Journal of Management and Economic Studies
2020, 2(4): 188-197 DOI: 10.26677/TR1010.2021.635
Journal Homepage: https://www.jomaes.org

Does Prospect Theory Explain Investment Decisions: A Comparative Study

Hilal H. ERDOGAN
Avrasya University, Department of Business Administration, Turkey
hilal.erdogan@avrasya.edu.tr
http//orcid.org/0000-0003-2249-8850

Abstract

The aim of the study is to analyze and compare risk behaviors of different experimental groups on investment decisions by utilizing prospect theory. In this context, investment scenarios standardized by Sullivan (1997) are conducted on corporate managers and undergraduate students through the interviews. The results of the study state that both managers and students exhibited a greater tendency towards risk avoidance on profit conditioned scenarios, and they exhibited risk taking behavior, particularly when they dealt with clear financial losses, supporting the assumptions of prospect theory. However, managers exhibit greater risk taking behavior when both groups take risk, and they also exhibit greater risk avoidance behavior when both groups avoid risk, comparing to students. Furthermore, the differences of confidence level between groups indicate that managers are always more confident in contrast to students regardless of taking or avoiding risk.

Keywords: Risk behavior, Investment decisions, Prospect theory, Framing effect.

Introduction

In the traditional approach to corporate finance, it is assumed that markets are efficient and they are dominated by rational investors (Shefrin, 2001). Accordingly, rational investor is only concerned with his own well being, he is planning ahead and executes his actions as planned, he does not need heuristics to simplify his choices, his choice is based on calculus and statistics and lastly, he has a good judgment of his abilities (Baker, Ruback & Wurgler, 2005). However, global market events and financial crisis periods such as the Great Crash of 1929 have clearly provided an evidence of an irrationality on asset pricing and stock market inefficiency because of the misvaluations on the financial markets (Baker and Wurgler, 2007). Therefore, as a response to this traditional approach, behavioral finance has grown during the past two decades and placed a focus on investor psychology on financial decisions and stock market anomalies in financial markets. Accordingly, the market is not perfect and is populated by irrational investors. Irrational investor is lead by fairness considerations, he reacts to regret, he may have problems of self control, he uses many heuristics to simplify his choices, he has only limited knowledge of calculus and statistics and he can be overconfident (Baker, Ruback & Wurgler, 2005). Hence, scholars devote more attention to the implications of investor biases on trading behavior (Thaler, 2000; Hackbarth, 2009) and focus more on how managers make decisions, particularly under uncertain

and risky conditions, in recent years. As seen, decision making literature has been expanded by the development of several psychological approaches on investment decisions (Scholz, 1983).

Within this context, this study aims to evaluate the risk behavior of corporate managers and students on investment decisions. Investment scenarios are conducted to examine the effect of prospect theory which is important for decision making process, particularly under risky conditions. It is expected that while most of participants will choose the sure outcome in the gain condition, they will choose the risky alternative in the loss condition.

This study enables to compare the differences of different experimental groups in a risky decision setting. Whether the experience in a corporation influences the attitude on risky behavior or differs from students' preferences are also determined through this study. Hence, professionals can design better approaches or new regulations that will help managers to cope with the framing effect and prospect theory in decision making process. Instructors can also design programs by taking into account the preferences of the students and make ready the students to the finance world.

The rest of the study is structured as follows: the literature review on the framing effect and the prospect theory is provided, at first. Then, the methodology including investment scenarios are covered and empirical findings are presented. The findings obtained are evaluated in the conclusion part.

Literature Review

Framing Effect

Framing effect states that individuals respond differently to the same decision problem if the problem is presented in a different format (Kahneman and Tversky 1979, Ritter 2003).

Decision making literature has shown that behavioral biases can affect the decisions of the managers (Gervais, 2009) and individuals exhibit a number of biases during decision making process (Slovic, 2000). Furthermore, toward the end of 20th century, many studies have attempted to examine how the framing of a decision problem affects decision making. When the same alternative is presented in a different format, managers' risk preference might change (Kuhberger, 1998; Zheng, Wang & Zhu, 2010). In other words, changes only in the wording of a decision without a real change in the expected results might affect an individual's choice and judgment (Kuhberger, 1998; Sher & McKenzie, 2006). This phenomenon is referred to as a framing effect (Tversky and Kahneman, 1981; Kuhberger, 1998; McElroy & Seta, 2003). Hence, changes on preference of the same decision scenario presented as different (positive vs. negative) ways occur as a result of framing (Gonzalez et al., 2005; Huang & Wang, 2010).

