Accepted Manuscript

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Please cite this article as: Gabbi G., Zanotti G., Sex & the city. Are financial decisions driven by emotions?. *Journal of Behavioral and Experimental Finance* (2018), https://doi.org/10.1016/j.jbef.2018.10.005

Sex & the City.
Are Financial Decisions Driven by Emotions?

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Abstract

Although the role of irrationality in trading choices has been extensively discussed in the literature, individual incidental emotions have been neglected. We investigated emotional explanatory factors and trading choices in a sample of non-professional agents who managed a virtual financial positions pretending to be traders. Using a series of daily surveys over a five-week period as well as introductive inventory surveys, we constructed measures of core affect and emotions and correlated these with subjects' financial choices. Our purpose is to test if the decision to buy or sell financial assets is affected by the emotional state of individuals, considering also gender clusters. A focus is on incidental emotions, detecting how positive emotions due to sexual activity may alter financial trading choices. Our findings suggest that agents incorrectly attribute their good mood to positive economic perspectives rather than positive emotions.

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1. Introduction

Rationality in individual economic and financial decision-making behaviour is a pillar of various streams of literature. Emotional state is a significant constraint on the ability of individuals to perfectly rationalize and handle the complexity of choices. We do not know if Mae West was right when she declared "sex is emotion in motion", but sex may certainly affect people's emotions and, consequently, their decision-making processes. Our purpose in this paper is to detect how emotions may alter financial trading choices, specifically if long/short positions can depend on sexual activity, considering also gender clusters.

The traditional financial literature assumes that individuals are rational agents maximizing the utility function, regardless of their emotional state and previous experience. The expected utility theorem assumes that individuals choose between alternatives according to the utility deriving from each alternative and to the probability that they assign to the various alternatives. Kahneman and Tversky (1979) reconsidered the role of attitudes, emotions and, in general, behavioral biases in investors' decisions. The way in which prospects are presented (framing) influence agents' preferences. The decision-making process consists of an editing stage, when prospects are coded and categorized and complex problems are broken down into simpler sub-problems, and an evaluation stage, when prospects with the highest value are chosen. Because the editing can lead to different representations, the decision can change accordingly. Framing is at the basis of mental accounting, since it is the way in which a problem is subjectively interpreted.

More recently, psychology has investigated how emotions and sentiments affect decision-making, also in regard to financial choices, and the perception of risks and rewards. According to this field of literature According to this field of literature, financial decisions are dominated by emotion rather than rational calculation; therefore, sentiments have to be considered for decision-making process". Damasio (1994) shows how choices can be extremely difficult for people who have lost the use of the emotional part of their brains. Thaler (1993) proves that psychological forces play a role in determining asset prices. Breitmayer and Pelster (2018) show how affect is relevant in stock pricing models and is eligible as an additional factor in asset pricing models.

Forgas (1995) shows that the computations required to make investment decisions are typically complex, abstract, and involve risk, which are the attributes considered to induce people to rely more heavily on their emotions when making a choice. Emotions have also been used to explain recent financial crises (Tuckett and Taffler, 2008), and to understand traders' decisions. Biais et al. (2005) use an experimental approach derived from Plott and Sunder (1988) to test the hypothesis that psychological variables have an influence on traders' behaviour, showing that mis-calibration reduces and self-monitoring enhances trading performances. The impact of psychological variables is significant for males but not for females. Lepori (2016) shows that air pollution-induced mood changes influence market returns.

In this paper we present the results of an experimental approach designed to clarify the interactions between emotional life and financial choices. More specifically, our purpose is to test if the decision to buy or sell financial assets is affected by the emotional state of individuals, doing so within a framework that describes the main factors explaining emotions. If people are more optimistic, they may be more inclined to buy. Specifically, they incorrectly attribute their good mood to positive economic perspectives rather than positive emotions.

The paper is organized as follows. In section 2 we review the literature on the relation between investor behavior and emotions. Section 3 presents the experimental design. We describe the process of participants' selection, the data that we collected by means of questionnaires, the rules of the game and the methodology that we applied to estimate the models. In section 4 we present and discuss the results. Section 5 concludes.

