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Holding period, Stock market illiquidity and Disposition effect in Karachi Meezan Index (KMI)

by

Muhammad Hamayoun Munir

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Dedicated to my parents and supervisor for their never-ending support and their guidance

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CERTIFICATE OF APPROVAL

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Abstract

This study examines the disposition effect, holding period and stock market illiquidity on the stock returns by using the data sample(daily data) of 30 companies which are listed on the Karachi Meezan Index (KMI). The data covered a period of 2008-2017. Two stage least square regression is used to study the relationship between stock market illiquidity, disposition effect and holding period on the returns of KMI which were determined through stock returns, market volatility and market capitalization. The result of the study for the particular time period shows that disposition effect is present in KMI which illustrates that the investors are more reluctant to realize loses and have eager to prefer gains. They sell securities more quickly when it moves towards gains but when the loss occur they hold those securities with the fear to book lose. This moves the market to the phenomena of disposition effect. First, Fama (1970) told that all investors are rational and every individual maximize their utility. We demonstrate that this is dreadfully unlikely to be correct. . It is also found that investors trading activity is highly correlated with disposition and this shows that the investors who suffer from disposition effect than their trading activities increase as compare to those which are not prone to disposition effect. The investor which are prone to disposition affect than there trading activities are co-related with each other.

 Key words: Disposition, behavioral biases, regret avoiding bias, pride seeking.

Contents

List of Tables

Chapter 1

Introduction

1.1 Background

Generally, it is the human nature that individuals are more sensitive toward losses as compared to gains. Investors tend to hold securities which prices are depreciated and sell quickly those stocks which depict gains. This phenomenon is called disposition effect. Investors are more successful who are quick to offset losses and securing gains rapidly. But holding on to potential losses for longer time periods the investors are less likely to be successful in future. It shows the discipline of professional traders and the presence of disposition effect (Locke and Mann, 2005). Baltussen (2009) says that rationality indicate that financial agents create the most excellent option that will make it viable for themselves. Miller and Modigliani (1961) discussed about rationality phenomenon; explained that all investors are rational in case of dividends. They described that rational investors are those investors which prefer more wealth as compare to less and are unconcerned seeing that whether a particular addition to a wealth takes formation of cash expenses or enhancement in market price of their holdings of distribute.

After Miller and Modigliani (1961) condition, Fama and French (1992), the father of EMH, efficient financial market was defined as one in which prices are informationally efficient which gives back directly all relevant information. According to

the theory of traditional finance (Fama and French, 1992) the markets are well organized and each investor has a rational opportunity and they make decisions that makes best use of their estimated utility. (Fama and French, 1992) also provides empirical evidence that the United States is efficient stock market. The EMH give three main suggestions about investor, first, investors are rational and they work for maximizing their utility. Second one is, some investors are not rational. Third, some trades investors systematically irrational, rational arbitrators that can eliminate variations of fundamental value. If any suggestion is valid for market it shows that the market is informationally efficient market. The prices represent a fundamental value and resources are bound for their most efficient uses.

But some problems or facts found in the financial markets, which in the past might not be solved by using this traditional finance theory. Researchers found anomalies that are unreliable with Famas suggestion of the efficient market hypothesis (EMH) such that in case of tremendous losers, they do better than winners and SPM (stock price momentum) give explanation of returns. January effect, small firm returns are greater, B/M ratio effect; price could not provide full information etc. However, the majorities of them were not built on strong hypothetical foundations and were therefore these are open for review in detail. Improper risk modification (IRM), data removal, sample collection, and biases were top protestations which make market to become inefficient. So these anomalies generate many events in stock market that made a mark on history such that crash of US market in 1929, crash of Asian stock exchange in 90s and market liquidity crisis of 2007 etc. that put forward remarkable adaptations in stock prices and buying and selling activities. This was nuisance for standard finance model of Sharpe (1964); Lintner (1975); Black (1972) during trading activities with these anomalies. Since the most excellent method is to study the activities of people who are facing the crisis. Thus researchers take an alternative related to behavioral finance, and its different form agent rationale theory. Many emotional and experimental researches in finance shows that people are not rational at all times, and biases will show that they deviate from the rational decision making. So many questions arise in new pattern which suggest that there is not just the presence of the traditional

finance theory only.

In 1980s, many empirical studies findings of Shiller et al. (1984); Thaler (1985) does not support the EMH. Hence starting from 1980s, many researches criticize the theoretical foundations of the EMH (efficient markets hypothesis). Black (1986) recommended that individual investors trade on noise rather than getting full information about the investment. Due to noise traders present in market, traditional finance model was questioned by a new model which we called behavioral finance which shoe the way of irrationality of the investor. Behavioral finance has established a highly pain and hence it started an immediate increase in researches in 1980. However, finance does not have one theory which fully explains its objection to the traditional finance.

De Long et al. (1990) were the first researchers that provided the suggestion of investor sentiments and theorized that investor undergo from beliefs in the management of their future cash flows but they do not depend upon facts linking to risk connected with these future benefits of profit. Therefore, behavioral finance challenges the assumption of EMH and their aim is to develop understanding of financial markets by implementing different forms of knowledge related to psychology and sociology (Baltussen, 2009). Previous studies (Benartzi and Thaler, 1995) related to behavioral model suggest that market anomalies are reliable with the irrational investor traders behaviors.

Behavioral biases were present during the intense financial crisis. So many developed and emerging countries effected from them. Lin (2011) found that whether disposition present in Taiwan and Chinese market during financial crisis. So results show that it is present in both markets. All investors want to attain more so mainly disposition present when prices are moving upward. However, three extreme financial crisis were observed throughout that time when Pakistan is present in high volatile market.

First time in March 2005 Stock market was gone down. Second fall down was observed in the 2006. Third most severe fall down was observed for nine month from May 2008 to Jan 2009. At that time period, Karachi Stock Exchange 100

index was jump down from position of more than ten thousand points while LSE-25 also moves downward more than three thousand points. During this period, in order to deal with sharp fall the Board of directors of KSE placed a floor, in August 2008 to protect market from sharp fall in share prices for some time being but later in December 2008 this floor was withdrawn. The LSE-25 index was 3868.8 points in June 2008 which was reduced to 2085.2 points in March 2009. The market capitalization of the LSE was reduced to almost half from Rs; 3,514.2 billion in June 2008 to Rs; 1953.1 billion in March 2009. The major source of this volatility of last crisis in the stock market due to political indecision and insecurity such as judicial crisis, terrorist attack etc. But the first two crashes are just because of bad governance. Hence, there need to study the stock market and determined the economic factors which effect the decision of investors of stock market.

This study examines the disposition effect on the KMI 30 index by using two stages least square regression its aim is to check the presence of disposition effect in financial market of Pakistan and this may be due to many reasons such as impact of financial crisis. Here data of stock prices is collected from Business recorder from 2008 to 2017 and we follow Visaltanachoti et al. (2007) paper to investigate the effect of holding period and illiquidity in Karachi Meezan index in Pakistan. Seeking pride and avoiding regret is also a main factor representing disposition effect.

Hence, in this study the emphasis is on disposition effect, which consider as the key factor affecting trading puzzles in financial markets. Also disposition present in market represent weak form of efficiency if previous prices represent future returns.

1.2   Problem statement

Our work focuses on the close relationship between the disposition effect and regret avoiding bias. By examine the broker account; Chen et al. (2007) study proved existence of overconfidence bias in Chinese stock exchange due to presence of high confidence in Chinese investor. Taking into consideration of data validity, Shefrin and Statman (1985) explained the disposition effect aspects of prospect theory,

aversion to regret, MA (Mental accounting) bias, and SC (self-control) willingness of investors to sell winner and hold a loser stock is a result of his irrational to realize the benefits. Visaltanachoti et al. (2007) worked on secondary data to check the disposition effect by regret avoiding and pride seeking, so we follow the procedure of Visaltanachoti et al. (2007) to find the impacts on KMI-30 in Pakistan stock market.

In general, we have to investigate the presence of disposition effect related with the regret avoiding and pride seeking bias in the Pakistan stock markets on KMI-30 index during the years 2008 to 2017 and also check the impact of disposition on the trading days and monthly returns, as past returns are signal for future returns. Many reasons are present behind the disposition effect and behavioral biases such as financial crisis. Pakistan observe major distractions in its regular economic behaviors as the outcome of severe energy crisis, high rate of manufacture, high charges of interest, inflation, weakening law and order position, poor industrial infrastructure, turn down in FDI and joint venture with unfamiliar investors, a puzzling stock market, a noticeable slowdown in the industrial and services regions.

The further international fundamentals which play key roles are global recession, credit crisis, weak economic prospect of the EU, USA, and limited contact to international markets and particular countries Pakistans economic downturn is due to its internal economic motivations instead of direct impact of financial crisis 2008, so it also impacts on Pakistani market. As Pakistan has suffered from CC (current account) insufficiency, high inflation, weak currency and rapid declining in financial system that put the country in a very complicated position and this is factor of disposition effect, regret avoiding and pride seeking bias.

1.3   Research questions

1. Does illiquidity inversely influence the holding period?

2. Does holding time of losers is longer than those who gain?

3. Are investors really reluctant to realize their losses?

4. Does excessive trading cause disposition effect?

5. Does the bullish behavior market mistakenly lead investor to believe that his investment skills are superior, so that he keeps on investing?

1.4 Objective of study

1. To check the impacts of disposition effect in Karachi Meezan Index (KMI-30).

2. To check the holding period and illiquidity of investor.

3. To investigate whether the disposition effect is present due to the regret avoiding bias or pride seeking bias.

4. To investigate how disposition effect is strong and its impact on the market returns.

1.5 Theoretical background

Many papers have been studied to explain the disposition effect which consists of many theories for theoretical explanations. Shefrin and Statman (1985) gave a framework consisting of combination of prospect theory, MA (mental account bias), RA (regret avoiding effects) and self-control complexities. Economists planned different reasons but most of theories have been discarded for the explanation of whole effects. Some have impact on disposition effect such that tax-motivations of traders but they do not give brief explanatory causes of variables. Similarly, belief in mean-reversion entail that the stock market price will not rise more than the inflation value but if we see at one of the major stock exchange indexes, we see that the stock market does increase in value. However, main theoretical background of disposition effect is as under.