The ''Asian disease problem'' described by Tversky and Kahneman (1981) is a classic example of the framing effect. Decision makers were asked to choose between two alternatives in case of an unusual disease. Firstly, an experiment conditioned on positive framing is structured for a certain or a probabilistic and risky option to save lives, on the other hand, an experiment conditioned on negative framing is structured for a certain or a probabilistic and risky option to minimize deaths. (Tversky & Kahneman, 1986: 260). Accordingly, in case of positive framing, decision makers are expected to exhibit risk avoidance behavior, and in case of negative framing, they are expected to exhibit risk taking behavior.

During the past three decades, many studies were conducted to examine the existence of framing effect. Furthermore, different tast domains within framing effect were analyzed. Life-death domains (Fagley & Miller, 1997; Druckman, 2001; Huang & Wang, 2010; Zheng, Wang & Zhu,

2010), monetary domains (Fagley & Miller, 1997; Huang & Wang, 2010) and time domains (Huang & Wang, 2010) were mostly focused in framing effect researches.

Financial desicions such as investment fund choices, tax-related decisions were also evaluated within the framing effect in the literature (Fagley & Miller, 1997; Diacon & Hasseldine, 2007; Schadewald, 1989; Highhouse & Paese, 1996; Chang, Yen & Duh, 2002; Hasseldine & Hite, 2003).

On the other hand, while some researchers claimed that reactions to positively or negatively framed scenarios are affected by personal characteristics during decision making process (Levin, Schnittjer, & Thee, 1988; Lauriola & Levin, 2001), some others suggest that gender is related to risk taking behavior (Hasseldine & Hite, 2003; Huang & Wang, 2010). Prospect theory suggested by Kahneman & Tversky (1979) was utilized to evaluate framing effect for the decision making literature.

Prospect Theory

Prospect theory is an important theory for decision making process under uncertainty and risk. Thaler (2000) suggests that prospect theory is as a way of understanding human cognition. As a response to the rational-based framework of traditional approach suggested by Han & Hsu (2004), Kahneman & Tversky (1979) provide robust evidences that people do not display rational behavior, particularly under risky conditions. Under these circumstances, people exhibit risk avoidance behavior in case of gains and exhibit risk taking behavior in case of losses; this behavior is explained by prospect theory (Kahneman & Tversky, 1979; Durukan, 1999).

Prospect theory explains the framing effect suggesting a value function (Kahneman & Miller, 1986; Kahneman & Tversky, 1979; Thaler, 2000; Süer, 2007). Accordingly, value is evaluated as gains and losses based on a reference point which is the central feature of prospect theory (Cochran, 2001). Accordingly, people's preferences will differ depending on whether the domain of outcomes is gain or loss and decision alternatives with outcomes above the reference point are viewed as gains, while outcomes below that point are viewed as losses (Fischhoff, 1983; Ritter, 2003). It is expected that decision makers tend to avoid risk when choosing between alternatives above the reference point, and take risk when choosing between alternatives below that point (Kahneman & Tversky, 1984; Sullivan, 1997, Olsen, 1997; Wen, 2010).

Many authors emphasized on various applications related to prospect theory. Loughran and Ritter (2002) and Chang (2011) used prospect theory to explain the severe underpricing of initial public offering (IPO). As similar, Ljungqvist & Wilhelm (2006) investigated whether prospect theory explains IPO market behavior. Thaler (1985) suggested that individuals utilize a reference point during their decision making process. Wiseman & Gomez-Mejia (1998) developed a behavioral agency model based on risk taking behaviors of executives. Wen (2010) examined the existence of prospect theory on corporate capital investment and corporate governance. Sullivan (1997) & Süer (2007) used several scenarios to determine corporate managers' risky behavior. Earnings management (Shen & Chih, 2005), customer choice (Cochran, 2001), asset prices (Barberis, Huang & Santos, 2001), liquidation decisions (Kyle, Yang & Xiong, 2006), option prices (Gemmill & Shackleton, 2005), managerial accounting decisions (Chang, Yen & Duh, 2002), capital budgeting decisions (Harwood, Pate & Schneider, 1991; Allport, 2005) were also studied and applied within the framework of prospect theory. Moreover, while some of the studies were conducted on managers and investors, others were conducted on students.

