

Investment Risk Tolerance, Before And After Recent Financial Tsunami: A Survey In Hong Kong

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This paper investigates some of the determinants of investment risk tolerance. It compares the results of the two surveys conducted during the first two weeks of March 2007 and November 2009 and aims at revealing the changes in investment behavior after the financial tsunami in year 2008. Data was collected by means of a survey conducted by "Shue Yan Economics and Well-being Research" during November 2009. A total of 3,095 randomly selected respondents participated in interviews. Among these respondents, 2,038 had participated in some type of investment in the last two years while 1,057 respondents had not participated in investment activity last two years. The results of the survey show that: 1) the investment risk tolerance of those respondents who did not participate in investment activity was much lower than the risk tolerance of those respondents who participated in investment activities last year, 2) the investment risk tolerance of the friends and family of the respondents affect the investment risk tolerance of the respondents, 3) those in a high income group tend to have the highest investment risk tolerance of the respondents, and 4) the investment risk tolerance of respondents after the financial tsunami dramatic changes to conservative and less willing to bear investment risk. These empirical findings provide important information for financial planners as well as individuals in preparing investment profiles.

Field of research: Personal Finance, Risk Assessment, Risk Tolerance,
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1. Introduction

Hong Kong Hang Seng index is currently fluctuation before and after financial tsunami and the local housing market is booming. While China stock market is boiling with china's hot economic. These scenarios all reflect a positive future investment environment. Nevertheless, adjustment of the whole investment market is only a question of when. Undoubtedly, this becomes a question in which the majority of investors are interested. Other considerations would be the range of adjustment, whether it is a suitable timing for investment and should investment activities be prolonged. All answers are related to risk.

2. Literature Review

The risk of adjustment occurrence increases with increasing asset prices. Once the risk comes larger than that investors could bear, investors would definitely adjust accordingly their investment portfolio for risk reduction reason. And the entire investment market would therefore adjust. Therefore, people's investment risk tolerance could lead to great impact to the entire investment market and they are interrelated. Extensively literature and studies have identified many demographic factors and sociological factors and psychological factors to be the determinants of risk tolerance. A prospect theory indicated that the individual investment decisions are affected by past experience and thought thus, the determinants of risk tolerance is very important related to the behavioural finance arena.

What determines risk tolerance? This literature review will briefly examine existing literature that addresses this question. Previous studies of risk tolerance suggest that demographic factors and sociological factors and psychological factors such as age, gender, education level marital status, number of dependents, wealth and income are very important determinants. Financial planners are essentially to evaluate their clients though these determinants factors. For examples, Lehman bond of holders are mistakenly evaluated their risk tolerance, they organize with a huge group to fight for these disturbance. These disturbance are the reasons of mismatch the supply the investment products and demand inefficiently of customers.

Age is the essentially to classify the level of risk tolerance, older investor do not

have sufficient time to recover the losses when the investment have a loss. They are often retirement, hence they only would want to have a stable income to pay their living expenses. Many studies also find that risk tolerance have an inversely relationship between age and risk tolerance. (McInish [1982]; Morin & Suarez [1983]; Riley and Chow [1992]; Palsson [1996]; Sung and Hanna [1996].). However, the other studies indicated that age is not the sole determining factor, it should have add the other factor to assist for evaluating the individual risk tolerance. (Grable 2000, Hariharan, Chapman, & Domain, 2000; Gollier & Zeckhauser, 2002).

Hence, recent studies suggest the other factors demographic factor, sociological factors and psychological factors should be taken into consideration when assessing the risk tolerance of individuals. Gender is another determining demographic factor to analysis the individuals risk tolerance. Research shows out that women are risk averse than men. (Hallahan, Faff and Mckenzie, 2004; Roszkowski and Grable, 2005; Watson and Mcnaughton 2007). Marital status and the number of dependents are also used for assessing the individuals risk tolerance. Terrence, Robert and Michael (2004), agree that marital status is a significant determinant of risk taking. Generally, it is vey reasonable that married couples have a greater responsibilities than when they are still an individual, and they have many dependents, they would consider more stable income, they are a group of risk averse. Thus, they are less likely to invest in riskier assets.

