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Omur Suer¹, Jale Minibas-Poussard²

SOCIAL REPRESENTATIONS OF RISK: A COMPARISON BETWEEN RISK-TAKER AND RISK-AVERSE INVESTORS

The aim of this study is to analyze the differences between risk-taking and risk-averse investors in terms of social representations. The sample consisted of 68 Turkish individual investors. First of all, the sample is categorized as risk avertives and risk takers by their answers to the questionnaires. The questionnaire also contained the questions regarding the respondents' perceptions of risk, life risk, deficiencies that may create risk, investment, financial risk and tolerable financial risks. The structure of social representations for each category is analyzed by the use of a word association technique, also called evocation task. The results suggest several tentative conclusions. For instance, the term "courage" appears only in risk representations of risk-taking investors. Concerning the life risk, risk-takers express more discrete risks such as job loss, health or money loss, while risk-averse investors express more abstract concepts like economy and investment. The findings provide evidence on the difference between the subsamples regarding financial risks. While risk-averse investors use mostly credit cards and invest in real estate, risk-takers are more inclined to use currency and be at stock market.

Keywords: social representations; risk behavior; behavioral finance; individual investors.

JEL classification: G02, A120, G110.

Йомюр Суйер, Жале Мінібаш-Пуссар

СОЦІАЛЬНІ УЯВЛЕННЯ ПРО РИЗИК: ПОРІВНЯННЯ РИЗИКУЮЧИХ ІНВЕТОРІВ ТА ТИХ, ЩО УНИКАЮТЬ РИЗИКІВ

У статті проаналізовано розбіжності в соціальних уявленнях про ризик між інвесторами, що часто ризикують, та тими, що уникають ризиків. Вибірка дослідження – 68 турецьких приватних інвесторів. Спочатку вони поділені в залежності від відповідей в опитуванні, на дві категорії – ризикуючі інвестори та ті, що уникають ризиків. Потім досліджено сприйняття таких термінів: ризик, ризик для життя, наслідки ризику, інвестиції, фінансовий ризик та прийнятний фінансовий ризик. Соціальні уявлення про ризик для обох категорій інвесторів структуровано з використанням методу асоціації слів. Аналіз даних надав змогу узагальнити такі спостереження. Слово «сміливість» зустрічається в інвесторів, що беруть на себе ризики. Ризик для життя ризикуючі інвестори описують більш конкретно (це стосується втрати роботи, здоров'я або грошей), водночас інвестори, що уникають ризиків, описують його за допомогою більш абстрактних категорій – «економіка» або «інвестування». Суттєва різниця між категоріями інвесторів спостерігається і відносно фінансових ризиків. Інвестори, що уникають ризику, частіше використовують кредитні картки та інвестують переважно в нерухомість. А ризикуючі інвестори частіше використовують готівку та грають на фондовій біржі.

Ключові слова: соціальні уявлення; поведінка відносно ризику; поведінкові фінанси; приватні інвестори.

Табл. 9. Літ. 21.

Йомюр Суйер, Жале Мінібаш-Пуссар

СОЦИАЛЬНЫЕ ПРЕДСТАВЛЕНИЯ О РИСКЕ: СРАВНЕНИЕ ИНВЕТОРОВ, БЕРУЩИХ НА СЕБЯ РИСК И ИЗБЕГАЮЩИХ ИХ

В статье проанализированы различия в социальных представлениях о риске между часто ризикующими инвесторами и теми, кто избегает рисков. Выборка исследования –

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68 турецких частных инвесторов. Вначале они разделены, согласно ответам в опросе, на две категории – *рискующие инвесторы* и *предпочитающие не рисковать*. Затем следуют вопросы о восприятии терминов: *риск*, *риск для жизни*, *последствия риска*, *инвестиции*, *финансовый риск* и *приемлемый финансовый риск*. Социальные представления о риске для обеих категорий инвесторов структурированы с использованием метода словесной ассоциации. Анализ данных позволил обобщить следующие наблюдения. Слово «*смелость*» встречается только у инвесторов, берущих на себя риски. *Риск для жизни инвесторы, любящие рисковать, описывают более конкретно (в привязке к работе, здоровью или деньгам), а избегающие риска инвесторы прибегают к таким абстрактным категориям, как «экономика» или «инвестирование»*. Существенная разница между категориями инвесторов наблюдается и относительно финансовых рисков. *Инвесторы, избегающие риска, чаще используют кредитные карты и вкладывают деньги в недвижимость. А инвесторы, предпочитающие риск, чаще оперируют наличными и играют на фондовой бирже*.
Ключевые слова: социальные представления; поведение относительно риска; поведенческие финансы; частные инвесторы.