Methodology

The aim of the study is to investigate whether the prospect theory exists in the decision making associated with invesment decisions. To determine the decision behavior, the study utilizes several scenarios that examine risky behavior across decision settings. The investigation is conducted through the interviews with eighty professional corporate managers and eighty six undergraduate students who make a choice between two alternatives for each experiment associated with a managerial decision problem. To test the confidence levels of the participants on their decisions, the degree to which preferred the chosen alternative for each experiment is presented between the ranges from '1' to '5', expressing 'weakly preferred' and 'strongly preferred', respectively. Within this context, five different experiments including twelve scenarios are conducted on corporate managers of small and medium size enterprises registered to Eagean Region Chamber of Industry, in the city centre of Izmir and senior class students of departments of business administration and economics, studied in Dokuz Eylul University. The responses of participants to investment scenarios are used to test the assumptions of framing effect and prospect theory.

Empirical Findings

Table 1 provides the results of the experiment conditioned on save and loss exhibiting risk taking or risk avoiding tendencies of the participants. Based on the results, it can be concluded that while managers chose the risky alternative with the percetage of 94%, students chose risky alternative with the percentage of 81% in the loss condition, at the 1% significance level. On the other hand, a great number of managers chose the scenario A with 92% percentage, and students chose the scenario A as well with 71.4% in the save condition, even if the results are insignificant. Thus, it can be said that while both managers and students tend to exhibit greater risk taking behavior when the scenarios are presented in terms of loss, and they tend to avoid risk in the save condition, consistent with the framing effect. Furthermore, when compared the results, it is clearly seen from the table that managers are more confident than students on their decisions for both save and loss conditions.

Table 1. Experiment on Framing Effect

Save Condition			**Loss Condition**	
A: Save $200,000 for sure.			**A:** Sure loss of $400,000.	
B: 1/3 probability of saving $600,000. 2/3 probability of saving nothing.			**B:** 1/3 probability of losing nothing. 2/3 probability of losing $600,000.	
MANAGERS				
	Risk Taking	**Risk Avoiding**	**Confidence Level**	**Comments**
Save	0.08	0.92	4.33/5	Greater risk avoidance
Loss	0.94	0.06	4.33/5*	Greater risk taking
STUDENTS				
	Risk Taking	**Risk Avoiding**	**Confidence Level**	**Comments**
Save	0.286	0.714	4.05/5	Greater risk avoidance
Loss	0.81	0.19	3.67/5*	Greater risk taking

*significance at 1% level based on chi-square test.

The results of experiment including profit and loss scenarios are presented on Table 2. Accordingly, the percentage of managers exhibiting risk avoiding behavior in the two profit conditions was 94% and 96%, with the confidence level of 5.00 at the 1% significance level. On the other hand, they chose the risky alternative in both loss conditions with 90% and 78% percentages, respectively. Thus, it can be said that risk greater taking behavior is exhibited by

managers when the alternative is presented as losses, and also exhibiting greater risk avoiding behavior in case of profit.

The students also exhibited greater risk avoiding behavior in case of profit with 60% and 80% while they chose the risky alternative when the scenario was presented in terms of loss with 100% and 75% percantages. The percentage of risk averse students in the first profit condition is close to split in behavior. This may be because of the probability of high profit when they take risk. Moreover, students are more confident on the decision in the profit condition by contrast with the loss condition.

To sum up, the results, reported on Table 2, provide strong evidence of risk avoiding behavior when the experiment is exhibited in terms of profit and and risk taking behavior when the experiment is exhibited in terms of loss for both of the groups. However, managers are more risk averse in profit condition and more risk taker in loss condition than students. Furthermore, comparing the confidence level, it is seen that managers make decision with stronger confidence than students.

Table 2. Experiment on Profits and Losses

Profit Condition: Set One	**Loss Condition: Set Three**
A: 60% chance of a $520,000 profit. 40% chance of no profit.	**A:** 60% chance to lose $390,000. 40% chance to lose nothing.
B: Sure profit of $312,000.	**B:** Sure loss of $234,000.
Profit Condition: Set Two	**Loss Condition: Set Four**
A: 60% chance of a $290,000 profit. 40% chance of a $130,000 profit.	**A:** 60% chance to lose $375,000. 40% chance to lose $230,000.
B: Sure profit of $226,000.	**B:** Sure loss of $317,000.