Furthermore, education level of individuals also have influences their risk tolerance. (Terrence, Robert and Michael, 2004) However, it could be argued that individual financial knowledge is actually more important than general education achievement in influencing risk-taking attitude. Income and wealth are also the key indicators of risk tolerance. (Reliey & chow, 1992; Schooley & Worden, 1996). They can afford the losses when they have sufficient income to recover the loss. However, it should be noted that wealth and income level often correlated with the other factor such as age. The wealth and income often would be gradually increase when their age become increase. That means age is still the major factor to classify the risk tolerance of individuals. On the whole, there are numerous studies to explain the determinants of risk tolerance. Our paper contributions of this paper is to update the existing literature and compares the results of the two surveys conducted during the first two weeks of March 2007 and November 2009 and aims at revealing the

changes in investment behavior after the financial tsunami in year 2008. A study based on an Asian sample has long been needed to confirm whether previous results are applicable across different culture.

3. Survey

Data for this study was collected by means of a survey conducted by “Shue Yan Economics and Well-being Research” during the first two weeks of March 2007 and 2009. A total of 3,095 randomly selected respondents participated in interviews. Among these respondents, 2,038 had participated in some type of investment in the last two years while 1,057 respondents had not participated in investment activity last two years.

3.1 Questionnaire Design and Statistical Summary

The questionnaire consisted of two main sections and all answers were ranked in an ordinal scale. Section 1 collected personal information on the respondents, such as: gender, marital status, education level, age, and household income. The second part of the questionnaire asked questions related to risk tolerance.

Table 1: Self-reported investment risk tolerance

In general, how would you describe your own investment risk tolerance?					
Year	Very low risk tolerance	Low risk tolerance	Moderate risk tolerance	High risk tolerance	Very high risk tolerance
2009	12.36% (0.60)%	30.34% (1.10)%	38.06% (1.25)%	16.69% (0.79)%	2.55% (0.16)%
2007	10.99% (1.44)%	30.24% (0.96)%	40.19% (0.88)%	15.70% (0.64)%	2.87% (0.18)%
Mann-Whitney U	Z	-.904	Asymp. Sig.	.366	
() standard error from bootstrap simulation of 250 times					
2009 and 2007 data comes from the same sample					

Table 1 shows that there is not much difference between the self-reported investment risk tolerance before and after the recent financial tsunami. Indeed, statistically, Mann-Whitney U test shows that there is no different between the data sample for 2009 and 2007. The distribution of the percentage tends to distorted to low risk tolerance; more than 40% of the

respondents claimed that they have low or very low risk tolerance while only about 20% of the respondents claim that they have high or very high risk tolerance. It seems that the respondent, in general, can be described as risk aversion.

Table 2: Main information to make decisions on investments

What type of information source provided most affects your decision to make investments?							
Year	Never consider any information	Mass media	Family members or friends	Internet	Investment consultants or brokers	Company prospectus	Other sources of information
2009	13.61% (0.86)%	25.77% (1.12)%	23.35% (0.99)%	6.39% (0.40)%	9.54% (1.54)%	8.45% (1.02)%	12.89% (0.68)%
2007	11.53% (0.57)%	23.32% (1.47)%	27.83% (1.27)%	9.29% (1.53)%	16.67% (0.76)%	6.28% (0.58)%	5.08% (1.19)%
Mann-Whitney U		Z		-.578	Asymp. Sig.		.563
() standard error from bootstrap simulation of 250 times							
2009 and 2007 data comes from the same sample							