1. Introduction. Individuals comprehend concepts and phenomena with their social representations and react to them accordingly. Every individual perceives and interprets a situation, in which he/she is involved, differently. One's attitudes are shaped by *representations*, every individual's reaction to a particular situation is different. The concept of *social representation* has been elaborated by Moscovici in 1961. His aim was to show how a new scientific approach spreads in a given culture and how it changes people's self-vision and their vision of the world. As it is stated by Abric (1987), *social representation* is the output or the process of a mental activity by which a person or a group of people rebuild the reality they face and assign it a specific significance. From this point of view, it is obvious that neither the process nor the outcomes of economic behavior can be explained without proper understanding of their link with social representations. It is generally believed that investors are more risk taking than non-investors. On the other hand, numerous academic researches show that the crucial point in analyzing risk behavior of investors or non-investors is to understand thoroughly how they perceive risk. From this perspective, the aim of this study is to analyze the differences between risk-taker investors and risk-averse investors in terms of social representations.

The remainder of the paper is as follows. The following section briefly describes the relevant theoretical framework. Then, data and methodology used in this study are described. The results are reported in the subsequent section. The last section concludes the paper.

2. Theoretical framework. Economic knowledge consisting of concepts, notions and explanatory constructions, leads to an economic language which can be translated as social representations related to economy. In everyday life, this economic language does not refer exactly to the underlying scientific definitions. Therefore, some kinds of transformations are necessary in order that ordinary people understand economic phenomena (Vérges, 1998). In this transformation process, which consists of shaping all the environmental elements, the role of *perception* is crucial. *Perception* can be defined as a process, which helps the individual be aware of his/her economic environment and interpret it in such way that it remains within the scope of his/her own references. The *perception process* may allow one simplify environmental representations by keeping in mind only some information, despite its complexity and load

which exist in the environment. One's perception is shaped from the already existing frame and a piece of information, which does not refer to the person's reference frame, is rarely perceived and memorized. Categorization is supported by similarities between the previously acquired knowledge and new perceived knowledge (Filser, 1994). As a result, every individual understands and interprets a situation which he/she is faced with, within the limits of his/her own perception and his/her risk perception of an uncertain economic or financial situation takes its shape accordingly.

Thus, the theoretical background of this study, taking its roots in the concepts of *perception* and *investment decision-making under uncertainty*, is based on two independent but interrelated research fields: 1) social representations; 2) risk behavior of investors as the determinant of investment decision-making.

2.1. Social representation theory. As stated above, the *social representation* concept has been elaborated by Moscovici in 1961. The aim of Moscovici, Romanian-born French social psychologist, was to put forth how a new scientific approach spreads in a given culture and how it changes people's self-vision and their vision of the world in which they are living. His first research, in 1961 was based on the reception and circulation of psychoanalysis in France. Moscovici (1973) described social representation as: "systems of values, ideas and practices with a two-fold function; first, to establish an order which will enable individuals orientate themselves in their material and social world and master it; secondly, to enable communication to take place amongst members of a community by providing them with a code for social exchange and a code for naming and classifying unambiguously various aspects of their world and their individual and group history".

Social representations are the results of the processes involving many stages structured around two dimensions: *objectivation* and *anchoring*. *Objectivation* can be explained as the functioning of social thinking which simplify, reduce, schematize and summarize; *anchoring* means incorporating the elements which are not already perceived. These two processes are actualized when someone is confronted with the unexpected or the inexplicable (Palmonari and Doise, 1986). Representations stored in memory are scrutinized with the aim of classifying the new contents on the basis of already existing categories and name these new contents (Kirchler, 2007: 30). Each representation is composed of 3 essential elements: 1) the central nucleus; 2) information and attitudes related to the nucleus; 3) the categorization system. The core nucleus remains the foundation of the representation structure and defines the link, which unifies the elements of representation (Abric, 1987).