1.5.1 Disposition effect

The main theoretical basis of the disposition effect is a prospect theory which was proposed by Kahneman and Tversky (1979b). According to prospect theory, gain region represent that area which consists of concave portion in value function while loss area represent convex portion. In disposition effect, investor give much more preferences in realization of gains by selling the stock and feel pride while reluctance to sell the losing stock by holding the stock due to regret avoiding because they avoid regret in holding the losers and feel pride for selling the winner stock. So disposition effect occurs due to regret avoidance and pride seeking. In other words, investors become risk seekers when they facing a loss and they become risk avoiders when facing a gain. After Kahneman and Tversky (1979b), Shefrin and Statman (1985) proposed a theoretical framework, that explain that disposition effect occur due to four reasons, those are as under.

The first one is prospect theory given by Kahneman and Tversky (1979a). The second reason is mental accounting and this concept was introduced by Thaler (1980, 1985) and Kahneman and Tversky (1979a). Mental accounting illustrated that people have a tendency to make unusual psychological accounts in their mind and they use money by following these accounts present in their minds.

The third reason is regret aversion and was introduced by Shefrin and Statman (1985). In order to avoid the regret the investor holds the loser and sale the winner.

The fourth reason is self-control bias. Self-control explains why disposition is weaker at the end of the year. Self-control is present uncooperatively for bear markets and particularly during the financial crisis. So investors when achieve gains are normally not sure about the future gains or future of stock markets and this situation forces the investors to sell the winning stocks. In another case, when investor suffered from different losses then he pessimistically supposes that price of stock will continue to decline. This situation decreases the self-control and thus they sell stocks to stay away from the increase of loss.

1.6   Significance of the study

The study is significant in a sense that there is less work done to check the impact of disposition effect in our country related to financial market especially in KMI (Karachi Meezan Index). This study provides an approach about rationality of Pakistani investor and this is the first study that checks investor regret avoiding bias, stock returns and disposition effect in the KMI 30 listed stocks. The goal of this study is to study the regret avoidance and disposition effect and their correlation with trading volume in the Pakistani market (KMI-30) from 2007 to 2017. This can offer valuable information for monetary and fiscal advisers, educating consumers and for asset executives in making or producing trading strategies.

1.7   Purpose of this study

Previous studies verify the existence of disposition effect of investors in different countries. This thesis also focuses on regret avoiding bias and check that if disposition exists than regret avoiding bias also exist, representing the presence of regret avoiding bias in Pakistani stock market. In this paper, we aim to investigate whether there is excess effect of trust and willingness creating regret aversion bias and disposition effect in KMI-30 by analyzing the interaction between the illiquidity and profitability of the market such as market return. Moreover, the study also analyzes how disposition effect impact on the stock market returns, and also investigates its reasons.

So in this study the focus on disposition effect and regret aversion bias in Karachi Meezan Index. Hence, work on disposition effect and regret aversion bias is very limited in Pakistan. Its major contribution is that people can beware from these biases in case of upward and downward movement of Karachi Meezan Index. The goal of this study is to deeply study disposition effect and its impact on Karachi Meezan Index.

1.8   Plan of study

This thesis ordered in different chapters. First chapter is the introduction of study and it further consists on background of study. This chapter also explains the theories that support our study. This chapter also includes questions, objectives, theoretical background, limitations review of all previous studies. Third chapter is related with data description, measurement of variables and methodology. Fourth chapter comprises of the interpretation of results and discussions. Fifth chapter is conclusion and future research directions of the study. At the end, references are attached with this study.

Chapter 2

Literature Review

2.1 Disposition effect

Generally, it is the human nature that individuals are more sensitive toward losses as compared to gains. Investors tend to hold securities which prices are depreciated and sell quickly those stocks which depict gains. This phenomenon is called disposition effect. Investors are more successful who are quick to offset losses and securing gains rapidly. But holding on to potential losses for longer time period the investors are less likely to be successful in future. It shows the discipline of professional traders and the presence of the disposition effect Locke and Mann (2005). Ashraf et al. (2014) examined the disposition effect in Pakistan Karachi stock exchange. They found that the disposition is positively associated with the illiquidity of the market from 2011 to 2015. Although the time period was short but the evidence of the psychological behavior (disposition effect) was existed in the market. The phenomenon is also observed in the E-trading as well. Winners sell more quickly than to losers even when the transactions are made through the internet. Average holding time period for the stocks was 3.95 days for winners and 6.21 days for the losers.

Dhar and Zhu (2006) studied the trading period to investigate the dispositions affect. They took data of individual trading from brokerage house. The findings

indicate that disposition affect depends upon the literacy of individual about financial markets, and also indicated that people who are wealthier and linked to stock market show less disposition affect as compare to others. Jr, Mineto and Silva (2007) studied the disposition affect, investor sales winning stock and hold the losing one. The add gender as additional factor in that study. The findings indicated that female are show less disposition affect as compare to the male.

Ng and Wu (2007) studied the disposition affect between and individual investor and institutional investor. The study used data of 6.4 million individual investor and institutional investor. The data collected from mainland China. The results suggest that institutional investor show less disposition affect as compare to individual investor. Bhootra and Hur (2012) studied analyzed the relationships among stock prices, their value and stock returns momentum. The results suggest that there positive relationship between capital gain and stock returns momentum for non-co integrated stock as compared to integrated stock.

The irrational behavior forces the human decision making in all aspects of life decisions. Similarly, irrationality of behaviors impacts on investment decisions, such as the disposition effect, overconfidence and other personal psychological tendency that cannot be clarify by traditional finance theory. Cut your sufferers and give permission your income to run! This is one of the most common pieces of instruction which is given in trading channel of different stock markets. Several investors appear to have difficulty following this guidance. As an alternative, they have tendency to hastily sell stocks that have appreciated in price while buy and hold those types of stocks which consist of losing value. An investor prefers their own taste as given by prospect theory that makes the investor to become more risk-averse and experiencing gains but investors become more risk-seeking when they experiencing losses.

Mutual funds investors are also subjected to this behavior when the withdraw redemption proceeds in their accounts but not when they reallocate. Generally, investors are more reluctant to those assets which have outperform but prone to those which performed poorly (Niehaus and Shrider, 2014). Barberand, Odean (2011) concluded that the investors underperformed the standard benchmarks as

by selling short winning securities and holding losing ones (disposition effect). They suggested that the behavior of the investors is influenced by the limited attention and past performance of the returns in their purchase decisions. They engaged in those previous patterns which lead them towards the pleasure and not follow the pain generated events. In this way they hold an undiversified stock which is inimical for the financial health of the individual investors.

(Fogel and Berry, 2006) explored that the decision of the investor satisfaction is not only linked with a simple outcome but the alternative outcomes affect the decision making. Survey indicated that the less than 10 percent of investors spent more time on selling than buying the stocks and less than 20 percent find it difficult when deciding to buy. The individual investors feel regret on hold loosing securities for longer time periods than selling winning securities too early. Prospect theory presented by (Kahneman and Tversky, 1979b) is the basis of disposition effect. It states that the investors overweight their loses as compared to gains (also known as loss aversion). It leads the way to selling those securities immediately, which appreciated in prices and holding down those which are depreciated (disposition effect).

Das (2012) studied the loss that investor bears just because of the disposition affect. He took historical data from the five different markets. The results indicated the investor faces loss just because he is prone to disposition affect. Investor loss will be decrease when he holds the winner and sale loser early. Garvey et al. (2007) investigated stock traders on Nasdaq Stock exchange which influence by their recent performance. The results showed that individual investor which as influenced by recent loss as more prone to disposition affect and vice versa.

Cao et al. (2006) worked on accounting conservation in Chinese capital markets during financial crisis started in 2008 due to economic disturbance on Global level for the disposition effect. The findings of this study showed that accounting conservation play a most important role in decision making. RAZA and MOHSIN (2014) said that tendency to sell winners in hurry and taking too much in riding losers showed disposition effect and that disposition effect also impact on the management decisions of the fund managers. The found that excessive realization

after capital gain is not only because of tax consideration, slightly disposition effect plays main role in tilting decisions.

Shefrin and Statman (1985) were the first to identify disposition effect and found ingredients underlying this specific behavior. The prospect theory was the first ingredient. Mental accounting was first highlighted by Thaler (1980, 1985) was the second ingredient which showed that all the investors have some psychological accounts in their minds at the time of buying each stock separately and then they move accordingly. The third factor was regret aversion proposed by (Shefrin and Statman, 1985) considering that investors tend to hold losing stocks as they feel regret on their initial buying decisions while closing on loss. The last factor was self-control, as the disposition effect gets weaker at the end of the year due to the self-controlling mechanism (e.g. End of tax) and getting rid of losing stocks.

Goo et al. (2010) analyzed the disposition affect in Taiwanese investors. The results indicated that disposition affect present in that market investor. They also further explore that disposition is more common in loser, disposition also affect by level of education and disposition also regret avoiding also support disposition affect. Jr, Goulartb, Cupertinob, Jr and Silvaa (2013) studied either dispositions affect decrease with investor experience. The results of the study showed that with experience of investor disposition affect were decreased and vice versa.

H0: Holding period has Insignificant impact on illiquidity and stock returns.

2.2 Prospect theory

Kahneman and Tversky (1979a) first time proposed a Prospect theory: An analysis of decision under risk challenge in which they discuss the EUT (expected utility theory) presented by Neumann and Morgenstern (1944). They said that basic assumptions of the theory are violated. According to prospect theory, gain region represent that area which consists of concave portion in value function while loss area represent convex portion. In disposition effect, investor give much more preferences in realization of gains by selling the stock and feel pride while reluctance

to sell the losing stock by holding the stock due to regret avoiding because they avoid regret in holding the losers and feel pride for selling the winner stock. So disposition effect occurs due to regret avoidance and pride seeking.

The main theoretical basis of the disposition effect is a prospect theory Kahneman and Tversky (1979a). According to prospect theory, gain region represent that area which consists of concave portion in value function while loss area represent convex portion. In disposition effect, investor give much more preferences in realization of gains by selling the stock and feel pride while reluctance to sell the losing stock by holding the stock due to regret avoiding because they avoid regret in holding the losers and feel pride for selling the winner stock. So disposition effect occurs due to regret avoidance and pride seeking. In other words, investors become risk seekers when they facing a loss and they become risk avoiders when facing a gain. After Kahneman and Tversky (1979a),Shefrin and Statman (1985) proposed a theoretical framework, that explain that disposition effect occur due to four reasons, those are as under.