## 2. Investor behaviour and financial choices

Psychological scientists assume that decision-making is driven by emotion rather than rationality (Lerner et al, 2015). A body of empirical literature has investigated the relation between stock market returns and proxies for emotions (i.e. weather, air pollution, and sports events), reaching mixed conclusions. Saunders (1993), and Hirshleifer and Shumway (2003) find that a positive mood associated with good weather leads to positive stock returns. Kaustia and Rantapuska (2016) find that a small amount of daily trading returns may be explained by weather-related mood variables. Below-average returns have also been set in relation to the duration of daylight (Kamstra, Kramer and Levi, 2003). Geomagnetic storms, full moon phases, associated with depressed mood, explain lower returns on financial markets (Krivelyova

and Robotti, 2003, Yuan Zheng and Zhu, 2006). Lepori (2016) shows that air pollution induces mood changes in traders operating on the floor, affecting their financial choices. Edmans et al. (2007) find that stock market returns fall when domestic country soccer teams are eliminated from important tournaments. Lepori (2015) demonstrates that a positive emotional state induced by viewing comedies leads to a reduction in demand for risky financial assets. A criticism of this empirical literature is that the relation between financial market returns and emotions is investigated through proxies (i.e. weather or sports events).

A second stream of literature directly investigates the emotional state of investors. The relationship between emotions and financial decisions is tested by comparing financial choices to emotions measured by a checklist of adjectives in the affects grid (Russell, 1980, 2003; Yik, Russell and Steiger, 2011). Au et al. (2003) analyse the impact of emotions on foreign exchange trading. They find that traders in a good mood have a lower trading performance compared to those in a neutral or bad mood. This is because traders in a bad mood are the most accurate in their decisions and behave conservatively in their trading. Kuhnen and Knutson (2011) find that positive emotional states such as excitement induce people to take risks and to be confident in their ability to evaluate investment options, while negative emotions such as anxiety have the opposite effects. Outcomes of past choices may change emotions and thus influence future financial decisions.

We follow Russell (2003), where the building blocks of emotions is core affect. A core affect is a "neurophysiological state consciously accessible as the simplest raw (non-reflective) feeling evident in moods and emotions" (p. 148). Core affect is not necessary directed at a specific object, being a single feeling and part of what we usually term a *mood* (Russell, 2009). Core affect is a component of discrete emotional episodes but not all of them (Yik, Russell and Steiger, 2011). In our paper, following Russell (2003), core affect is defined in a dimensional system characterized by two dimensions: "pleasure-displeasure" and "activation-deactivation" (Figure 1).

Figure 1 – Baseline emotional framework
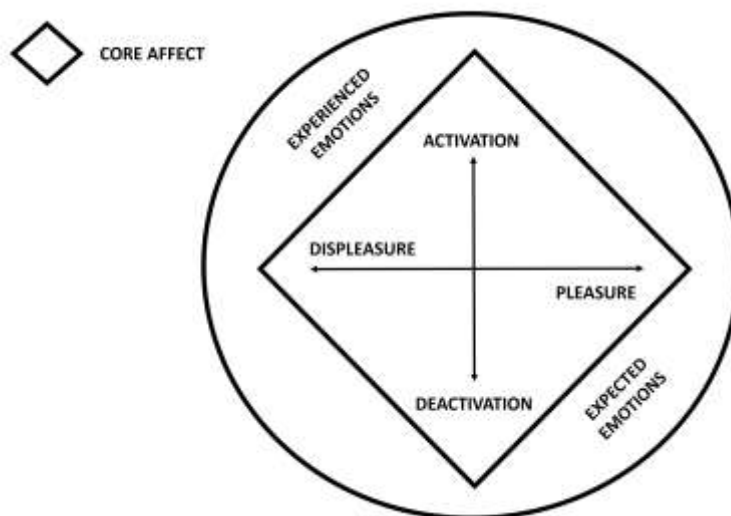
Along with the core affect, we consider other emotions that are temporary and frequently stronger (Gärling, et al 2016) and may trigger behavioural changes and transient feelings. Emotions can be classified as 'experienced', 'expected' and 'incidental'.

Experienced emotions are associated with specific choice outcomes and may generate pride or regret (Mellers, 2000). Gilbert and Wilson (2007) show that decision-makers anticipate the consequences of different choices and their affective reactions to those consequences.

The anticipation of the outcome (positive or negative) of a relevant event from a personal point of view may influence the decision making process. For example, an investor, when deciding whether or not to purchase a stock, may imagine the disappointment that she/he would feel if the price of the stock then declined or the regret if s/he did not buy the stock and then the stock price rose. These emotions are experienced once the outcomes of the choice are known.

Expected emotions are felt when thinking about what may happen in the future. They are associated with future events. The hope of earning and fear of losing apply in financial choices (Gärling et al, 2016). Expected emotions are perceived at the time of choice. For example, an investor can feel immediate fear of losing or hope of gaining when deciding whether or not to purchase a stock. (Rick and Loewenstein, 2008).

