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# The Role of Wealth in Gain and Loss Perception: An Empirical Analysis

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## Abstract

People with significantly different initial starting capitals may perceive gains and losses differently. In order to test this hypothesis, we consider and compare two samples of investors: retail investors as those with a maximum of €500,000 worth of assets under management (AUM) and private investors as those with more than €500,000 AUM. Based on the answers obtained from specifically devised questionnaires, we test the differences in gain and loss perception and check the level of satisfaction/dissatisfaction in situations of gain and loss. The results obtained demonstrate that private and retail investors perceive gains and losses differently.

**Keywords:** perception of gain, perception of loss, decision-making, private investors, retail investors

## 1. Introduction

A plethora of experiments (e.g., [1, 2]) demonstrate that decisions made in an economic and financial setting are influenced by subjective perceptions. The framing effect [3] is a perceptual phenomenon implying that different presentations of the same information may lead to different choices. Chen et al. [4], Del Vecchio et al. [5], Gourville [6], Levin et al. [3], McKechnie et al. [7], Sinha and Smith [8], Tombu and Mandel [9] and Tversky and Kahneman [10] have investigated how the framing effect could influence the decision-making process. DelVecchio [11], DelVecchio et al. [5], Gourville [6], Kahneman [12, 13], McKechnie et al. [7] and Mellers [14] have examined the incoherence of judgement when faced with similar or indifferent situations. Kahneman and Tversky [15], Kühberger [16] and Olsen [17, 18] demonstrate that the framing effect can influence the decision-making process so as to cause a shift from 'risk-adverse' to 'risk-seeking' and vice versa, the so-called risky-choice framing effect. The framing effect is predicted by Kahneman and Tversky [15] in their prospect theory. According to this theory, individuals' choices are always made considering the gains and losses compared with an initial starting capital (reference point). Kahneman and Tversky [19] argue that investors decide by mentally referring to their status quo (i.e. the current level of wellbeing). In any situation in which it risks being altered, the decision-making procedure is adjusted [10, 20] in order to preserve it as far as possible [15]. According to Kahneman and Tversky [15, 19], the absolute value perceived of losses appears to be

more consistent than that of earnings of the same amount (loss aversion). Kahneman et al. [21] and Tversky and Kahneman [22] demonstrate that the distress experienced on losing a sum of money is almost twice that of the pleasure associated with gaining the same amount. Bearing in mind these conclusions, we believe it is rational to suppose that two people with significantly different amounts of initial capital (reference points) may perceive gains and losses differently. Since the initial level of wealth is the reference point on which a judgement in wealth variation is based, it is logical to forecast that perceived changes in wealth are different for private and retail investors, because as is well known, private investors have a higher level of wealth than their retail counterparts. The former have a large amount of wealth in financial assets (minimum US\$ 500000.00<sup>1</sup>), an expensive lifestyle and sophisticated needs in terms of diversification of asset allocation, which include real estate, luxury collectibles, artworks and passion investment; in contrast, retail investors do not have these characteristics. We consider as retail investors those with a maximum of €500000.00 worth of assets under management (AUM) and private investors as those with more than €500000.00 AUM. The aim of this chapter is to test whether private and retail investors perceive gains and losses differently.

Our analysis tests the differences in gain and loss satisfaction/dissatisfaction perceived by private and retail investors; moreover we compare the levels of satisfaction/dissatisfaction declared by private and retail investors.

The conclusions of this survey are significant from two different perspectives. First, the paper extends existing literature on the topic of gain and loss perception by comparing private and retail investors, an important distinction in the banking and financial sector. Second, the results obtained should be taken into consideration by banks, financial intermediaries, consultants and asset managers aiming to improve their relationships with clients and to develop the most suitable financial products for different types of clients.

