Size and B/M" are included in the model to grasp the style tilts of Fama and French three factor model. Although this is not part of the study, rather they are included to count for the rational aspect Principal (planner) of fund manager. The results of SEM through AMOS are presented in table 3 and path diagram is shown in Fig 1.

All the fitness indices are in acceptance region. Values of RMSEA is well above 0.08, and the other fitness indices i.e. NFI, GFI and NNFI are above 0.90 indicating good fit for the SEM model. Mediating role of disposition effect can be observed from the path diagram. Indirect relations between the independent variables and dependent variables through mediation are six. Probability values shows that all six hypothesized paths are significant. If we exclude the mediating variable i.e. disposition effect a total of eight relations can be observed between four underlying variables of disposition effect and two Management directions. For a confirmatory purpose a competing model with all the possible relations has been tested and the results of that model were inferior to one that has been tested before shown in appendix fig 3. Thus, confirming that the indirect model with disposition effect is more superior to the direst one. Models are compared on the basis of chi square value, degree of freedom and fitness indices "RMSEA, NFI, NNFI and GFI". Error correlations are also estimated by AMOS. Some of those relations are also found to be significant but they are not core part of this study that's why they are not hypothesized. However, they can be observed in the path diagram in fig 1.

Table 3: Results of Structure Equation Model

		Mediating variable Disposition Effect	Dependent Forward Integration	variables Retention
Control Variables	Size	----	0.57**	0.45
	B/M	----	0.35	0.48**
Independent variables				
Tax consideration		0.21	----	----
Aversion to regret		0.68**	----	----
Self control		0.58**	----	----
Mental accounting		0.64**	----	----
Mediating variable				
Disposition Effect		----	0.67**	0.73**
Note: Significance	*P≤ 0.05	**P≤ 0.01		

Figure 1: Path diagram



Note: Paths are significant at *P = 0.05 and **P = 0.01. χ^2 "chi-squared = 16.99; RMSEA = 0.08; NFI = 0.94; NNFI = 0.97; CFI = 0.98

H1; DE plays mediating role between TC and FT.

H2: DE plays mediating role between TC and BT

H3: DE plays mediating role between MA and FT.

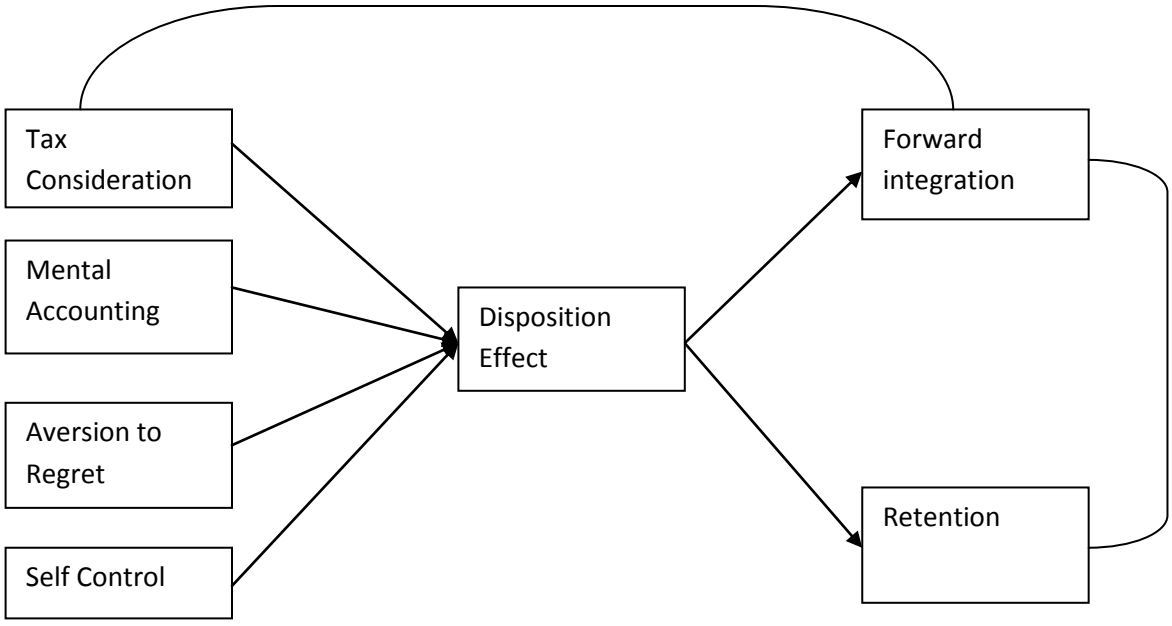
H4: DE plays mediating role between MA and BT