MANAGERS

	Risk Taking	**Risk Avoiding**	**Confidence Level**	**Comments**
Profit: One	0.06	0.94	5.00/5*	Greater risk avoidance
Profit: Two	0.04	0.96	5.00/5*	Greater risk avoidance
Loss: Three	0.90	0.10	4.33/5*	Greater risk taking
Loss: Four	0.78	0.22	4.33/5*	Greater risk taking

STUDENTS

	Risk Taking	**Risk Avoiding**	**Confidence Level**	**Comments**
Profit: One	0.40	0.60	4.25/5*	Greater risk avoidance
Profit: Two	0.20	0.80	4.30/5*	Greater risk avoidance
Loss: Three	0.88	0.12	3.30/5*	Greater risk taking
Loss: Four	0.75	0.25	3.80/5*	Greater risk taking

*significance at 1% level based on chi-square test.

The experiment was conducted in terms of profit and expenditure and the results were presented on Table 3. In this experiment, it is concluded that managers preferred the certain option with 88% when the scenario is presented as profit, while only about 12% chose the risky alternative indicating a clear tendency for risk avoidance. On the other hand, managers exhibited a tendency of risk taking behavior. Only 12% of the managers select the certain expenditure, while 88% selecting the probabilistic expenditure. This may be because of that expenditures are viewed as a reduction from current assets and thus, induce managers to take risk.

On the other hand, students are split in their risk behavior for both profit and expenditure condition (52.4% vs. 47.6%). This can be because of similarities of profit and expenditure values in scenarios of A and B. Furthermore, students may be hesitant because of being inexperienced

in real finance world. Nevertheless, students have preferred certain alternative in the profit condition and risky alternative in the expenditure alternative, consistent with the assumptions of prospect theory, even if the values are close to each other. The confidence level of the experiments is also observed higher for the managers, consistent with the earlier results.

Table 3. Experiment on Profits and Expenditures

Profit Condition	**Expenditure Condition**
A: Sure profit of $420,000.	**A:** Certain expenditure of $420,000.
B: 75% chance of $570,000 profit. 25% chance of no profit.	**B:** 75% chance of $570,000 in expenditures. 25% chance of no additional expenditures.

MANAGERS

	Risk Taking	**Risk Avoiding**	**Confidence Level**	**Comments**
Profit	0.12	0.88	5.00/5*	Greater risk avoidance
Expenditure	0.88	0.12	4.67/5*	Greater risk taking

STUDENTS

	Risk Taking	**Risk Avoiding**	**Confidence Level**	**Comments**
Profit	0.476	0.524	4.52/5	Split in risk behavior
Expenditure	0.524	0.476	4.05/5	Split in risk behavior

*significance at 1% level based on chi-square test.

Table 4 presents the results of the experiment conditioned on revenues and cost. In the revenue condition, 86% of the managers and 66.7% of the students selected the certain outcome, indicating clear risk avoidance behavior at the 1% significance level. As expected, the students tend to take risk in the cost condition with about 57.1%. Differently, 94% of the managers chose the certain alternative, indicating a greater risk avoidance behavior, when the experiment was conditioned on cost scenarios, not supporting the prospect theory. Chi-square test also indicate insignificancy for cost condition preferences of the managers. Thus it can be concluded that while managers are greater risk averse for both of the scenarios, students exhibit greater risk avoidance behavior in the revenue condition and they take risk more compared to managers in the cost condition. On the contrary, managers avoid risk more than students and additionally, they are more confident (5.00) on their decisions.

Table 4. Experiment on Revenues and Costs

Revenue Condition	**Cost Condition**
A: $575,000 certain revenues.	**A:** $250,000 certain costs.
B: 30% probability of $365,000 in revenues. 70% probability of $665,000 in revenues.	**B:** 30% probability of $460,000 in costs. 70% probability of $160,000 in costs.