The role of experienced emotions has been recognized and it is coherent also with the consequentialist economic account of decision-making (Rick and Lowenstein 2008). In the financial literature, less attention has been paid to expected emotions. Our assumption is that expected emotions have an impact on decision-making and they can influence behaviour and alter people's choices.

People's decisions may be affected also by incidental emotions, that is, a set of events "unrelated to our current goals and actions" (Liu, Chai, Yu, 2016, p. 1), for instance, positive/negative news, a good/bad situation such as a family quarrel, or a very pleasant evening with a partner. We introduced two variables to capture respectively positive and negative incidental emotions (figure 2) following Loewenstein and Lerner (2003).

Figure 2 – Emotion framework with incidental emotions
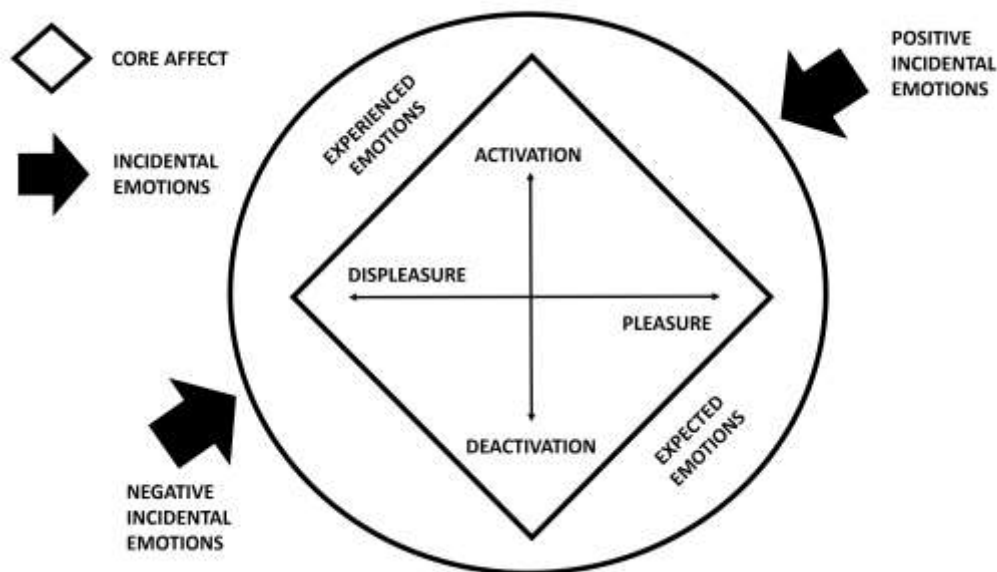
Among the events that generate incidental emotions, we explored those that could occur frequently in order to have sufficient statistical significance. As a positive incidental event, we chose sexual intercourse within twelve hours before the financial choice. The impact of sexual activity on financial decision-making has already been explored in Coates, Gurnell, Sarnyai (2010) whose finding is that hormones due to sexual activity can exaggerate market moves. According to Meltzer et al. (2017), sexual afterglow remains high for a

considerable number of hour. This support our request to consider sexual intercourse within the twelve hours preceding the financial choice.

As a negative incidental event, we considered exposure to non-financial news resulting in a negative feeling during the past 12 hours. Moretti and di Pellegrino (2010), Bonini et al. (2011) demonstrated that induced feelings of disgust significantly increase rejection rates of unfair offers.

In our study, the above-described emotional framework is applied to financial decision-making. More specifically, we investigate the impact of different categories of emotions on the decision to take a long/short financial position.

3. Experimental design. Materials and Methods

3.1. Agents

We measured the emotional state with a direct investigation conducted by means of a daily questionnaire to MSc in Finance students at two Italian universities (Siena and Bergamo).[1] Students were asked to participate as volunteers in an experimental trading game to investigate how the different categories of emotions may affect financial choices.

84 students initially enrolled in our experiment. Out of the 84 students, 77 provided valid and time compliant responses that we consider in our analysis. 39 were males and 38 females, with ages ranging from 19 to 28 and a mean age of 24 years old (32.5% between 19 and 22; 57.1% between 23 and 25; 10.4% between 26 and 28).

To all participants who properly completed the questionnaires we offered two academic credits (ECTS) to add to their personal study plans.[2] As a further

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[1] Students from Siena University attend the MSc in Finance; students from Bergamo University attend the MSc in International Business and Finance.