The first one is prospect theory given by Kahneman and Tversky (1979a). The second reason is mental accounting and this concept was introduced by Thaler (1980, 1985) and Tversky and Kahneman (1973). Mental accounting illustrated that people have a tendency to make unusual psychological accounts in their mind and they use money by following these accounts present in their minds. The third reason is regret aversion and was introduced by Shefrin and Statman (1985). In order to avoid the regret the investor holds the loser and sale the winner.

The fourth reason is self-control bias. Self-control explains why disposition is weaker at the end of the year. Self-control is present uncooperatively for bear markets and particularly during the financial crisis. So investors when achieve gains are normally not sure about the future gains or future of stock markets and this situation forces the investors to sell the winning stocks. In another case, when investor suffered from different losses then he pessimistically supposes that price of stock will continue to decline. This situation decreases the self-control and thus they sell stocks to stay away from the increase of loss.

Shefrin and Statman (1985) gave a framework consisting of combination of prospect theory, MA (mental account bias), RA (regret avoiding effects) and self-control complexities. Economists planned different reasons but most of theories have been discarded for the explanation of whole effects. Some have impact on disposition effect such that tax-motivations of traders but they do not give brief explanatory causes of variables. Similarly, belief in mean-reversion entail that the stock market price will not rise more than the inflation value but if we see at one of the major stock exchange indexes, we see that the stock market does increase in value.

Chui (2001) examined disposition affect in Macau. The findings clearly indicated that disposition affect present in Macau stock market. It also indicated the psychological factors also explain the disposition affect. Dacey and Zielonka (2008) study investigated the dispositions affect by using prospect theory of Tversky and Kahneman (1974). The findings indicated that the prospect theory explain disposition affect on value function.

2.3 Holding period

As disposition is the sale of winning stock too early that contain gaining value and hold the stock that include losing value. The disposition considered as an anamoly in the stock market: why do investors sell off winners but keep losers? Economists and financial analyst are more unenthusiastic to accept those theories that are based on controlled environment. That is why, it os essential to look at authentic market behavior in order to realize that whether equivalent behavior present in market setting or not.

Ashraf et al. (2014) examined the disposition effect in Pakistan Karachi stock exchange. They found that the disposition is positively associated with the illiquidity of the market from 2011 to 2015. Although the time period was short but the evidence of the psychological behavior (disposition effect) was existed in the market. The phenomenon is also observed in the E-trading as well. Winners sell

more quickly than to losers even when the transactions are made through the internet. Average holding time period for the stocks was 3.95 days for winners and 6.21 days for the losers.

The relationship between market return and TV (trading volume) is also discussing the or regret avoidance, pride seekers and in disposition theory. A positive theory which related to capital gains and capital loss (Loss realization), which indicates that investor have a tendency to sell winners too early ride losers too long relative to normative theory called disposition effect (Shefrin and Statman, 1985; Weber and Camerer, 1991). Kaustia (2010) analyzed the disposition and prospect theory. He found that as prices increase than sale jump to zero and when prices increase the sale remain constant or increase. Farag and Cressy (2010) examined whether past loser outperform past winner by taking data of twenty companies of the Egyptian market from2005-2011. Price dramatically changed only in 1day from the period of 2005-2011. The results indicate that their disposition exists in the market and the firm size is negatively co-related to post event returns. Garvey and Murphy (2004) find the disposition effect in professional investors. And the results indicate that the professional investor could show the disposition effect.

When the price of securities fully reflects the all available information related particularly stocks is called market efficiency and it is supported by the efficient market hypothesis (EMH) formulated by Eugene Fama in 1970. Market is said to be efficient with respect to information that reflect in the prices of securities. If the market is efficient than it become difficult for every- one to make profit Malkiel (1995). The EMH say that no one earns the abnormal return. Basu (1977) studied the empirical relation between the investment performance in the equity market and P/E ratios. According to P/E hypothesis the stock with low P/E outer-perform than those whose P/E is high and results also support that hypothesis. Thats show the violation of EMH. Inefficiency arises due to some abnormal behavior of the investors. Investors hold the losing securities and sale the winning ones that is called disposition effect. Investor belief and preference regarding gain and loss also have impacts on the holding of securities. If an investor believes that prices will increase in the future than he hold the losing securities and sell winning

securities when he believe that their prices will decrease in the future Hirshleifer (2001). In current years the disposition effect has been studied in a large number of studies and then further evaluate the differentiation of a disposition effect for a mixture of investors such that institutional investors, individuals, mutual funds, dealers and foreigners. Work done by Tversky and Kahneman (1974) is also paying attention on gamblers, particularly for those investors who face losses in their recent history. Due to presence of irrationality, financial economists exploit the term disposition effect for this tendency. Later, disposition effect was introduced by (Shefrin and Statman, 1985), which leads to loss aversion of investors given by Kahneman and Tversky.

As disposition is the sale of winning stock too early that contain gaining value and hold the stock that include losing value. The disposition considered as an anamoly in the stock market: why do investors sell off winners but keep losers? Economists and financial analyst are more unenthusiastic to accept those theories that are based on controlled environment. That is why, it os essential to look at authentic market behavior in order to realize that whether equivalent behavior present in market setting or not.

Shefrin and Statman (1985) give a behavioral asset pricing model or behavioral portfolio theory. They work on secondary data and this study accepts the positive relationship between capital gain and loss realization in individual investors. Before Shefrin and Statman (1985), Markowitz (1952) describes mean variance portfolio theory that contains assumptions of standard finance theory. He also called them a construction theory because it gives the tools required for the construction of mean-variance portfolios of savers who think only about the estimated returns of their portfolio and risks. But which type of objective or aims should present for mean variance portfolio investor to attain more wealth? Does their aim consist of just safety from poverty or do they consist of probability to become rich? Hence mean-variance portfolio theory is silent concerning these objectives.

Behavioral portfolio theory given by (Shefrin, 2010) is a theory related to both constructions and objectives. It begins with investors objectives which settle construction of portfolios. Hence Shefrin (2010) explain that investor have a higher

tendency to sell the assets that consists of increasing value and hold the assets that consist of decreasing value. None of them show rational expectations according to literature. Hence literature figures out the prospect theory which give a brief explanation of disposition effect.

Shafran et al. (2009) studies on different indexes such as US, NYSE, and AMEX and they find that both turnover frequency and different lags of stock return of every stock gives a positive and significant relationship and this relationship is found in time series data of trading level. The significant and positive association tells that traders show more eagerness to discard those stocks which are winner and hence this observation is more reliable with the effect of disposition. Shafran et al. (2009) is the earliest investigator that combined the effect of overconfidence of the investors with the effect of disposition. People with overconfidence often experiences significant losses and costs (Odean, 1998); representing that this type of confidence makes investors to act irrationally and this irrationality shift the investor to ill-fatted performance. Hence, disposition effect is scientifically designed by many researches such as different studies of Shefrin and Statman (1985); Odean (1998); Weber and Camerer (1991) because they use that all information that which was related to dealings to sell the stocks for calculation of observation index. As overconfidence gives no clear characteristics and feedback from with the help of surveys and laboratory studies which contain many errors (Ackert and Deaves, 2009; Deaves et al., 2010). Moreover, Daniel et al. (1998) also took those investors to study the level of stock market price trends and market disturbance that overcome the level of private information. They noted from their results that private information moved to self-attribution biased which also shift them to become overconfident.

However, very few researchers have yet performing. According to Grinblatt and Han (2005), due to effect from disposition of investor. A stock consisting of good information has surplus selling force as measure up to the stock that has bad information. Such a disturbing creates low-price feedback to unrestricted information. Stock price fluctuate from its fundamental value. Due to investor heterogeneity, overconfidence influence trades that signify the effect the disposition to take place

and benchmark begin to alert. Value in the next trading time goes back toward basics. Their model was unique because it provides that the profits or losses of lagging capital are sufficient to predict stock returns. Thus, the existence of investors that shows the effect of the disposition reduces price fluctuations.

Daniel et al. (1998) said that when investors are overconfident then they overreact to information that he collect through private resources and under react to those information which they get from public resources and that leads toward market mispricing. Frazzini (2006) give data from 1993 to 2002 to check the disposition when there is announcement of underreaction, so disposition present in this situation. Hence both disposition and overconfidence exists.

(Odean, 1998) work on different studies to check the 10000 individual investors trading records and he found that many of individual investors sell the winning stock in 1 or 2 years due to their regret avoidance because regret avoidance factor shifts the investor to hold the losing assets and forces them to sell winning stock or assets. After Statman et al. (2006) perform empirical research and investigate the impact of overconfidence on trading volume in the US market, They use market return to measure the degree of overconfidence. The finding showed that overconfidence changes with market returns. (Barberis and Xiong, 2009) also take a first step in realizing gains and loss in trading market that cause disposition effect by accumulation of the trading mechanism. Whereas, Choe and Eom (2009) discuss about the effects of disposition in the South Korean futures market. Mosca et al. (2011) investigate the effect of accounting conservatism balance overestimation and underestimation resulting from the disposition effect, that is investor hold losses but sell winners to realize gains. Kim et al. (2011) study the effect and factors of overconfidence and disposition during trading behaviors of investors. They include 1185 individual investors accounts from Taiwan market and find the strong positive effects of disposition due to overconfidence bias effected investors in Taiwan stock market. Disposition and overconfidence is present in institutional investor (Zaiane, 2013). Chang (2008) work on Chinese stock market to see the performance of trading, representative bias and overconfidence and found that experience investor are less suffer from these biases than inexperienced investor. The

disposition effect is stronger in Chinese stock market.

Li and Yang (2013) work on weekend effect for realization of gains and losses and found that individual investors are more suffer from gains loss on Friday and trader enter new contract on Monday. Lin (2011) found that disposition occur due to mental accounting bias in which investor set different accounts in their mind. Gender and age effect due to the presence of disposition effect and investment performance and result shows that female investor perform better than the male investor, female have greater tendency to realize losses so disposition effect is less in females than male investors (Talpsepp, 2011; Aftab et al., 2012)

Choe and Eom (2009) took data of 60,000 investors of Korean future market and found that disposition is present in Korean future market due to biases. Brown et al. (2006) worked on Australian stock exchange data from 1995 to 2000 and they found disposition effect and their research support tax effect which occur in June. Tariq and Ullah (2013) also take 27 most important companies consisting of daily stock prices that represent the all sectors of Karachi stock exchange and find that disposition effect occurs due to overconfidence.