MANAGERS

	Risk Taking	**Risk Avoiding**	**Confidence Level**	**Comments**
Revenue	0.14	0.86	5.00/5*	Greater risk avoidance
Cost	0.06	0.94	5.00/5	Greater risk avoidance

STUDENTS

	Risk Taking	**Risk Avoiding**	**Confidence Level**	**Comments**
Revenue	0.333	0.667	4.20/5*	Greater risk avoidance
Cost	0.571	0.429	4.20/5*	Risk taking

*significance at 1% level based on chi-square test.

The results of the profit-cost experiment conducted are presented on Table 5. In the profit condition, both managers (88%) and students (76.2%) preferred to choose low risky alternative in expected profits, exhibiting significant greater risk avoidance behavior.

Results provided from the cost conditioned experiment indicated that managers chose the high and low risk alternatives with about 84% and 16%, respectively, as expected within the prospect theory. However, the students exhibited risk avoidance behavior with about 57.1% as in the profit condition, although the experiment is conditioned on cost, against the assumptions of prospect theory. This can be because of low cost probability with about 30% when they choose risky alternative. Otherwise, they will expect at least $344,000 costs.

To sum up, significant risk avoiding behavior was observed for both groups in the profit condition, with more than 4.00 confidence level. When the alternative is conditioned on cost, while managers prefer to take risk, students tend to avoid risk.

Table 5. Experiment on Profits and Costs

Profit Condition				**Cost Condition**			
A:	70% probability of $465,000 in profits			**A:**	70% probability of $465,000 in costs		
	30% probability of $155,000 in profits				30% probability of $155,000 in costs		
B:	70% probability of $384,000 in profits			**B:**	70% probability of $384,000 in costs		
	30% probability of $344,000 in profits				30% probability of $344,000 in costs		
MANAGERS							
	Risk Taking	**Risk Avoiding**	**Confidence Level**	**Comments**			
Profit	0.12	0.88	5.00/5*	Greater risk avoidance			
Cost	0.84	0.16	4.33/5*	Greater risk taking			
STUDENTS							
	Risk Taking	**Risk Avoiding**	**Confidence Level**	**Comments**			
Profit	0.238	0.762	4.29/5*	Greater risk avoidance			
Cost	0.429	0.571	3.95/5	Risk avoidance			

*significance at 1% level based on chi-square test.

Conclusion

This study aims to investigate whether the irrational behavior of prospect theory exists in the decision making associated with the investment decisions. To determine the decision behavior, the study reports on five experiment groups including twelve scenarios that investigate risky alternatives across decision settings in which profit, loss, revenue, cost, and expenditure forms. The investigation is conducted through the interviews with eighty professional corporate managers and eighty six undergraduate students who will make a choice between two alternatives in a decision problem setting. The experiment has been applied on small and medium size enterprises registered to Eagean Region Chamber of Industry, in the city centre of Izmir and senior class students of departments of business administration and economics studied in Dokuz Eylul University. The responses of participants to managerial scenarios are used to test the assumptions of prospect theory.

Within the prospect theory, it is expected that the participants tend to avoid risk when the scenario is presented as profit conditioned, on the other hand, it is expected that they tend to be risk taker in case of losses. Accordingly, the results indicated that both managers and students exhibited a greater tendency towards risk avoidance on profit conditioned scenarios, as expected. Consistently, they exhibited risk taking behavior, particularly when they dealt with clear financial losses and expenditures. Thus, it can be said that both expenditures and losses are

considered in the same mental accounts by decision makers. In other words, participants tend to take risk in the expenditure condition, as in the loss condition, in accordance with prospect theory. However, decision making process is evaluated different for the cost conditioned experiment, as reported on Experiment 4 and 5. This may be because of that costs may be seen as a necessary to produce and have income, and thus they are perceived as integral parts of the profits and revenues.

Finally, an important different between students and managers was observed that managers are more risk takers when both groups take risk, and also they are more risk averse decision makers while both groups avoiding risk. Furthermore, confidence level differences between groups demonstrate that managers are always more confident in contrast to students regardless of taking or avoiding risk.

To sum up, this study attempts to display managerial behaviors of corporate managers and undergraduate students under risk. Risk attitudes of these two groups were compared and thus, the differences between theory and practice may be seen in terms of prospect theory. The study is important to determine whether the experience in a corporation influences the risky behaviors or differs from students' preferences. Through the differences between experimental groups, it is expected to examine that whether students represent the managers and the experiment gained in real business world affects risky behaviors. In addition, the study enables to test the assumptions of prospect theory which are developed as an alternative to traditional finance theories.

