Money Illusion for Others

Rajarshi Majumder
Grenoble Ecole de Management
Ignazio Ziano
University of Geneva
Robert Mai
Grenoble Ecole de Management

Cite as:
Majumder Rajarshi, Ziano Ignazio, Mai Robert (2024), Money Illusion for Others. *Proceedings of the European Marketing Academy*, 52nd, (118995)

Paper from the 53rd Annual EMAC Conference, Bucharest, Romania, May 28-31, 2024

Money illusion for others

Money illusion is the inclination of people to think of money in nominal values instead of real values, without taking into account the effect of inflation. In this paper, we explored the extent to which people are affected by money illusion and to which extent they perceive others to be affected by it. We investigated how likely people would be willing to buy and sell and how likely they think others would be willing to buy and sell in times of inflation. Across three pre-registered studies, we found that, in the presence of inflation, participants believed they were less likely to buy and equally likely to sell as compared to others at a higher nominal price when there was no change in real price. Interestingly, we found that when directly asked, participants considered themselves to place more importance on the real value of money than nominal as compared to others. We discuss the theoretical and practical implications of the self-versus other perceptions of the effect of money illusion.

Keywords: money illusion; self-other differences; decision making

Track: Consumer Behavior

1. Introduction

"Money illusion" (Fisher, 1928) indicates the propensity of people to think of money in nominal value and not in real value, neglecting the effects of inflation (Shafir, Diamond, and Tversky, 1997). Although any economic transaction can be represented in terms of nominal or real values, in the presence of inflation, the nominal representation of the transaction has more salience because of its simplicity in understanding. When this adjustment from nominal to real values is difficult to compute due to time separation, then nominal representation can seem to be much more salient. For example, if an armchair was bought for $400 and sold for $480 after 6 months when the prices of all goods and services had increased by 25% due to inflation, a rational decision maker would identify the real loss of 4.2%, but people influenced by money illusion would see a 20% nominal profit. This is because, in the time period of 6 months, the difference of $80 provides more salience in understanding the price changes. This bias towards nominal evaluation can impact consumers' buying and selling choices when they do not consider the effect of inflation on the real value of money. Previous research showed that consumers see themselves as the best version possible and think the decisions they make for themselves are better than what others do (Dunning, 2007). However, when people make predictions about others' reactions to inflation, they might fail to take into consideration how others react to the situation. In the current research, we will test the extent to which people are affected by money illusion and to what extent they perceive others to be affected by it. In addition, we will explore how much people perceive to place importance on the two values of money while transacting and how much they perceive others to place importance on them. An inconsistency with claiming to factor in the effect of inflation in transaction decisions while having a bias towards nominal evaluation while actually making the decision will indicate people do not make rational decisions, although they claim to be more rational than others. Pre-registrations, data analysis, and materials are posted at the Open Science Framework repository.

1.1 Self-versus other perceptions.

In this research, we will explore how much consumers believe that others would be less willing to buy to avoid nominal loss and more willing to sell to have nominal gain in times of inflation than themselves. A rational person would make transaction decisions based on real values, but research (Shafir, Diamond, and Tversky, 1997; Ziano et al., 2021) showed people to have a greater reliance on nominal accounting, exhibiting money illusion. While making a decision, people often contrast themselves with others (Festinger, 1954). However,

it often involves systematic bias in enhancing the image of the self (Dunning, 2007). Depending on how socially distant the average other is, it can lead to inaccuracy in the relative comparison of self with the other, and people might perceive themselves to be more rational than average others (Epley and Dunning, 2000). One of the dominant reasoning for this is that perceiving the self to be more rational and a better decision-maker than others is self-enhancing (VanBergen, Lurie, and Chen, 2022), and it leads to the enhancement of ego (Brown, 2012). When peers are unable to share a viewpoint similar to the self, people assume them to be less objective than themselves, which makes the self-versus other differences more pronounced (Pronin, Gilovich, and Ross, 2004). This tendency to view the self as more objective than others leads people to view others as holding more contradictory and dogmatic viewpoints than themselves (Robinson, Keltner, Ward, and Ross, 1995). Thus, people might perceive themselves to be less affected by the money illusion and believe that an average other relies more on nominal accounting than themselves, thereby indicating others' lack of competence and perceiving them to be more affected by money illusion.

