How do at-risk online stock traders behave in the stock market?
Links between stock trading and gambling

Continuum of risk from investing to gambling (Arthur, Williams & Delfabbro, 2016)

- Halfway on the continuum: speculative trading

Short-term stock market returns are practically impossible to predict (Barber, Lee, Liu & Odean, 2014; Chordia, Roll & Subrahmanyam, 2005)
Certain speculative practices may attract gamblers into the stock market (Arthur, Williams & Delfabbro, 2016)

- Day trading
- Penny stocks
- Short selling
- Derivative products

Gambling has been identified as a motive to practice speculative trading (Bauer, Cosemans & Eichholtz, 2009; Dorn & Sengmueller, 2009; Kumar, 2009; Markiewicz & Weber, 2013)
The advent of the Internet increased the accessibility of the stock market while offering interesting incentives to trade (e.g., reduced transaction time and costs).

- A facilitating context for the development of excessive online stock trading

- Individuals who trade online do so more frequently, more speculatively and less profitably than when they trade offline (Barber & Odean, 2002)
Excessive stock trading has begun to be studied as a form of gambling problem in the stock market.

- Turner (2011): links between the manifestations of gambling disorder and excessive online stock trading (illusions of control, excessive preoccupation, chasing losses)

- Granero et al. (2012): report similarities between the psychological/clinical profiles of pathological gamblers, whether in the stock market or not

- Grall-Bronnec et al. (2015): excessive traders traded speculatively and felt like experts before incurring losses and seeking treatment
Many conceptual papers in finance have focused on excessive stock trading and its resemblances with gambling.

Studies have also begun to emerge in clinical psychology, but empirical data on excessive stock trading behaviors is still rare.

Hence, is it adequate to be considering excessive stock trading as a form of gambling problem in the stock market? Or by doing so, could we be overlooking some specific behaviors that may provide a different insight into its nature as a clinical phenomenon?

The present study:

To explore these [trading and gambling] behaviors in online stock traders.
Telephone interviews to assess:

- Online trading behaviors and related psychological aspects
- Professional and academic consequences
- Participation in other gambling activities
- Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001) adapted for trading activities (PGSI-Trading)
Recruitment through a business and finance magazine (*Les Affaires*) and the emailing list of the Université Laval community (*N* = 100)

- Post hoc grouping based on PGSI-Trading score
  - No problem (score of 0; *n* = 49)
  - Low-risk (scores 1-2; *n* = 36)
  - High-risk (scores 3-7 [moderate risk; *n* = 13] and 8+ [problem gambling; *n* = 2])

- Due to this possible post hoc grouping, the study aim became a comparative one:
  - To compare trading and gambling behaviors of online stock traders based on excessive trading problem risk as measured by the PGSI-Trading instrument
Sociodemographic characteristics of the sample by PGSI-Trading group
• Comparative omnibus tests for non-parametric data (Kruskal-Wallis $H$, khi-square of independance; *$p < .05$; **$p < .01$)

• Post hoc comparisons with Bonferroni corrections ($p = .0167$)
Online trading behaviors by PGSI-Trading group

<table>
<thead>
<tr>
<th></th>
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<th>*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical analysis</td>
<td>56.99</td>
<td>47.61</td>
<td>67.27</td>
<td>44.1</td>
<td>60.37</td>
</tr>
<tr>
<td>Traded money needed for next year</td>
<td>47.49</td>
<td>53.39</td>
<td>63.14</td>
<td>44.48</td>
<td>64.13</td>
</tr>
<tr>
<td>Purchasing on margin/short selling</td>
<td>44.41</td>
<td>53.01</td>
<td>64.56</td>
<td>44.74</td>
<td>56.56</td>
</tr>
<tr>
<td>Transactions more speculative</td>
<td>61.83</td>
<td>54.77</td>
<td>50.17</td>
<td>44.5</td>
<td>50.17</td>
</tr>
<tr>
<td>Derivative products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chose titles based on knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Yellow: No problem
- Blue: Low-risk
- Purple: High-risk
Online trading behaviors by PGSI-Trading group

** Sig. differences between groups for speculative trading behaviors

- Technical analysis
- Traded money needed for next year
- Purchasing on margin/short selling
- Transactions more speculative
- Derivative products
- Chose titles based on knowledge

- No problem
- Low-risk
- High-risk
No sig. differences = no surprise! Online trading requires knowledge. But could this very knowledge contribute to a sense of expertise that encourages excessive trading behaviors in more vulnerable individuals?
**Percentage of endorsement of online trading behaviors by PGSI-Trading group**

<table>
<thead>
<tr>
<th>Behavior</th>
<th>No problem</th>
<th>Low-risk</th>
<th>High-risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day trading</td>
<td>20</td>
<td>33</td>
<td>60</td>
</tr>
<tr>
<td>Withdrawals from account</td>
<td>19</td>
<td>44</td>
<td>57</td>
</tr>
<tr>
<td>Swing trading over a few days</td>
<td>16</td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>Checking markets overnight</td>
<td>12</td>
<td>31</td>
<td>47</td>
</tr>
</tbody>
</table>

