

Information Management Against Excessive Trading: More or Less? Or Both?

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Motivation I

Private households participating in the stock market show high volumes of turnover in their portfolio. Via costs associated with such trading (commission fees, bid-ask spreads etc.), this decreases net returns.

- The phenomenon has been documented in the U.S. (Barber and Odean, 2000), Taiwan (Barber et al., 2008) and Canada (Linnainmaa et al., 2019).
- Barber et al. (2008) estimate that in Taiwan such losses are equivalent to 2.2% of gross domestic product.

Motivation II

Biais et al. (2005) and Grinblatt and Keloharju (2009) further show that such 'excessive trading' correlates with mistakes in information processing, *i.e.* overconfidence: overestimating the value of private knowledge.

While previous research (see Hanke et al., 2010; Huber et al., 2012) has explored the impact of 'Tobin-like' taxes in order to mitigate 'excessive trading', this paper focuses on informational interventions.

Experimental Design

For this study, I ran a computer laboratory experiment

Participants trade independently from each other on the basis of real-life stock-data, in particular monthly returns from stocks listed on S&P 500 from January 1960 to July 2017 (mean returns were communicated).

At the beginning of each round participants are allocated a random stock for a random month from the basket. For each round, they must then make a binary stylised trading decision: they either *hold* the stock or *trade* it.

Experimental Design

Choices convert into payments for the experiment as follows.

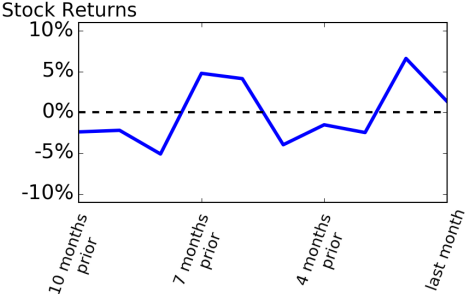
- *Hold*: participants receive their allocated stock's return for the allocated month.
- *Trade*: participants receive the returns for another randomly chosen stock at another random month. 5% (percentage points) will be deducted from their returns.

Returns (denominated in %) are added up over all rounds and paid out at a rate of $1\% = \text{€}0.08$ at the end of the experiment. There are 30 independent rounds.

To make these choices, participants are exposed to varying information according to the experimental treatments they receive. In addition to the control group, there are two treatments.

Control

To inform their decision-making, the Control Group receives information on the historic performance of their allocated stock.



Do you wish to trade or hold your stock? Trade Hold

Feedback Treatment

Participants receive detailed feedback after each round, in order to facilitate learning and increase accountability.

You chose to HOLD your stock.	
In this round you earned %	6.7308
Your stock yielded returns of %	6.7308
You did not pay any commission fees	
If you would have chosen to TRADE your stock,	
you would have earned %	9.0899
The stock would have yielded returns of %	14.0899
You would have paid commission fees of %	5.0000
You did not choose the most profitable option!	

Information Filter Treatment

Information on the allotted stock's performance history may be suppressed.

YOUR INFORMATION ACCESS HAS BEEN RESTRICTED

Do you wish to trade or hold your stock? Trade
 Hold

To allow for a more detailed analysis, this is done as follows.

- Each round, a random, natural number z from 0 to 10 is drawn with uniform probabilities.
- Each round, θ denotes the longest unbroken run of either positive or negative returns, starting with the most recent.

If $z \geq \theta$, information is suppressed.

2 × 2 experimental design

The implementation of treatments follows a 2 × 2-experimental design.

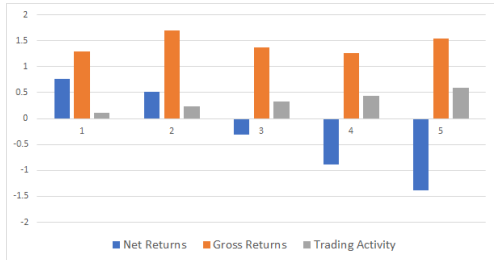
Participants are randomly allocated into four groups according to the quadrants in the figure below.

Control	Detailed Feedback (Treatment I)
Information- Filter (Treatment II)	Treatment I & II

Results

Let

- *TRADING* denote a participant's decision to trade in a given round ($TRADING = 1$) or hold ($TRADING = 0$),
- *GROSS RETURNS* denote a participant's earnings in given round without potential commission fees deducted,
- *NET RETURNS* denote a participant's earnings in given round after deducting potential commission fees.



⇒ Signs of excessive trading in the experiment at the individual-level.