It is believed that this study will be useful for professionals to design new regulations leading to managers while making decisions and for instructors to design new programs benefiting to students while being ready to the real business world. The results can be generalized to all corporate managers and to the undergraduate students. For further research, financial crisis periods can be taken into account to test the investment behaviors of the groups under uncertain and more risky conditions. Within this context, coronavirus disease pandemic period can also be included to the study.

References

Allport, C. D. (2005). *The Influence of Evaluative Reactions to Attribute Frames and Accounting Data on Capital Budgeting Decisions,* Unpublished Doctoral Dissertation, Blacksburg, Virginia.

Baker, M., Ruback, R. S. and Wurgler, J. (2005). Behavioral Corporate Finance: A Survey, *NBER. Working paper,* 10863.

Baker, M. and Wurgler, J., (2007). Investor Sentiment in the Stock Market, *Journal of Economic Perspectives*, 2(21), 129-151.

Barberis, N. Huang, M. and Santos, T. (2001). Prospect Theory and Asset Prices, *The Quarterly Journal of Economics,* 116, 1, 1-53.

Chang, C. J., Yen, S. H. and Duh, R. R., (2002). An Empirical Examination of Competing Theories to Explain the Framing Effect in Accounting-Related Decisions, *Behavioral Research in Accounting*, 14, 35-64.

Chang, C. H. (2011). IPO Underpricing: A Social Comparison Perspective, *International Review of Economics and Finance*, 20(3), 367-375.

Cochran, A. (2001). Prospect Theory & Customer Choice. *Prospect Theory Overview*, October, 1-16.

Diacon, S. and Hasseldine, J., (2007). Framing Effects and Risk Perception: The Effect of Prior Performance Presentation Format on Investment Fund Choice, *Journal of Economic Psychology,* 28, 31-52.

Druckman, J. N. (2001). Evaluating Framing Effects, *Journal of Economic Psychology*, 22, 91-101.

Durukan, M. B. (1999). Bireysel Yatırımcı Davranışına Alternatif Bir Yaklaşım: Bekleyiş Kuramı, *İktisat İşletme ve Finans Dergisi*, 14, 161, 76-83.

Fagley, N. S. and Miller, P. M. (1997). Framing Effects and Arenas of Choice: Your Money or Yyour Life? *Organizational Behavior and Human Decision Processes,* 71, 355–373.

Fischhoff, B. (1983). Strategic Policy Preferences: A Behavioral Decision Theory Perspective, *Journal of Social Issue*, 39(1), 133-160.

Gemmil, G. and Shackleton, M. B. (2005). Prospect Theory and Option Prices: Evidence from S&P500 Index Options, 1-12.

Gervais, S. (2009). Capital Budgeting and Other Investment Decisions, (Ed.) Baker, H. K. and Nofsinger, J. R.: *Behavioral Finance* in (pp: 413-434) Wiley/Blackwell.

Gonzalez, C., Dana, J., Koshino, H. and Just, M. (2005). The Framing Effect and Risky Decisions: Examining Cognitive Functions With fMRI,. *Journal of Economic Psychology,* 26, 1-20.

Hackbarth, D. (2009). Determinants of Corporate Borrowing: A Behavioral Perspective, *Journal of Corporate Finance,* 15, 389-411.

Han, B. and Hsu, J. (2004). Prospect Theory and Its Applications in Finance, 1-28.

Harwood, G. B., Pate, J. L. and Schneider, A. (1991). Budgeting Decisions as a Function of Framing: An Application of Prospect Theory's Reflection Effect, *Management Accounting Research,* 2(3), 161-170.

Hasseldine, J. and Hite, P. A., (2003). Framing, Gender and Tax Compliance. *Journal of Economic Psychology*, 24, 517-533.

Highhouse, S. and Paese, P.W. (1996). Problem Domain and Prospect Frame: Choice under Opportunity versus Threat, *Personality and Social Psychology Bulletin*, 22**,** 124–132.

Huang, Y. and Wang, L., (2010). Sex Differences in Framing Effects Across Task Domain, *Personality and Individual Differences,* 48, 649–653.

Kahneman, D. and Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk, *Econometrica*, 47(2), 263-291.