Table 2 reviews that the type of information source provided most affects the respondents' decision to make investments. Table 2 shows that a large portion of the respondents that participated in investment activities in the last year, tend to rely on information provided by mass media or by family members or friends (around 25%) to make their investment decisions and this does not change much before and after the recent financial tsunami. The main difference in the information considered before and after the recent financial tsunami tends to lie on the trust for investment consultants or brokers. In 2007, 16.67% of the respondents rely on investment consultants and brokers as the major information for them to make investment decisions, however, in 2009, only 9.54% of the respondents do so. Thus respondents tend not to trust the

financial consultants or brokers after the recent financial tsunami. Indeed there is large increase in other sources of information, the percentage increases from 5.08%, in 2007 to 12.89% in 2009. It is reported that large portion of the other information can be classified as the instinct of the respondents. It seems that the people in Hong Kong shift to believe in themselves rather than the investment consultants. Statistically, Mann-Whitney U test shows that there is no different between the data sample for 2009 and 2007. It is hard to say that people in Hong Kong are being has learning something from recent financial tsunami and become more rational than before.

Table 3: The term “Risk”

How would you associated the word “risk” to the following words				
Year	Loss	Unreliable	Chance	Rich
2009	30.51% (1.39)%	28.82% (3.30)%	36.44% (1.76)%	4.24% (0.27)%
2007	20.27% (1.06)%	33.23% (1.07)%	43.45% (1.19)%	3.04% (0.19)%
Mann-Whitney U	Z	-6.675*	Asymp. Sig.	.000
() standard error from bootstrap simulation of 250 times				
2009 and 2007 data significantly different from each other				

Although, table 1 shows that self-reported investment risk tolerance does not change much before and after recent financial tsunami, the attitude of the respondents towards the word “risk” seem to change. In 2007, 43.45% of the respondents associated the word “risk” with “chance” but in 2009 the percentage dropped to 36.44%. At the same time, in 2009, around 30.51% of the respondents associated the word “risk” with “Loss” while in 2007; the percentage is only around 20.27%. Additionally, Mann-Whitney U test shows that 2009 and 2007 data are significantly different from each other. It seems that the negative sentiment for the word “risk” has increased, respondents tends to be more caution about risk after the recent financial tsunami than before.

Table 4: Family and Friend point of view on your investment and risk attitude

In general, how would you family and friend describe your investment and risk attitude?

Year	A real risk avoider	Cautious about risk	Take action after completing adequate research	Speculator
2009	11.59% (0.55)%	25.37% (1.28)%	49.72% (0.90)%	13.32% (0.84)%
2007	10.92% (0.59)%	26.85% (0.89)%	57.88% (1.03)%	4.34% (0.66)%
Mann-Whitney U	Z	-4.449	Asymp. Sig.	.000
() standard error from bootstrap simulation of 250 times				
2009 and 2007 data significantly different from each other				

After the financial tsunami, the attitude of the respondents' community towards risk and investment tends to change. In 2007, only 4.34% of the respondents are being described as speculator by their family and friends, however, in 2009 the percentage increased dramatically to 13.32%. At the same time, the percentages for the description "take action after completing adequate research" dropped from 57.88% in 2007 to 40.72% in 2009. There is a slight drop for the percentage named "Cautious about risk" from 26.85% to 25.37%, whereas there is a slight rise for the percentage named "A real risk avoider" from 10.92% to 11.59%. Additionally, Mann-Whitney U test shows that 2009 and 2007 data are significantly different from each other. The attitude of investment after the financial tsunami changed to have more speculators and investors who do not conduct enough research before investment decision.