[2] The European Credit Transfer and Accumulation System is a student-centred system based on the student workload required to achieve the objectives of a programme, objectives preferably specified in terms of the learning outcomes and competences to be acquired. Credits are allocated to all educational components of a study programme (modules, courses, placements, dissertation work) and reflect the quantity of work each component requires to achieve its specific objectives or learning outcomes in relation to the total quantity of work necessary to complete a full year of study successfully. This was an incentive for our students, who were expected to register a pre-defined number of credits (according to the Bologna process signed in 1999, the number of credits are 180 for undergraduate courses and 120 for Master of Sciences).

incentive to conclude the experiment accurately and consider it "personally relevant", we also offered two airline tickets (one for the winner and one for any other person of his/her choice) to London to be drawn by lot from among the participants at the end of the experiment. Following Williams et al. (2003), rewarding participants with examination credits for their university curricula induces them to act seriously.

None of the participants in our study had prior professional trading experience or previous exposure to this kind of experiment. The choice of running the experiment with students, instead of professional traders, allowed us to explain trading behaviour by filtering the impact of the economic cycle, financial markets performance, and corporate bonuses so that financial choices should have been driven only by emotional state.

Our subject population was an optimal choice for various reasons (Sapienza et al., 2009): MSc in Finance students are familiar with financial risk (minimum uninformed risk); they are homogeneous in age and educational background (minimum mystification risk); they are expected to enter the financial industry, so that they represent a proxy of professional financial decision-makers, without firms' constraints affecting their decisions (minimum representative risk).

3.2. General procedure

We explained the rules of the game in a two-hour session before starting the experiment. Besides the first meeting, the experiment was run by email messages. To guarantee applicants' privacy as much as possible, with the first email we sent everyone a random nickname which served as a unique identifier for each participant.

For 5 weeks the students were asked to fill in a questionnaire every morning before 10.00 a.m., excluding weekends and public holidays. The questionnaire consisted of two sections: one related to the emotional state of the participant that day and the other to the financial decision. At the end of each trading day, agents were informed about the result (plus/minus) of their financial choice.

More specifically, in the first part, we gathered information on six variables (Table 1) aimed at describing the emotional state as in our model (figure 2). Agents had to answer two questions intended to capture core affect on the two dimensions of the Russel model (1980). The first question ("Grade the

intensity of your energy") was designed to capture the activation vs. deactivation; the second ("Assess the degree of your well-being") to capture the pleasure vs. displeasure dimension. We named these two variables ACTIVATION and PLEASURE, respectively.

The third question ("How do you feel about yesterday's financial choice?") focused on the degree of satisfaction (experienced emotions) with the previous day's financial result. We named this variable EXPERIENCED emotion.

The fourth question ("How do you feel about today's financial choice?") sought to capture emotions for the future financial results expected at the end of day. We named this variable EXPECTED emotion.

All these variables ranged from 1 (low level) to 5 (high level).

The last two questions were related to incidental emotions. The first one ("Have you had any sexual intercourse within the past twelve hours?") was a dummy variable (yes/no) related to sexual activity aimed at capturing a relevant incidental positive emotion. We also asked participants experiencing sexual activity if the consequent feeling was positive or negative. Since the answers were 98.5% positive, we assume that SEX captures a positive incidental emotion.

The second question ("Have you received any personal/general non-financial news resulting in a negative feeling?") was a dummy variable (yes/no) related to incidental negative emotion. We named it BADNEWS.

Table 1. Daily questionnaire independent variables

Variable Name	Question	Values
Experienced Emotions	How do you feel about yesterday's financial choice?	1 very unsatisfied … 5 very proud
Activation	Grade the intensity of your energy	1 very low energy … 5 full of energy
Pleasure	Assess the degree of your well-being	1 very negative … 5 very positive
Expected Emotions	How do you feel about today's financial choice?	1 high fear of losing … 5 high hope of gaining
Sex	Have you have sexual intercourse with your partner in the past twelve hours?	0 no 1 yes
Bad news	Have you have received bad non-financial news resulting in a negative feeling	0 no 1 yes

The second part of the questionnaire was related to the financial choice. We asked participants to choose between taking either a long or short position on a hypothetical financial asset. The variable (LONG) was a dummy with a value of 1 if the participant took a long position and 0 if s/he took a short position. Whenever agents wanted to reverse their position from long to short (from short to long), they had to sell (buy) all the existing financial assets plus one size.

The stock price was randomly generated, and participants did not have any information about expected future performance. We consequently expected the financial choice to be based only on the emotional state of the decision-maker.