As it is stated by Abric (1987), *social representation* is the output or the process of mental activity by which a person or a group of people reshape the reality they face and assign it a specific significance. Thus, as one operates in terms of representations in front of a situation, he/she does not react in the same way at all.

Social representations play a key role in social relations dynamics. They allow people understand and explain the reality. In other words, social representations are not only cognitive but also social. Therefore, the understanding and the analysis of social representations provide twofold advantages (Abric, 1994): 1) cognitive component involves the rules that define cognitive processes in the formation of representations; 2) social component is determined by social conditions in which a representation has been developed.

Until recently this theory has been ignored by scientific community. Fortunately today it constitutes a major reference not only in social psychology but also in other social sciences and interdisciplinary areas such as economic psychology. The main advantages of the analysis of social representations within the context of economic psychology can be summarized as follows: Firstly, it helps incorporate the contextual side of the related object and a particular situation. Then, it takes into account the creation of social process and the use of economic knowledge. Finally, it encompasses all cognitive dimensions related to psychological nature of reasoning (Vêrges, 1998).

2.2. Risk behavior of investors as the determinant of investment decision making.

Investment decision-making is one of the least understood areas of finance. However, how individuals allocate their wealth provides important insights into individual risk preferences and degrees of risk aversion (Riley, 1992: 32). Traditional finance theories are centered on the expected utility theory (Von Neumann and Morgenstern, 1947). This theory assumes that individuals are rational, they want to maximize the expected utility and risk aversion is a typical human attitude towards risk. The degree of risk aversion can be measured by the curvature of the utility function since the risk attitude is directly related to it. While the risk neutral individuals' utility functions are linear, risk seeking individuals have convex utility functions and risk averse individuals have concave utility functions.

Contrary to traditional finance, behavioral finance assumes that investors may act irrationally and make wrong investment decisions. In the often cited article, Kahneman and Tversky (1979) suggest a new model, which is considered as an alternative to the expected utility theory. According to this theory, individuals' choices made in risky situations reveal several characteristics inconsistent with the key principles of the utility theory. Kahneman and Tversky argue that individuals underweight likely outcomes in comparison with the outcomes that are certain and they call this phenomenon the *certainty effect*. The second component of the decision-making process that Kahneman and Tversky discover is the *isolation effect* meaning that, individuals facing a choice among different prospects disregard the elements common to all prospects under consideration. Another argument of this theory is that the choices among negative prospects are mirror images of choices among positive prospects and this is called the *reflection effect*. Finally, according to this theory, decisions in risky situations are made by evaluating the values assigned to gains and losses with respect to a reference point and decision weights, whereas in the utility theory, these decisions are made according to final wealth and probabilities (Kahneman and Tversky, 1979). The value function, which passes through the reference point, is s-shaped and, as its asymmetry implies, overweighs small probabilities and underweighs large probabilities. This value function (v) which replaces the utility function has two parts: a concave part in the gain domain and, a convex part in the loss domain, capturing risk-averse behavior in gains and risk-seeking behavior in losses.

Among the empirical studies on the determination of investors' risk behavior in investment decision making, it is worth referring to some surveys. Barnewell (1987) analyze the lifestyle characteristics of individual investors via focus group interviews with various types of individual investors over a period of time. Barnewell classifies individual investors as belonging to either of two extremes – *active or passive* – and

he concludes that individual investor behavior can be predicted by lifestyle characteristics, risk-aversion, control orientation and occupation. Based on the Barnewell's findings, Warren et al. (1990), in another empirical study, categorize stock and bond investors as described in Table 1.

Table 1. **Stock/bond investor groups** (Warren, Stevens and McConkey, 1990)

	<i>Light Stock/Bond Investors</i>	<i>Heavy Stock/Bond Investors</i>
<i>What are they like?</i>	<i>Dress-conscious:</i> More likely to be conformists and have lower self-confidence. <i>Service-volunteers:</i> More likely to be involved in volunteer work / community projects.	<i>Not Dress-conscious:</i> More likely to be nonconformists and have high self-confidence. <i>Not Service-Volunteers:</i> Less likely to be involved in volunteer work / community projects
<i>Who are they?</i>	Singles or widows or, still have children at home. Lower education and income levels.	Married with no children at home. Higher education and income levels.
<i>What is their investment activity?</i>	They do invest but tend to have investments in instruments other than stocks / bonds	These investors hold heavier concentrations of their portfolio in the form of stocks / bonds.