The people have inner tendency or well-established phenomenon to suffer from the biases in the the behavioral sciences base studies (Joseph, 1996; Grether, 1980; Tversky and Kahneman, 1973, 1974; Yates, 1990). We checked disposition effect from realizes gains and losses, previous studies show that disposition effect present in different stocks market (Shefrin and Statman, 1985).(Visaltanachoti et al., 2007) study the Chinese stock markets with different relationships between holding periods, SI (stock illiquidity) and observe the effect investors disposition effect in the Chinese markets during year 1996 to 2003. The result concluded that Chinese investors holding period give positive relationship for illiquid stocks which show the holding period is longer for larger or illiquid stocks and have negative relationship with past stock returns leading to disposition effect. They also examine that investor feel regret to hold the losers and feel pride when they sell winners take investors to seeking pride and avoiding regret phenomenon. Aftab et al. (2012) found that disposition present in Karachi stock exchange creating longer holding period for larger firms.

Many studies have been performing to investigate the disposition effect to check the intensity of disposition in different markets. A belief in mean-reversion suggests that the stock market price will not rise more than the inflation price throughout time period. But if we see on major stock exchange indexes; we see that stock prices increases in value. (Weber and Welfens, 2007) said that the effect of disposition can be reduced if securities offered for sale automatically at the end of the period. Therefore, it cannot provide details of the mean-reversion belief, the belief that value goes back to original price. For example, people whom lose will recover to its previous price and the winning stocks fall inversely to its previous lowest price.

Odean (1998) the time period was in months as 104 days for winners and 124 days for losers. Although the difference between the time period of the winner and the loser was small as 2.36 days in e-trading situation and 20 days in Odeans research, but still the strong evidence existed for the disposition effect (Locke and Mann, 2005).

He also documented that investors in US market have more tendency to keep losses stocks rather than winners. A persons well-being depends not only on just his present consumption of goods but it also depends upon how his current consumption measure up to his past consumption. People are more concerned to their losses as compared to the gains relative to their preference point which leads to loss aversion (Bowman et al. 1998).Loss aversion is popularly summarized by the phrase losses emerge larger than gains (Barberis and Xiong, 2009) . Loss aversion thus justifies placing the burden of proof plaintiff (Ammann et al., 2012). Polman and Atwater (2012) worked on eight studies to test prediction of making choices for others includes loss aversion. Showed that loss aversion is significantly dangerous among people. Loss realization is greater in Helsinki apartment market (Martikainen et al., 2009). Selling an apartment at loss is unlikely than gain and it is not due to positive correlation between sales and price.

Frazzini (2006) worked on disposition effect which showed the tendency of investors to realize the gains and carry losses that encourages the underreaction to news which shows return certainly. He said that bad news good news travel travel slowly

between stocks which trade at large capital losses or capital gains. (Barberis and Xiong, 2009) studied disposition effect in Taiwan stock market. They found a strong effect of investors which are more willing to realize a loss, follows a prior gain and conversely to realizing a gain following an earlier loss (Brown et al., 2006). When investors are arbitrating or judging both gains and losses comparative to starting reference point then investors are risk averse in the direction of gains and risk seeking in the direction of losses (Giorgi and Hens, 2006). A change reference point also changing the disposition effect and results also suggesting that girls do not keep losing stocks and winning stocks as the reference point shifts from purchasing price to previous price (Talpsepp, 2013) and DE is stronger in long positions than in short positions (Choe and Eom, 2009). The authors Jordan and Diltz (2004) relate the hot (or cold)hand and the gamblers fallacy to discrepancies in accepting (buy) versus rejection (sell) decisions. They categories the trend length as an appropriate moderating variable that give you an idea about an asymmetry between buying and selling frames. Disposition effect different indexes (Aftab et al., 2012; Visaltanachoti et al., 2007; Attanasio et al., 2002; Yang and Zheng, 2010) and its also impact during financial crisis (Lin, 2011). Lin (2011) examined the weekend effect of disposition based on a transaction data set on the Taiwan stock index future market. Individual represent their higher tendency by realization if both gains and losses on Friday, and dealers are also prone to realize losses on Friday. Choe and Eom (2009) worked on the disposition effect in Korean stock index future market to examine the tendency of investor to ride losses and realize gains and find strong indication of disposition effect which is stronger in long position rather than short position that effect the investor performance resulting negative correlation between disposition and investment performance.

Disposition occurring due to loss aversion bias arises in larger firms who established corporate product safety offices by establishing designs and safer products and negative relation was presented in them (Viscusi, 1986). Firms having greater initial return from zero (winners) having offer price above for first time show that investor suffer from disposition effect and they also showing that turnover is significantly lower for negative IPOs trading below the offer price and new maximum and

minimum stock price produce strong increase in volume (Kahneman and Tversky, 1979b). (Singal and Xu, 2011) find that relationship present between overconfidence is positive and statistically significant presence on disposition effect while self-control is negative and significance presence on disposition effect. Talpsepp (2011) find that there is a negative correlation between the level of disposition effect and average return over the period and higher returns are shown by investor who does not carry a loser stocks. His working is related to gender age factors that effect investor performance leading to disposition effect by examining PGR-PLR analysis and conclude that portfolio of female investor perform better than male investor and older investor outperform both in male and female. The result showed that there is a negative correlation present and less biased investors showed good results. So disposition effect is due to irrational behavior and they relate to fact that male and female brains interpret changing point in different patterns is also effecting gender (Da Costa Jr et al., 2008).

Lin (2011) studied the impact of financial crisis and find a more significant disposition effect present during appreciation period and in another case of depreciation period, disposition does not effect during financial crisis in Chinese stock markets and their findings implies that the investors may create a self-control device in order to prevent loss expansion when the financial crisis take place. Investors who are overconfident are less expected to experiences from the disposition effect. On the other side, investor whos suffering from reduced trading choices is probably also be effected by overconfidence bias, but these correlations and associations are small. Kim et al. (2011) said that disposition effect present in Taiwanese traders activities; especially under bear market conditions while a more self-control investor tend to show a higher level of the disposition effect. Prosad et al. (2017) said that when agents received positive information then they might be attracted to buy overvalued assets because they themselves that they can sell that asset to agents while even more extreme beliefs which creating disposition and self-control bias.

The people have inner tendency or well-established phenomenon to suffer from biases in the psychology and behavioral science literature Ferejohn and Grether

(1974); Yates (1990). We checked the disposition effect from realized gains and losses, previous studies show that disposition effect is present in different markets (Shefrin and Statman, 1985). Visaltanachoti et al. (2007) Study the Chinese Stock market by evaluating Stock Illiquidity, average holding Periods and then observe the effect of investors disposition effects. They took data for year 1996 to 2003. The results conclude that Chinese investors holding periods give positive relationship for illiquid stocks and have negative relationship with past stock returns leading to disposition effect. They also examined that investor feel regret to hold the lasers and feel prides when they sell winners take investor to seeking pride and avoid regret phenomenon. Aftab et al. (2012) found that disposition present in Karachi Stock exchange creating longer holding Period for larger firms. These studies shows that investor always try to face risky securities, trade more and too much invest in them to make gains to cover their large bad investment and do not realize their losses and regularly investing on them by neglecting the capital asset pricing model or portfolio rebalancing theory and much more involved in behavioral portfolio theory.

Cao et al. (2006) worked on accounting conservation in Chinese capital markets during financial crisis started in 2008 due to economic disturbance on Global level for the disposition effect. The findings of this study showed that accounting conservation play a most important role in decision making. RAZA and MOHSIN (2014) said that tendency to sell winners in hurry and taking too much in riding losers showed disposition effect and that disposition effect also impact on the management decisions of the fund managers. The found that excessive realization after capital gain is not only because of tax consideration, slightly disposition effect plays main role in tilting decisions. Visaltanachoti et al. (2007) worked on Chinese stock markets between 1996 and 2003 to investigate holding period and illiquidity. They found strong evidence of disposition effect in Chinese market as Chinese investors holding periods are longer for illiquid stocks and they are inversely linked with past return of stocks. A problem occurred in the assessment of risk due to desirability of different outcomes cause disposition effect (Russo and Yong, 2010). Aftab et al. (2012) investigated the holding period, illiquidity and

disposition effect in Karachi Stock Exchange from 2003 to 2007 and found the negative relation of the holding period which indicates the presence of disposition effect in Karachi Stock Exchange.

Disposition effect also found in Taiwan and Chinese stock markets, when financial crisis starts during the appreciation and depreciation period. Hence, Sharpe rise and fall of stocks before and after financial crisis provide us good time to keep an eye on disposition effect (Lin, 2011).

Lin (2011) worked was related to weekend effect of Taiwan stock index future market in realizing gains and losses leads to disposition effect and he found that individual shows higher tendency of loss and gain realization on Friday, while dealers are also prone to understand loss on Friday. Tendency to sell winning investment too much early and holding stocks of losing investments too long refer to disposition effect has negative wealth cost because individuals whose loss continue to underperform and winning investments are continuing to outperform (Aspara and Hoffmann, 2015). Sun and Hsaio (2006) conducted a survey through questionnaires of five point Likert scale related to strongly agree and disagree from different universities to check disposition effect. AMOS was used and the results significantly favored the existence of disposition effect.

(Das, 2012) studied the loss that investor bears just because of the disposition affect. He took historical data from the five different markets. The results indicated the investor faces loss just because he is prone to disposition affect. Investor loss will be decrease when he holds the winner and sale loser early. Garvey and Murphy (2004) investigated stock traders on Nasdaq Stock exchange which influence by their recent performance. The results showed that individual investor which as influenced by recent loss as more prone to disposition affect and vice versa.

Annaert et al. (2008) focused on selling activity of mutual fund investor and found that manager take average purchase price as reference price to evaluate gains and loss. As Chinese investors mainly focus on selling stocks which shows appreciation in their prices and believe on pst returns because they are the representative of future returns, so we can say that experienced investor also suffer from behavioral biases (Chang, 2008). They collected data from brokerage firms in China which

included 74,960 investors account data and found that investors do trading mistakes due to negative correlation of bias. A problem of trading mistake occurs when we take risky choices such as when an individual act as risk averse then they confirm gains (making money) and in case of risk seeking they confirm losses (losing money) due to emotions that encourages individuals to adopt particular choices (Druckman and McDermott, 2008). Hence investor face one of two heuristics which are (1) hot/cold hand (2) gamblers erroneous belief and they relate to accepting (buy) and rejecting (sell) decisions (Johnson et al., 2014).

