

How information format affects financial decision making: Preliminary results

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The influence of numeric information format on decision making processes has been demonstrated in different domains. There is evidence showing that probabilistic reasoning is different depending on the information format used (Gigerenzer, 1995 and 1999). For example, individuals tend to be sensible to the absolute magnitude of a number more than its statistical meaning (Helpern, Blackman, and Salzman, 1989). Stone, Yates, and Parker (1994) showed that risk perception and consumer decision are influenced by the information format. In the absolute information condition participants choose between two types of tires; they were presented with the probability to have a tire blowouts and with the tires price. In the relative information condition participants made the same choice but the risk of tire blowouts was described comparing the average risk and the risk associated with the two tires brands. Their results suggest that displaying information in a relative format leads to less risky behaviour.

To our knowledge there are no studies aimed at investigating the influence of information format on financial decisions. In one experiment, we studied how information format can influence people's investment strategies. We designed a financial scenario that allowed to check for the status quo bias (Samuelson e Zackhauser, 1988; Kahneman, Knetsch, and Thaler, 1991) and for the disposition effect (Shefrin e Statman, 1985; Odean, 1998; Shapira e Venezia, 2000). The status quo bias is the people's attitude to not change their original investment strategy; people prefer to keep the original strategy to avoid the uncertainty associated with a change. The disposition effect is the people's attitude to sell gaining investments too early and to keep losing investments too long. The scenario describes the returns of two stock funds owned by the individual and asks them to choose how to proceed with their investment strategy (basically, to change or stay with the funds). Funds' returns were presented in one of four different formats: percentage (25%), mean prices of stocks (1.22€), fractions (1/4), and difference between mean prices of stocks now and at the start of the investment (0.25€). Of the two funds described in the scenario, one was a losing fund and the other a gaining fund.

Four hundred and eighty students enrolled at the University of Modena and Reggio Emilia were asked to make a choice among four different alternatives: sell the losing fund and keep the gaining fund, sell the gaining fund and keep the losing fund, keep both funds, and sell both funds. Our main hypothesis was that the numeric information format would affect choices both increasing and reducing the status quo bias and the disposition effect. Specifically, we predicted an increase in the number of participants who choose to sell the losing fund when returns are presented as percentages

because this is the format presenting numbers higher in magnitude. We also hypothesized that the fraction format should increase the preferences for the status quo alternative (to keep both funds) because of the relative format of the information.

A 4 (information format) x 4 (choices) log-linear analysis displayed an interaction between information format and type of choice ($\chi^2 (9,480) = 19.874$; $p = .019$). When funds' returns are expressed as percentages there is a significant increase in the number of participants who choose to sell the losing fund in comparison with the other formats ($\chi^2 (3,65) = 7.923$; $p = .048$). See the table below.

In the percentage condition there are no significant differences between the alternatives "sell the losing fund" and "sell the gaining fund" ($\chi^2 (1,65) = 2.600$; $p = .107$) while in the other three conditions the alternative "sell the losing fund" is significantly less chosen. Chi-square analyses are significant for both the mean price condition ($\chi^2 (1,62) = 23.299$; $p = .001$), for the difference condition ($\chi^2 (1,60) = 17.067$; $p = .001$) and for the fraction condition ($\chi^2 (1,48) = 10.083$; $p = .001$). Results in the percentage condition contradict the disposition effect.

When returns are expressed as fractions the alternative "keep both funds" (status quo bias) is more attractive than the alternative "sell the gaining fund" ($\chi^2 (1,100) = 9.000$; $p = .003$) while in the other three conditions there are no differences. Chi-square analyses are not significant for the percentage condition ($\chi^2 (1,80) = 0.5$; $p = \text{n.s.}$), for the mean price condition ($\chi^2 (1,97) = 0.93$; $p = \text{n.s.}$) and for the difference condition ($\chi^2 (1,97) = 0.258$; $p = \text{n.s.}$). Thus, the fraction condition appears to increase the status quo bias; however in this condition the number of participants choosing the status quo alternative was not significantly higher in comparison with the other conditions ($\chi^2 (3,204) = 6.118$; $p = .106$).

In conclusion, the results in the percentage condition can be explained by the absolute magnitude of the numbers presented to the participants in this condition (Helpert, Blackman, and Salzman, 1989), while the results in the fractions condition can be explained by the relative format of the information (Stone, Yates, and Parker, 1994). This study shows how simple format variations of the same information can sensibly affect individuals' preferences on how to manage their financial investments.

	Percentage	Price	Difference	Fraction	
Sell the losing fund	21,7%	10%	11,7%	10,8%	13,5%
Sell the gaining fund	32,5%	41,7%	38,3%	29,2%	35,4%
Keep both funds	34,2%	39,2%	42,5%	54,2%	42,5%
Sell both funds	11,7%	9,2%	7,5%	5,8%	8,5%
	100% (n = 120)	100% (n = 120)	100% (n = 120)	100% (n = 120)	100% (n = 480)