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Determinants of the Risk Tolerance of Individual Investors

Rahmawati¹, M. Dileep Kumar², Meyland Kambuaya³, Farhan Jamil⁴, Saqib Muneer^{4*}

¹Faculty of Economic, STIE Muhammadiyah, Palopo, Indonesia, ²University Institute for International and European Studies, University Gorgasali, Georgia, ³Faculty of Economic, Universitas Cendrawasih, Papua, Indonesia, ⁴Faculty of Management, Universiti Teknologi Malaysia. *Email: Saqibmuneer85@gmail.com

ABSTRACT

This study presents new evidence on determinants of risk tolerance of individual investors of Pakistan. The main objective of the research is to evaluate the factors that determine the individuals' decisions. It is essential to understand the factors of risk tolerance and how to manage these factors to enhance the ability of risk tolerance in making investment decisions and increasing economic growth. The survey instrument used to investigate the determinants of risk tolerance is based on a questionnaire developed by Dow Jones and Company in 1998 that is in Bodie et al. (2007). The questionnaire contains two parts. The first part includes demographic information about and second part includes questions or cases, while univariate analysis is used to calculate the significance of the results. Four hypotheses have been formulated and tested. Relying on the results of the study, the author concludes that men are less risk averse than women, educated investors are more likely to take risk, less wealthy investors are less risk tolerant than wealthy investors and the interesting fact found is that there is no as such strong relation between age and the level of individual risk tolerance although the risk tolerance of each age group is significantly different. Education and wealth are highly correlated with risk tolerance. Improving the level of education to make investors more risk tolerant towards risky investments of higher gains, understand the factor of gender to find the reason why women are less risk tolerant than men, and why they are not contributing in the economic growth of the country, don't treat investors as a homogeneous group, whether they should consider men and women as a separate market groups, each group has its own requirements and strategies. The results also support the importance of proper training programs for risk assessment, acceptance and management should be conducted in order to design risk accepting behavior of the individuals in a useful way. This research would be significant for the investors to enhance their investment decisions in a risky situation. This research would also be helpful for the financial institutions, investment companies, Government, NGOs and social activist in treating the investors in such a way so that their risk tolerance ability can be increased which in return contribute in economic growth.

Keywords: Risk Tolerance, Gender Differences, Target Market, Investment Programs

JEL Classification: G32

1. INTRODUCTION

Risk is one of the important factors of investment. Investments can be made in many ways. When an individual is buying a product either tangible or not, actually he is making an investment for future. He also considers those factors which can affect his decision of investment. When an individual is going to make an investment, he firstly thought about rate of return and the risk involved in that investment. Both financial and investment decisions are mainly effect by risk. Investor confidence and risk tolerance are important concepts that investors are constantly trying to gauge. Risk tolerance is a property of the investor's preferences and not at all

related to the assets. Determinants of risk attributes of individual investors are of great interest in behavioral finance Investment decision depends on the risk tolerance of an individual, how much risk an individual can bear while making an investment.

In an article previous researches had described the risk tolerance and its management as a key factor for investing money in any stock. The investors should have the inbuilt ability of risk tolerance while making investments in stocks. Investor should know the management of risk and should not put all the eggs in one basket. The ability of risk tolerance is a major factor for any job related to investment.

2. LITERATURE REVIEW

All investors observe a fundamental shock in each country, a component of which is common across investors. These shocks affect all investors symmetrically; they move prices but create no incentives for trade (Froot 2003). The effect of the government policies that encourages more women to become a part of labor market is also considered in the study. Such policies help to build responsible citizens towards their future.

1.1. Problem Statement

In Pakistan understanding the basic factors that affect the investor's investment decision may be imperative for stakeholders including government, financial institutions, banks, business associations, educational institutions, etc. In current situation of Pakistan, people hesitate to invest because they feel their investment will be loss and no benefit will be generated. The investments have been sharply declined in the last few years in Pakistan. The economy is moving in the downward trend due to less investment which ultimately causes unemployment, high inflation etc. Apart from relying on foreign aid, it is essential to invent our own resources to increase the investments and bring out the country from a rigorous situation.