1.2 Perceived nominal versus real value of money for self and others.

People might perceive themselves to have a better understanding of the values of money compared to others and perceive themselves to place more importance on the real value of money than on nominal value. However, they might perceive others to place lower importance on the real value of money as compared to nominal value than themselves. This is because making a decision based on real values, and people are biased in perceiving themselves to be more rational than others (van Boven, Dunning, & Loewenstein, 2000). Owing to this erroneous assessment, they might perceive others to be more willing to buy and less willing to sell than themselves at a higher nominal value. We will test the relative importance of the real and nominal value of money by directly asking participants to rate how much importance they and others place on both the real and nominal value of money. This inquiry is theoretically interesting as it will test whether people can connect the definitions of the real and nominal value of money with actual decisions, especially when compared to others and whether people show a larger effect of money illusion as compared to others than they perceive.

1.3 Buying versus selling.

Buying and selling are psychologically different decisions. This is because selling an item is perceived to be a monetary benefit (Chu and Liao, 2010), but while buying an item, consumers experience the "pain of paying" (Shafir and Thaler, 2006). In order to alleviate the

pain of paying, consumers often try to justify their purchase positively (Kivetz, 1999) through a nominal gain, overlooking the real loss. In such a case, reluctance to buy during inflation when the nominal prices are high and more willing to sell would be considered a prudent choice. Thus, in the current research, we will explore to what extent the type of decision (buying vs. selling) moderates the difference in self-versus others' perceptions of money illusion. Specifically, we aim to understand if consumers perceive others to be less reluctant to buy and more willing to sell as compared to themselves in situations of inflation.

Study Overview

Table 1: Summary of findings

Study	***N***	**Design**	**Main Findings**
Testing the main effects of self-other asymmetry and moderation by type of decision			
1	388 (Prolific U.K.)	Between-subjects 2 targets (self vs. other)	Participants were less likely to buy as compared to others
2	308 (Prolific U.S.A)	Fully within-subjects 5 targets (self vs target others – avg. American, best friend, colleague and family member) X 2 type of decision (likelihood of buying and selling decision)	Participants were less likely to buy and equally likely to sell as compared to others
3	401 (Prolific U.S.A)	Between-subjects 3 targets (self vs. other vs. best friend)	Participants believed any unspecified others and their best friend were equally willing to sell as themselves
4	232 (French students)	Fully within-subjects 2 targets (self vs. other) X 2 type of decision (likelihood of buying and selling decision)	Participants were less likely to buy and equally likely to sell as compared to others. This shows that the effect is generalized across the French population
Test for moderation of self-other asymmetry			
5	398 (Prolific U.S.A)	Mixed design: 2 targets (self and other) as the within-subjects factor X 2 levels of picture presentation (with picture vs no picture) as the between-subjects	The perceived importance of the real and nominal value of money increased with the picture presentation, but the self-other bias couldn't be attenuated
6	300 (Prolific U.S.A)	2 time of decision taking (decision now compared to six months before vs decision now compared to six months after) between subjects X 2 targets (self vs other) within-subjects	We found a moderating effect on the time of decision-making. Participants perceived that they were equally likely to buy *now* rather than six months *before* (post-nominal price change) as compared to others. Participants perceived that they were equally likely to buy *now* rather than six months *after* (post-nominal price change) as compared to others
Testing the main effect for possible managerial implication			
7	298 (Prolific U.S.A)	2 targets (self vs other) X 2 possibilities (possibility A vs possibility B) fully within-subjects	*Dependent variable: choice* Participants perceived others as having a higher likelihood of choosing the possibility with a greater nominal increment as compared to themselves. *Dependent variable: perceived likelihood of switching* Participants perceived others would have a higher likelihood of switching to a possibility of higher nominal increment from a lower nominal increment than themselves