Effects of Treatments on Trading

	(1) Trading	(2) Trading	(3) Trading	(4) Trading
<i>FEEDBACK</i>	-0.0554*** (-4.20)	-0.0550*** (-4.16)	-0.0554*** (-4.21)	-0.0550*** (-4.16)
<i>FILTER</i>	-0.0734*** (-5.60)	-0.0717*** (-5.47)	-0.0734*** (-5.60)	-0.0717*** (-5.47)
<i>INTERACT</i>	0.00438 (0.24)	0.00470 (0.26)	0.00438 (0.24)	0.00470 (0.26)
Fixed Effects				
Session		✓		✓
Period			✓	✓
<i>N</i>	10560	10560	10560	10560

Effects of Treatments on Net Returns

	(1) Net Returns	(2) Net Returns	(3) Net Returns	(4) Net Returns
<i>FEEDBACK</i>	0.448* (1.92)	0.432* (1.84)	0.447* (1.92)	0.432* (1.84)
<i>FILTER</i>	0.357 (1.55)	0.338 (1.34)	0.357 (1.55)	0.337 (1.46)
<i>INTERACT</i>	-0.232 (-0.71)	-0.205 (-0.63)	-0.230 (-0.70)	-0.204 (-0.62)
Fixed Effects				
Session		✓		✓
Period			✓	✓
<i>N</i>	10350	10350	10350	10350

Effects of Information Restriction on Net Returns

	(1)	(2)	(3)	(4)
	Net Returns	Net Returns	Net Returns	Net Returns
INFO RESTR.	0.302* (1.81)	0.291* (1.74)	0.304* (1.82)	0.293* (1.75)
Fixed Effects				
Session		✓		✓
Period			✓	✓
<i>N</i>	10320	10320	10320	10320

Discussion

Trading behaviour in experiment mirrors key aspects of real-life behaviour

Go:

- Overconfidence (Biais et al., 2005; Grinblatt and Keloharju, 2009) and
- Gambling (Grinblatt and Keloharju, 2009; Gao and Lin, 2014) contribute to excessive trading

Risk does not drive results:

- Returns in treatments *less* volatile
- Increased volatility in observed returns does not lead to more trading

Go

⇒ Thus, channel proposed by Gneezy and Potters (1997) and Larson et al. (2016) has no bite.

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Personal Characteristics and Trading Behaviour

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	(1)	(2)	(3)	(4)
	Trading	Trading	Trading	Trading
Male	-0.0200** (-2.00)	-0.0243** (-2.38)	-0.0200** (-2.00)	-0.0243** (-2.38)
Age	0.00121* (1.80)	0.00165** (2.29)	0.00121* (1.80)	0.00165** (2.29)
Riskseek. Index	-0.0325 (-1.20)	-0.0337 (-1.22)	-0.0325 (-1.21)	-0.0337 (-1.22)
Gambling Index	0.0560*** (3.08)	0.0607*** (3.23)	0.0560*** (3.08)	0.0607*** (3.23)
Stock Exper. Basic	-0.0253 (-1.50)	-0.0236 (-1.37)	-0.0253 (-1.50)	-0.0236 (-1.37)
Stock Exper. Adv.	-0.0117 (-0.61)	-0.00850 (-0.43)	-0.0117 (-0.61)	-0.00850 (-0.43)
Low Self Est. Index	0.00557 (0.20)	0.0220 (0.77)	0.00557 (0.20)	0.0220 (0.77)
Overconf. Index	0.106*** (3.77)	0.104*** (3.54)	0.106*** (3.77)	0.104*** (3.54)
Irregular BMI	0.0147 (1.34)	0.0122 (1.10)	0.0147 (1.34)	0.0122 (1.10)
Fixed Effects				
Session		✓		✓
Period			✓	✓
Observations	10200	10200	10200	10200

Treatment Effects on Return Risk

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	(1)	(2)
	Net Return Std.	Gross Return Std.
<i>FEEDBACK</i>	-0.685 (-1.40)	-0.600 (-1.20)
<i>FILTER</i>	-0.836* (-1.67)	-0.703 (-1.37)
<i>INTERACTION</i>	1.078* (1.70)	0.926 (1.43)
Fixed Effects		
Session	✓	✓
<i>N</i>	352	352

Effect of Observed Risk on Trading [Back](#)

	(1)	(2)	(3)	(4)
	Trading	Trading	Trading	Trading
Hist. Ret. Std.	-0.000244* (-1.73)	-0.000234* (-1.72)	-0.000227 (-1.50)	-0.000216 (-1.48)
Fixed Effects				
Session		✓		✓
Period			✓	✓
<i>N</i>	6346	6346	6346	6346