Kahneman, D. and Miller, D. T. (1986). Norm Theory: Comparing Reality to Its Alternatives, *Psychological Review*, 93, 136-153.

Kahneman, D. and Tversky, A. (1984). Choices, Values and Frames, *American Psychologist*, 39, 4, 341-350.

Kuhberger, A. (1998). The Influence of Framing on Risky Decisions, *Organizational Behavior and Human Decision Processes,* 75, 23–55.

Kyle, A.S., Yang, H. O. and Xiong, W. (2006). Prospect Theory and Liquidation Decisions, *Journal of Economic Theory,* 129, 273-288.

Lauriola, M. and Levin, I. P. (2001). Personality Traits and Risky Decision Making in a Controlled Experimental Task: An Exploratory Study, *Personality and Individual Differences,* 31, 215-226.

Levin, I. P., Schnittjer, S. K. and Thee, S. L. (1988). Information Framing Effects in Social and Personal Decisions, *Journal of Experimental Social Psychology*, 24, 520–529.

Ljungqvist, A. and Wilhelm, W. J. (2005). Does Prospect Theory Explain IPO Market Behavior, *The Journal of Finance*, 60, 4, 1759-1790.

Loughran, T. and Ritter, J. R. (2002). Why Don't Issuers Get Upset about Leaving Money on the Table in IPOs? *Review of Financial Studies,* 15, 413-443.

McElroy, T. and Seta, J. (2003). Framing Effects: An Analytic–Holistic pPerspective, *Journal of Experimental Social Psychology*, 39 610-617.

Olsen, R.A. (1997). Prospect Theory as an Explanation of Risky Choice by Professional Investors: Some Evidence, *Review of Financial konomics,* 6, 2, 225-232.

Ritter, J. (2003). Behavioral Finance, *Pacific-Basin Finance Journal,* 11, 4, 429-437.

Schadewald, M. S. (1989). Reference Point Effects in Taxpayer Decision Making, The *Journal of the American Taxation Association*, 68-84.

Scholz, R. W. (1983). *Decision Making Under Uncertainty*. *(1st edition),* Amsterdam: North-Holland.

Sher, S. and McKenzie, C. R. M. (2006). Information Leakage from Logically Equivalent Frames, *Cognition,* 101, 467-494.

Shefrin, H. (2001). Behavioral Corporate Finance, *Journal of Applied Corporate Finance*, 14, 113-126.

Shen, C. H. and Chih, H. L. (2005). Investor Protection, Prospect Theory, and Earnings Management: An International Comparison of the Banking Industry,. *Journal of Banking & Finance,* 29, 2675-2697.

Slovic, P. (2000). Rational Actors and Rational Fools: The Influence of Affect on Judgment and Decision-Making. *Roger Williams University Law Review,* 6, 163-212.

Sullivan, K. (1997). Corporate Managers' Risky Behavior: Risk Taking or Avoiding? *Journal of Financial and Strategic Decisions*, 10, 3, 63-74.

Süer, Ö. (2007). Yatırım Kararlarında Alınan Risk Düzeyinin Belirlenmesine İlişkin Ampirik Bir Çalışma, *Öneri,* 7, 28, 97-105.

Thaler, R, (1985). Mental Accounting and Consumer Choice, *Marketing Science,* 4, 199-214.

Thaler, R. H. (2000). From Homo Economicus to Homo Sapiens, *Journal of Economic Perspectives,* Volume 14, 1, 133-141.

Tversky, A. and Kahneman, D. (1981). The Framing of Decisions and the Psychology of Choice, *Science,* 211, 453-458.

Tversky, A. and Kahneman, D. (1986). Rational Choice and the Framing of Decisions, *The Journal of Business*, 59(4), 251-278.

Wen, Y. F. (2010). Capital Investment Decision, Corporate Governance, and Prospect Theory, *Procedia Social and Behavioral Sciences,* 5, 116–126.

Wiseman, R. M. and Gomez-Mejia, L. R. (1998). A Behavioral Agency Model of Managerial Risk Taking, *The Academy of Management Review*, 23, 1, 133-153.

Zheng, H., Wang, X.T. and Zhu L. (2010). Framing Effects: Behavioral Dynamics and Neural Basis, *Neuropsychologia*, 48, 3198-3204.