1.2. Objectives of the Research

The objective of the research is to better understand the fundamental factors that determine the investment decision of individual investors in Pakistan. This study will help us to better analyze the factors that affect the individual investor decision. If we make a grip on these factors which effect the investor decision more strongly then we will be able to increase investment trend in the economy by introducing less risky environment.

- Analyze the risk tolerance trend in the investment decisions which will show a picture to us that how much risky decisions Pakistani investors are willing to make
- Secondly analyzing what factors basically effect the level of risk tolerance in an individual and how each of them affect it
- On playing with all the analyzed factors how we can change the level of risk tolerance in an individual to make it in favor of risky investments
- How to manage risk on basis of analyzed risk tolerance trend in investors to make the investment less risky and hope for more returns.

1.3. Significance of the Study

This research would be significant for the investors to enhance their investment decisions in a risky situation. This research would also be helpful for the financial institutions, investment companies, Government, NGOs and social activist in treating the investors in such a way so that their risk tolerance ability can be increased which in return contribute in economic growth.

1.4. Organization of the Study

The remaining segment of the research is organized as follows: Section II describes the most related literature review relying on four factors that measure the risk tolerance of individual investor more closely. Section III discusses the conceptual framework of the study and Section IV explains the data methodology and development of hypothesis. Section V provides the analysis of result and Section VI gives the conclusion, implication and recommendations.

A common approach is to formulate a plan or a policy and use this as the starting point of risk identification process. It is often useful to develop some kind of scale of risk management. The technique for estimating a risk within a given time will depend largely on the resources available and the nature of the risk itself. For some possibilities people can rely on their knowledge and understanding of the situation and then give their best judgment as to whether it will actually develop (Roy and Cornor Darren, 2000).

Regulation strongly affects the attitude of financial institutions to risk taking and often dictates how they accommodate risks. The government of developed economies had begun their slow but consistent withdrawal from their role as insurers, manager of certain risks. Value at risk is very useful when estimating the overall risk of an institution. Risk managers need to find out which of the component risks contribute most to the total risk (Crouhy 2001).

Froot (2003) clarify amend in risk predilection of individual investors rely on the observed measurement evolving positions and trades. He observes directly the wealth and positions of a large group of international institutional investors. Shu et al. (2005) indicate that Taiwanese individual investors believe in mean deterioration.

Fiala (2005) describe that tolerance as a virtue of ethical life for individuals is an ancient idea. Modern societies have institutionalized the ideas that state power should be limited and that dissent should be protected and that conformity is not necessary for social responsibility. Tolerance results from a modest, self-critical understanding of human limitations. Individuals cannot share a life in common without giving of something in value. Tolerant communities are fragile and precarious and they are always at risk from the fanatical forces of intolerance. Tolerance is often linked to the formation of beliefs that emphasizes that persons must come to belief things for the right reason.

Investment returns drives us, investment risk deters us. The prospects of losing money people pumped into a single investment is frightening. When approaching an investment decision, be realistic about what the market can give the investor in exchange for the risk they take (Burton 2001).

This research is relying on factors like education, age, wealth, gender, nationality etc. Christiansen (2006) find that investors with high level of education invest a large fraction of asset in stocks and bonds. Educated individuals are more risk tolerate as compared to an illiterate because they have studied the market in close view and have well know how about the market positioning. How market fluctuates and what are the factors that cause to ups and downs in the market portfolio.

As people get older, they prefer fixed income securities rather than more return at higher risk. Young investors unlike older ones can compensate their losses because they have much time

to reimburse their losses. When an investor is young, he has more capacity of equities and as he approaches to the age of retirement he reduces his weight of equities. More recently, Summers et al. (2006) found that investors become more risk seeking with age. Poterba and Samwick (2001), found no significant relationship between investor's age and the percentage of equities in investors' portfolios. A positive relationship is also prevails between investor's age and equity share (Yoo, 1994). But when they approaches to their retirement age, the percentage of equities in portfolios is reduces.