* **: Low endorsement

** **: High endorsement
Day trading | Withdrawals from account | Swing trading over a few days | Checking markets overnight
---|---|---|---
20 | 33 | 60
20 | 44 | 57
67 | 67 | 67
12 | 31 | 47

No problem | Low-risk | High-risk

Short-term trading = another speculative practice

Percentage of endorsement of online trading behaviors by PGSI-Trading group.
Day trading | Withdrawals from account | Swing trading over a few days | Checking markets overnight
---|---|---|---
20 | 19 | 67 | 31
33 | 44 | 67 | 47
60 | 57 | | 47

At-risk groups withdrew money from their accounts more due to mostly short-term financial motives (need for cash, desire to finance projects such as a holiday trip)

Percentage of endorsement of online trading behaviors by PGSI-Trading group
Day trading | Withdrawals from account | Swing trading over a few days | Checking markets overnight
---|---|---|---
20 | 19 | 16 | 12
33 | 44 | 67 | 31
60 | 57 | 67 | 47

* * * Checking markets overnight was related to excessive preoccupation with stock in excessive traders interviewed by Grall-Bronnec et al. (2015).

Percentage of endorsement of online trading behaviors by PGSI-Trading group.

No problem | Low-risk | High-risk
---|---|---

Psychological aspects related to online trading by PGSI-Trading group

<table>
<thead>
<tr>
<th></th>
<th>Excitement before market opens</th>
<th>Make money quickly</th>
<th>Strong sensations after transactions</th>
<th>Long term investment objective</th>
<th>Increased risk-taking after losses</th>
<th>Perception of having traded excessively</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No problem</strong></td>
<td>41.96</td>
<td>44.26</td>
<td>42.99</td>
<td>53.92</td>
<td>45</td>
<td>22</td>
</tr>
<tr>
<td><strong>Low-risk</strong></td>
<td>54.19</td>
<td>49.04</td>
<td>54.36</td>
<td>54.47</td>
<td>54.72</td>
<td>29</td>
</tr>
<tr>
<td><strong>High-risk</strong></td>
<td>69.53</td>
<td>70.67</td>
<td>65.77</td>
<td>58.33</td>
<td>73</td>
<td>73</td>
</tr>
</tbody>
</table>

- Excitement before market opens
- Make money quickly
- Strong sensations after transactions
- Long term investment objective
- Increased risk-taking after losses
- Perception of having traded excessively

*Significant differences indicated by asterisks:*

- ** indicates a very significant difference (p < 0.01)
- * indicates a significant difference (0.01 ≤ p < 0.05)
In addition to endorsing speculative trading behaviors, higher-risk traders also appear to report an emotional/psychological experience akin to that of problem gamblers.
<table>
<thead>
<tr>
<th>Activity</th>
<th>No problem</th>
<th>Low-risk</th>
<th>High-risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lottery</td>
<td>65</td>
<td>61</td>
<td>53</td>
</tr>
<tr>
<td>Casino</td>
<td>31</td>
<td>31</td>
<td>47</td>
</tr>
<tr>
<td>Poker</td>
<td>22</td>
<td>28</td>
<td>40</td>
</tr>
<tr>
<td>Sports betting</td>
<td>18</td>
<td>19</td>
<td>33</td>
</tr>
<tr>
<td>Card/board games</td>
<td>15</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Skills games</td>
<td>12</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>VLTs</td>
<td>10</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Online gambling</td>
<td>4</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Bingo/Kinzo</td>
<td>0</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Percentage of endorsement of gambling participation by PGSI-Trading group.
No sig. differences between the three groups: could there be something specific about the stock market that attracts a particular profile of gamblers?

Perhaps the skill component inherent in the use of knowledge and strategy, along with the perception of prestige associated with the stock market, are specific structural characteristics that attract gamblers who seek a socially acceptable gambling activity where they may experience thrill while simultaneously satisfying a need to feel competent and knowledgeable.
Limitations

- Grouping of the moderate and problem trading groups may have diluted certain results
- Non-validated use of the PGSI-Trading measure

Strengths

- Custom-designed questionnaires explored a wide range of behaviors seldom studied up to date in online traders
- Telephone interviews for richer, more nuanced data
Future research avenues

▪ Validate the PGSI-Trading instrument

▪ The role of knowledge and illusions of control in online traders
  ▪ How do they contribute to overconfidence and ultimately, to excessive trading behaviors?

▪ Perseverance and rigidity: underlying cognitions?
  ▪ Which erroneous thoughts lead certain traders to stick to their unsuccessful strategies rather than developing the necessary flexibility to trade in the market?

▪ Focus more specifically on speculative traders for the study of problem gambling


Melanie Dixon completed her Ph.D. in clinical psychology at Université Laval (Québec City, Canada) in 2018. Her thesis comprises two studies that explored excessive online stock trading behaviors and their links with problem gambling. Her experience in the field of addiction covers both the empirical and clinical domains as her full-time residency was completed at an addiction treatment center.


She plans to devote the majority of her time to her practice as a psychologist while remaining active in research on addiction.
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https://gambling.psy.ulaval.ca