## **2. Literature review**

A plethora of experiments (e.g., [1, 2]) demonstrate that decisions made in an economic and financial setting are influenced by subjective perceptions. The framing effect [3] is a perceptual phenomenon implying that different presentations of the same information may lead to different choices. Chen et al. [4], Del Vecchio et al. [5], Gourville [6], Levin et al. [3], McKechnie et al. [7], Sinha and Smith [8], Tombu and Mandel [9] and Tversky and Kahneman [10] have investigated how the framing effect could influence the decision-making process. DelVecchio [11], DelVecchio et al. [5], Gourville [6], Kahneman [12, 13], McKechnie et al. [7] and Mellers [14] have examined the incoherence of judgement when faced with similar or indifferent situations. Kahneman and Tversky [15], Kühberger [16] and Olsen [17, 18] demonstrate that the framing effect can influence the decision-making process so as to cause a shift from 'risk-adverse' to 'risk-seeking' and vice versa, the so-called risky-choice framing effect. The framing effect is predicted by Kahneman and Tversky [15] in their prospect theory. According to this theory, individuals' choices are always made considering the gains and losses compared with an initial starting capital (reference point). Kahneman and Tversky [19] argue that investors decide by mentally referring to their status quo (i.e., the current level of wellbeing).

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<sup>1</sup> Capgemini, The World Wealth Report, [www.worldwealthreport.com](http://www.worldwealthreport.com)

In any situation in which it risks being altered, the decision-making procedure is adjusted [10, 20] in order to preserve it as far as possible [15]. According to Kahneman and Tversky [15, 19], the absolute value perceived of losses appears to be more consistent than that of earnings of the same amount (loss aversion). Kahneman et al. [21] and Tversky and Kahneman [22] demonstrate that the distress experienced on losing a sum of money is almost twice that of the pleasure associated with gaining the same amount. Bearing in mind these conclusions, we believe it is rational to suppose that two people with significantly different amounts of initial capital may perceive gains and losses differently.

### 3. The sample selection

During the 2015, we contacted approximately 100 financial advisers and asked if they were willing to forward the questionnaires we had prepared to some of their private and retail clients (see Appendices A and B). We asked each financial adviser to contact at least two private and two retail investors so as to obtain a minimum of 400 completed questionnaires. The questionnaire, delivered to investors in a closed envelope, was anonymous; only age, sex, geographical provenance and the amount of asset under management were the required fields; it was very simple, comprising only two pages of multiple-choice questions. We decided to let the investors answer alone in their own homes so as to receive uninfluenced answers [23] and gave them 3 days to return the questionnaire either to their financial advisers or directly to us, recommending in both cases the use of a sealed envelope. We rejected those without any indication of quantity of assets under management. The others were used to identify two groups of sample investors, as shown in **Table 1**.

The questions in the questionnaires were designed taking inspiration from the examples and experiments discussed in the literature [5, 11, 15, 19, 21, 24]. In particular, we focused our investigation on the level of perception of gains and losses starting from an initial amount of wealth. In order to ask questions consistent with the goals of this paper, we asked advisers to give a prior indication of the average assets under management of their private and retail clients. The information obtained allowed us to design questions for a hypothetical private investor with €3000000.00 average assets under management and his/her hypothetical retail counterpart with about €300000.00 average assets under management. Thus, we designed two questionnaires: one for private investors (see Appendix A) and one designed for retail investors (see Appendix B). When formulating the questions, we bore in mind the fact that semantic cues [25–30] can influence or

	Private	Retail
Average AUM (euros)	3002000.00	315198.00
AUM standard deviation (euros)	1260349.48	179908.00
Average age	61.68	55.66
Age standard deviation	6.94	6.28
% male	86	85
% living in northern/central Italy	80	80
Number of observations	100	100

**Table 1.**  
*Description of sample groups.*

alter answers. For this reason, when possible we used neutral semantic cues and scenario questions that do not present any probability, so as to avoid ‘one-stage’ or ‘two-stage’ problems [31]. In this way each question follows a linear programme model [32], with the aim of not creating any gambling element in the investors’ minds.

