Financial Goal Clarity and Risk Tolerance: An Experimental Investigation

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Introduction

Financial risk tolerance, defined as "the maximum amount of uncertainty that someone is willing to accept when making a financial decision," (Grable, 2000, p.625) has been studied extensively over the past two decades. One of the important research approaches involves understanding the factors associated with risk tolerance. Grable (2008) proposed a comprehensive conceptual model, which encompasses biopsychosocial factors (e.g., gender, age, and self-esteem, etc.), environmental factors (e.g., family situations, peer behavior, and social transitions, etc.), and precipitating factors (e.g., experience, knowledge, and skills, etc.), to better understand how financial risk tolerance is influenced by a variety of factors. Although strong relationships have been identified between the factors in the conceptual model and risk tolerance (see Grable (2008), p. 12), relatively little is known about how financial goal settings influence individuals' risk tolerance.

Researchers have found that goals play a critical role in people's financial planning behaviors (Glass & Kilpatrick, 1998; Neukam & Hershey, 2003). Winnell (1987) defined goals as the end purposes that "give the person strong direction, a sense of coherence, and meaning" (p. 271). According to researchers, goals affect individuals' task performance through directing attention and action, mobilizing efforts, increasing persistence, and developing strategies (Locke, Shaw, Saari, & Latham, 1981). Strategy development, an indirect mechanism in its effect on task performance, is cognitive in essence (Locke, Shaw, Saari, & Latham, 1981). Individuals who set goals are more likely to employ relevant learning strategies in different circumstances than those who do not set goals (Terborg, 1976); they also frequently redefine the task in the way that would permit them to fulfill the goal (Bavelas & Lee, 1978).

An important characteristic of goal settings, as indicated by Winnell (1987), is goal clarity since a clear goal may provide feedback on whether concrete objectives have been achieved. The task goal theory (Locke & Latham, 1990) postulates that specific and difficult goals can lead to higher levels of performance relative to vague or easy goals. From a social cognitive theory perspective, the power of goal setting derives from the influence of self-referent thinking processes (Cervone, Jiwani, & Wood, 1991). Other words, when trying to achieve a well-defined goal, individuals will direct their attentions toward the relation between the benchmarks of the goal setting and their actual attainments.

There has been scant research on the relationship between financial goal setting and risk tolerance. Cai and Yang (2010) found that individuals with a financial goal had different risk tolerance than those without a financial goal. However, goal clarity, the important characteristic of financial goal setting, and how it affects risk tolerance, has not been investigated. Stawski, Hershey, and Jacobs-Lawson (2007) found that goal clarity serves as an important psychological mechanism that motivates individuals to plan for retirement. They argued that financial goal clarity may be added to the list of factors that influence retirement planning, which already includes a variety of cognitive, demographic, and socioeconomic indicators. The current study aimed to investigate the effect of goal clarity on risk tolerance by examining the difference between a well-defined financial goal and a vague one as they influence how individuals use risk-taking strategies in investment activities.

Fishburn's target return theory (1977) provides a theoretical foundation to the current study. The theory incorporates the effect of people's goal settings on their motivational and behavioral patterns, though not explicitly stated: the motivation is to achieve a specific target return as a goal. The convex/concave utility-of-return functions in the theory may shed some light on the relationship (although not direct) between specific goal settings and risk preference. In the theory, attainment of specific goals brings achievement and feeling of success and the motivations of achieving a specific target could make people more risk tolerant. On the other hand, when there is a severe potential loss that may downgrade the status or fall below the specific target, the goal of security is prevalent, hence individuals tend to be less risk tolerant.

One common argument from both the social cognitive theory and the target return theory is that individuals make decisions based on the assessment of consequences of previous decisions and compare them with

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the targets or standards. Individuals' financial motivation domains as one of the decision contexts also play an important role in risk-taking activities. The present study aimed to investigate individuals' dynamic financial decision process using an investment game with feedbacks of changes of hypothetical investment return (wealth) provided. The effects of a target return as a clear financial goal compared to that of a vague goal on risk tolerance. The following research hypotheses were proposed and tested in an experiment using a simulated investment game:

      Hypothesis 1: In the achievement motivation domain (capital acquisition), individuals with a clear financial goal will be more risk tolerant than those with a vague financial goal;

      Hypothesis 2: In the security motivation domain (capital loss prevention), individuals with a clear financial goal will be less risk tolerant than those with a vague financial goal.