As previously described, the literature shows that people in a positive mood make optimistic judgements and choices, while fear leads to pessimistic scenarios (Lerner and Keltner, 2001). We should expect a positive relation

between high (low) ranked emotions and the decision to buy (sell), with the exception of the BADNEWS variable, where the expected sign is negative.

3.3. Model specification

While the neoclassical financial paradigm assumes that agents are rational and markets are efficient, our hypothesis is that individuals are influenced by emotional factors (core affect, experienced, expected) as stated in our baseline emotional framework (Figure 1). Our goal was to verify if the positive disposition is irrationally associated with an optimistic expectation of market growth and a consequent financial choice of purchase:

H1: Long financial positions are associated with positive emotional states.

$LONG_{i,t} = f\ (EXPERIENCED_{i,t},\ ACTIVATION_{i,t},\ PLEASURE_{i,t},\ EXPECTED_{i,t})$.

We then introduced incidental emotions to estimate how they influence financial decisions. More specifically, we expected to find that positive (negative) incidental emotions strengthen the optimism (pessimism) and then the attitude to buy (sell) financial assets. Because positive and negative incidental emotions may occur in the same period (in our model, 12 hours before the financial choice), we studied their interactions. We built three dummy variables as combinations of SEX and BADNEWS.

   a) Individuals who had sexual intercourse but did not receive any bad news (YSNB);
   b) Individuals who received bad news but did not have any sexual intercourse (NSYB);
   c) Individuals who experienced both (YSYB).

We did not run regressions for the individuals who did not experience any incidental emotions (who have experienced neither of the two incidental emotions). Table 2 shows that the combinations of incidental emotions are well balanced within the whole sample and by gender.

Table 2. Incidental emotions frequency

INCIDENTAL EMOTIONS	ALL SAMPLE	FEMALES	MALES
YSNB	19.7%	17.0%	22.4%
NSYB	30.0%	30.0%	30.1%
YSYB	15.6%	16.7%	14.4%
NSNB	34.7%	36.3%	33.1%

We estimated three different equations, by adding in the baseline model, each time, one of the three incidental variables (YSNB; NSYB; YSYB):

H2: Long (short) financial positions are positively associated with recent good (bad) incidental emotions.

$$\text{LONG}_{i,t} = f(\text{EXPERIENCED}_{i,t}, \text{ACTIVATION}_{i,t}, \text{PLEASURE}_{i,t}, \text{EXPECTED}_{i,t}, \text{INCIDENTAL}_{i,t})$$

We finally explored the model by gender. A common stereotype is that women are more emotive than men. This may also affect financial choices. We investigated if this label really reflects actual economic behaviour.

Before running our regression models, we tested the correlation and collinearity among emotional variables across all days and individuals (Table 3)

Table 3. Correlations

Pearson correlation coefficients for explanatory variables used in the panel logit regressions. Since for each independent variable Tolerance = 1/VIF, low values indicate high multivariate correlation. There would be as many tolerance coefficients as there are independents. The higher the inter-correlation of the independents, the more the tolerance will approach zero. As a rule of thumb, if tolerance is less than 0.20, a problem with multicollinearity is indicated.

	EXPERIENCED	ACTIVATION	PLEASURE	EXPECTED	YSNB	NSYB	YSYB	TOLERANCE (1/VIF)
EXPERIENCED	1.000							0.853
ACTIVATION	0.242	1.000						0.806
PLEASURE	0.153	0.181	1.000					0.943
EXPECTED	0.285	0.365	0.120	1.000				0.824
YSNB	0.174	0.203	0.115	0.104	1.000			0.773
NSYB	-0.212	-0.183	-0.132	-0.119	-0.324	1.000		0.731
YSYB	-0.049	0.033	-0.034	0.007	-0.213	-0.282	1.000	0.808

Emotional variables exhibit low correlations, significant at the five percent level, and with the expected sign. Since the tolerance is always higher than 0.20, we exclude multicollinearity.

To test H1 and H2 we ran panel logistic regressions.

4. Results

In this section we present and discuss our findings. The parameters and tests for the baseline model are shown in Table 4. Our results show that the emotional state has a statistically significant impact on financial choices for the whole sample of observations and for each sub-sample selected by gender. Emotions matter, and more specifically, all the emotional framework proxies show empirical signs that prompt interesting comments.