#### 4. Declaration of satisfaction/dissatisfaction: retail vs. private investors

This analysis is based on the answers obtained for questions 1–4 in the questionnaires (see Appendices A and B). The private sample was asked to express a degree of ‘satisfaction’ or ‘dissatisfaction’ concerning an achieved performance, first in terms of percentage (+3%) and then in terms of absolute value (+ €90000.00)<sup>2</sup>. We did not express any start value parameter in the questions, so investors could express their real degree of satisfaction/dissatisfaction bearing in mind their wealth. The same questions were then presented first in the case of a loss in absolute value (– €90000.00) and then as a loss quantified as –3%. The same situation was presented to the retail sample, first considering a + 3% performance and a €9000.00<sup>3</sup> gain and then in the case of a loss in absolute value (– €9000.00) and a loss quantified as –3%; in this case too, we did not express any start value parameter for the above reason. The results are shown in **Figure 1**.

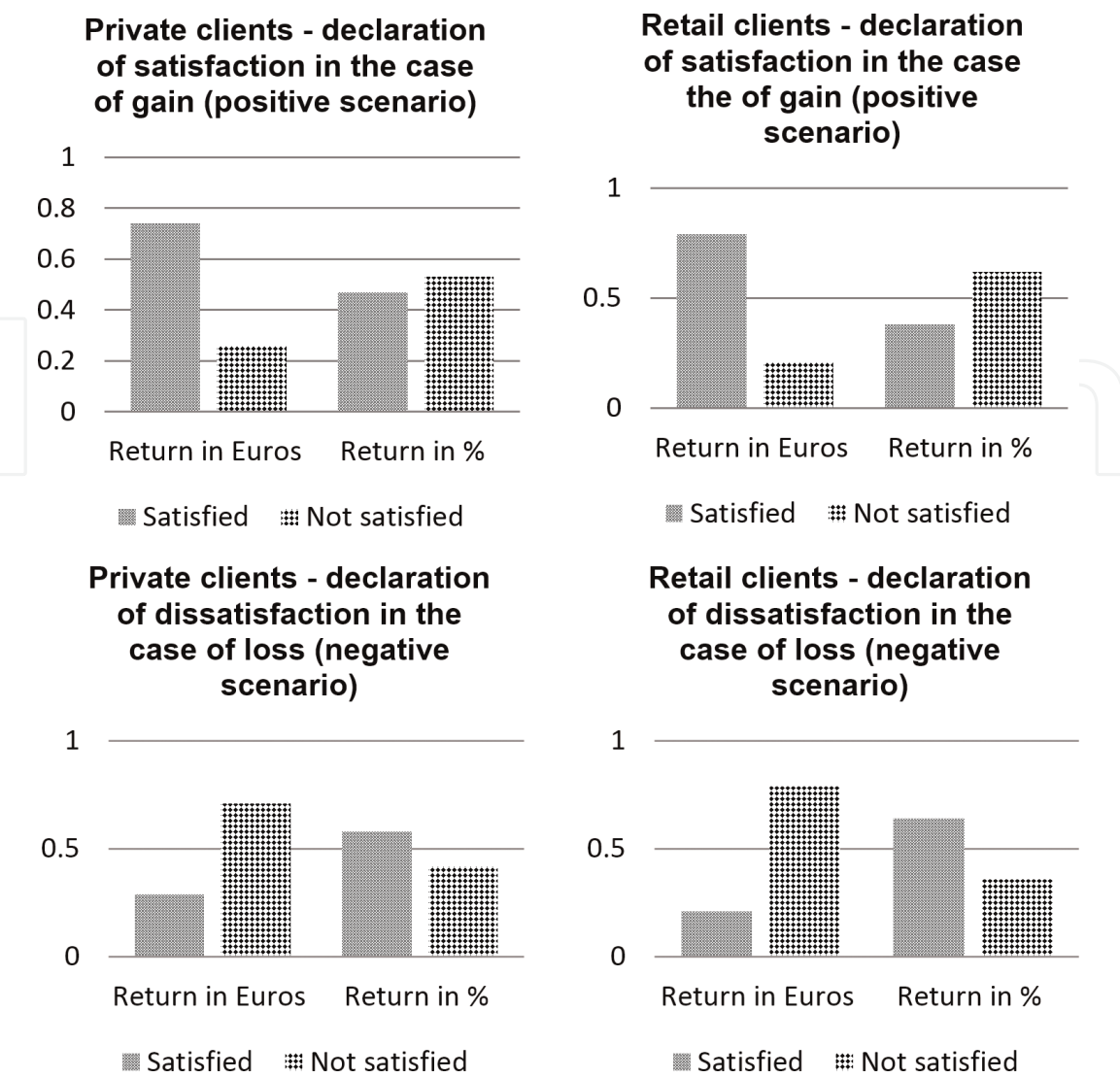
**Figure 1** seems to show different perceptions of gains and losses depending on whether these are expressed in terms of absolute value or as a percentage, even if these represent the same amount, both among investors belonging to the same sample and when comparing private and retail investors. In fact, in the case of a positive scenario (**Figure 1**, upside), the gain expressed in absolute value seems to be perceived by both samples with more satisfaction than the same amount expressed as a percentage. More specifically, it seems that retail investors perceive more dissatisfaction than private investors when faced with gains expressed as percentages. **Figure 1** in a negative scenario (downside) confirms that losses expressed in absolute values and as percentages, even if of the same amount, are perceived differently both by private and by retail investors. However, in this case, **Figure 1** shows that the loss expressed in euros is perceived with more dissatisfaction by retail investors than by private investors. With the aim of testing the evidence in the graph, **Table 2** presents the statistical analysis of the perceptions of the two samples examined in the case of a positive (upside) or a negative (downside) situation.

