

FINANCIAL RISK TOLERANT ATTITUDE: EMPIRICAL EVIDENCE FROM PAKISTAN

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Abstract

The study aimed to investigate the phenomena of risk tolerant attitude in response to the stock index price changes along with the demographic variables. To explore this phenomena, data was collected from the investors, bankers and household individuals whereas daily & weekly closing KSE index prices were taken from stock exchange to study the impact of the change in prices on the risk tolerant attitudes. With the help of daily & weekly regression analysis, the study concluded that in Pakistan KSE stock index prices does not have influence on individual risk tolerant attitude due to a number of reasons including lack of awareness and financial knowhow among people, financial market being in the initial developmental phase in comparison to developed nations to name few. Furthermore, due to political and economic instability people prefer to invest in gold and tend to save in government saving schemes and hold fixed deposits accounts. The study also found that men and households with higher income are more risk tolerant as compared to women and those having lower household income respectively. Age, marital status, income and education level were not found to be significant predictors of risk tolerant attitudes.

Keywords: Risk Tolerant, Stock Market, The behavior of Investors towards Risk, Investment Preferences, Risk Assessment & financial scheduling

Introduction

Is an individual fully rational while making risk taking attitude? Economist and finance specialist having a debate, the behavior and decision related with the finance is affected due to the use of unemotional estimation (kahneman, 2003). With the help of laws of probability, the risk attitude can

be measured proficiently, but many of the finance specialists have a contradiction with these laws. (Hirshleifer, 2001).

With an aim to maximize their utility, psychologist identified that people's attitude and behavior is not always consistent (Warneryd, 1999). For example behavioral finance and other psychological theories described the herding behavior that's mean the tendency of individual connect in investing the same way by seeing the others. Herding behavior takes place when further more peoples engage in continuation of price tendency. Finance specialists and experts come into view to truthfully predict the current events into future. (Plous, 1993).

The (Clarke & Statman,1998) shows in his report, people's attitudes regarding risk tolerance and stock market sentiments have declined due to market crash by considering the data of 1987 market collapse. Such results show that what would have been projected under completely impartial model of economics. (Harlo and Brown,1990). The tendency of market pricing and other related data & information that are monetary growth and Gross Domestic Product (GDP) are the main reasons of turn down of stock prices which cause the constant , high risky behavior and abnormalities of market.

The (Clark & Statman, 1998) derive that environment after crash makes a change in emotional behavior and risk tolerance of people. Much evidence verifies that financial decision and emotional behavior are affected due to the stock market abnormalities. (Ackert, Church & Deavs, 2003). The stock market prices changes take part to conclude the individual risk patience attitude. To understand the relationship between return of stock and risk tolerance explain that why the investors purchase the investments that are more risky by showing herding behavior when the market price increases and sell them in trend of price reduction.

Laying on additional original bases the answer to this question shows how investors build their estimation that has impact on decision related with the finance. (Clarke & Statman, 1998). This also adds up the information about the condition of investor psychology that is a factor of financial decision making.

Financial risk tolerance can be described as the will of a human being to take risk having a behavior in which outcome remain unsure with the likelihood of particular harmful results (Irwin, 1993). To forecast the financial risk tolerance of an individual person is difficult because it is such a hard to define and multidimensional concept. Trone, Allbright and Taylor, (1996) they concluded that like other thoughts and sentiments are influenced by many biased determinants. Some psychologist concludes that to simplify the risk taking preference is difficult (Thaler & Johnson, 1990). Another way to manage risk is depend how the situation is presented sometimes the

problems are same but frame in different manner which cause an individual take more or less risk. (Thaler and Johnson,1990).

The researcher found that the risk tolerance behavior are varied when individuals are in good mood and shows risk taking behavior and also shows risk averse behavior when they are in depressing mood. (Thaler Ackert, Church, & Deaves, 2003).