Cohn et al. (1975) conclude that risk aversion decreases as investor wealth increases. Lewellen, Lease and Schlarbaum (1977) provide evidence that age, sex, income and education affect investors' preferences on capital gains, dividend yields and overall returns. Riley and Chow's (1992) findings are based on the fact that risk aversion decreases as age, wealth, income and education of an investor increase. Le Baron, Farrelly and Gula (1989) find that risk aversion depends largely on emotional rather than rational considerations.

3. Data and methodology. Convenience sampling is used to collect data from 68 individual investors living in Istanbul, Turkey. The questionnaire is designed to collect information necessary to analyze the differences between risk-taking investors and risk-averse investors in terms of social representations. The questionnaire is composed of two sections (Table 2). The first section is composed of a set of structured questions designed to categorize respondents as risk avertives and risk takers. The second section is composed of a set of questions to identify the structure of social representations for each category.

First of all, we to categorize the respondents as "risk avertives" and "risk takers", through their answers to the questions in the first section of the questionnaire. In order to do this categorization, a measurement index is created by the authors. Through the "risk behavior index", a value is assigned to each respondent. The index is computed as follows (Table 3).

The calculation of the "risk behavior index" is based on two interrelated questions:

- 1) How the respondent perceives himself/herself in taking financial risks?
- 2) How the respondent allocates his/her wealth?

The formula, based on the combination of these two dimensions, provides a risk behavior score for each respondent. The components of the basic formula (*a simple summation of three scores A, B and C*) can be explained as follows:

1) "A" refers to the score representing self-perception of the respondent regarding his/her willingness to take financial risks. This score is obtained through the first

question of the questionnaire’s first section: "What can you say about your willingness to take financial risks, in general?". The answer is structured by scale ranging from 1 to 9, where "1" refers to "I never take risk" and "9" refers to "I like taking risk". In order to have the standardized values for "A", "B" and "C", the following transformation is done: If the answer ≤ 5 ; "0" is assigned and if the answer ≥ 6 ; "1" is assigned.

Table 2. Questionnaire, authors’

First section	
Question	Answer type
What can you say about your willingness to take financial risks, in general?	the scale ranging from 1 to 9 "1" refers to "I never take risk" "9" refers to "I like taking risk"
How do you invest your money?	Demand deposit account, % Time deposit account (1 month), % Time deposit account (3 months), % Time deposit account (6 months), % Time deposit account (1 year), % FCA (demand deposit), % FCA (time deposit), % REPO/T-bills/T-bonds, % Mutual fund (type B), % Mutual fund (type A), % Common stock, % Real estate, % TOTAL, 100%
Second section	
Question	Answer type
1. What are the 5 five words that come to mind when you hear the word "risk"?	unstructured question / maximum 5 items / in order of priorities
2. What are the first 5 words that come to mind when you are thinking about the risk factors that may create risk in your life?	unstructured question / maximum 5 items / in order of priorities
3. What are the first 5 words that come to mind when you are thinking about the deficiencies that may create risk for you?	unstructured question / maximum 5 items / in order of priorities
4. What are the first 5 words that come to mind when you hear the word "investment"?	unstructured question / maximum 5 items / in order of priorities
5. What are the first 5 words that come to mind when you hear the phrase "financial risk"?	unstructured question / maximum 5 items / in order of priorities
6. What are the first 5 words that come to mind when you are thinking about the financial risks that you can undertake?	unstructured question / maximum 5 items / in order of priorities

2) "B" refers to the score representing the investment instrument choice of the respondent and it is obtained through the answer to the second question of the questionnaire’s first section: "How do you invest your money?". As it is well known, common stock investments are riskier than investors in fixed income securities. The reason behind this lies in the fact that common stock returns are directly related to corporate profits, which may fluctuate uncontrollably, in a negative or positive direction, depending on internal and/or external factors. Another investment instrument, A-type mutual funds, which is included in the list, are required to have at least 25% of

their portfolio value invested in equities which are traded at Istanbul Stock Exchange. Thus, "B" score is obtained as follows: a) If the respondent does not invest in common stock and/or mutual fund (type A), "0" is assigned; b) if the respondent invest in common stock and/or mutual fund (type A) \Rightarrow "1" is assigned.