Table 5: Investment Decision

Will your risk tolerance affect your investment decision?					
Year	Certainly will not	May not	neutral	May	Certainly will
2009	1.19% (0.07)%	4.27% (0.27)%	14.77% (0.93)%	47.83% (0.98)%	31.93% (1.96)%
2007	3.51% (0.22)%	7.35% (1.65)%	20.37% (1.51)%	43.49% (2.16)%	25.28% (0.83)%
Mann-Whitney U	Z	-9.569	Asymp. Sig.	.000	
() standard error from bootstrap simulation of 250 times					
2009 and 2007 data significantly different from each other					

Table 5 depicts that the effect of the risk tolerance affect the investment decision of the interviews. Most of the respondents changed their view on their attitude towards risk tolerance in their investment decision. There is 25.28% of the investors claimed that tolerance will certainly affect their investment decision in 2007, whereas 31.93% of them claimed that it would affect their investment decision. For the option “Certainly will not”, the percentage decreases from 3.51% to 1.19% from 2007 at 2009. For the option “neutral”, an obvious decrease from 20.37% to 14.77% after the financial tsunami. This indeed reviews that the risk tolerance will affect their investment decision. Additionally, Mann-Whitney U test shows that 2009 and 2007 data are significantly different from each other. It seems that respondents take into account the risk tolerance factor more seriously after the financial tsunami

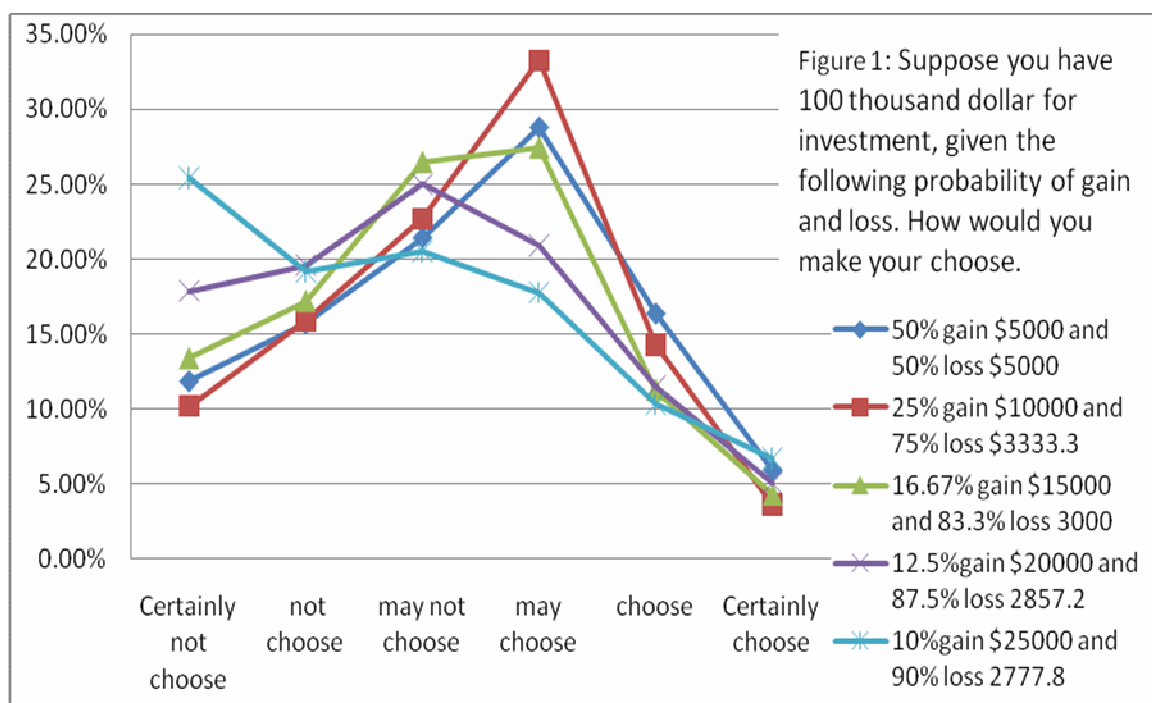
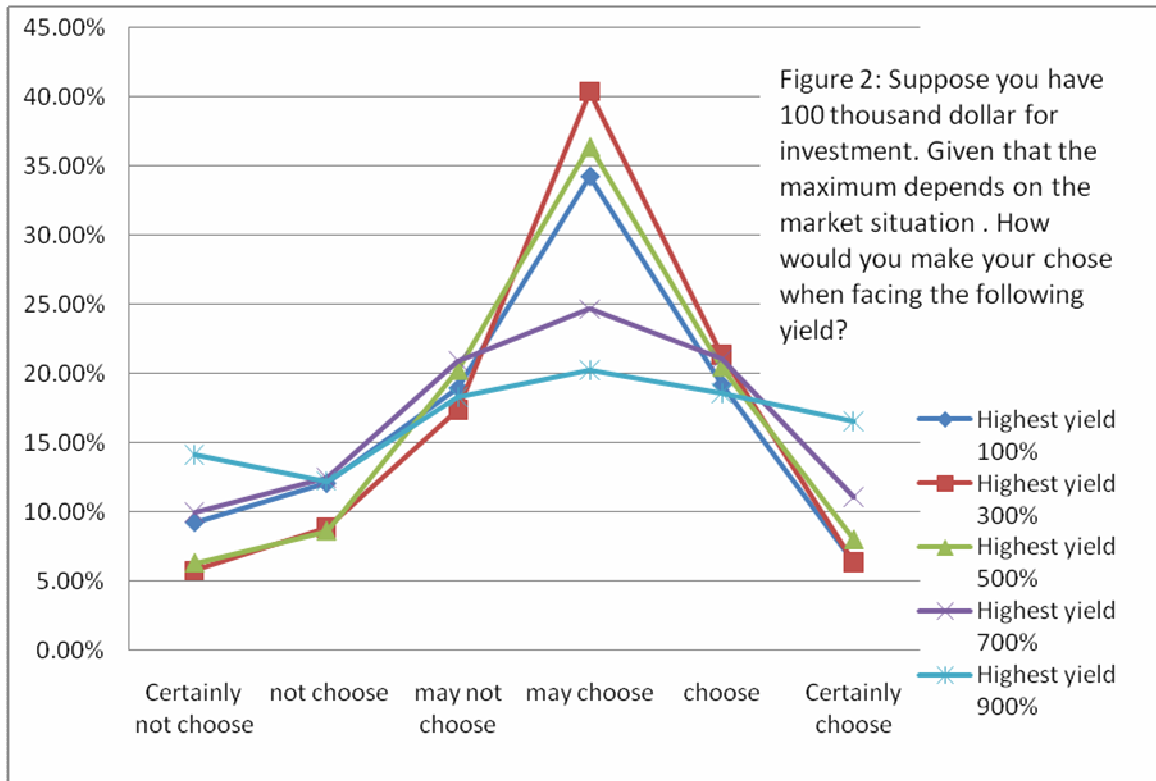