Literature Review

The study examined the relationship between the risk tolerance and age. For that authors collected a data from the panel of survey of consumer finance for the period of 1983-89. Authors developed a hypothesis life cycle investment and their risk tolerance was measured through ratio of the risk asset to total wealth. The total wealth is defined by the combination of human capital and net worth. Through the analysis of descriptive tools, the authors suggest that the risk tolerance increase with the increase in the age.(Wang and Hanna, 1997)

The research was designed to determine the effects of financial and demographic variable and factors related to the risk tolerance. The authors collect data from the 1992 survey of consumer finance. They used a logistic regression analysis and Chi Square Statistics to determine the risk tolerance in sets of different variable. They conclude that the female are less risk tolerance as compare to male with having a same household income. The authors also suggest that risk tolerance also differ by gender, marital status and education due to difference in understanding of the risk's nature.(Sung and Hanna,1996)

The study aimed to test changes in financial risk tolerance of investor when returns and prices fluctuate. For that purpose he uses six survey of consumer finance by using cross-sectional data from 1983 to 2001. The research measures the changes in financial risk tolerance level during this time. The author performed analysis to measure the changes in risk tolerance to control respondents and family characteristics. Research finds that financial risk tolerance level increases when returns of stock increase & vice versa. The study also found that the correlation in financial risk tolerance and price fluctuation is negative. This study helps the investor to avoid the biases of overreacting the recent events. (Yao, Hanna, Suzanne, mood, 2004)

The authors considered the effects of demographic variables (race & ethnicity) to measure the financial risk tolerance of Blacks, Hispanics and whites. The study concluded that the “Blacks and Whites” has more financial risk tolerance than whites, after measuring the effects of other variables. Risk attitude can affect the investing behavior, so suitable approach to take financial risk is important for achieving investment goals. Govt. agencies and financial advisor should emphasis on client investment education and

financial risk tolerance to racial and ethnic groups for better choice to achieve their financial goals. (Yao,Gutter, Hanna, 2005)

To examined the relationship among the risk tolerance, projection bias, vividness and equity prices by developing two hypotheses. First, the risk tolerance level of the investor fluctuates with the change in investment market, and, second, investors use the closing market price to build their risk tolerance attitude. The researchers use regression test to determine the role of projection bias and vividness in the formation of risk behavior among a convenience sample of internet 1355 respondents. A study result shows that individual who own securities interested to use recent stock market data at the time of establishing risk attitudes. Further the risk attitudes in usual and total were fluctuating on the bases of closing prices of weekend. Financial advisor advised that risk tolerance should not be used as a stagnant input when making asset allocation decision. (Grable, Lytton, Barbara O'Neill, Joo, and Klock, 2006)

The study was conducted on the entrepreneurial activity in conjunction with the risk tolerance of between the entrepreneurs and full time employed individuals in South Africa. They select some control variables (age, marital status, ethnicity, race, knowledge, home ownership status, education etc) and designed a questionnaire and collect that form the 1054 respondents. Through the analysis of one way ANOWA and some independent sample suggest that the entrepreneur are more risk tolerance then the full time employed individual and non employed individuals. They also conclude that the Maas & Herrington point out that there is entrepreneurial activity is highly dependent on the effective entrepreneurship education in South Africa.(A.J. Antonites& R. Wordsworth,2009)

The Authors examined financial risk tolerance in associated with the global financial crisis. To prove this statement author perform test and retest on the data of 2007-2009 of the investors who use the FinaMetrica risk tolerance survey and after controlling for demographic and regional variations. Study showed the result that in 1st test the risk tolerance was high but in retest that was performed for the 2nd half of 2008 and 1st half of 2009, the risk tolerance was low and the change was no greater than a few measurement points.(Gerrans, Faff, Neil Hartnett,2012)

The study include the panel data from 1992-2006 that is waves of the Health and Retirement Study (HRS) to study the change in risk tolerance by passing the time with the change in stock market returns. Researchers conclude that there is a positive relation in the risk tolerance and the stock market return. Individual investors tend to sale the securities when the stock prices move upward and tend to purchase the securities when stock prices are low. Researchers, employers, financial educators and practitioners should guide the investors to avoid the bias of overweighting recent news of market

performance. Researcher used multilevel cumulative logistic regression analysis to examine whether market returns predict the change in risk Tolerance over time that has control for the other factors in the model. (Yao, Angela L. Curl, 2010)