Table 3. Calculation of "risk behavior index"

Question 1	A	if the answer $\leq 5 \Rightarrow$ "0" is assigned if the answer $\geq 6 \Rightarrow$ "1" is assigned
Question 2	B	if the respondent does not invest in common stock and/or mutual fund (type A) \Rightarrow "0" is assigned if the respondent invest in common stock and/or mutual fund (type A) \Rightarrow "1" is assigned
Question 2	C	the number of investment instruments chosen by the respondent is divided by 9, which is the maximum number of investment instruments selected by the respondents (the results range from 0,11 to 1,00)
TOTAL SCORE		if the value of $(A + B + C) < 1.44 \Rightarrow$ "0" is assigned if the value of $(A + B + C) \geq 1.44 \Rightarrow$ "1" is assigned

3) "C" refers to the score representing the diversification tendency of the respondent and this score is also obtained through the answer to the second question of the questionnaire's first section: "How do you invest your money?". In financial terminology, diversification simply means reducing risk by investing in different types of assets. According to the Modern Portfolio Theory (MPT) developed by Harry Markowitz in 1952, risk can be reduced by diversifying into uncorrelated asset classes. If asset values do not fluctuate in perfect congruity, a diversified portfolio will be less riskier than the weighted average risk of its constituents. From this perspective, in order to obtain "C" score, the number of investment instruments chosen by the respondent is divided by 9, which is the maximum number of investment instruments selected by the respondents. By doing so, the standardized values for each score, "A", "B" and "C", could be obtained (for "C" score, the results range from 0.11 to 1.00).

4) The total score, which allows researchers discriminate 30 risk-taker investors from 38 risk-averse investors, is calculated by simply summing up these 3 scores for each respondent. The results for the whole sample ranges from 0.33 to 2.89. The value 1.44 (the first value greater than the mean value which is 1.28) is chosen as the discriminating value. If the value of $(A + B + C) < 1.44$; "0" is assigned and if the value of $(A + B + C) \geq 1.44$; "1" is assigned.

After classifying the sample as "risk averters" and "risk takers", the structure of social representations for each category is analyzed by the use of the word association technique, also called *evocation task* (Verges and Bastounis, 2001). The 6 questions included in the second section of the questionnaire (Table 2) give us the understanding about the respondents' perceptions regarding the following notions: *risk*, *life risk*, *deficiencies which can create risk*, *investment*, *financial risk*, *tolerable financial risks*. More specifically, the respondents are asked to provide the maximum of 5 words or expressions (in order of priorities) associated with these notions. The results are analyzed in terms of frequencies of provided associations and the rankings of terms evocation (the first term provided being at rank 1, the second at rank 2 etc. with the highest possible rank being 5). The analysis is conducted by calculating mean frequencies and mean rankings for each evocation (different word associated with the target

word). Thus, the dictionary (which includes all evocations obtained from the task) is organized into 4 groups of evocations:

- 1) *Central nucleus*: Words appearing with high frequency and low mean rank (e.g., 1st, 2nd).
- 2) *1st periphery*: Words appearing with high frequency and high mean rank (e.g., 4th, 5th).
- 3) *2nd periphery*: Words appearing with low frequency and low mean rank.
- 4) *3rd periphery*: Words appearing with low frequency and high mean rank.

The structural approach to social representations postulates that the first group of evocations, that is, the one containing associations that are spontaneously made most frequently first, describes the *central nucleus* of the structure of the representation. Under central nucleus, researchers refer to widely shared core elements that identify the object of the representation in a more stable manner (Verges, 1994).

4. Results. The results in Tables 4 through 9 provide tentative conclusions. For instance, the term "courage" appears only in risk representations of risk-taker investors. Unsurprisingly, risk-averse investors associate "losing" with *risk* (Table 4). This finding is consistent with the definition of "risk aversion" given by Florack and Hartmann (2007). In their study, they define risk aversion as the discussion of means to avoid possible losses and the expressed fear of losing money.