Amihud (2002) studied the stock market illiquidity on the stock returns. Illiquidity is measured by average daily ratio of absolute stock return to dollar volume. The results showed that the Illiquidity premium present in market and stock market Illiquidity affect strongly to smaller firms as compare to bigger firms. (DeWeaver and Shannon, 2010) studied Waning vigilance and disposition affect. They took data of individual investor from Thai stock exchange. The results indicate that disposition affect is present In Thai stock exchange because individual not focus the adverse news and as results hold the losing one and sale the winner.

(Graham, 2009) investigated the competence effect which affects home bias and the trading frequency. They found that when investors are competent then trades occur more frequently. They also found that the male investors and the investors who invest in larger portfolios are more educated investors and more competent than female investors and those investors who have investment in smaller portfolios or less educated. (Mizrach and Weerts, 2009) found a weak but positive relationship between profits and experience related to a disposition due to familiarity bias. Annaert et al. (2008)discussed about selling activity of mutual fund investor and found that manger take average purchase price as reference price to evaluate gains and loss. Kim et al. (2011) examines that traders suffer from disposition effect and it is greater in bear market and more overconfident investor display higher level of disposition.

H2: Holding period has significant impact on illiquidity and stock returns.

2.4   Illiquidity

Ashraf et al. (2014) examined the disposition effect in Pakistan Karachi stock exchange. They found that the disposition is positively associated with the illiquidity of the market from 2011 to 2015. Although the time period was short but the evidence of the psychological behavior (disposition effect) was existed in the market. The phenomenon is also observed in the E-trading as well. Winners sell more quickly than to losers even when the transactions are made through the internet. Average holding time period for the stocks was 3.95 days for winners and 6.21 days for the losers. Odean (1998) the time period was in months as104 days for winners and 124 days for losers. Although the difference between the time period of the winner and the loser was small as 2.36 days in e-trading situation and 20 days in Odeans research, but still the strong evidence existed for the illiquidity and disposition effect (Lee et.al 2011).

Hung and Yu (2006) investigated the impact of irrational beliefs in mean aversion assumption on the disposition affect. They also investigated the impacts of capital mobility from bond market to stock market because change in disposition affect. The results indicated that strong irrational beliefs in mean reversion, higher cognitive bias and less risk aversion increases the disposition affect and due to increase in disposition affect the capital mobility increase from bond market to stock market. Banz (1981) studied the impact of size impact on NYSE common stock returns. The results indicated that smaller firms has greater returns as compare to larger firms and it showed that capital asset pricing model was mispriced in that market.

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mistakes due to negative correlation of bias. A problem of trading mistake occurs when we take risky choices such as when an individual act as risk averse then they confirm gains (making money) and in case of risk seeking they confirm losses (losing money) due to emotions that encourages individuals to adopt particular choices (Druckman and McDermott, 2008). Hence investor face one of two heuristics which are (1) hot/cold hand (2) gamblers erroneous belief and they relate to accepting (buy) and rejecting (sell) decisions (Johnson et al., 2014). The people have inner tendency or well-established phenomenon to suffer from the biases in the the behavioral sciences base studies (Joseph, 1996; Grether, 1980; Tversky and Kahneman, 1973, 1974; Yates, 1990).

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We checked disposition effect from realizes gains and losses, previous studies show that disposition effect present in different stocks market (Shefrin and Statman, 1985).(Visaltanachoti et al., 2007) study the Chinese stock markets with different relationships between holding periods, SI (stock illiquidity) and observe the effect investors disposition effect in the Chinese markets during year 1996 to 2003. The result concluded that Chinese investors holding period give positive relationship for illiquid stocks which show the holding period is longer for larger or illiquid stocks and have negative relationship with past stock returns leading to disposition effect. They also examine that investor feel regret to hold the losers and feel pride when they sell winners take investors to seeking pride and avoiding regret phenomenon. Aftab et al. (2012) found that disposition present in Karachi stock exchange creating longer holding period for larger firms.

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2.5   Behavioral Biases

Shefrin and Statman (1985) give a behavioral asset pricing model or behavioral portfolio theory. They work on secondary data and this study accepts the positive relationship between capital gain and loss realization in individual investors. Before Shefrin and Statman (1985), Markowitz (1952) describes mean variance portfolio theory that contains assumptions of standard finance theory. He also called them a construction theory because it gives the tools required for the construction of mean-variance portfolios of savers who think only about the estimated returns of their portfolio and risks. But which type of objective or aims should present for mean variance portfolio investor to attain more wealth? Does their aim consist of just safety from poverty or do they consist of probability to become rich? Hence mean-variance portfolio theory is silent concerning these objectives.

Behavioral portfolio theory given by Shefrin and Statman (1985) is a theory related to both constructions and objectives. It begins with investors objectives which settle construction of portfolios. Hence Shefrin and Statman (1985) explain that investor have a higher tendency to sell the assets that consists of increasing value and hold the assets that consist of decreasing value. None of them show rational expectations according to literature. Hence literature figures out the prospect theory which give a brief explanation of disposition effect.

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female investors and those investors who have investment in smaller portfolios or less educated. (Mizrach and Weerts, 2009) found a weak but positive relationship between profits and experience related to a disposition due to familiarity bias.

(Čekauskas and Liatukas, 2011) investigated the impact of disposition effect, systematic trading, overconfidence, overconfident investors and disposition prone impact on stock market. They studied the Estonain stock market. The results indicate the investor are prone to realize gain as compare to losses show disposition affect, also find that buying decision are correlated with previous one. (Chong, 2009) studied the disposition affect in IPO (initial public offerings) either investor hold the IPOs. He took data 132 IPO listed on Bursa Malaysia. The findings showed that disposition is not exist in IPO (initial public offerings) which are listed on Bursa Malaysia.

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The relationship between market return and TV (trading volume) is also discussing the or regret avoidance, pride seekers and in disposition theory. A positive theory which related to capital gains and capital loss (Loss realization), which indicates that investor have a tendency to sell winners too early ride losers too long relative to normative theory called disposition effect (Shefrin and Statman, 1985; Weber and Camerer, 1991). Kaustia (2010) analyzed the disposition and prospect theory. He found that as prices increase than sale jump to zero and when prices increase the sale remain constant or increase.

A problem of trading mistake occurs when we take risky choices such as when an individual act as risk averse then they confirm gains (making money) and in case of risk seeking they confirm losses (losing money) due to emotions that encourages individuals to adopt particular choices (Druckman and McDermott, 2008). Hence investor face one of two heuristics which are (1) hot/cold hand (2) gamblers erroneous belief and they relate to accepting (buy) and rejecting (sell) decisions (Johnson et al., 2014). The people have inner tendency or well-established phenomenon to suffer from the biases in the the behavioral sciences base studies (Joseph, 1996; Tversky and Kahneman, 1973, 1974; Yates, 1990).

Barberis and Xiong (2009) concluded that the investors underperformed the standard benchmarks as by selling short winning securities and holding losing ones

(disposition effect). They suggested that the behavior of the investors is influenced by the limited attention and past performance of the returns in their purchase decisions. They engaged in those previous patterns which lead them towards the pleasure and not follow the pain generated events. In this way they hold an undiversified stock which is inimical for the financial health of the individual investors.

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Statman et al. (2006) studies on different indexes such as US, NYSE, and AMEX and they find that both turnover frequency and different lags of stock return of every stock gives a positive and significant relationship and this relationship is found in time series data of trading level. The significant and positive association tells that traders show more eagerness to discard those stocks which are winner and hence this observation is more reliable with the effect of disposition. Statman et al. (2006) is the earliest investigator that combined the effect of overconfidence of the investors with the effect of disposition. People with overconfidence often experiences significant losses and costs (Odean, 1998); representing that this type of confidence makes investors to act irrationally and this irrationality shift the investor to ill-fatted performance. Hence, disposition effect is scientifically designed by many researches such as different studies of Shefrin and Statman (1985); Odean (1998); Weber and Welfens (2007) because they use that all information that which was related to dealings to sell the stocks for calculation of observation index.

Few researchers have yet performing. According to Grinblatt and Han (2005), due to effect from disposition of investor. A stock consisting of good information has surplus selling force as measure up to the stock that has bad information. Such a disturbing creates low-price feedback to unrestricted information. Stock price fluctuate from its fundamental value. Due to investor heterogeneity, overconfidence

influence trades that signify the effect the disposition to take place and benchmark begin to alert. Value in the next trading time goes back toward basics. Their model was unique because it provides that the profits or losses of lagging capital are sufficient to predict stock returns. Thus, the existence of investors that shows the effect of the disposition reduces price fluctuations.

H3: Regret avoiding and pride seeking bias causes disposition effect in Karachi Meezan Index.

Chapter 3

Data and Methodology

This study analyzes the factors effecting trading activities such as return and turnover occur due to the presence of disposition effect from Karachi Mezzan Index by taking 30 stocks on the KMI-30 with the help of business recorder. The data is selected for theses 30 stocks from which 4 stocks are discarded due to incomplete data containing of incomplete market capitalization data and closing time period. 26 stocks were containing complete data for the analysis of disposition effect. Further, Years from 2008 to 2017 give a perfect period for analysis as 2008-2009 contains depression period, 2010 to 2014 contains recovery period and 2015 to 2017 contains boom period. Our analysis also contains daily data to examine the volatility because many researchers focus on daily data in working with stock returns. Here Eviews is used to inspect all regression and models, which is commonly used in econometric studies.

3.1   Data Sources and Sample Collection

This study uses daily data obtained from KSE data base of Karachi Stock market (KMI 30 index) of July 2008 to June 2017. Analysis is conducted to check the impact of disposition on Karachi Meezan Index by examining the holding period, illiquidity and disposition effect by following the equation, which has been used earlier by Visaltanachoti et al. (2007).

3.2   Description of variables

Our dependent variable is Disposition effect which is measured by computing average holding period of Karachi Meezan Index. This study examines the average holding period which is determined for each year of Karachi Meezan Index. It is calculated by dividing the number of outstanding shares in KMI by the annual (TV) trading volume (turnover) of KMI.