An individual who do not have enough sources and consume all of his earnings on daily consumption, cannot invest anywhere because he do not have any saving to invest at profitable place or market. A positive relation between wealth and risk tolerance is exist. In America, Bruce and Johnson (1994) resulted that women take less investment risk as compared to men. Lewellen et al. (1977) find out that gender was the third most important determinant of investor style. Schubert (2006) describes that men are less risk averse then women in a stereotype that leads to discrimination against women in a labor market. In Pakistan women remains at home and men will be responsible for household expenses and financial burden of his family. Men go to the markets, make surveys and find out where there is a way to generate profit by investing at a profitable organization.

3. CONCEPTUAL FRAMEWORK

The study is based on research paper published in International Research Journal of Finance and Economics by Jasim Y. Al. Ajmi in 2008. The conceptual framework of this study is to analyze the risk factor that effect an individual to make investment and this can easily be achieved by taking into consideration the risk tolerance of how much risk an individual can bear against a particular factor. If an individual has less risk tolerance against a factor then its mean that factor effect the investors decision of investment more strongly. And there is a need to work on that factor to overcome the situation. This research helps to affect the government policy that encourages women to play their role in the economic growth of the country. The outcome of this policy is to make citizen more responsible towards their future.

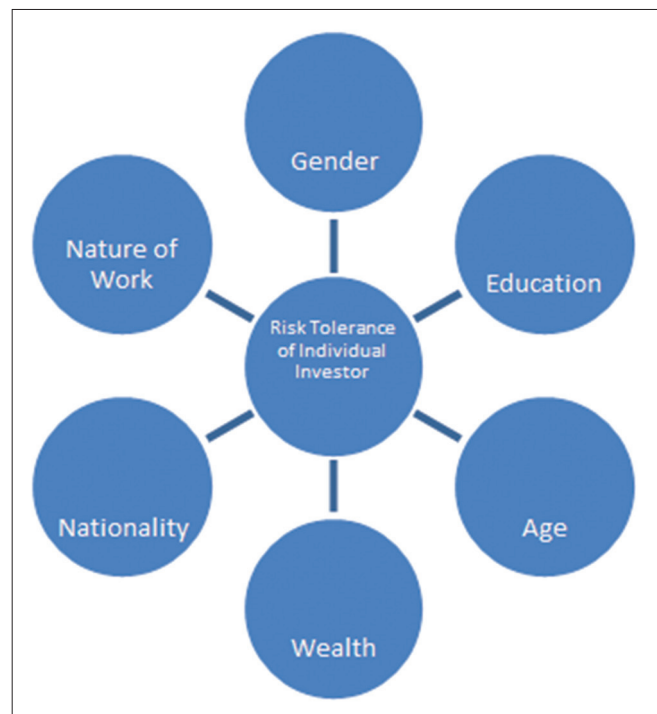
The factors taking into consideration during this study are gender, age, education level, wealth and nature of work. These factors are more strongly effect the decision of an individual investor. So we can say that risk tolerance is used to calculate the level of risk of an individual, how much capacity an individual has against a particular factor (Figure 1).

4. DATA AND METHODOLOGY

4.1. Research Approach

The data source to find out the desired results is based on primary data. The component of primary data used in this study is questionnaire. The survey instrument is used to investigate the determinants of risk tolerance that is based on a questionnaire developed by Dow Jones and Company in 1998 that is in Bodie

Figure 1: Research gap



Source: Jasim Y. Al-Ajmi, International Research Journal of Finance and Economics ISSN 1450-2887 Issue 17 (2008)

et al. (2007). The questionnaire will be divided into two parts. The first part in the questionnaire contains information about respondents for demographic information regarding education level, age, gender, monthly income and nationality. The second section describes questions or cases in which respondents have to select one of three possible answers. Alternatives are weighted between 1 and 3.