Table 4. Social representations of "risk"

	Risk-aversives	Risk-takers
central nucleus	to lose danger earnings life	courage earnings to lose danger
1st periphery	stock exchange money investment	loss
2nd periphery	uncertainty	life money
3rd periphery	bankruptcy loss of reputation luck	excitement profit

Concerning the *life risk* representations, risk-takers express more concrete and specific risk areas such as "job loss, health loss and money loss", while the risk-averse investors express less specific terms like "economy and investment" (Table 5).

Table 5. Social representations of "life risks"

	Risk-aversives	Risk-takers
central nucleus	economics investment	unemployment monetary loss health problems
1st periphery	health problems	economics
2nd periphery	expenditures exceeding revenues	natural disasters
3rd periphery	loneliness	indecision

Another evidence provided by this analysis is the emphasis on "information" by risk-takers. According to this group of respondents, lack of information may create risk and this can be interpreted as their willingness to control their investments by themselves. On the other hand, for the risk-averse investors, health deficiency is the major risk factor (Table 6).

Table 6. Social representations of "deficiencies that may create risk"

	Risk-aversives	Risk-takers
central nucleus	health	money lack of information
1 st periphery	money family	clumsiness confidence health
2 nd periphery	security unemployment	insurance
3 rd periphery	retirement	family stability

The results concerning the social representations of *investment* also are unsurprising. The terms "time deposit account and saving" are said only by risk-averse investors, as expected. Moreover, the term "stock exchange" appears only among risk-takers (Table 7).

Table 7. Social representations of "investment"

	Risk-aversives	Risk-takers
central nucleus	time deposit account savings money future	future money
1 st periphery	real estate foreign exchange risk	real estate bank
2 nd periphery	bank earnings	savings foreign exchange return to investment risk profit earnings
3 rd periphery	car education profit	stock exchange education stock

As it can be seen in Table 8, "stock exchange", as representing *financial risk*, appears only among risk-averse investors.

The results provide evidence also on the difference between the two sub-samples in terms of *tolerable financial risks*. While the risk-averse investors dare only to use credit cards and to invest in real estate, risk-takers are more inclined to take currency and stock market risks (Table 9).

5. Conclusion. This paper reports the results of the survey of 68 investors, living in Istanbul, Turkey, on their perceptions of *risk*. The constructed "risk behavior index"

allows us discriminate 30 risk-taker investors from 38 risk-averse investors. The questionnaire comprising the questions for discriminating risk averse investors from risk takers contains also the questions on the respondents' perceptions of the notions of *risk, life risk, deficiencies which can create risk, investment, financial risk and tolerable financial risks*. After categorizing the sample as "risk-averse" and "risk-takers", the structure of social representations for each category is analyzed by the use of the word association technique, also called *evocation task*.

Table 8. Social representations of "financial risk"

	Risk-averse	Risk-takers
central nucleus	stock exchange economics	economics foreign exchange
1st periphery	foreign exchange to borrow money	stock exchange
2nd periphery	to borrow money unemployment	interest rate volatility political instability
3rd periphery	banks uncertainty	lack of information control unemployment inflation

Table 9. Social representations of "tolerable financial risks"

	Risk-averse	Risk-takers
central nucleus	investment in real estate credit card	foreign exchange stock exchange bill / promissory notes
1st periphery	foreign exchange	REPO investment in real estate
2nd periphery	mutual funds	interest rate volatility
3rd periphery	time deposit account	bank to build up a business

The results suggest some tentative conclusions. For instance, the term "courage" appears only in the risk representations of risk-taker investors. Concerning life risk representations, risk-takers express more specific concepts such as job loss, health loss and money loss while, the risk-averse investors express less specific, broader concepts like economy and investment. The results provide evidence on the difference between the two sub-samples in terms of tolerable financial risks. While the risk-averse investors dare only to use credit cards and invest in real estate, risk-takers are more inclined to take currency and stock market risks. Another evidence provided by the analysis is the emphasis on the lack of information by risk takers; this can be interpreted as their willingness to control their investments by themselves.

To sum up, this work can be considered as a pilot study proposing a methodology for not only discriminating the averse investors from risk takers, but also for investigating risk perceptions by investors through social representations. We believe this can be a good start for future research on larger samples and in different settings. The results provided in this study can help financial advisors to have a deeper understanding of investors' behaviors.

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