**Table 2** confirms the existence of some statistically significant differences between the two analysed samples. The satisfaction perceived when faced with a gain expressed as a percentage is different between private and retail investors ( $p = 0.0767$ ), while in the case of a negative scenario, the dissatisfaction perceived when faced with a loss expressed in terms of absolute value differs between private and retail investors ( $p = 0.0702$ ). As previously demonstrated in many studies [5–7, 11–14], our results also reveal a clear inconsistency in judgement, similar for and common to both samples. This situation can be explained by the way the assessment parameters were presented and by the investors’ internal reference points [4, 8, 33].

<sup>2</sup>  $\pm$  €90000.00 is about  $\pm 3\%$  of the private sample average asset under management.

<sup>3</sup>  $\pm$  €9000.00 is about  $\pm 3\%$  of the retail sample average asset under management.





**Figure 1.**  
*Satisfaction/dissatisfaction as perceived by private and retail investors in terms of gains (upside) and losses (downside).*

	Mean retail	Mean private	Diff.
In the case of a gain (positive scenario)			
Declaration of satisfaction faced with a gain situation expressed as a percentage	0.37	0.47	−0.10*
Declaration of satisfaction faced with a gain situation expressed in terms of absolute value	0.78	0.74	0.04
In the case of a loss (negative scenario)			
Declaration of dissatisfaction faced with a loss situation expressed as a percentage	0.63	0.58	0.05
Declaration of dissatisfaction faced with a loss situation expressed in terms of absolute value	0.20	0.29	−0.09*