H5: DE plays mediating role between ATR and FT.

H6: DE plays mediating role between ATR and BT

H7: DE plays mediating role between SC and FT.

H8: DE plays mediating role between SC and BT



Note: Paths are significant at *P = 0.05 and **P = 0.01. χ^2 "chi-squared = 16.99; RMSEA = 0.08; NFI = 0.94; NNFI = 0.97; CFI = 0.98

H1; DE plays mediating role between TC and FI.

H2: DE plays mediating role between TC and SR

H3: DE plays mediating role between MA and FI.

H4: DE plays mediating role between MA and SR

H5: DE plays mediating role between ATR and FI.

H6: DE plays mediating role between ATR and SR

H7: DE plays mediating role between SC and FI.

H8: DE plays mediating role between SC and SR

Path analysis shows that tax consideration has three possible relations. Tax consideration is most probably the rational aspect of Management decision that's why tax consideration has no effect on disposition effect. Other two possible links are with forward Management and Stock retention decision. Path from tax consideration to forward Management is significant. It shows that most of the time when a manager liquidates a security is because of tax considerations. An additional item in the survey confirms that most of the forward Management decision is because of tax

consideration. Fund managers confirm that that liquidate most of their winners in December as shown in fig 2 in appendix. This finding is consistent with Odean [1998]. Thus we can say that tax consideration is an important component of excessive selling of winners by fund managers. Evidence of high realization in six month period is also indicating that yes fund managers are aware of the tax and that is why tax has significant effect on forward Management.

As hypothesized, tax consideration is not the only underlying factor for excessive trading of winners. In addition to tax, disposition effect is key factor for portfolio Management. Disposition effect arises because of number of factors. Perhaps the most prominent explanation for forward Management decision is Prospect theory. Prospect theory leads to disposition effect and disposition to sell winners early lead the manager to forward Management. This relationship can be confirmed from the path diagram. In contrast to tax consideration mental accounting, regret to aversion and self control paths are loading on disposition effect with significant probability. It shows that these biases have affect on Management decision but the direction of causality is not direct. In fact, these biases give rise to disposition effect which plays role of mediator. It is the disposition effect which compels the fund manager to rebalance his portfolio either through forward Management or Stock retention. The rebalancing process is not to maximize the long run gains. Rather, it is the prospect theory which enforces fund managers to rebalance the portfolio in order to satisfy the immediate demand of fund unit holders. It confirms that Management decision of fund manages is affected by these behavioral biases. Moreover disposition effect has significant effect on both Stock retention and forward Management.

Conclusion and limitations

The basic purpose of this study is to shed light on aversion to loss realization discussed by [Kahneman and Tversky (1979)]. This paper tries to explain the scenario with a unique approach. The theoretical framework used is an adapted version of Shefrin and Statman. We included three additional factors (Size, B/M and Tax considerations) to mental accounting, prospect theory and self control. In order to grasp the effect of behavioral aspect of fund managers we control for size and B/M value. Significantly, we argue that excessive realization after capital gain is not just because of tax consideration rather disposition effect plays key role in Management decision. Difficulty in closing an account with losses in mind, the feelings of regret to have in friends and family, and rationale for methods investors use to force themselves to realize losses are key factors, which give raise to disposition effect. In order to test the theoretical framework survey is conducted from fund managers. Results from AMOS shows that tendency to "sell winners early and riding losers for long" plays key role in Management decision. This tendency is because of three underlying behavioral aspects known as mental accounting, regret to aversion and self control. Tax consideration has direct loading on portfolio Management, that is because of the rational aspect of behavioral model known as the Principal (Planner) cited above. Significance of tax consideration confirms findings of Dyl that investors are aware of tax benefits associated with capital gains. Moreover, the controlling variable i.e. Size and B/M value also shows significant loading on forward Management decision.

