Rumors in Financial Markets

Insights into Behavioral Finance

Mark Schindler

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_________ Rumors in Financial Markets _________
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# Contents

List of Symbols ......................................................... ix

Preface ................................................................. xi

1 Introduction .......................................................... 1
   1.1 Objectives of this book ........................................ 2
   1.2 Structure of this book .......................................... 3
   1.3 Research methodology ........................................ 4

2 Definitions and Characteristics of Rumors ....................... 5
   2.1 Definitions .................................................. 5
      2.1.1 Structure of the categories, news, information and rumor .... 7
      2.1.2 Rumors versus gossip .................................. 10
      2.1.3 Summary of rumor characteristics ..................... 10
   2.2 Historical background to studies on rumors ............... 10

3 Rumors and the Theory of Finance ................................. 15
   3.1 Rumors and Behavioral Finance ............................... 15
      3.1.1 Theoretical excursion: A formal definition of the value of information .... 15
      3.1.2 The relationship between the value of information and efficient markets ...... 16
      3.1.3 The criticisms of Behavioral Finance .................... 17
      3.1.4 The link between rumors and Behavioral Finance ............ 18
      3.1.5 Financial markets as a fruitful ground for rumors .......... 19
      3.1.6 Six types of rumors .................................... 20
      3.1.7 Classification of rumors in financial markets ............ 21
   3.2 Rumors and rational behavior ................................ 21
      3.2.1 Rationality in the classical Theory of Finance ............ 22
      3.2.2 Bounded rationality .................................... 24
      3.2.3 Procedural rationality .................................. 25
      3.2.4 An action is always rational ............................ 26
      3.2.5 Rationality in financial markets ....................... 27
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3.3 Empirical studies of rumors in the stock market</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>3.4 Review of models on rumors</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>3.5 Ethnographical studies</td>
<td>34</td>
</tr>
<tr>
<td>4</td>
<td>Legal Aspects of Rumors in Financial Markets</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>4.1 Rumors in financial markets and insider trading</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>4.1.1 Introduction</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>4.1.2 Review of scientific literature on insider trading</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>4.2 Review of models on insider trading</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>4.2.1 Models of insider trading regulation</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>4.2.2 Models of trading by registered insiders</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>4.3 Rumors in financial markets and price manipulation</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>4.4 Review of models on market manipulation</td>
<td>48</td>
</tr>
<tr>
<td>5</td>
<td>Survey of Rumors in Financial Markets</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>5.1 The survey and its intention</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>5.2 Participant profile</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>5.2.1 Survey parameters</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>5.2.2 Survey participants</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>5.3 Development of rumors</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>5.3.1 How rumors start and why</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>5.3.2 Correlation between market volatility and frequency of rumors</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>5.3.3 What is the source?</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>5.3.4 First actions on a rumor</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>5.3.5 Action on specific versus general rumors</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>5.4 Spreading of rumors</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>5.4.1 To spread or not to spread?</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>5.4.2 First or last in the row?</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>5.4.3 Spreading time: How long it takes</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>5.5 Belief in rumors</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>5.5.1 Why rumors are believed</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>5.5.2 Does it matter what you believe?</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>5.6 Network formation</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>5.7 Trading on rumors</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>5.7.1 Systematic price patterns?</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>5.7.2 Rumor sources and profits</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>5.7.3 Thoughts triggered by the price movement</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>5.7.4 Actions triggered by the price movement</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>5.8 Rumors versus information</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>5.8.1 Trading on rumors versus trading on information</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>5.8.2 The difference between a rumor and information</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>5.9 Conclusions from the survey</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>5.9.1 Rumors follow logical rules</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>5.9.2 Prices reflect beliefs</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>5.9.3 Investment strategies on rumors</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>5.9.4 Relating the results to other studies</td>
<td>78</td>
</tr>
</tbody>
</table>
6 Rumor Experiments

6.1 Why use experiments as a research methodology? 79
6.2 Methodological pre-considerations 81
  6.2.1 Internal versus external validity 81
  6.2.2 Selection of participants 82
  6.2.3 Payment of participants 82
6.3 Review of previous rumor experiments 82
  6.3.1 The psychological experiments of DiFonzo and Bordia 82
  6.3.2 An economic approach towards rumor experiments and their
    structuring in this book 84
6.4 First stage experiments: Ambiguity aversion in a financial market 85
  6.4.1 A brief overview of ambiguity aversion 86
  6.4.2 Experimental design 96
  6.4.3 Results of the first stage experiments 98
  6.4.4 Discussion 101
  6.4.5 Conclusion 105
6.5 Second stage experiments: Varying rumor messages 106
  6.5.1 A brief discussion of the existing literature 106
  6.5.2 Experimental design 108
  6.5.3 Results of the second stage experiments 109
  6.5.4 Conclusion 113
6.6 Third stage experiments: Testing herd behavior 113
  6.6.1 A brief overview of herd behavior in financial markets 114
  6.6.2 Experimental design 121
  6.6.3 Results of the third stage experiments 122
  6.6.4 Discussion and conclusion 127
6.7 Fourth stage experiments: Communication 128
  6.7.1 A brief overview 128
  6.7.2 Experimental design 129
  6.7.3 Results of the fourth stage experiments 130
  6.7.4 Discussion and conclusion 137