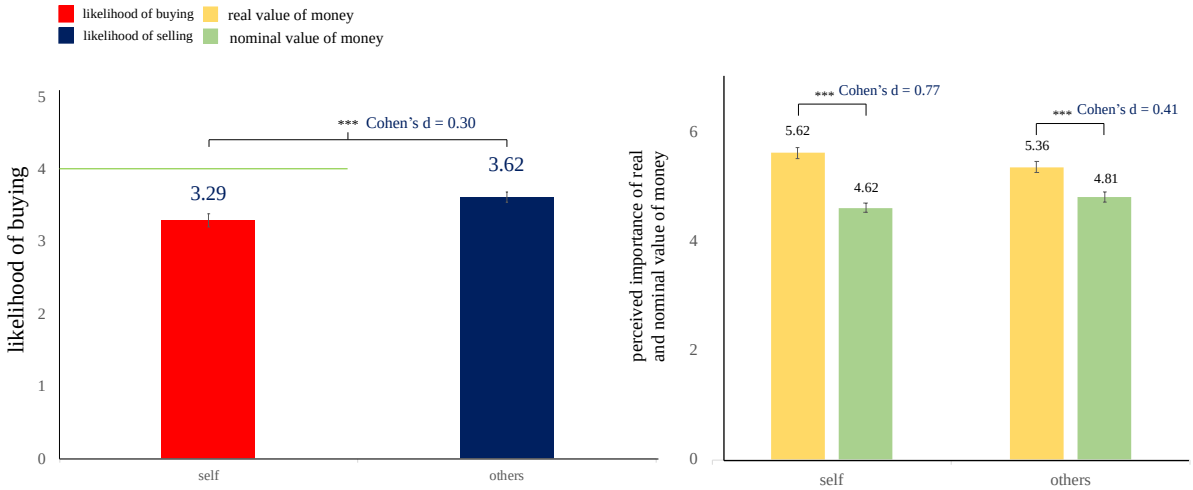
Note: N = 2325; Sample size indicated after applying preregistered exclusion criteria

2. Study 1 – Money Illusion for others in a buying decision

This preregistered study[1] had 388 participants (100 males, 287 females, 1 other; M_{age} = 38 years, SD = 7.17 years). An independent sample t-test showed that participants believed they (M = 3.29, SD = 1.13) were less likely to buy than others (M = 3.61, SD = 0.98), $t(386)$ = 2.93, p = .004, d = 0.30. Decomposing the interaction of 2 (self vs other) between subjects X 2 (real vs nominal value) within subjects ANOVA, we found that participants perceived they (Cohen's d = 0.77, p_{Tukey} < .001) would place more importance on real value than nominal value, and specifically more importance than others (Cohen's d = 0.41, p_{Tukey} < .001).

This shows that consumers are unable to connect the definition of real and nominal values of money with their actual decision as they claimed to place more importance on real value but were less likely to buy than others at unchanged real values than others. It should be noted that if consumers were more rational than others, as they asserted, their likelihood of buying at the present time would be the same as it was six months ago, since the real value has not changed. This shows consumers are affected by money illusion more than they perceive as compared to others.

Figure 1: Bar diagram showing self-other asymmetry in buying decision and perceived importance on real and nominal value of money.



Note: The green line indicates the similar likelihood of buying in present time compared to six months before. If people were behaving more rational than others, then the likelihood of buying would remain same in the present time compared to after six months before as the real value remains unchanged.

[1] As per pre-registration, we planned to test the mediating impact of risk perception, earning perception, personality traits, perceived importance of product attributes, and perceived purchasing power on the relationship of self-other condition on likelihood of buying. However, we did not include them in the presentation of the first study and only concentrated on the main effects.

3. Study 2 – Perceived effect of money illusion for target others in a buying and selling decision.

This preregistered study had 308 U.S. American participants through Prolific (121 males, 183 females, 2 prefer not to disclose, 2 others; M_{age} = 38.7 years, SD = 14.2 years). Decomposing the interaction of 2 (self vs target others) X 2 (likelihood of buying vs selling) within subjects ANOVA, we found participants perceived themselves to be less likely to buy compared to all the target others (all Cohen's $d > 0.25$, $p_{Tukey} < .001$). Furthermore, we found that participants perceived themselves to be equally likely to sell as target others ($p_{Tukey} > .05$). Decomposing the interactions of the 2 (self vs target others) X 2 (real vs nominal value) repeated measures ANOVA, we found that participants perceived targets to place lower importance on the real value of money than themselves (all Cohen's $d > 0.20$, $p_{Tukey} < .001$).