Finding from this study will help both institutional and individual investors in their investment decisions. Investors should design free determined policy for their portfolio. In order to reduce the effects of disposition managers can adopt different strategies i.e. they can create a benchmark for the level of losses. They should operate with hard and fast rule, like never let the losses

exceed ten percent. Managers must not hope against hope. Rather they should follow a specific predetermined benchmark for both losses and gains. Managers must be brave to accept that yes they were wrong and get out. Then feel alive and play the game with new spirit.

In particular we can conclude that tax consideration alone is not enough to explain the observed pattern of fund manager's decisions. Rather the patterns are consistent with combination of mental accounting, regret to aversion, self control and tax consideration. Our conclusion can be taken only as tentative. Future studies must be conducted to investigate more insight of the disposition effect. Researchers must use account level data of fund unit holders and then match the frequencies of realization in terms of losses and gains. More over macro economic variables can also play significant role in excessive trading.

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Appendix:

Figure 2; Why fund managers liquidate a security (Portfolio Rebalancing or Short term gains)

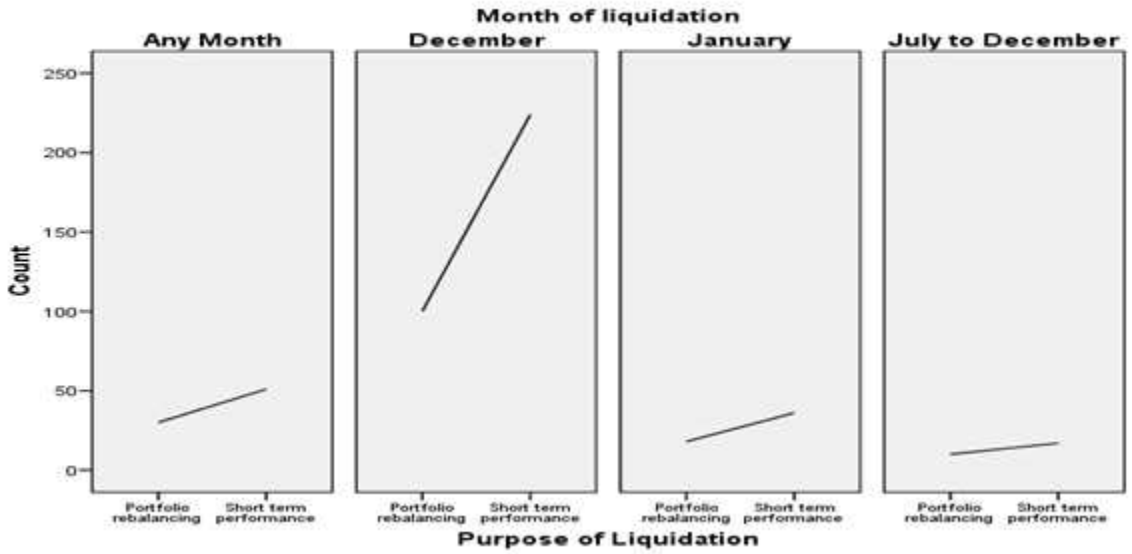
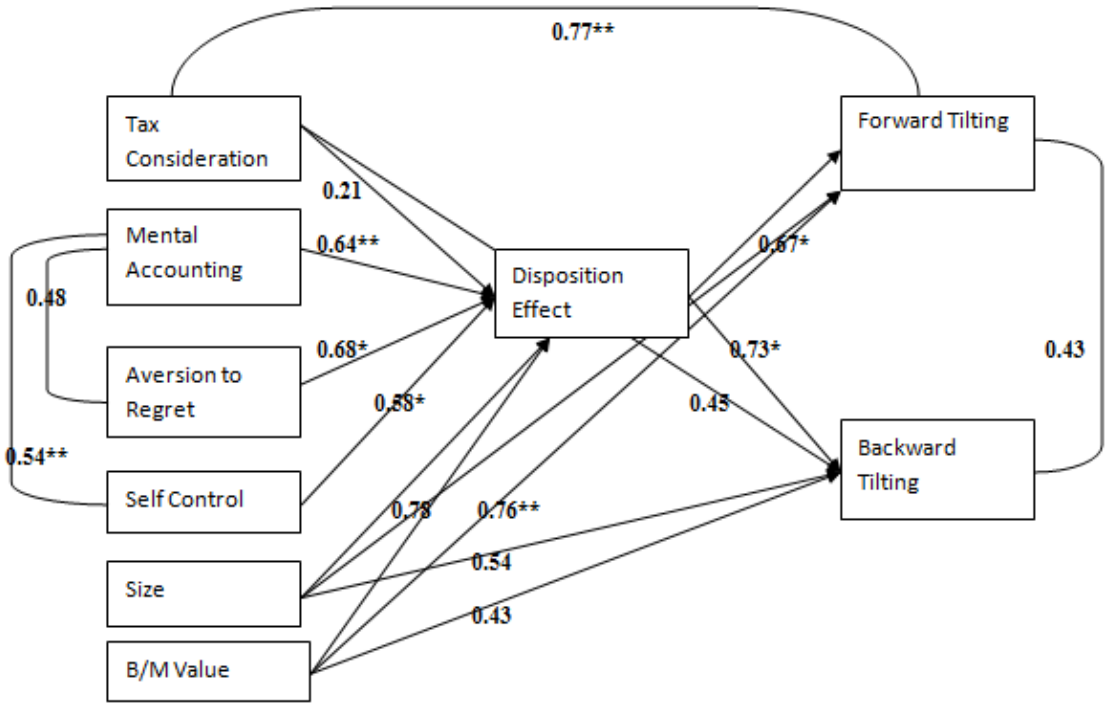


Figure 3: Path diagram with all possible relations



Note: Paths are significant at *P = 0.05 and **P = 0.01. χ^2 "chi-squared = 16.99; RMSEA = 0.08; NFI = 0.94; NNFI = 0.97; CFI = 0.98

Table 1: Scale validity and reliability

Scale	Items	Loading Path	Cronbach's alpha
Tax consideration	TC1	0.83	0.88
	TC2	0.84	
	TC3	0.87	
	TC4	0.80	
	TC5	0.75	
Mental accounting	MA1	0.83	0.91
	MA2	0.89	
	MA3	0.87	
	MA4	0.85	
	MA5	0.79	
Aversion to Regret	ATR	0.78	0.84
	ATR	0.88	
	ATR	0.86	
	ATR	0.81	
	ATR	0.77	
Self Control	SC1	0.89	0.86
	SC2	0.82	
	SC3	0.77	
	SC4	0.83	
	SC5	0.80	
Disposition Effect	DE1	0.75	0.83
	DE2	0.84	
	DE3	0.89	
	DE4	0.78	
	DE5	0.79	
Forward Management	FT	0.81	0.79
	FT	0.83	
	FT	0.87	
	FT	0.79	
	FT	0.72	
Stock retention	SR	0.86	0.88
	SR	0.79	
	SR	0.87	
	SR	0.78	
	SR	0.88	

Notes: χ^2 "chi-squared = 126.99; df = 65; RMSEA = 0.06; NFI = 0.95; NNFI = 0.97; CFI = 0.98