4.2. Research Methodology

The questionnaires were distributed to individuals in Islamabad Stock Exchange, public organizations and banks of Islamabad. The degree of a respondent's risk aversion is calculated by adding the weights of the answers. Those who scored a total of between 9 and 14 are considered as conservative investors. Those who scored between 15 and 21 are classified as moderate investors, and those who scored between 22 and 27 points are classified as high risk tolerance. The methodology used to reach at the desired findings is descriptive statistics i.e., frequency, mean, std. deviation etc. while univariate analysis is used to calculate the significance of the results.

4.3. Sample Size

The sample size of the survey is 187 respondents basis on different; age, educational level, gender, income, etc.

4.4. Factors of Risk Tolerance

There are many factors/variables that are affecting the risk tolerance of the individual investors in making investment decisions, where Risk Tolerance is dependent variable while gender, age, wealth, education, nature of work etc. are all independent variables.

4.4.1. Gender

Gender is the most researched factor that uses to measure the individual risk tolerance. Difference in gender affect the level of risk tolerance as the nature of man is totally different from women in aspect of facing negative consequences. Men have more capacity to tolerate the risk burden as compared to women.

4.4.2. Education

Education of course play a very important role as the professionals say that do not take risk on a matter or on a business deal unless you fully understand on what business of what type and of what extent of risk you are going to take. And education is the only element that can help one understand all. Investor's educational level is a determinant of risk tolerance of individual. This factor as a measure of earning power highly correlated with investor's income. Business people are high risk takers it can be taken back to the business students. How acquiring a business degree will affect the tolerance of risk in a person. A researcher's survey result indicates the following;

4.4.3. Age

Age is another important factor of investment decisions of individuals. Many researchers support that young people are less risk averse then older people. As individuals age increase, their risk tolerance and need for investment liquidity increases. Young Professionals who have not yet started their families would make heavy investment in stocks. Younger professionals are more willing to take risks in the marketplace than older business owners.

4.4.4. Wealth

Another factor that causes the investors decisions to change is wealth. Wealth in any form is sacrificed in front of risk in hope of higher gains. More the money, more the willingness to face risk. Rich and wealthy individuals have more capacity to risk tolerance because they have enough sources to get wealth and compensate their losses.

Several researchers have made many relationships between the amount of wealth and level of tolerating the risk. This seems to be a realistic approach as every human first preference to spend money for accomplishment of his/her basic needs then rest of the money is there for which he is willing to take risk for gain.

4.5. Research Hypothesis

H01: There is no significant difference between the risk tolerance of men and women.

H02: Education does not affect significantly in determining the risk tolerance of individual investors.

H03: There is no significant difference between risk tolerance of people of different age group.

H04: Investors wealth does not play significant role in determining the risk tolerance of individual investor.

5. RESULTS AND DISCUSSION

The descriptive statistics and univariate analysis were applied to find out the results and significance of the study (Table 1).

Apart from other four factors, Nationality is another important socioeconomic factor considered in this study. The results show that, on average Pakistani individuals (mean of 1.78) are significantly more risk tolerant then Non-Pakistanis (mean of 1.67) working in Pakistan. This shows that their risk tolerance differ significantly.

Men's mean risk tolerance is 1.86 points, whereas women mean is 1.63. These figures indicate that both men and women have moderate risk tolerance, although women are less risk tolerant then men. Therefore we can say that men are less risk averse then women. Hence, it supports that women are less likely to hold risky assets. The reason behind this result may be the income difference between men and women in Pakistan. This discrimination contributes to their risk preferences.

Second reason may be the culture environment of Pakistan. In Pakistan, mostly women remain at home and look after the home matters without involving in financial responsibility. Usually women in Pakistan feel that there is someone else to support them, this might not encourage them to take risky decisions.

There is no as such strong relation between age and the level of individual risk tolerance although the risk tolerance of each age group is significantly different. Results show that investors between 40 years and 49-year-old are more risk tolerant then between 30 years and 39 years and investors between 30 years and 39 years are more risk tolerant then between 20 years and 29-year-old. And when investors approach to retirement age their level of risk tolerance starts to decline from the risk tolerance of age level of 40 years and 49 years. Another factor considered in this study is wealth and income of investors. Results of the study show that high income earning individuals are significantly more risk tolerant then lower income earning individuals.