This shows that, although consumers perceived themselves to be more willing to sell and less willing to buy at unchanged real value, they perceived target others to place lower importance on the real value of money than themselves (presented in Figure 3). This adds robustness to our finding that that consumers claim to understand the real and nominal values of money, but they are more affected by money illusion in reality than others. Furthermore, it shows that the type of decision-making moderates the self-versus other asymmetry.

4. Study 3 – Perceived effect of money illusion for target others in a selling decision.

This preregistered study had 401 participants (122 males, 278 females, 1 other; M_{age} = 36.2 years, SD = 14.6 years). Decomposing the interactions of one-way ANOVA analysis with self, any unspecified others and best friend (target other) as between subjects factor, we found no difference in likelihood of selling decision between self (M_{self} = 5.04, SD = 1.30), any unspecified others (M_{others} = 4.68, SD = 1.31) and best friend ($M_{best\text{-}friend}$ = 4.77, SD = 1.53), $p_{Tukey} > .05$. This replicates our previous finding and adds robustness to the notion.

5. Study 4 – Replicating the perceived effect of money illusion with French consumers.

This preregistered study had 232 francophone undergraduate participants (103 males, 128 females, 1 prefer not to disclose; M_{age} = 21.85 years, SD = 1.18 years). Decomposing the interaction of 2 (self vs target others) X 2 (likelihood of buying vs selling) within subjects ANOVA, we found that participants were less likely to buy (d = - 0.56, $p_{Tukey} < .001$), and equally likely to sell as compared to others (d = - 0.10, p_{Tukey} = .461). This replicated our main findings with French consumers also and shows the generalizability of the effect.

6. Study 5 – Attempt to moderate self-versus other asymmetry in perceived effect of money illusion by diagrammatic representation real and nominal value of money.

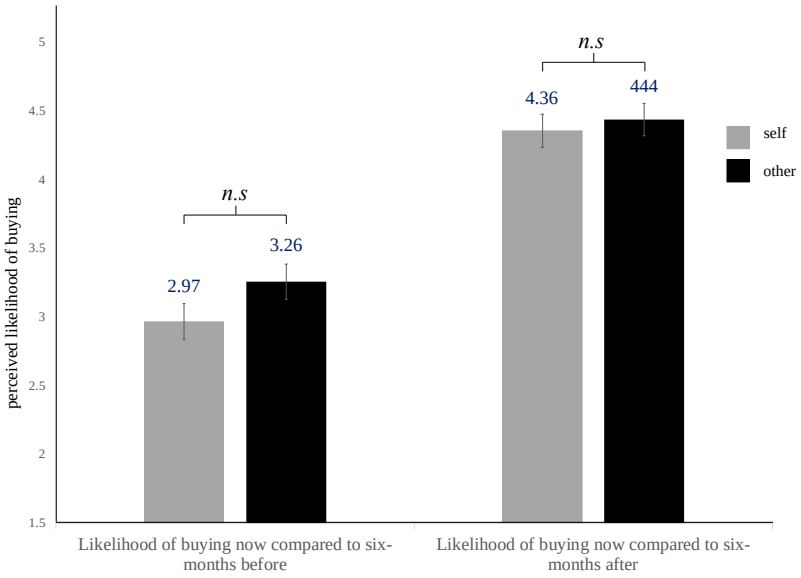
The objective of this study is to test whether a better understanding of the real and nominal value of money might influence people's perception of the effect of money illusion on others. This preregistered study had 398 participants (199 males, 192 females, 3 others, and 4 prefer not to disclose; M_{age} = 39.33 years, SD = 12.98 years). We conducted a 2 (self and other) within-subjects X 2 (real vs nominal) within-subjects X 2 (with picture vs no picture) as the between-subjects factor. In the "with picture" condition participants were given thorough explanation of the real and nominal value of money, along with a diagrammatic representation of fluctuation of the real and nominal value of minimum federal wage. Further we conducted 2 (self vs other) within subjects X 2 (with picture vs no picture) between subjects ANOVA with likelihood of buying decision as the dependent variable to test whether the increased understanding of the importance of real and nominal value translates to decision making or not. Decomposing the interactions, we found that although the perceived importance of real value as compared to the nominal value increased in the condition "with picture" (d = 0.92) as compared to the condition "without picture" (d = 0.67), participants (M = 3.00, SD = 1.27) were less likely to buy as compared to others (M = 3.33, SD = 1.20), d = - 0.27, p_{Tukey} < .001. The efficacy of explicit debiasing intervention in mitigating self-other bias remains limited. While individuals may possess an increased comprehension of distinguishing between real and nominal value and the importance of each in making economic decision, this knowledge does not necessarily transfer into effective decision-making.