Table 4. Emotions Model and Financial Decisions (LONG/SHORT)

This table shows the panel logit regressions of the positive expectations and subsequent long position decision of investors (LONG). Three equations have been estimated: (i) all the variables of the model collected with the daily questionnaire applied to all the population; (ii) and (iii) the same equation applied by gender (respectively females and males). Heteroscedasticity robust standard errors are reported in brackets. * means significantly different from zero at 10% level (two-tail t-test), ** at the 5% level, and *** at the 1% level.

LONG	All genders	Females	Males
CONSTANT	-3.470***	-3,078***	-3.879***
	(0.368)	(0.491)	(0.553)
ACTIVATION	0.462***	0.395***	0.530***
	(0.093)	(0.135)	(0.131)
PLEASURE	0.244***	0.387***	0.075
	(0.071)	(0.491)	(0.102)
EXPERIENCED EMOTIONS	0.127***	0.120**	0.144***
	(0.044)	(0.061)	(0.065)
EXPECTED EMOTIONS	0.395***	0.209*	0.605***
	(0.084)	(0.116)	(0.124)
Observations	1,925	950	975
Wald test	107.82	49.48	66.20
Prob > chi2	0.000	0.000	0.000

Positive emotional states, captured by the core affect (ACTIVATION and PLEASURE), induce financial agents to take decisions that are oriented towards long positions. These are components of the emotional state that are more personal and independent from financial factors. Our results show that active and pleased agents are fundamentally buyers.

It is worth discussing the results found for experienced and expected emotions. Positive experienced emotions, proxied by pride, also make people buy. However, pride can be generated either after taking a long position and seeing the market rise or after taking a short position followed by a market fall. In any case, our results show that when agents feel proud of their previous performance, they take long positions in financial markets. This is in contrast with the reinforcement effect proved by Barber and Odean (2013).

At the same time, positive expected emotions (hope of gaining) may be associated with an expected bull market (that should lead to a long position) or to an expected bear market (that should lead to a short position). Our results show that when agents expect to gain, they behave as buyers in the market.

Without rational elements to support financial choices, pride related to the previous day's choice and hope of gaining is associated with a disposition to buy.

It should be pointed out that the agents involved in our study were aware that the gain on the market does not imply a long position and knew how short selling works. Nevertheless, in the absence of fundamental financial elements on which to base a "rational" choice, it emerges that the expectation of profit is generally associated with purchase.

The analysis by gender shows a different sensitivity: in particular, in the women's group, the financial choice remains closely linked to the core affect. On the other hand, the statistical significance of the link with pride in what has been achieved (experienced emotions) and above all with the expected emotions is reduced. On the other hand, financial choices made by males are affected by emotions linked to previous and expected results and by only one dimension (activation) of the core affect.

Our findings show that psychological variables are significant for both genders. However, in contrast to Biais et al. (2005), the impact shows distinctive differences between the genders. Females are driven by energy and wellbeing, males are driven only by energy. Our results confirm the stream of literature explaining the different buying behaviour (Park et al., 2006). Following an utilitarian approach, men's financial choices are mainly led by actual and expected results (pride and hope); women tend to be more hedonic and make decisions on a more general emotional level.

Table 5 presents estimates for the whole sample with the baseline model reinforced with the three variables capturing combinations of incidental emotions (YSNB, NSYB, and YSYB).

Factors of the baseline model maintain their significance, and all incidental emotions significantly affect financial choices.

The experience of sexual intercourse in the 12 hours preceding the financial decision, without bad news (YSNB), has a very significant positive coefficient: sex makes agents take long positions (Table 5 model 1).

When we introduce the negative incidental emotion (that is, negative news received in the past 12 hours, NSYB), we observe a negative coefficient, meaning that investors take short positions in financial markets (table 5 model 2).

Also to be underlined is that introduction into the estimated model of positive or negative incidental emotions felt in the past few hours makes the experienced emotions (PROUD) less significant.

The final model (Table 5 model 3) estimates the behaviour if both incidental emotions are felt (YSYB). The estimated coefficient is positive, still significant but with a slightly lower sensitivity compared to YSNB. This means that when individuals experience in the same period strong positive (sex) and negative (badnews) emotions, the former dominate and agents take long positions.

Table 5. Emotions Model and Financial Decisions with incidental emotions (LONG/SHORT)

This table shows the panel logit regressions of the positive expectations and subsequent long position decisions of investors (LONG). Three equations have been estimated: MODEL 1 estimated the baseline model with the reinforcement of YSNB variable, i.e. the agent had experienced only a sexual activity without bad news. MODEL 2 estimated the baseline model with the reinforcement of the NSYB variable, i.e. the agent had experienced only bad news and no sexual activity. MODEL 3 estimated the baseline model with the reinforcement of the YSYB variable, i.e. the agent had experienced both sexual activity and received bad news. Heteroscedasticity robust standard errors are reported in brackets. * means significantly different from zero at 10% level (two-tail t-test), ** at the 5% level, and *** at the 1% level.