Here dependent variable is holding period as holding period of firm i for each year t is calculated with outstanding shares on stock i, day d and year t and then divided the annual trading volume by taking daily turnover on stock i, day d and year t. While N represent total trading days of stock i in year t.

$$HP_{i,t} = \frac{\left(\frac{SharesOutstanding_{i,t,d}}{VOLD_{i,t,d}}\right)}{N} \tag{3.1}$$

HP = Holding Period

VOLD = Respective daily volume for year t in terms of Pak rupee

N = total number of trading days for stock i during year t

i = firm

d = day of the year

t = year

John Bollinger"-says "Volatility is function of uncertainty. Standard deviation or variance can be used to measure Volatility between the returns of security or (MI) market index. Commonly, as volatility of the security is higher the higher the risk associated with that security will also be higher (Bhownik, 2013). The following formula is used to measure stock market volatility.

$$\sigma = \sqrt{\frac{\sum_{i=1}^{n}(R_i - \bar{R})^2}{n}} \tag{3.2}$$

σ = Standard deviation of the sample

R_i = Daily returns in terms of Pak rupee in year t

$\bar{R}$ = Average returns in terms of Pak rupee in year t

n = total number of trading days for stock i during year t.

Our independent variable is illiquidity calculated by taking daily return and trading volume (volatility) on stock i on day d and year t. While N represent total trading days of stock i in year t. So it is written as:

$$ILLIQ_{i,t} = \frac{(\frac{IR_{i,t,d}}{VOLD_{i,t,d}})}{N} \qquad (3.3)$$

$ILLIQ_{i,t}$= represents the illiquidity of stock i in year t

$IR_{i,t,d}$ = return on stock i on day d of year t

$VOLD_{i,t,d}$= respective daily volume in terms of Pak rupee in year t

N = total number of trading days for stock i during year t.

3.3 Control Variables

There are two control variables included.

Firm size: It represents the average market capitalization (MC) index of firm I during year t. As market capitalization associated with illiquidity.

Volatility: It represents the return of variation of the firms daily stock.

Here two square least regression model (TSLS) is applied to determine the presence of disposition effect. Econometric Model

The regression used to examine the relationship between the investors holding period and illiquidity.

3.4 Econometric Model

The regression used to examine the relationship between the investors holding period and illiquidity.

$$HP_{i,t} = \beta_0 + \beta_1 ILLIQ_{i,t-1} + \beta_2 MC_{i,t} + \beta_3 VOL_{i,t} + e_{i,t} \qquad (3.4)$$

$ILLIQ_{i,t-1}$ = showing the estimation of normal percentage illiquidity of firm i in preceding year (t-1)

$MC_{i,t}$ = average market capitalization of firm

$VOL_{i,t}$ = variance of the firms daily stock returns

$e_{i,t}$ = Error term

Due to presence of measurement errors ILLIQi,t, the factor biasness is present in estimated coefficients, so the estimated ILLIQi,t then replaces the original ILLIQi,t present in Equation 3.4 ILLIQ is taken as an instrument variable because many factors affect the ILLIQ. So we apply two scale least square method instead of ordinary least square given by Visaltanachoti et al. (2007).

3.5 Regret Avoiding and Pride Seeking:

For the estimation of the disposition effect in Karachi Meezan Index, following equation is used.

$$HP_{i,t} = \beta_0 + \beta_1 R_{i,t} + \beta_2 ILLIQ_{i,t} + \beta_3 MC_{i,t} + \beta_4 VOL_{i,t} + e_{i,t} \qquad (3.5)$$

$HP_{i,t}$ = average (annually estimated) time period that investors hold the stock of firm i during year t

$R_{i,t}$ = annually average return on stock I in year t.

$ILLIQ_{i,t}$= represents the illiquidity of stock i in year t and calculated value is taken taken from the first stage regression equation 3.1.

$MC_{i,t}$= Average market capitalization of firm

$VOL_{i,t}$=Variance of the firms daily stock returns

$e_{i,t}$= error term

Chapter 4

RESULTS AND DISCUSSION

4.1   Descriptive Statistics

Descriptive variables provide an overview of Karachi Meezan Index. Summary statistics for ordinary shares are taken in Table 4.1. This table consists of descriptive statistics and contains many different variables such as Holding period, Illiquidity, Market capitalization and Volatility. The period starts from July,2008 to June,2017 with their means, medians and standard deviations. Results shows that variation in holding period is present and it is due to high divergence between mean and median while illiquidity and market capitalization represent the presence of skewed distribution for KMI-30 index companies. The user-friendliness of the information necessary to calculate the ILLIQ annual average, annual average retention periods, market capitalization and variations verify the numerous observations which are present for every year. The mean and median of the lack of liquidity, holding periods of market capitalization, and variations of daily returns for Karachi Meezan Index are given in Table 4.1.

TABLE 4.1: Descriptive Statistics

Variables	Years	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
HP	**Mean**	23.6846	767.216	508.804	981.499	1002.83	20.9801	8.5889	7.9365	7.0134	6.9543
	Median	3.7247	17.6528	6.7543	15.6963	20.6429	4.3385	2.6336	2.2573	2.6883	3.3015
	St.dev	71.5186	4359.8	2864.31	4768.52	4397.05	75.4789	19.609	24.395	12.1202	9.5854
ILL	**Mean**	2.66E-09	1.64E-08	1.64E-07	6.83E-08	1.70E-09	2.50E-10	3.03E-10	7.72E-11	6.84E-11	1.07E-10
	Median	4.73E-11	8.85E-11	9.83E-11	1.37E-10	1.64E-10	3.64E-11	3.15E-11	2.84E-11	2.87E-11	2.62E-11
	St.dev	1.30E-08	5.25E-08	1.02E-06	5.32E-07	3.79E-09	7.65E-10	1.70E-09	1.72E-10	1.07E-10	2.54E-10
MC	**Mean**	39695	22653	25800	29672	70016	83390	57040	67227	70304	92455
	Median	19628	9063	11281	11249	10751	15613	22544	35925	47650	67601
	St.dev	55596	35471	37936	46921	328407	344440	83485	81393	63676	78270
VOL	**Mean**	2.32%	2.91%	2.31%	1.91%	2.32%	2.04%	2.03%	1.95%	1.69%	1.69%
	Median	2.25%	2.94%	2.24%	1.84%	2.04%	1.93%	1.90%	1.91%	1.61%	1.64%
	St.dev	0.82%	2.35%	0.88%	0.77%	1.43%	1.05%	0.77%	0.67%	0.58%	0.57%

NOTE:

HP = Holding period ; ILLIQ = Illiquidity

MC = Market capitalization ; VOL = Volatility

A major difference between the average and median ILLIQ in the table indicates that the ILLIQ distribution for Karachi Meezan Index listed companies for the sample period was very uneven and highly skewed value. The longest period average tenure was 1002 days 0f 2012, with a median of 20 days holding in the same year. The shorter average tenure was 29 days, with an average holding period of 7 days 1n 2017. The average time that inventories are varies from year to year and there is no clear trend during the period. The average capitalization of the KMI-30 varies from 22000 rupees 93000 rupees(millions) during the period 2008 to 2017. The median of market capitalization ranges from 10000 to 67000 rupees(millions) between 2008 to 2017. The variation of the daily return showed a downward trend over the sample period.

4.2 Annual based holding period regression

The outcomes of the estimates of 26 companies included in the list of KMI-30 are reported in Table 4.2. A two-stage least squares method is used for the period ranging from 2008 to 2017, Coefficients containing ILLIQ were positive and significant throughout the sample period. This result provides us the strong support for the hypothesis that holding period has positive impact on illiquidity. So investors holding periods for common stocks are related to the level of transaction costs, as predicted by (Visaltanachoti et al., 2007), Amihud and Mendelson (1986) and Atkins and Dyl (1997). This means that because of transaction cost investors hold losing stocks long and sell winning stocks soon. We can simply say when illiquidity increase and less trade in the market people start keeoing reserves (stocks) to avoid long transaction costs. The regression coefficients on market capitalization were positive and significant in each year except 2010, 2012. However, negative and significant correlation is also present in years 2011 and 2012. It shows that the smaller holding periods are related to the smaller firms and longer holding period related with larger firms. Moreover, the regression coefficients on the returns variance were negative and insignificant except 2015, 2016 and 2017 which shows

that the holding period have negative impact on stock returns. The R2 figures ranged from .10 to .85.

The regressions outcomes describe above give the robust hold up to the statement the investors holding periods are an ever-increasing function of the ILLIQ. The results show that when investors purchase better ILLIQ common stocks in KMI-30 then they show longer investment time horizons than investors who obtain small ILLIQ stocks.

Table 4.2: Annual based holding period regression

Years	2008			2009			2010			2011			2012		
Variables	Coefficient	t. stat	Prob.	Coefficient	t. stat	Prob.	Coefficient	t. stat	Prob.	Coefficient	t. stat	Prob.	Coefficient	t. stat	Prob.
Constant	-255.897	-1.845763	0.0659	-18155.84	-2.322878	0.0208	5916.649	1.568179	0.1179	12133.1	2.072564	0.0391	594.3233	1.261602	0.208
ILL	1.17E+09	1.56165	0.1194	2.52E+10	1.422115	0.156	9.44E+08	2.089758	0.0375	7.60E+09	7.952084	0	4.44E+11	2.199279	0.0286
MC	11.46677	1.880009	0.0611	817.913	2.392384	0.0173	-238.5781	-1.52801	0.1275	-484.7014	-2.019879	0.0443	-1.55E-10	-0.878429	0.3804
VOL	218.8185	0.556429	0.5783	-9139.444	-1.397224	0.1634	-2091.09	-0.189101	0.8501	-24797.09	-1.222748	0.2224	-14374.32	-1.012194	0.3122
Adj. R2	0.383217			0.141415			0.432585			0.799766			0.137344		
J-Stat	12.03199		0.525022	0.424872		0.424872	11.33784		0.124547	40.65361		0.000001	17.5049		0

Years	2013			2014			2015			2016			2017		
Variables	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.
Constant	17.12313	2.037235	0.0425	10.07477	2.989324	0.003	4.768235	1.700833	0.09	3.499485	1.38057	0.168	-11.31553	-2.106118	0.036
ILL	3.03E+10	1.335031	0.1829	3.73E+09	2.354397	0.0192	1.12E+11	3.028973	0.0027	6.63E+10	3.56897	4E-04	1.70E+10	9.311874	0
MC	5.05E-11	4.300142	0	2.90E-11	2.088977	0.0375	4.68E-11	4.018226	0.0001	5.13E-11	6.60588	0	3.43E-11	5.678663	0
VOL	-388.2304	-1.36836	0.1722	-209.0735	-1.59027	0.1128	-436.0586	-3.061209	0.0024	-271.4954	-2.86769	0.004	-3.211204	-2.447945	0.0149
Adj. R2	0.136016			0.1037			0.622257			0.397356			0.291808		
J-Stat	25.85855		0	116.9857		0.000000v	49.71913		0	168.9864		0	128.5136		0

4.3 Holding period over the sample period

Table4. 3 give the results of holding period over the whole period of sample from 2008 to 2017. Table shows that holding period gives highly positive relationship with illiquidity and negatively impacted by returns shows longer holding period which are impacted by returns. However, there are many other factors that affect holding period of investors such as taxes, media, gender effects etc.