Education and risk tolerance are significantly correlated. More educated investors with higher level of education have more tolerance of risk then the investors with lower level of education. Education and wealth are highly correlated with risk tolerance. Investors with higher level of education and income are more risk appetite then less educated and wealthy individuals because the educated individuals have more chances of getting more income by utilizing their abilities. Losses in the investment of higher educated and wealthier investors do not distress because they would not affect their standard of living.

6. FINDINGS AND CONCLUSION

The objective of this research is to better understand the risk tolerance and responses to questions on demographic characteristics. The results show that men are less risk averse then women, educated investors are more likely to take risk, age does not affect risk tolerance significantly, and less wealthy investors are less risk tolerant then wealthy investors.

Women bear less risk tolerance than men may also be due to Pakistani cultural and environmental factors. In Pakistan, mostly women remain at home and the source of earning is

Table 1: The descriptive statistics and univariate analysis

Variables	Frequency	Percent	Mean	Std. deviation	Risk tolerance	F- statistics	Significant
Gender							
Male	113	61.0	1.3904	0.48914	1.86	20.446	0.000
Female	74	39.0			1.63		
Education							
Undergraduate	74	39.6			1.61		
Graduation	64	34.2	1.8663	0.80207	1.77	10.509	0.000
Post-graduation/professional degree	49	26.2			1.88		
Age (years)							
20-29	76	40.6			1.67		
30-39	61	32.6	1.9626	0.89424	1.74	3.859	0.010
40-49	30	16.0			1.83		
50 and above	20	10.7			1.75		
Monthly income							
<Rs. 20,000	49	26.2			1.60		
Rs. 20,000-Rs. 49,999	85	45.5	2.1390	0.94010	1.68	15.719	0.000
Rs. 50,000-Rs. 79,999	31	16.6			1.84		
Rs. 80,000 and higher	22	11.8			1.95		
Type of work							
Public	51	27.3			1.72		
Private	102	54.5	1.9626	0.78541	1.80	3.127	0.018
Self employed	24	12.8			1.91		
Retired	10	5.3			1.73		
Nationality							
Local	163	87.2	1.1283	0.33537	1.78	14.917	0.000
Foreign	24	12.8			1.67		
Risk tolerance							
Low	51	27.3					
Moderate	125	66.8	1.7861	0.53603			
High	11	5.9					

much dependent on men. In Pakistan, education level needs to be improved for the growth and economic development of the country. In present scenario, Pakistan is spending <2% of GDP on education while the developed countries are spending more than 5% of GDP on education. The literacy rate in Pakistan for the year 2009-2010 remains 58% which requires to be improved. This is a need to increase the spending on education in Pakistan in order to compete and grow in the world. Educated people will bring investments and play their key role in the prosperity and growth of economy. This study will be fruitful for Government officials, economists etc. to take initiatives and decision for the betterment and development of the country.

This study will be beneficial for financial institutions and Investment companies would better design their product and can target the market more efficiently. Secondly, Government, NGOs and social activists can better understand the factor of gender to find the reason why women are less risk tolerant than men, and why they are not contributing in the economic growth of the country. The awareness in the society and community about the role of women can increase the investment in the country.

Government, NGO's, financial institutions, economists can target the group of people having less monthly income. They should bring awareness to less wealthy people about the habit of savings and making investments at profitable places to uplift the standard of living.

There is a need to develop a policy and strategy to safeguard the rights and benefits of foreigners. The confidence level of foreigners

requires to be improved so that they can be able to contribute their role for the development of host country. Foreign investment remains more valuable for the growth of a country.

Public employees shows less risk tolerance as compared to other people of the group i.e. nature of work. Government can mainly play their role in increasing the habit of investment in public employees by adopting policies to give them incentives/benefits while making investment.

Another implication of the results is that investment companies should not treat investors as a homogeneous group, whether they should consider men and women as a separate market groups, each group has its own requirements and strategies. Pakistani investment companies should consider these factors and accordingly design the programs to achieve the desired targets.

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