LONG	MODEL 1	MODEL 2	MODEL 3
CONSTANT	-3.307***	-2.551***	-3.890***
	(0.390)	(0.383)	(0.386)
EXPERIENCED EMOTIONS	0.085*	0.079*	0.142***
	(0.046)	(0.046)	(0.175)
ACTIVATION	0.375***	0.383***	0.440***
	(0.098)	(0.095)	(0.097)
PLEASURE	0.201***	0.186**	0.275***
	(0.075)	(0.073)	(0.074)
EXPECTED EMOTIONS	0.423***	0.399***	0.427***
	(0.088)	(0.086)	(0.088)
YSNB	1.907***		
	(0.169)		
NSYB		-1.098***	
		(0.128)	
YSYB			1.785***
			(0.175)
Observations	1,925	1,925	1,925
Wald test	206.67	166.04	190.60
Prob > chi2	0.000	0.000	0.000

Table 6 shows the results for our three models for the group of females. Core affect remains significant independently of the incidental emotion combination that we tested. Incidental emotions reduce or eliminate the significance of experienced and expected emotions.

Strong positive or negative incidental emotions and core affect are the main drivers of financial choices. The models confirm that women do not seem to be influenced by the emotional components linked to the success or failure of

the economic choice of the previous day and the expectations of performance of the same day. When we introduce positive and negative incidental emotions (model 3), the decision to buy or sell appears to be explained again by all the variables of the emotional framework. This finding confirms that positive incidental emotions offset negative ones.

Table 6. Emotions Model and Financial Decisions with incidental emotions (females)

This table shows the panel logit regressions of the positive expectations and subsequent long position decision of investors (LONG) for female participants. Three equations were estimated: MODEL 1 estimated the baseline model with the reinforcement of the YSNB variable, i.e. the agent had experienced only sexual activity without bad news. MODEL 2 estimated the baseline model with the reinforcement of the NSYB variable, i.e. the agent had experienced only bad news and no sexual activity. MODEL 3 estimated the baseline model with the reinforcement of the YSYB variable, i.e. the agent has experienced both sexual activity and received bad news. Heteroscedasticity robust standard errors are reported in brackets. * means significantly different from zero at 10% level (two-tail t-test), ** at the 5% level, and *** at the 1% level.

LONG	MODEL 1	MODEL 2	MODEL 3
CONSTANT	-2.836***	-2.167***	-3.536***
	(0.507)	(0.518)	(0.516)
EXPERIENCED EMOTIONS	0.098	0.072	0.136**
	(0.062)	(0.062)	(0.064)
ACTIVATION	0.347**	0.330**	0.361**
	(0.138)	(0.137)	(0.140)
PLEASURE	0.325***	0.303***	0.428***
	(0.102)	(0.101)	(0.103)
EXPECTED EMOTIONS	0.194	0.215*	0.257**
	(0.118)	(0.118)	(0.121)
YSNB	1.450***		
	(0.245)		
NSYB		-0.912***	
		(0.171)	
YSYB			1.780***
			(0.251)
Observations	950	950	950
Wald test	76.68	73.49	91.37
Prob > chi2	0.000	0.000	0.000

The outcomes of the male group confirm the previous results, with some peculiarities (Table 7).

Incidental emotions are in all cases particularly significant. The sign of the regression coefficients are as expected: positive emotions are associated with optimism, negative emotions with pessimism. More specifically, the sensitivity to take long financial positions after experiencing sexual activities (YSNB) is higher than in the female group. The same applies when males receive bad news (NSYB). If both incidental emotions are experienced (YSYB), the sensitivity is independent from gender.

The distinctive feature of males is that the baseline framework variables change their explanatory capacity: differently from females, males remain sensitive to financial expectations. Similarly to females, what happened on the previous trading day loses significance.

With reference to the core affect, only the activation dimension is relevant, that is, the degree of energy perceived by individuals. The higher the activation state, the higher the disposition to buy. Pleasure is not significant. This confirms the finding of previous studies (Sapienza et al., 2009) that male financial decisions are determined by a combination of financial expectations (expected utility theory) supported by energetic emotional state.