TABLE 4.3: Eviews table

Dependent Variable: HP
Method: Two-Stage Least Squares
Date: 10/13/17 Time: 14:27
Sample (adjusted): 6 3120
Included observations: 3115 after adjustments
White heteroskedasticity-consistent standard errors & covariance
Convergence achieved after 11 iterations
Instrument specification: ILLIQ C LAGILLIQ MV VOL
Lagged dependent variable & regressors added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	188.3472	132.4465	1.422063	0.1551
ILLIQ	2.82E+09	1.34E+09	2.099181	0.0359
MC	-8.78E-11	1.29E-10	-0.683368	0.4944
VOL	3882.631	4166.854	0.93179	0.3515
R-squared	0.260261	Mean dependent var		334.1118
Adjusted R-squared	0.258356	S.D. dependent var		2662.979
S.E. of regression	2293.324	Sum squared resid		1.63E+10
Durbin-Watson stat	1.996325	J-statistic		48.83162
Instrument rank	25	Prob(J-statistic)		0.000035

TABLE 4.4: Annual based holding period regression

Variables	Coefficient	t.stat	Prob.
Constant	188.3472	1.422063	0.1551
ILL	2.82E+09	2.099181	0.0359
MC	-8.78E-11	-0.683368	0.4944
VOL	3882.631	0.931790	0.3515
Adj. R2	0.258356		
J-Stat	48.83162		0.000035

4.4 Regret Avoiding and Pride seeking

The regression results for the annual returns (yield) were negative and insignificant except for year 2009 representing weak disposition effect. Hence 2009 shows significant effect of disposition which may be due to bad governance, financial crisis effects and terrorist activities etc. the coefficients indicate significant negative effect available in the stock market during the year 2008, as investors tend to recognize their profits too untimely and hold on to losers securities. This shows that disposition is not too much effected due to regret avoidance. The coefficient on the ILLIQ available was significant and positive in every year except 2008 and 2009. This result robustly supports our statement that the investors holding periods or retention period for common stocks are correlated to the level of transaction costs.

The regression analysis coefficients in market capitalization were also positive and significant for every year except 2010 and 2012. This illustrates that the holding period is higher for the larger companies and smaller for smaller companies in Karachi Meezan Index (KMI-30). The regression coefficients in the variance of returns were negative and significant except for the year 2008, for all companies listed on the Karachi Meezan Index KMI-30, figures from the regression R2 ranged from .14 to .79.

TABLE 4.5: Regret Avoiding and Pride seeking

Years	2008			2009			2010			2011			2012		
Variables	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.
Constant	-258.2038	-1.841073	0.0666	-17817.03	-2.30175	0.022	5875.989	1.570735	0.1173	12053.22	2.0314	0.0431	381.2	0.848512	0.3968
RET	-243.5886	-0.695048	0.4876	-26136.68	-1.73586	0.0836	-2290.921	-0.18633	0.8523	-22122.77	-0.91296	0.362	-62127.11	-1.521545	0.1292
ILL	1.18E+09	1.569412	0.1176	2.26E+10	1.307754	0.1919	9.44E+08	2.083177	0.0381	7.61E+09	7.956303	0	4.32E+11	2.194004	0.029
MC	11.55305	1.873697	0.0619	804.6653	2.373459	0.0182	-237.3051	-1.53019	0.127	-481.0861	-1.97658	0.049	-1.03E-10	-0.617361	0.5375
VOL	223.5659	0.568556	0.5701	-10511.5	-1.71416	0.0875	-1561.274	-0.13373	0.8937	-24549.74	-1.20263	0.2301	-1720.566	-0.113278	0.9099
Adj. R2	0.381724			0.141852			0.430745			0.799722			0.140786		
J-Stat	23.34887		0.13823	0.243426		0.24343	19.2353		0.023265	43.55082		0	13.73972		0

Years	2013			2014			2015			2016			2017		
Variables	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.	Coefficient	t.stat	Prob.
Constant	18.4922	2.176839	0.0303	9.879781	2.965116	0.0033	4.766527	1.700327	0.0901	3.498883	1.375528	0.17	-10.68673	-1.96998	0.0497
RET	506.2626	1.041958	0.2983	-234.0838	-1.47556	0.1411	94.26314	0.630078	0.5291	88.14194	0.717687	0.4735	-99.97581	-0.85737	0.3919
ILL	3.05E+10	1.333798	0.1833	3.73E+09	2.304131	0.0219	1.12E+11	3.028402	0.0027	6.63E+10	3.576588	0.0004	1.69E+10	9.277731	0
MC	5.01E-11	4.238353	0	2.92E-11	2.119525	0.0348	4.76E-11	4.070037	0.0001	5.14E-11	6.583164	0	3.47E-11	5.724937	0
VOL	-526.632	-1.61049	0.1083	-207.8782	-1.60101	0.1104	-435.3821	-3.07062	0.0023	-264.2384	-2.7138	0.007	-3.028737	-2.27807	0.0234
Adj. R2	0.134408			0.108135			0.621339			0.396155			0.291166		
J-Stat	25.82537		0	2.654029		0.103288	52.69276		0	169.9484		0	131.8521		0

4.5 Regret Avoiding and Pride seeking for the sample period

Table 4.5 represent overall sample period of regret avoidance and pride seekers. This shows that disposition effect is not present for the whole sample as well because the coefficient of return is showing negative but highly insignificant values. The regression coefficient of ILLIQ is positive and significant which supports our statement that the investors holding periods or retention periods for common stocks are correlated to the transaction costs.

TABLE 4.6: Eviews table

Dependent Variable: HP
Method: Two-Stage Least Squares
Date: 10/13/17 Time: 14:38
Sample (adjusted): 6 3120
Included observations: 3115 after adjustments
White heteroskedasticity-consistent standard errors & covariance
Convergence achieved after 10 iterations
Instrument specification: ILLIQ C LAGILLIQ MV VOL
Lagged dependent variable & regressors added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	158.4135	137.1922	1.154683	0.2483
RET	-31810.96	24292.74	-1.309485	0.1905
ILLIQ	2.84E+09	1.36E+09	2.084401	0.0372
MC	-7.12E-11	1.32E-10	-0.53877	0.5901
VOL	5054.528	4353.455	1.161038	0.2457
R-squared	0.264377	Mean dependent var		334.1118
Adjusted R-squared	0.262245	S.D. dependent var		2662.979
S.E. of regression	2287.303	Sum squared resid		1.62E+10
Durbin-Watson stat	1.996308	J-statistic		60.83048
Instrument rank	30	Prob(J-statistic)		0.000005

TABLE 4.7: Regret Avoiding and Pride seeking

Variables	Coefficient	t.stat	Prob.
Constant	158.4135	1.154683	0.2483
RET	-31810.96	-1.309485	0.1905
ILL	2.84E+09	2.084401	0.0372
MC	-7.12E-11	-0.538770	0.5901
VOL	5054.528	1.161038	0.2457
Adj. R2	0.262245		
J-Stat	60.83048		0.000005

4.6 Discussion

The fundamental reason of this study is to throw some illumination on those investors that have an aversion to loss realization and attain high trading frequency such as disposition effect discussed by Kahneman and Tversky (1979) and Odean (1998). To summarize, this study demonstrated that individual adult investors (1) use graphical information to make financial investment decisions, (2) rate line graphs showing historical performance (3) show a bias decision.

After the analysis, now move toward findings. The findings showed that strong disposition affect exist in Karachi Meezan Index (KMI) and also Investors suffer from disposition effect in Pakistan markets. This produces a decline in the final wealth of the investors. If investors are not holding stocks for a long time, not sell their winning stocks too early and not showing interest in highly trading then investors can be recovered horridly. Such goal could be carried out by rising sophistication of investors. We can also say that investor literacy could be improved by giving education to youth. This type of approach is carried out in many developed countries. The organization or institutions gives resources, values and variety of support for the investor financial education. Further investors raised in that environment in which the basic financial knowledge is distribute to investors. Investor sophistication will be improved, if different programs and projects are to be started in Pakistan by taking small steps. Govt may include financial classes into school syllabus. These courses are of course very expensive, but it could give

a solid return on investments or savings. If investors are less behaviorally biased than market would be informationally higher efficient and prices would have enhanced by communication to the fundamentals. This would eventually lead to a better resource allocation.

Of course, we have to think about the argument that noise trading smoothes the progress of trade and also necessary for a stock market functioning. Noise traders investors that focus on systematic biases (Shleifer, 1990). Black (1986) confirmed that noise permit markets to function and make them to avoid from market malfunction (failure). Berkman and Koch (2008) analyzed the relationship of noise trader as an alternative and a variety of market quality procedures. In line with Kyle (1985) model, authors found that noise trading is positively related with quantity and strength. Their results also showed that noise trading contracted the bid-ask spread. While some researchers usually agree that various levels of noise are desirable for the markets to perform and excessively of noise traders is detrimental to the quality of the markets but yet they are uncertain about their optimal levels. The ratio of the effect of disposition investors in Karachi Meezan Index (KMI-30) present in this thesis is basically high and we can say that there is indulgence of some noise. Although, if investors are educated then their sophistication would increase and noise trading activity will have decreased and hence market malfunction from small trading activity is normally not like.

