Influence of Risk Aversion on Distinct Risky Investment Preference: The Mediating Role of Information Search

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***Abstract*—Risk aversion is one of major psychological determinants of risky decision-making behavior and information search is often used as a way to overcome perceived risk by investors. This study attempted to propose a mediated model of the determinants of risky investment decision making where theorizing that the effect of risk aversion on risky investment decision was mediated by information search, integrating risk aversion and information search. We expected that the results could provide empirical support for (1) the inconsistency of risk aversion across different risky investment in financial domains, and (2) the usefulness of the mediated model which views the information search as a mediator of effects on indirect risky investment preference, especially the mediating role of professional advice. Thus the practical implications for professional advisors or for mutual fund companies could be addressed.**

Keywords-risk aversion; information search; risky investment

I. INTRODUCTION

Risk aversion is one of major psychological determinants of risky decision-making behavior [1][2][3][4][5]. Early expected utility theory [6] dominating the analysis of decision making under risk argue that investors are completely rational and risk averse, they make the investment decision that maximizes expected return while minimizes risk. Recently it has been proposed that an individual's risk tendency differ in different situations [7][8][9]. Prospect theory, developed by Kahneman and Tversky [7], argues that people will present different risk tendency when they are in distinct sure situation, called certainty effect, which refers to the tendency people will tend to risk aversion when choices involve sure gains and tend to risk seeking when choices involve sure losses. Weber et al. [9] propose a psychological scale to assess risk taking in five content domains. The results find that there is no consistent risk aversion across all content domains.

Most researchers seem to agree that risk aversion hold an important role in financial domain. Donkers & Soest [10] find that the effect of risk aversion on individual's risky investment preference is significant rather than on risk-free investment. More studies, focusing on a specific risky investment (such as stock or option), indicated superior results with risk aversion in their risky decision-making behavior [5][11][12]. Although much work has been done to date, more studies need to be conducted to ascertain the different effect of risk aversion in distinct risky investment preference due to the notion of the inconsistent risk aversion across different situations proposed by Kahneman and Tversky [7] and Weber et al., [9]. Thus, an in-depth investigation of the influence effect of risk aversion on distinct risky investments is proposed and is one purpose of this study. Two forms of investments based on control-orientation by investors [13] are discussed here, called direct-controlled investment (e.g. stocks, option) and indirect-controlled investment (e.g. mutual fund), "direct investment" and "indirect investment" for short separately. The former allows complete decision power of realizing gains or losses to individuals and is historically riskier. Shefrin and Statman [2] point out that investors' problem was that whether they could exhibit sufficient self-control to realize their gains or losses. Nagy and Obenberger [14] indicated that self-control is one of major psychological elements framing the behavioral aspects of investment decisions. Thus, the other behavioral concept: *self-control* [15] is considered in this paper. Following Shefrin and Statman [2], the concept of self-control in this research plays a willpower-recognized role of realizing gains or losses to individuals as having two sets of preferences that are in conflict at a point in time [15]. To understand the influence of self-control on distinct risky investments is another purpose of this study due to the segmentation of risky investments.

Many scholars have found that investors often use information search as a way to overcome perceived risk [16][17][18]. Most of them have focused on discussing the simply direct effect of information search on the investment decision behavior or the simply direct effect of risk aversion on information search separately. These findings exhibited that risk aversion increases seeking help through information search [16][19], while the results of studies examining the effect of information search on the risky investment have been mixed. For example, although many investors obviously relied on the information from companies' financial statement or from financial professionals' sophistication [17][18], some of them were seemingly

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suspicious of this information [5][14]. To attempt to promote these direct effects approaches, integrating risk aversion and information search, by proposing a mediated model of the determinants of risky investment decision making where theorizing that the effect of risk aversion on risky investment decision was mediated by information search was one purpose of the present study. The proposed theoretical model that extended the direct effects approaches to build the mediating role of information search and posited a direct casual effect between psychological aspects, including risk aversion and self-control as above describing, and risky investment is shown in Fig.1.

II. Research Model and Hypotheses

A. Risk aversion

Most of researchers studying risky choice behavior recognize that risk aversion is a crucial determinant affecting personal decisions under uncertainty [2][9][20][21] Scholars studying from different theoretical perspectives differ in their interpretations of the feature of risk aversion.