7. Study 6 – Moderation of self-versus other asymmetry in perceived effect of money illusion by a temporal reference point.

This preregistered study had 300 U.S. American participants (129 males, 162 females, 5 others, 4 prefer not to disclose; Mage = 38.51 years, SD = 13.48 years). We conducted a repeated-measures ANOVA with conditions (likelihood of buying *now* compared to six months *before* vs likelihood of buying *now* compared to six months *after*) as between-subject factors, targets (self vs other) as within-subject factors and the likelihood of buying decision as the dependent variable. Decomposing the interactions, we found that participants perceived that they (M = 2.97, SD = 1.39) were equally likely to buy *now* rather than six months *before*, as compared to others (M = 3.26, SD = 1.43), t(298) = - 2.53, p_{Tukey} = .057, d = - 0.21. Furthermore, we found that, participants perceived that they (M = 4.36, SD = 1.86) were equally likely to buy *now* rather than six months *after*, as compared to others (M = 4.44, SD =

1.59), $t(298) = -0.76$, $p_{Tukey} = .872$, d = - 0.05. This is an interesting finding as this is opposed to our previous finding it shows that time of decision-making moderates the self-other differences. It must be noted that, the mean buying decisions in the present time as compared to before ($M = 2.97$) and as compared to the future ($M = 4.44$) are significantly different from the rational decision-making point ($M = 4.00$), $p < .05$, $d > 0.50$.

Figure 1: The bar diagram represents a comparison of self and others for buying decisions in present time compared to six months before and after.



8. Study 7 – Managerial Study: Effect of money illusion on understanding of salary changes.

This preregistered study had 298 U.S American participants (147 males, 144 females, 5 others, 2 prefer not to disclose; M_{age} = 37.72 years, SD = 13.28 years). We conducted a repeated-measures ANOVA with target conditions (self and another employee in a similar position) on two separate dependent variables: choice between two possibilities and likelihood of leaving the company while working under possibility A (low nominal raise in salary) to possibility B (high nominal raise in salary). In possibility A, participants were told that the company gave a 5% raise in salary when the inflation rise had been 3%. In possibility B, participants were told that the company gave a 7% raise in salary when the inflation rise had been 5%. Although the nominal increments differed in the two possibilities, the real increment (2%) remained the same.

We conducted a one-tailed t-test against a mid-point of 4, representing no preference for either possibility, which is the rational choice. We found that the participants perceived themselves as less likely to choose possibility B than possibility A ($M = 3.77$, SD = 2.02), d = - 0.11, $p = .049$. In addition, we found that the participants perceived others as more likely to

choose possibility B than possibility A, $d = 0.18$, $p = .003$. We conducted a one-tailed t-test against a mid-point of 4, representing no preference for either possibility, which is the rational choice. We found that the participants perceived themselves as equally likely to stay under both possibilities ($M = 4.02$, SD = 1.94), $t(297) = 0.15$, $d = 0.01$, $p = .881$. In addition, we found that the participants perceived others as more likely to shift to possibility B from possibility A ($M = 4.25$, SD = 1.64), $t(297) = 2.65$, $d = 0.15$, $p = .008$.

This study is of managerial importance as it shows that compared to themselves, people perceive others to have a higher likelihood of choosing a possibility where the company gives offers greater nominal. Further, our finding suggests that compared to self, individuals tend to perceive others as more likely to switch jobs based on the assessment of their nominal compensation rather than their real salary.