Method

The purpose of the experiment was to answer the question regarding the effects of a clear financial goal vs. a vague financial goal on individuals' risk tolerance when investment returns (wealth) change.

Participants

One hundred and twenty undergraduate students from intermediate financial management classes participated in the experiment (mean age = 22.3; M=55%, F=45%).

Design

The experiment was a 2 (financial motivation domain: achievement vs. security) x 2 (goal status: a clear goal vs. a vague goal) between-subject design.

Material and procedure

The experiment employed a simulated investment game and was conducted via personal computers. Participants answered 20 questions regarding their investment choices in either the achievement domain or security domain. All questions involved only probabilities and potential outcomes and no investment tools were specified. The expected value for each question item ranged from $300 to $1,600 gains or losses and the order of the questions were assigned randomly in advance. Each question had two options with one sure gain or loss option and a risky option that was stated as different combinations of probabilities and potential returns or losses. For example, one question asked participants to choose one of two choices for an investment: a sure gain of $800 or a 10% chance to gain $2600 and a 90% chance to gain $600. The sure option was coded 1, and the risky option was coded 2. In the subsequent analysis, participants' scores to all questions were summed to obtain total risk scores. Participants' risk tolerance was derived from the risk score they obtained: those with higher risk scores were more risk tolerant than those with lower risk scores. After making the choice, each participant got a feedback with regards to the amount won or lost, either from the sure or the probabilistic choice, which was set a priori by the researcher for every question.

The participants were assigned randomly with 30 participants in each group. Participants in the achievement motivation domain (achievement clear goal and vague goal groups) had $0 in their accounts when they started. Participants in the security motivation domain (security clear goal and vague goal groups) had $20,000 in their account to start the game. Participants in the achievement clear goal group were informed that the goal was to raise the amount in their account to $20,000 by the end of the game, whereas the goal for the participants in the clear security goal group was to keep a $100 balance at the end of game. The participants in the two vague goal groups were informed that they need to raise money (achievement group) or not to lose much money (security group). Additional instructions were also given to all participants that the account balance would be adjusted according to their investment outcomes and they would be acknowledged such balance change. For all groups, the game would be over when it ran out of questions.

Results

The dependent variable was the risk tolerance of participants in different groups, which was measured with the average scores of their answers to the questions with higher scores associated with higher risk tolerance. The independent variables were goal clarity (clear goal vs. vague goal), and financial motivation domain (achievement vs. security).

A two-way ANOVA was used in the subsequent analysis. First of all, the main effect of financial goal clarity on risk tolerance was significant ($F(1, 119) = 34.26$, $p < .001$.). The interaction effect of financial motivation

domain and financial goal clarity on risk tolerance was significant ($F(1, 119) = 27.18$, $p < .001$). Specifically, for participants with achievement motivation (capital acquisition), the mean risk tolerance score (M=1.68, SD = .22) for those who had a clear financial goal was significantly higher than the mean score for those with a vague financial goal (M=1.26, SD = .21; $p<.001$, Tukey adjustment for post hoc comparison was utilized.). Conversely, for participants with security motivation (capital loss prevention), those who had a clear financial goal obtained a significantly lower mean risk score than did those without a vague financial goal (Means of 1.46 (SD = .18) vs. 1.67 (SD = .21), p=.04, with Tukey adjustment). Therefore, the results supported both H1 and H2, showing a significant effect of financial goal clarity on risk tolerance in both capital acquisition and capital loss prevention domains with opposite directions: having a clear financial goal will make individuals with achievement motivation more risk tolerant, whereas it will make individuals with security motivation more risk averse.

Conclusion

The results of the experiment showed a significant effect of financial goal clarity on risk tolerance in both motivation domains. The current study provided experimental evidence that financial goal clarity serves as an important factor that influences individuals' risk tolerance. The results also confirmed the proposition from the target return theory that individuals may not have constant risk tolerance in different financial domains. Having a financial goal is essential for individuals to manage and plan for their financial affairs; however, a vague goal may not be adequate for goal fulfillment strategy development, such as how to respond to financial risk. A well-defined financial goal provides clear checkpoints for individuals to compare their performance with the standards; therefore, more adaptive strategies may be used in the process of financial management.

One limitation in the current study was that the questions in the investment game involve either gains only or losses only. In real life situations, most financial decisions involve both gains and losses. Two conflicting motivations---security and achievement---exist in each decision. In future research, it will be more meaningful to investigate people's strategies in approaching financial goals by combining both gains and losses in one decision. It is also useful to identify which motivation is dominant when people are moving closer to their specific financial goals.

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