Figure 1 shows the choice interviewers made towards various investment opportunities. The most obvious thing is that the deviation of the percentage for “Certainly not choose” and “Certainly choose” enlarges when the possibility of gain is lower/ the possibility of loss is higher. There is most investors choose “Certainly not choose” for the investment opportunity 10% gain \$25000 and 90% loss \$2777.8. Also, it ranks the highest for the choice “Certainly choose” among the five options. A prospect theory indicated that the individual investment decisions are affected by past experience

This result can be explained by prospect theory which indicated that the

individual investment decisions are affected by past experience. When the questionnaire conducts, investors will not choose the one with the highest loss possibility as they are risk adverse. Also, someone may want to take the risk for the gain of \$25000 even there is only 10% chance. This is reasonable expressed in the prospect theory.



We can see from this graph that the higher return, the flatter the yield curve. It means that there is no big difference in the percentage of people preferences “Certainly choose” and “Certainly not choose”. It can be explained by representative bias which is chatacteristics of something we know are reflect onto the feature of something that we do not know. In this question, it only stated that the maximum loss will depend on the facing market situaton. When people are facing higher yield like 900%, they may think that higher yeild is reflecting a higher risk. The result shows that more people will prefer “ certainly not choose” as they think that the higher risk involved. However, the question only show that the maximum loss will depend on market situation. It hasn't show that the higher return reflecting that higher risk.