9. General discussion

Our findings add a theoretical contribution to the literature on money illusion and the perception of others. Our findings showed that people suffer from a greater degree of money illusion than they perceive compared to others. Although people perceive themselves to place more importance on the real value of money than the nominal value than others, they are less motivated to buy and equally motivated to sell at a higher nominal price when there is no change in real value, compared to others. This shows that people make irrational decisions despite claiming to be more rational than others. We uncovered the moderating effect of buying and selling decision as they are perceived differently and the moderating effect of temporal reference point in decision making. Our managerial study showed that people are more affected by money illusion than they perceive as they deviate from the rational choice of no difference between two possibilities of high and low nominal increment in salary when there is no real increment in the salary.

Our findings have practical implications for understanding how people perceive others to make transaction decisions (e.g., when people buy and sell products) in times of inflation. For instance, if others are perceived to be more willing to buy at a higher nominal price, house owners might overestimate people's willingness to pay and set very high nominal prices to beat the effect of inflation. This could lead to discouragement from buyers and the failure of a profitable transaction. Investors perceiving to have a potentially lower perception of earning as compared to others might discourage people from buying by dismissing real value pay-offs and losing out on opportunities. This might impact the firm's earnings as the stock prices might get devalued to intrinsic value. Furthermore, people might perceive others to be more

satisfied with a nominal increment in their wage. People might feel cheated if others get a higher nominal hike than themselves in a different company. This can lead to a higher attrition rate and, in general, employee discontent.

10. References

Brown, J. D. (2012). Understanding the Better Than Average Effect. *Personality and Social Psychology Bulletin*, *38*(2), 209–219.

Chu, H., & Liao, S. (2010). Buying while expecting to sell: The economic psychology of online resale. *Journal of Business Research*, *63*(9–10), 1073–1078.

Dunning, D. (2007). Self-Image Motives and Consumer Behavior: How Sacrosanct Self-Beliefs Sway Preferences in the Marketplace. *Journal of Consumer Psychology*, *17*(4), 237–249.

Epley, N., & Dunning, D. (2000). Feeling "holier than thou": Are self-serving assessments produced by errors in self- or social prediction? *Journal of Personality and Social Psychology*, *79*(6), 861–875.

Fehr, E., & Tyran, J. R. (2007). Money illusion and coordination failure. *Games and Economic Behavior*, *58*(2), 246–268.

Festinger, L. (1954). A Theory of Social Comparison Processes. *Human Relations*, *7*(2), 117–140.

Fisher, I. (1928). *The money illusion*. Adelphi Co.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

Kivetz, R. (1999). Advances in Research on Mental Accounting and Reason-Based Choice. *Marketing Letters 1999 10:3*, *10*(3), 249–266.

Pronin, E., Gilovich, T., & Ross, L. (2004). Objectivity in the Eye of the Beholder: Divergent Perceptions of Bias in Self Versus Others. *Psychological Review*, *111*(3), 781–799.

Robinson, R. J., Keltner, D., Ward, A., & Ross, L. (1995). Actual versus assumed differences in construal: "Naive realism" in intergroup perception and conflict. *Journal of Personality and Social Psychology*, *68*(3), 404–417.

Shafir, E., Diamond, P., & Tversky, A. (1997). Money Illusion. In *Source: The Quarterly Journal of Economics* (Vol. 112, Issue 2).

Shafir, E., & Thaler, R. H. (2006). Invest now, drink later, spend never: On the mental accounting of delayed consumption. *Journal of Economic Psychology*, *27*(5), 694–712.

van Boven, L., Dunning, D., & Loewenstein, G. (2000). Egocentric empathy gaps between owners and buyers: misperceptions of the endowment effect. *Journal of Personality and Social Psychology*, *79*(1), 66–76.

VanBergen, N., Lurie, N. H., & Chen, Z. (2022). More Rational or More Emotional Than Others? Lay Beliefs About Decision-Making Strategies. *Journal of Consumer Psychology*, *32*(2), 274–292.

Ziano, I., Li, J., Tsun, S. M., Lei, H. C., Kamath, A. A., Cheng, B. L., & Feldman, G. (2021). Revisiting "money illusion": Replication and extension of Shafir, Diamond, and Tversky (1997). *Journal of Economic Psychology*, *83*.