The study concludes that birth order is conjunction with risk tolerance level. Researcher selected Three hundred sixty-eight individuals as sample to collect data from a university in the Southwestern United States, completed a psychometrically sound financial risk tolerance measure (Grable and Lytton, 1999). This study conclude that first born individuals have high risk tolerance level and the later-born individuals have less risk tolerance level. Among later-born individuals male investors have high risk tolerance than the later-born females. Descriptive statistics are used to compare distribution of the different socio-economic and demographic variables according to birth order. In addition, there is use of t tests to detect any major difference that may exist with respect to birth order among the many demographic and asset allocation characteristics. (Gilliana and Chatterjee, (2011)

The paper is based on the investors risk tolerance and general economic mood in Australian context. With the use of large data and OLS regression analysis, and the result after the use of FinaMetrica dataset, the risk tolerance level of investors of Australia (as measured by RTS) has no affect from the general economic mood (as measured by CSI). T-tests comparing risk tolerance scores during optimistic and pessimistic months, and preceded by positive and negative share market returns and checking the individual behavior during optimistic and pessimistic time confirm the findings of the study.(Santacruz, 2008)

In this article researcher used the panel data of Household, Income and Labour Dynamics in Australia (HILDA) survey from the 2001–10 to investigate changes in the behavior of Australian households about the risk tolerance, particularly in response to changes in the macroeconomic environment. This topic is important in this way that households are involved in financial planning and monetary and regulatory policy. Ordered legit analysis is used to perform the research. Descriptive analysis performed on risk attitudes showed that in the period of ten-years, individuals that reevaluated their attitude toward financial risk-taking were the persons who likely to reduce their risk tolerance.(West and Worthington, (2010)

The research was designed to test out the mood influence on the financial decision. Research is about how mood affects the financial decision making of an individual and his risk tolerance level. A survey was performed for this purpose and least-squares regression model was used in this. 1300 surveys were mailed for the response and only 548 were returned. Result showed that positive mood tends an individual to more risky decision

making and negative mood tends to low level of risky decision making because mood affects on the decision as if it is positive it will highlight the positive aspects of the investment and if it is negative it will highlight the negative. Age, income job etc. are the variables that are used in this survey.(Grablea and Roszkowski, (2008)

The paper is about a very interesting topic that is related to the tendency of youth perception about their foreign career and its relation with their risk tolerance level. Researcher used the questionnaire method in his survey and got 295 fully completed responses and these responses were from the Bachelor and Master level students. The findings of the study contains that there is a positive relation between the subject's willingness to pursue a foreign career and the subject's risk appetite. FCC, RA, SRT and other statistical measures are used in this study. Age, labour hours and the gender are considered the control variables in this survey.(Fathi, 2008)

Methodology

Data and sample selection

The study was designed to explain the risk tolerance of individuals based on the stock prices changes along with the demographic variable. For that purpose, the study considers 106 sample sizes which diversified into individuals such as investors, banks managers and household individuals.

To determine the attitudes of individual regarding the risk tolerance, the twelve risk assessment questionnaire and demographic questions have been designed and also daily&weekly stock index prices are collect form the publically available resource for the period of Jan 2012 to Mar 2013.

Variables

To determine the relationship risk tolerance with the demographic variables and KSE index prices(daily& weekly), the study considered a dependent as well as independent variables. The dependent variable is risk tolerance which was measured through the development of twelve risk assessment questions.

The study also consists of some independent variable that is daily stock prices of Karachi Stock Exchange (KSE) form Jan 2012 to Mar 2013. We also introduced some additional independent variable as control variables that are Age, Age² Gender, Income, Marital Status and Education level.

Analysis

The method of analysis, we used a regression analysis and some descriptive statistics (mean, standard deviation) tools to examine the relationship, how much stock prices changes having an influence on the risk tolerance of individuals. We also used a daily& weekly stock index prices to predict the individual's attitude regarding the risk tolerance.