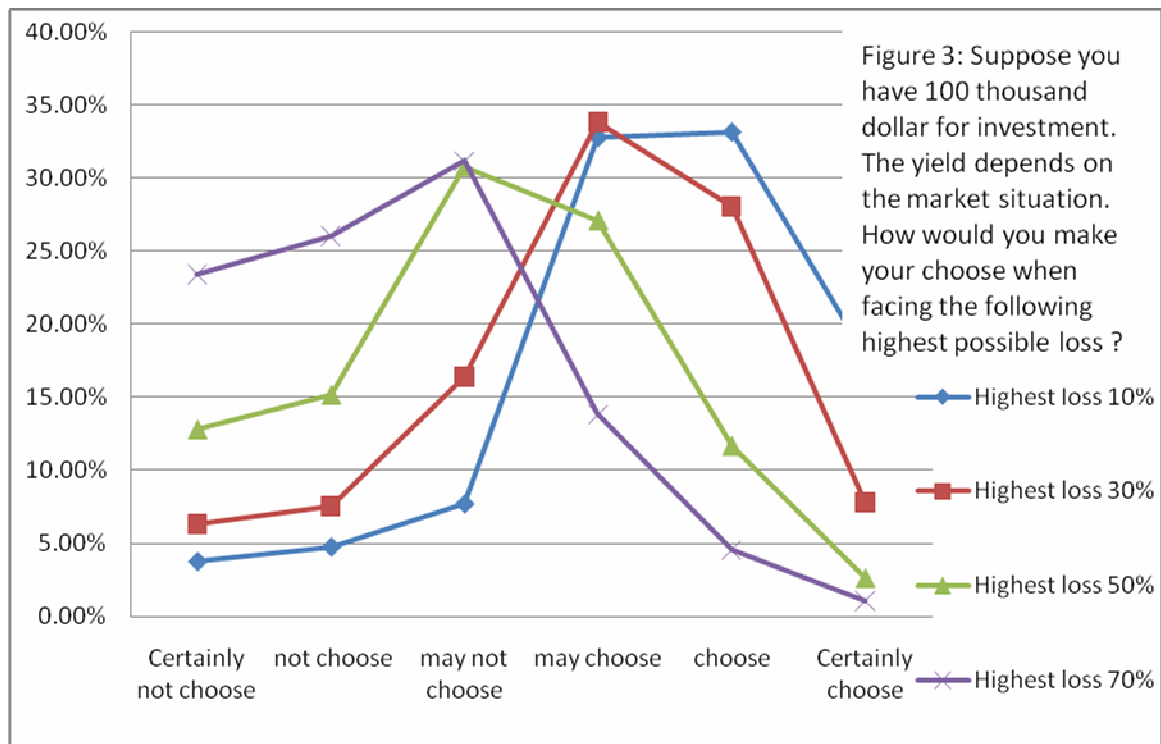


Figure 3 shows investor's choice towards the highest possible loss choices. There is an interesting fact. When the highest loss increases from 10% to 70% gradually, the shape of the result for each choice shifts from a "right-tail hill" to a "left-tail hill". This means that there are more investors may choose / choose the investment than the previous options. This situation can be explained by the Prospect Theory. The Prospect Theory shows a convex to the losses, which means that investors feel bad when they realize an investment loss, but twice as large a loss does not make the typical investor feel twice as bad. In this sense, we can explain such situation that when investors face higher possibility of loss, their utility loss from the investment loss will tend to decrease. Also, it can be explained by Representativeness Bias. They will treat "highest loss 70%" as higher risk, and higher risk means higher possibility of return as risk and return is positively related. That's why more investors tend to choose to invest even the highest loss range rises.