Table 7. Emotions Model and Financial Decisions with incidental emotions (males)

This table shows the panel logit regressions of the positive expectations and subsequent long position decision of investors (LONG) for male participants. Three equations were estimated: MODEL 1 estimated the baseline model with the reinforcement of the YSNB variable, i.e. the agent had experienced only sexual activity without bad news. MODEL 2 estimated the baseline model with the reinforcement of the NSYB variable, i.e. the agent had experienced only bad news and no sexual activity. MODEL 3 estimated the baseline model with the reinforcement of the YSYB variable, i.e. the agent had both experienced sexual activity and received bad news. Heteroscedasticity robust standard errors are reported in brackets. * means significantly different from zero at 10% level (two-tail t-test), ** at the 5% level, and *** at the 1% level.

LONG	MODEL 1	MODEL 2	MODEL 3
CONSTANT	-3.925***	-3.054***	-4.219***
	(0.612)	(0.573)	(0.575)
EXPERIENCED EMOTIONS	0.073	0.102	0.156**
	(0.070)	(0.067)	(0.067)
ACTIVATION	0.419***	0.441***	0.512***
	(0.142)	(0.133)	(0.135)
PLEASURE	0.051	0.066	0.100
	(0.113)	(0.106)	(0.105)
EXPECTED EMOTIONS	0.724***	0.606***	0.614***
	(0.136)	(0.129)	(0.128)
YSNB	2.304***		
	(0.237)		
NSYB		-1.288***	
		(0.195)	
YSYB			1.768***
			(0.245)
Observations	975	975	975
Wald test	184.03	95.73	104.80
Prob > chi2	0.000	0.000	0.000

To summarize, incidental emotions significantly impact on financial choices, with a disposition to buy when linked to positive experiences, and viceversa to sell when associated with negative events. If both incidental emotions are experienced, positive events dominate, and agents are driven to a more optimistic behaviour. This findings reinforce Ariely and Loewenstein (2006) who demonstrate that objects perceived as relatively unattractive in a non-aroused state. In our case, the existence of positive incidental emotions

(represented by sexual experiences) shifts the orientation of financial agents towards a buying attitude.

The behaviour of our agents partly contradicts the finding of Gärling et al. (2016) that significant emotions can change the relevance of the core affect in the decision-making process. Female financial decisions are supported to a significant extent by the core affect and when incidental emotions are introduced into our models the impact is on the emotions linked to the expected and experienced financial results. In other words, emotions alter emotions but not the core affect. For males, the core affect is less relevant at least for the pleasure dimension. Viceversa, what matters are incidental and expected financial results.

The robustness of the model is confirmed by the fact that combination of incidental emotions for the whole sample and for both genders enter the estimates with a very significant p-value. What emerges from our analyses is that, regardless of gender, when individuals experience both positive and negative incidental emotions (YSYB), positive emotions dominate significantly, affecting the optimistic perception that the financial market is growing and that, consequently, it is convenient to take a long position.

5. Conclusions

We have presented an approach to estimating emotional impacts in financial decision-making based on Loewenstein and Lerner's (2003) affective influences model. The framework comprises three main components: the core affect, emotions related to financial results (backward and forward looking), and incidental emotions (positive and negative).

The absence of economic-financial information on the assets to buy or sell should lead to completely symmetrical effects of positive and negative incidental emotions. Indeed, when separately tested, positive and negative incidental emotions appear to affect financial decisions symmetrically. Our investigation shows that when a positive emotion (in our case a sexual intercourse) is experienced at the same time as a negative one, the positive emotion dominates generating optimistic expectations and thus a financial decision to buy.

The implications of our results are both managerial and financial.

The former applies to HR management, since our findings show that decisions depend on optimism and pessimism justified by non-rational factors and more importantly by incidental emotions that can hardly be foreseen. In other words, even behavioural tests to select human resources cannot ensure rationality, since incidental emotions affect agents' decisions. The problem could be managed if irrational factors are reduced by increasing the awareness that financial choices must be shared at team level.

Teams should be gender balanced. Our results show that women are less affected by emotional factors related to past and expected financial results. Together with Barber and Odean (2001), who showed that women are less prone to herding in periods of euphoria or panic in financial markets, we encourage gender balance within trading rooms.

The fact that gender diversity is an added value in terms of the quality of the decision-making process has already been proven, and it has also led to intervention by some legislators in defining the composition of boards. Our results show that the creation of gender-balanced teams could also enable trading rooms to mitigate the impact of emotional variables and thus improve financial choices.

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