Result of Analysis

Table 1 Estimator's of risk tolerance using KSE Stock index prices daily

Variable	Coefficient	Beta	t	Sig
(Constant)	51.927		.538	.592
Gender	-3.887	-.263	-2.493	.014
Age ²	-.244	-.275	-.536	.593
Age	1.328	.305	.553	.582
M_status	-2.920	-.335	-2.176	.032
Qualification	-1.164	-.217	-1.924	.057
Income	.217	.047	.402	.689
Daily_ind_T	-1.783	-.017	-.180	.858

Table 1 presents the results from the regression analysis using the data of daily stock index prices of KSE, Gender and marital status are the significant predictors' of the individual risk tolerance. The literature and analysis shows that men are more risk tolerant the women and the study also determined that age and income level is positive associated with the risk tolerance but not significant predictors. Specifically, we determined that daily stock index prices, age² and qualification are unrelated with the risk tolerance.

Table 2 Estimator's of risk tolerance using KSE Stock index prices weekly

Variable	Coefficient	Beta	t	Sig
(Constant)	86.740		1.861	.068
Gender	-4.390	-.346	-2.309	.025
Age	4.086	1.022	1.300	.199
Age2	-.899	-1.115	-1.537	.130
M_status	-2.363	-.294	-1.377	.174
Qualification	-.626	-.114	-.703	.485
Income	-.420	-.094	-.576	.567
Wk_ind_T	-5.657	-.165	-1.159	.252

Table 2 shows the results using the KSE stock index weekly prices, the previous week KSE index closing prices, age, age² marital status, qualification and income are not the significant predictors of risk tolerance. These show the opposite results regarding the measurement of the risk tolerance. The only result match with the table 1, which is women are less risk tolerant then the men.

Discussion and Findings

We asked a question at the start of the paper, is individual fully rational while making risk tolerance attitude. The study found that answer of this question is no because every individual is not behave fully rationally in every situation to maximize their utility.

Our results have contradiction with the Grable and Lytton's study findings, which shows that the stock market prices change have no affect on the individual risk tolerance attitude with a number of reasons behind this, the big reason is that financial market in Pakistan not developed as compare to developed nations, since independence Pakistan's economy faced depression and misery situation, every individual want to invest in most secured security and they hold mostly saving in banks, real estate and gold. The study also found that people having a lack of awareness & information about the stock market due to having a low literacy rate and political instability and insecurity are also big hurdles in the way of progress of the stock markets in Pakistan.

The literature review and our findings about the demographic variables shows the women are the less risk tolerant than the men and also found that higher house hold income individuals' are more risk tolerant then the others. We also found that there is no relationship between the risk tolerant and age, age², marital status and qualification.

Study found that income is not significant predictor due to the number of reasons like Pakistan is a developing country where masses rely on periodic income that is hardly enough to meet subsistence and thus are not left with enough money to take risk and invest in stock market. Only few people have multiple sources of income and financial know how and take the risk to play with their money.

Conclusion

The study has contradiction with the findings of John Grable, Ruth Lytton & Barbara O'Neill, (2010) and concluded that the stock index prices change have no influence on the risk tolerant attitudes due to number of reasons that are literacy rate in Pakistan is very low as compared to developed nations, financial market are not developed, mostly peoples prefer to invest in gold and hold their saving in savings and fixed deposit accounts.

The study also found that women are more risk tolerant then men who are consistent with previous studies found in the literature because women are not independent in Pakistan as compare to developed nations due to religious matters and some other factors. Regression with daily & weekly index prices suggests that there is no relationship found between the risk tolerant and index prices, age, age², qualification, marital status.

Limitation & Recommendation

- In that study, findings are limited. First, the number of factors which is used in this regression analysis is limited and it would be future implication to use some additional demographic variable, social economic factors and also consider other stock exchange price index to conclude a better results.

- A second, a detailed study of literature review suggests that the number of factor that may have explain the financial risk attitude of individual's like motion and choice decisions and also the mood have a influence on the risk preference and specific risk choice, so it's a future implication to add in the regression model to know their influence on the risk attitude. This kind of interesting study already conducted by the (Arkes, Herren, and Isen, (1998) Hirshleifer (2001)).
- Third, data were collected through the convenient sampling, it may have been excluded the number of factors which may be important for that study to conclude their better results. Fourth, due to shortage of time we could not collect a response from the maximum number of respondents.

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