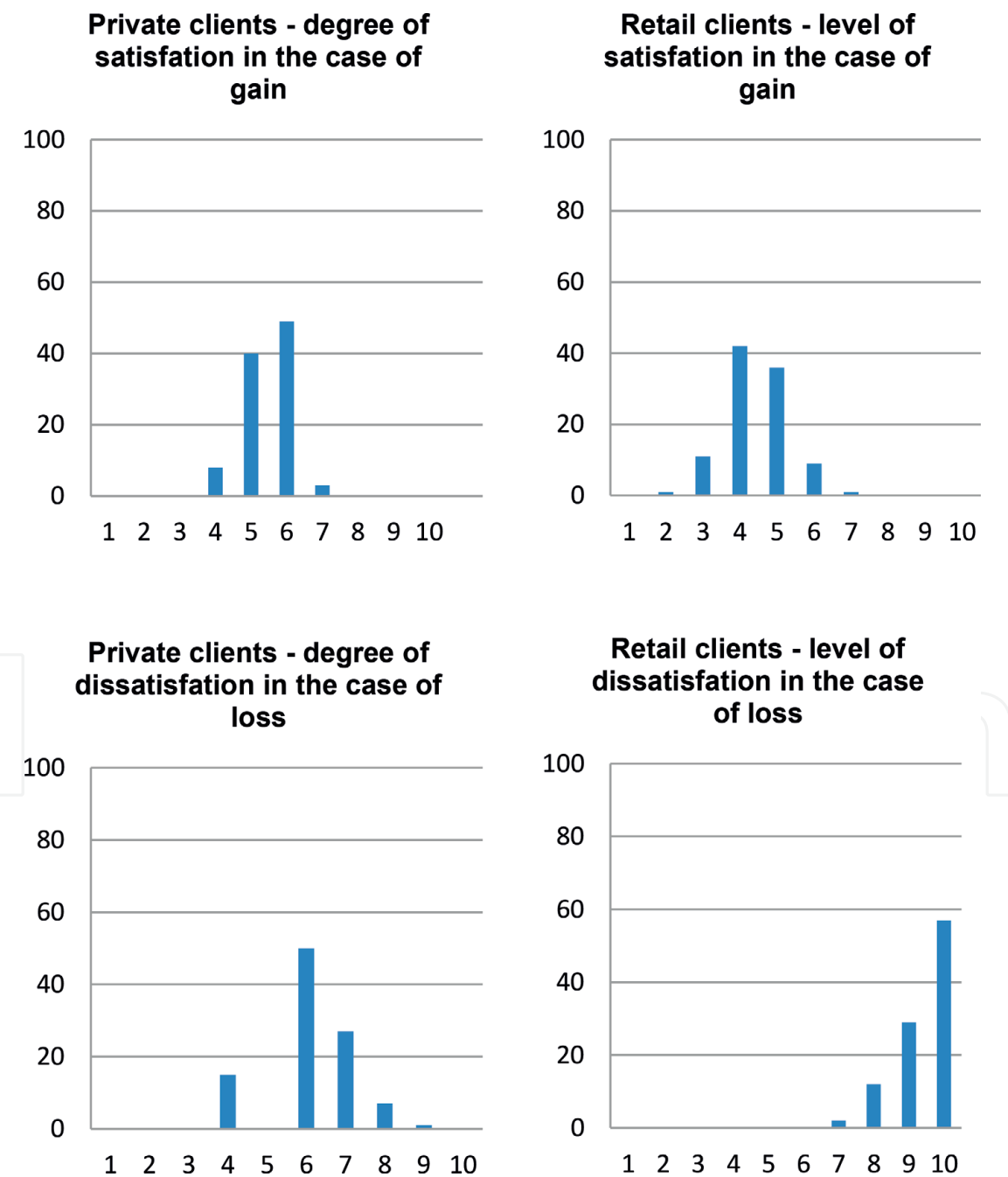
\*Statistically significant at 10%.

**Table 2.**  
*Gain and loss perception comparing private and retail investors.*

5. Level of satisfaction/dissatisfaction declared by retail and private sample investors

This analysis is based on the answers obtained from questions 5 and 6 in the questionnaires (see Appendices A and B). We would like to test our survey samples' perception of loss and gain by asking them to identify the degree of 'satisfaction'/'dissatisfaction' experienced, on a scale from 0 to 10, when faced with a positive/negative variation of wealth in terms of absolute value ( $\pm$  €90,000 per private investor and  $\pm$ €9000 per retail investor). The results are shown in **Figure 2**.