7 Conclusions and Outlook 141

Appendices 147

Appendix I 147
  Appendix I.1: Formal presentation of preference relations and choice
    rules 147
  Appendix I.2: Formal presentation of preference relations with utility
    functions 147

Appendix II 149
  Appendix II.1: Experimental instructions for the rumor setting with an
    auctioneer (experiments 1 and 2) 149
  Appendix II.2: Experimental instructions for the rumor setting with a
    batch auction (experiments 3 and 4) 153
  Appendix II.3: Experimental instructions for the rumor setting in a
    continuous double auction (experiments 5 to 12) 157
Appendix III 161
  Appendix III.1: Second stage experimental instructions 161
Appendix IV 163
  Appendix IV.1: Third stage experimental instructions 163
Appendix V 165
  Appendix V.1: Fourth stage experimental instructions 165
  Appendix V.2: First two message levels 167
Notes 169
References 177
Index 191
List of Symbols

\[ t = 0, 1, \ldots, T \] time periods
\[ s = 1, \ldots, S \] states of the world
\[ l = 1, \ldots, L \] lotteries
\[ x = 1, \ldots, X \] outcomes
\( c(s) \) consequence of state \( s \)
\( \Theta(p(s)) \) second-order probability of occurrence of state \( s \)
\( u(c(s)) \) utility of consequence \( c \) in state \( s \)
\( p(s) \) probability measure of occurrence of state \( s \)
\( E(p) \) expectation with respect to the probability measure
\( SEU(x) = \sum_{s \in S} p_s u(x_s) \) subjective expected utility
\( q_t \) stock price at time \( t \)
\( d_t \) dividend at time \( t \)
More than three years ago the rumor started to spread among my acquaintances that I was considering writing a PhD thesis. Jointly responsible for the fact that the rumor turned out to be true and that this book could be completed on the basis of my PhD thesis during my employment at the Institute for Empirical Research in Economics at the University of Zurich are a number of people whom I would like to thank.

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By far the greatest thanks go to my parents Joan and Hans, and to my sister Christine, who have supported me during my long period of education in every respect and with all of their hearts. This work is dedicated to them.
A trader may, when it comes to rumors on stock exchanges, not even trust his own father.

ANDRÉ KOSTOLANY (own translation)

A rumor can be everywhere, at any time, at any place. It is perceived as something mysterious, almost magical. A rumor frequently produces a hypnotic effect. It fascinates, overwhelms, entraps and stirs up people’s minds. Rumors are the oldest mass medium in the world and their nature is still difficult to grasp. What is so special about rumors, that people get so excited, anxious and nervous? Why do companies release press bulletins stating, ‘We don’t comment on rumors’? People do not know too much about this important social phenomenon, especially from a scientific point of view. Where does it start, how does it develop, where and when does it end? How does it differentiate itself from gossip, legends and just ordinary information? How are rumors spread, when are they believed and what kind of an impact can they have? Everyone believes they are able to recognize a rumor when they are faced with one, but no one can give you a satisfying definition of it. The longer people think about rumors, the more they realize how difficult it is to set limits on what they are and what they are not. Why is it so difficult to capture the exact content and functionalities of a rumor? There are at least two possible explanations for that. The first explanation is that a rumor is not observable from the beginning to the end. When people start studying a rumor, it is usually already dead or in the final phase. In many cases it will be very difficult to find out its starting point and development process. The second possible explanation is that rumors, at least until a few years ago, have included a moral aspect. This prejudice has made people think more about the moral entitlement of a rumor than of actual functionalities.\(^1\)

One of the most central elements of the Theory of Finance is the economics of information and how new information is updated to reallocate scarce resources. Rumors are a special form of information and their special characteristics have to be accounted for when applied to the Theory of Finance. Since rumors involve not only financial but also psychological and sociological elements, it is necessary to apply an interdisciplinary approach when analyzing rumors in financial markets. While the individual behavior when faced with rumors in financial markets is one aspect to be analyzed, probably the more interesting one is to search for behavioral mechanisms on an aggregate level. One of the goals of this work is to evaluate whether rumors lead to systematic behavioral patterns when trading assets in a financial market.

Unfortunately, from a scientific view, not too much is known about rumors, in particular in financial markets. This is somewhat astonishing, since rumors on the one hand have a very long history and are known to be a very efficient mass media communication channel, and on the other hand appear almost on a daily basis in technical newspapers and magazines.