Expected utility theory [6] and prospect theory have dominated the analysis of decision making under risk. The former is generally accepted as a normative model of rational choice and argues that investors are risk-averse, wealth maximizing, and completely rational to deal with complex choices [6][14]. The latter, proposed by Kahneman and Tversky [7] who develop an alternative model against expected utility theory to suggest that individual is irrational and has inconsistent risk tendency under risky choices, argues that individual will tend to "risk aversion in choices involving sure gains and to risk seeking in choices involving sure losses" [7: p. 263]. In addition, more researches believe that the tendency of individual's risk aversion or risk seeking is not consistent across situations [8][9][21]. Weber and Milliman [8] propose a definition that considers the individual's risk tendency after factoring out situational differences in risk perception to show greater stability across situations to individual's risk preference. Weber et al., [9], moreover, propose a psychometric scale to measure risk taking (i.e. risk-averse or risk-seeking) in five content domains. They conclude that individuals' risk attitude differs greatly from these domains, i.e. people are not consistently risk-averse or risk-seeking across different situations. On the basis of the literature reiew dexcribed above,the notion that individuals do not appear to be consistent degree of risk aversion across different risky investment in financial domains is expected.

1) Risk aversion and risky investments

The effect of risk aversion on the individual's risky decision-making behavior has been widely investigated [5][17][18]. Most researches have focused on incorporating the others determinants of risky decision-making behavior [5][11][16][17][21][22]. Shum and Faig [5] found that comparing with the unique variables in SCF (such as investment advice and motives for saving), the relationship of risk aversion and stock holding is negative and highly significant. Pennings and Smidts [4] found that more risk-averse individuals will "express stronger intentions to reduce the fluctuations in net income" [4: p. 1344]. Thus they are less likely to prefer riskier investment and are even more willing to pay for professional advisors' advice when decisions involve high degrees of uncertainty and importance [16][17]. Hence:

Hypothesis 1: *The lower the investor's risk aversion, the higher the degree of his/her risky investment preference.*

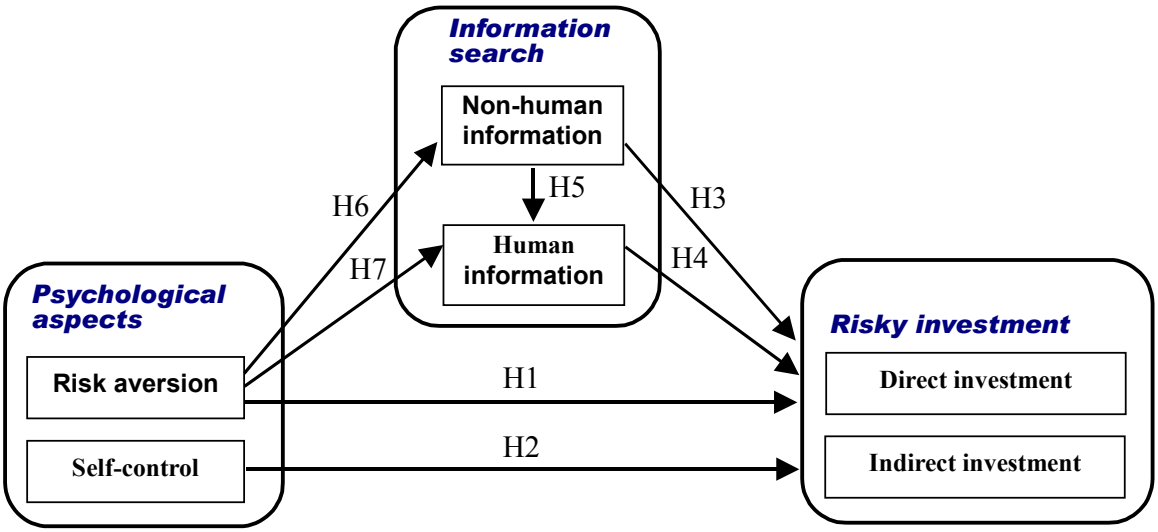

Fig.1 Research Model and Research Hypotheses

Hypothesis 1a *: The lower the investor's risk aversion, the higher the degree of his/her direct risky investment preference.*

Hypothesis 1b *: The lower the investor's risk aversion, the higher the degree of his/her indirect risky investment preference.*

B. Self-Control

Self-control, proposed by Thaler and Shefrin [15], refers to the concept that individual viewed as an organization is assumed to be both a farsighted planned and a myopic doer at a point in time. It leads that an internal conflict occurs between a rational planner part and a more emotional, normal doer part. Self-control is reflected in the disposition effect [2] that investors sell winner (stocks) too early to enjoy quickly the pride of having correct choice in the past, and ride losers too long to avoid the pain of regret from realizing losses. Kahneman and Ripe [23] incorporate optimism in the concept of control. Their research argues that optimisms overestimate their ability to control events and underestimate risks. They tend toward an illusion of control, which makes them to take more risks. Hence:

Hypothesis 2 *: The higher the level of investor's perceived self-control, the higher the degree of his/her risky investment preference.*

Hypothesis 2a *: The higher the investor's perceived self-control, the higher the degree of his/her direct risky investment preference.*

Hypothesis 2b *: The higher the investor's perceived self-control, the higher the degree of his/her indirect risky investment preference.*

C. Information Search

1) Information search and risky investment preference:

a) Non-human information search: Previous studies of individual financial investment decision have examined the determinants from economic perspectives. These crucial determinants, representing the criteria of classic wealth-maximization and company's accounting information [14], include expected dividends [14][24][25], long-term growth [24], financial stability [22][25], and future expectation [14][25]. These economical determinants coming from non-human source of information search, describing above, are the primary consideration in individual risky investment decision even combined with diverse other variables [14], or are still the valuable criteria while investors are more concerned about human's skill/management [22]. Hence:

Hypothesis 3 *: No-human information search positively influences investors' risky preference.*

Hypothesis 3a *: No-human information search positively influences investors' direct risky preference.*

Hypothesis 3b *: No-human information search positively influences investors' indirect risky preference.*

b) Human-information search: Today, investors have a greater choice of investment products due to the diversification of financial investment [13]. It leads individuals to make the investment decision in increasing complexity and uncertainty [22] due to the lack of their knowledge and understanding of various risky investments [17][18]. To reduce uncertainty form decision-making process, investors will undertake a large amount of information search [17][26]. On the other hand, today's advances in technology of information search have made the acquisition of information much easier and cheaper than before [27]. It has generated the problem of information overload for investors [28], and more information is not always better [29]. In order to find the needs information, unsophisticated investors prefer to seek professionals' help (e.g. [16][18]). Howcroft et al., [17] identify that individuals seek help to overcome uncertainty through the use of professional advisor and diverse source of information, and will rely much more upon human information, such as the opinions of friends and experts. Hence:

Hypothesis 4 *: Human information search positively influences investors' risky preference.*

Hypothesis 4a *: Human information search positively influences investors' direct risky preference.*

Hypothesis 4b *: Human information search positively influences investors' indirect risky preference.*

Hypothesis 5 *: The more important the investors perceived non-human information search, the more important the investors perceived human information search.*

2) Risk aversion and information search:

Risk-averse individuals tend to "weight potentially negative outcome more than positive outcome" [21: p.1577][30] under uncertainty, thus overestimate the likelihood of loss [21]. Their dislike for taking risks psychologically leads to a stronger desire to avoid risk [31]. Thus the more risk-averse individuals favor to seek help through information search. Hence:

Hypothesis 6 *: The higher the investor's risk aversion, the more important he/she perceived non-human information search.*

Hypothesis 7： *The higher the investor's risk aversion, the more important he/she perceived human information search.*

III. RESEARCH METHODOLOGY

A. Data collection

For the actual experiment, 500 investors who were holding or had experience of investing in risky investment were randomly selected. The reason for selecting individuals with some investment experience was that, based on the feedback from the pilot study, they were more likely to understand and complete the questionnaire and seemed to be more interested in participating.

B. Instrument Development

Considering the investors' opinion and risk tendency across situations of different risky investment, the survey instrument was measured by applying psychometric scale approach and was developed by adapting from the literature wherever possible.

C. Data analysis and discussion

Data analysis was performed following a two-stage methodology [32] where the development of measurement model is the first stage and then, the evaluation of structure model is the second stage. LISREL was used to data analysis with CFA (confirmatory factor analysis) for the former stage and with path analysis for the latter stage.

Data analysis, results and discussion will be presented in the related Journals in the future.

IV. CONTRIBUTION AND LIMITATION

A. Contribution

This study expects that the results could provide support for (1) the notion that individuals do exhibit inconsistent degree of **risk aversion** across different risky investment in financial domains, and (2) the usefulness of placing information search aspects in a more central role in the model of risky investment decision-making behavior. That is, the results of this study could provide preliminary empirical support for the mediated model which views the information search as a mediator of effects on indirect risky investment preference, especially the role of professional advice. Thus the practical implications for professional advisors or for mutual fund companies could be addressed. Moreover, this model may promote current understanding of the direct effect models applied in most researches on risky decision-making behavior previously.

B. Limitation

This study has investigated the effect of determinants, focusing on both psychological aspects and information search aspects, on individual risky investment preference. The results may be influenced by demographic variables, such as age, gender, wealth, education and income [5]. However, the effect of demographic variables on investment decision-making behavior was not the objective of this paper.

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