A horizontal reading of **Figure 2** shows that the level of satisfaction declared by retail and private investors faced with a gain is almost the same, while there is an obvious difference in the case of a loss, when retail investors appear more dissatisfied than private investors. **Table 3** presents the statistical analysis of this difference



**Figure 2.** Satisfaction and dissatisfaction perceived by private investors (on the left) and retail investors (on the right) in the case of gain (upside) and loss (downside).

	Mean retail	Mean private	Diff.
Level of satisfaction on a scale from 0 to 10 when faced with a gain situation	4.44	4.47	−0.03
Level of dissatisfaction on a scale from 0 to 10 when faced with a loss situation	9.41	6.14	3.27***

\*\*\*Statistically significant at 1%.

**Table 3.**  
*Gains and losses: the level of satisfaction/dissatisfaction declared by private investors and retail investors.*

and confirms our impression: the level of difference in dissatisfaction declared by private and retail investors is statistically significant ( $p = 0.000$ ).

**Figure 2** is read vertically, that is to say the level of satisfaction/dissatisfaction declared by private investors and by retail investors in the case of gains/losses offers an important point of analysis. With reference to the retail investor sample, the empirical thesis [21, 22], according to which the disappointment experienced on losing a sum of money appears to be about twice that of the pleasure associated with gaining the same amount, seems to be valid. In fact, the weighted average degree of satisfaction on gaining is 4.44, while dissatisfaction on losing the same amount is on average 9.41. Instead, with reference to the private sample, the dissatisfaction a private client experiences on losing a sum of money does not appear to be twice that of the pleasure associated with gaining the same amount (gain satisfaction weighted average = 4.47 vs. loss dissatisfaction weighted average = 6.14). Thus, the Kahneman and Tversky [15] value function, which is steeper for losses than for gains, seems to be valid for the retail sample but not for the private one. This conclusion must take into account the initial ‘anchor’ level of wealth [4, 8, 15, 19, 33], which is high for the private investors interviewed and by which economic changes are evaluated. The results therefore lead us to consider the possibility that very wealthy people could show a limited degree of indifference towards gains and losses [34].

## 6. Conclusions

The results presented in this chapter demonstrate that private and retail investors evaluate financial performance (gains and losses) differently. In particular, the results presented in this chapter show that investors, whether retail or private, perceive gain and loss expressed in terms of absolute value and as a percentage differently, even if the gain/loss is of the same amount. However, we demonstrate that loss expressed in euros is perceived with more dissatisfaction by retail investors than private investors.

The comparison of results obtained in the analyses conducted shows significant changes in evaluations of gains and losses. However, the quantification of satisfaction/dissatisfaction declared by private and by retail investors in the case of gains/losses demonstrates that the disappointment expressed by retail investors on losing a sum of money appears to be about twice that of the pleasure associated with gaining the same amount. This situation is not confirmed with reference to private investors. This is due to the fact that the two groups start from different initial levels of wealth, which provide the parameter used to determine satisfaction or dissatisfaction.

The results presented in this chapter suggest some considerations we believe should be taken into account by banks, asset managers, private bankers and financial planners in order to improve the range of products offered and their



relationships with clients. First, it is fundamental to map an investor’s entire wealth with meticulous accuracy in order to identify the real (or approximate) current status quo. Second, negative change in wealth must be identified, so that immediate action can be taken in order to avoid psychological pressure on the investor. In this context, the creation of financial or insurance products with ‘stop loss’ or guaranteed invested capital could be a very useful support. Finally, we believe it is very important to check the risk level sustainable by each investor (private or retail) and verify whether the portfolio asset allocation is suitable for the investor.

Appendix A: The private investors’ questionnaire

Dear investor,

This questionnaire is a tool used to collect information about the reaction of investors in the face of possible market scenarios, for research purposes. The questionnaire is anonymous, and to ensure it remains so, we suggest you fill it in alone, in your own home, and return it in a sealed envelope either to your financial planner or directly to Andrea Lippi, c/o Università Cattolica del Sacro Cuore, Via Emilia Parmense 84, 29122 Piacenza. Please answer truthfully to avoid falsifying our research results. Thank you in advance for your cooperation.