An important technique that smoothers the market progress is quality arbitrage. There are always complicated investors are present in the market that earn profits from every situation of the stock market. Disagreement between derives down their profits and further information improves their informational efficiency. However, Shefrin (2010) also noted that there are number of obstacles which arbitrageurs are facing. We also found that the investor prone to disposition effect will affect the prices and this verifies that arbitrageurs are incapable to completely discard the price impact. Due to these type of reasons we believe that there are justifications to get better the different ways of arbitrage. For example, it is very complicated and approximately not possible to undersized or short sell stocks in the Karachi Meezan Index (KMI-30). To improve the ways of short selling a platform to

facilitate loan stocks could be produced. Although, this is simply a paradigm and a potential hazards of enlarged market management should also be cautiously evaluating.

We found evidence that investors suffer from the disposition effect, trade regularly in Karachi Meezan Index (KMI-30) and biased investor affect the stock prices. First, Fama and French (1992) told that all investors are rational and every individual maximize their utility. We demonstrate that this is dreadfully unlikely to be correct. Investors, who are infected by this behavior, they are declining their wealth in Karachi Meezan Index (KMI-30). The findings hold out various robustness tests and they all add to the BF literature. It shows that judgment making found in psychology and sociology help to figure out financial markets. The Second, Fama and French (1992) disagreed that some investors are irrational in the market; their trades are unsystematic and cancel out effect of each other. Therefore, markets are informationally efficient. Divergent to this suggestion we found that investors trading activity in the KMI-30 (Karachi Meezan Index) is correlated. It means investors invest in the same direction for a particular time period. This could be driven by similar trading strategies or patterns. This is supported by our findings that disposition prone and overconfidence investors trade systematically. Overconfidence investors may even be indulgence of strength that forces systematic trading. Third, Fama and French (1992) argue that if a group of irrational investors constantly trade rationally then there will be rational arbitrageurs also exist which reduce the price impact and thus making market informationally efficient. On the other hand, we found some empirical support that disposition effect investors have an impact on prices, because in case of price increases, the investors are in hurry to sell out the stock but hold the stock in case of losing value causing different impact on price. We have justifications to consider that the third argument of the EMH (Efficient Market Hypothesis) is more fragile and it is more maintained by the strong hypothetical options of the limits of arbitrage (Shleifer, 2000)

The three fundamental instruments of the EMH are practically very essential. Imagine that what take place if any one of them does not holds. Those investors

which are irrational affect trade activities systematically and also change the safety measures of prices. The information that is hold into prices is untrue. As a result, the value of the security does not keep in touch to its fundamental value. This outcome is very essential in many behaviors. First, savings are unclear, investors do not familiar with the correct value of the firms in which they are investing. Some companies have too much capital inflows but other companies bear shortages. Resources are not payable to their largest part of efficient utilization. Second, elegant investors can systematically hit the market. We can also say that if investors successfully recognize the misevaluation or poor evaluation model then abnormal profits can be achieved. Active finance management abruptly makes intelligence. By holding the market portfolios, diversifying and continuously rebalancing is useless. Third, here is the existence of point that in-timing investments makes change in market conditions. It is reasonable that as time passes misprices increases or decreases. Fourth, CAPM is not entirely perfect as long as it does not include behavioral events. Fifth, the price responses to latest information may not fundamentally speedy and correct.

Market-wide model verified the lead-lag relationship between MR (market returns) and MT (market turnover), and clearly showed that the strong disposition affect is present in the market. Disposition effect is one which investors sell winning stock too quickly and hold losers for long period.

Overconfidence bias present in those situations when investors value their information too much and they believe that their information is correct according to their private signals. They can better understand about the value of the financial security and they always retain the information of succeed part of their assets and easily forget the failure (Odean, 1998). Accordingly, investor should evaluate information objectively to avoid overconfidence. Finally, this study also suggests that disposition can be exists when self-control very ow. So investor should have higher control that can reduce the effect of disposition. Therefore, investor must try to practice some mechanisms to control the irrational behavior.

Chapter 5

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study is focuses on disposition effect (which is in the form of regret avoiding and pride seeking) in financial market of KMI-30 (Karachi Meezan index) in Pakistan. The aim of this study also present three step investigations related to three fundamental instruments of EMH in the KMI-30. First step is to recognize whether investors perform irrationally. By determining the disposition effect, we have exposed that investors are behaviorally biased or irrational. They are more eager to realize gain as compared to losses, as investors are less overconfident and not trade too much.

Disposition is positively associated with the illiquidity of the market from 2011 to 2015 in Pakistan Karachi stock exchange. Although the time period was short but the evidence of the psychological behavior (disposition effect) was existed in the market. The phenomenon is also observed in the E-trading as well. Winners sell more quickly than to losers even when the transactions are made through the internet. Average holding time period for the stocks was 3.95 days for winners and 6.21 days for the losers (Ashraf, Waris and Sania, 2010).

Visaltanachoti et.al (2007) Study the Chinese Stock market by evaluating Stock Illiquidity, average holding Periods and then observe the effect of investors disposition effects. They took data for year 1996 to 2003. The results conclude that Chinese investors holding periods give positive relationship for illiquid stocks and have negative relationship with past stock returns leading to disposition effect. They also examined that investor feel regret to hold the lasers and feel prides when they sell winners take investor to seeking pride and avoid regret phenomenon.

But the investors suffering from disposition effect decreases their final wealth and expected utility. Investors are more successful who are quick to offset losses and securing gains rapidly. But holding on to potential losses for longer time periods the investors are less likely to be successful in future. It shows the discipline of professional traders and the presence of disposition effect (Locke, Mann and Peter 2005). We also found that investors trading activity is highly correlated and this shows that the investors who suffer from disposition effect than their trading activities increase as compare to those which are not prone to disposition effect. The investor which are prone to disposition affect than there trading activities are co-related with each other. All these evidence support the fact that irrational choices of investors and cancel out as predicted by the EMH. Miller and Modigliani (1961) discussed about rationality phenomenon; explained that all investors are rational in case of dividends. They described that rational investors are those investors which prefer more wealth as compare to less and are unconcerned seeing that whether a particular addition to a wealth takes formation of cash expenses or enhancement in market price of their holdings of distribute. After Miller and Modigliani (1961) condition, Fama (1970), the father of EMH, efficient financial market was defined as one in which prices are informationally efficient which gives back directly all relevant information. According to the theory of traditional finance (Fama, 1960) the markets are well organized and each investor has a rational opportunity and they make decisions that makes best use of their estimated utility. In the final step, the study analyze, whether investors suffering from behavioral biases of disposition effect have an impact on stock prices. Daniel et.al (1998) said that when investors are overconfident then they overreact to information which

they collected through private resources and under react to those information which they get from public resources and that leads toward market mispricing. Frazzini (2006) give data from 1993 to 2002 to check the disposition when there is announcement of underreaction, so disposition present in this situation. Hence both disposition and overconfidence exists. A problem of trading mistake occurs when we take risky choices such as when an individual act as risk averse then they confirm gains (making money) and in case of risk seeking they confirm losses (losing money) due to emotions that encourages individuals to adopt particular choices (Druckman and McDermott, 2008). Hence investor face one of two heuristics which are (1) hot/cold hand (2) gamblers erroneous belief and they relate to accepting (buy) and rejecting (sell) decisions (Johnson et al., 2014).

The single ordinary least squares regression would be spurious if it is used to estimate those relations directly, as it is most likely that the investors holding periods and the ILLIQ for each stock are simultaneously determined. The adoption of the ILLIQ as an exogenous independent variable in regression Equation 3.1 would, therefore, result in coefficient estimates that are biased and inconsistent. Two-stage least squares would be an appropriate procedure to use in introducing an instrumental variable, in order to estimate the relation between holding periods and ILLIQ. The previous years ILLIQ for each firm is employed as an instrumental variable. There is no theoretical rationale to support the premise that this years holding periods and the previous years ILLIQ are jointly determined. In addition, the lagged ILLIQ has the desired characteristic of being an instrumental variable, as it is highly correlated with this years ILLIQ Visaltanachoti et.al (2007).

5.2 Implications of the study

This paper has implications for policy makers. Investors laboring under overconfidence should discuss with professionalsand seek advice. Further they need to adjust their positions in different stocks where turnover returns are balanced and turnover does not deviate more the returns. From these results present in my study will help and facilitate the investors in making their investment decisions

and it also facilitate institutional and individual investors to prevent from losses while making any investment decision. For making their portfolio to be strong, investor should have a tendency to propose the free strong-minded policy. If managers want to decrease their bad effects or tragedies related to losses occur due to the presence of disposition effect and regret avoiding bias, then managers can adopt or produce different strategies which can decrease the chance of losses such as manager can make a benchmark for different levels of losses. Investors must manage all the losses and gains according to hard and fast rule they built the situation in which the investors should not allow the losses more than ten percent. Managers should not hope, which is not in favor of hope. Hence, there should be the presence of particular and fixed benchmark that can differentiate both losses and gains at different levels. Managers should be daring to recognize that yes, this is immoral and get out of the situation. Then they can feel alive and can play the game again with more and new strength of mind. We see three main implications of our study.

5.3   Limitation and contribution

This is very important in different aspects. This study focus on disposition effect and regret aversion bias in Karachi Meezan Index. Hence, work on disposition effect and regret aversion bias is very limited in Pakistan. Its major contribution is that people can beware from these biases in case of upward and downward movement of Karachi Meezan Index. The goal of this study is deeply study the disposition effect and its impact on Karachi Meezan Index.

5.4   Recommendations

Further study must be carry out to explore more imminent factors of the disposition effect. Researchers are required to use the data level of financial credit fund of participants and then calculate the frequencies for the understanding of the conditions of income. Furthermore, the macroeconomic variables can also play

a most important role in unnecessary trading. There are four recommendations for further research: the development of appropriate measurement scale, broadly sample, more factors related to psychology, another investment market and the circumstances of the overall general market environment. The relationship between disposition effect and investment uniqueness such as age, gender, home and foreign biases and taxes effects would give helpful analysis for strategy judgment. In addition, it is significant to analyzing the interactions between these psychological factors as repentance and aversion mental accounting to clarify the relationship between these psychological factors as repentance and aversion mental accounting to clarify the relationship between various psychological factors. Therefore, an ideal and complete capital management method consisting of assertion of information, prescript, evaluate risk tendency, financial recommendations, and asset distribution give the significant way for further work.

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