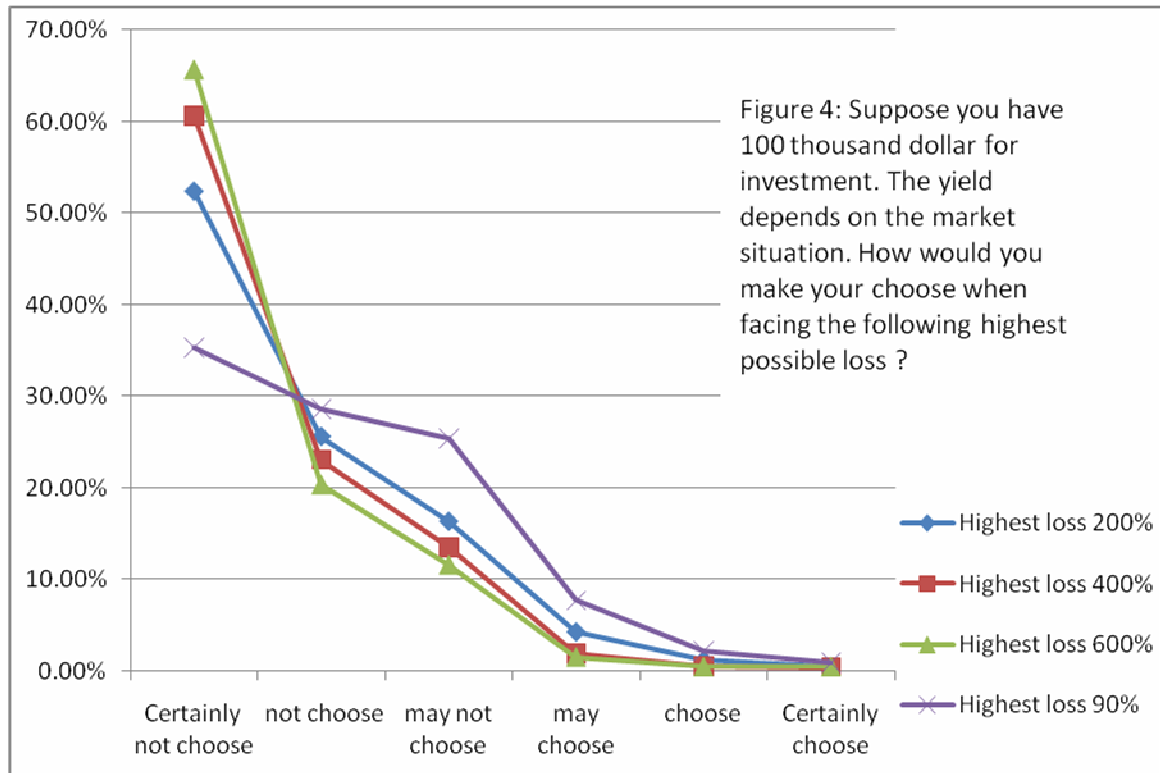


Figure 4 shows a similar result as Figure 3's. We can observe that when the highest loss increases to 600%, more investors tend to give up the investment choice, whereas the highest loss is 90%, only about 35% of the investors will give up the investment option. This can be explained by Mental Shortcuts. When investors are given only the highest possible loss of the investment, they will have the perception inside the brain that they do not want to bare extra risks or even loss 6 times of their original investment amount. Thus, they do not want to choose to invest for the choice having greater highest loss.

Conclusions

This study gathered and compared quantitative data from about 3000 respondents within in 2007 and in 2009 to better understand the changes in investment behavior after the financial tsunami in year 2008. These empirical findings provide important information for financial planners as well as individuals in preparing investment profiles. Moreover, the trusts of between financial planners and their clients are broken because misunderstanding and wrongly assessment of clients risk tolerance. It is very critical to rightly assess individual investment risk tolerance when they make investment decisions. It can avoid the political, social and legal distributes. To strengthen the

international financial entre role, government has the responsibility to efficiently distribute the financial product to the suitable individual.

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