Age \_\_\_\_\_ Sex M ☐ F ☐ Geographic Area North/Center ☐ South ☐

Please declare your total assets under management (i.e., mutual funds, Sicav, asset management, shares, bonds, financial insurance).

€ \_\_\_\_\_

1. Bearing in mind your current level of wealth, in the case of a positive performance equal to +3% per year, would you consider yourself: (Please put an X in the appropriate box)

Satisfied	
Not satisfied	

2. Bearing in mind your current level of wealth, in the case of a profit equal to €90,000 per year, you would consider yourself: (Please put an X in the appropriate box)

Satisfied	
Not satisfied	

3. Bearing in mind your current level of wealth, in the case of a negative performance equal to –3% per year, you would consider yourself: (Please put an X in the appropriate box)

Satisfied	
Not satisfied	

4. Bearing in mind your current level of wealth, in the case of a loss equal to €90,000 per year, you would consider yourself: (Please put an X in the appropriate box)

Satisfied	
Not satisfied	

5. Bearing in mind your current level of wealth, on a scale from 0 to 10, how satisfied would you feel with a €90,000 gain? *(Please put an X in the appropriate box)*

0	1	2	3	4	5	6	7	8	9	10

No satisfaction, low satisfaction, medium high satisfaction, very high satisfaction

6. Bearing in mind your current level of wealth, on a scale from 0 to 10, how dissatisfied would you feel with a €90,000 loss? *(Please put an X in the appropriate box)*

0	1	2	3	4	5	6	7	8	9	10

No dissatisfaction, low dissatisfaction, medium high dissatisfaction, very high dissatisfaction

**Appendix B: The retail investors’ questionnaire**

Dear investor,

*This questionnaire is a tool used to collect information about the reaction of investors in the face of possible market scenarios, for research purposes. The questionnaire is anonymous, and to ensure it remains so, we suggest you fill it in alone, in your own home, and return it in a sealed envelope either to your financial planner or directly to Andrea Lippi, c/o Università Cattolica del Sacro Cuore, Via Emilia Parmense, 84, 29122 Piacenza. Please answer truthfully to avoid falsifying our research results. Thank you in advance for your cooperation.*

\_\_\_\_\_  
Age \_\_\_\_\_ Sex M ☐ F ☐ Geographic area North/Center ☐ South ☐

Please declare your total assets under management (i.e. mutual funds, Sicav, asset management, shares, bonds, financial insurance).

€ \_\_\_\_\_

1. Bearing in mind your current level of wealth, in the case of a positive performance equal to +3% per year, you would consider yourself: *(Please put an X in the appropriate box)*

Satisfied	
Not satisfied	

2. Bearing in mind your current level of wealth, in the case of a profit equal to €9000 per year, you would consider yourself: *(Please put an X in the appropriate box)*

Satisfied	
Not satisfied	

3. Bearing in mind your current level of wealth, in the case of a negative performance equal to  $-3\%$  per year, you would consider yourself: *(Please put an X in the appropriate box)*

Satisfied	
Not satisfied	

4. Bearing in mind your current level of wealth, in the case of a loss equal to €9000 per year, you would consider yourself: *(Please put an X in the appropriate box)*

Satisfied	
Not satisfied	

5. Bearing in mind your current level of wealth on a scale from 0 to 10, how satisfied would you feel with a €9000 gain? *(Please put an X in the appropriate box)*

0	1	2	3	4	5	6	7	8	9	10

No satisfaction, low satisfaction, medium high satisfaction, very high satisfaction

6. Bearing in mind your current level of wealth, on a scale from 0 to 10, how dissatisfied would you feel with a €9000 loss? *(Please put an X in the appropriate box)*

0	1	2	3	4	5	6	7	8	9	10

No dissatisfaction, low dissatisfaction, medium high dissatisfaction, very high dissatisfaction

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