Chapter 8
Whom to Trust for Financial Advice?
The Quality of Stock Recommendations on Twitter

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ABSTRACT

Twitter has become a popular online platform for individuals seeking news and advice about financial assets. In this study, we examine which user characteristics relate to the quality of investment advice. Due to the fact that Twitter allows users to anonymously create and share content, a large portion of the information and investment advice found on its channels turns out to be non-useful, misleading or even incorrect. Using methods from computational linguistics to analyze roughly 9 million tweets, our findings show that a set of behavior-based user features, as well as characteristics of the message content relate to the quality of proffered investment advice.

1. INTRODUCTION

“In many respects, Twitter is the latest news wire of Wall Street. Investors have come to rely on the social medium for minute-by-minute news and opinion. […] We have to recognize Twitter for what it is, a social media site, and an unfiltered news source.” This is what Jack Ablin, Chief Investment Officer at BMO Private Bank said about Twitter. On April 23, 2013, hackers sent a tweet from the official Twitter account of Associated Press, reporting that President Barack Obama had been injured in two explosions at the White House. In response, the Dow Jones dropped 140 points, while the Standard & Poor’s (S&P) 500 index lost 0.9%, translating into a $130 billion loss in stock value (Matthews, 2013; Sprenger, Tomasjan, Sandner, & Welpe, 2013). Three months earlier, in another false scare, a Twitter user posing as

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an influential short-selling firm reported that Audience Inc., an audio and video-compressing company, 
was under investigation by the U.S. Department of Justice; the news caused the company’s stock price to 
plummet by 25% (Applegate & Keller, 2013). These are just two of many examples of how significantly 
impactful microblog messages can be on stock markets, yet how difficult it is for market participants to 
assess the accuracy of information conveyed through these messages. One reason for this difficulty is 
that microblog users operate anonymously - they lack the clues that they have in the real world to assess 
their credibility (Castillo, Mendoza, & Poblete, 2011). While investment advisors in the offline world 
(including any individuals giving investment advice, as well as financial service professionals) provide 
potential investors with information on their age, gender, education, qualifications and expertise, micro-
blog users hardly ever disclose their real names. Nevertheless, microblogs are becoming an increasingly 
popular space for investors to engage in discussion and to exchange financial information. This growing 
trend stands to potentially squeeze out other more traditional means of investor communication, making 
accuracy and transparency all the more necessary in the microblog space. As an initial step, practitioners 
and scholars may find ways to distinguish between users who provide high quality advice and those who 
do not. As of yet, the determinants of investment advice quality in microblogs have not been explored. 
This study aims to fill that gap. While recent studies in the area of microblogs and stock markets have 
described the relation between the quality of investment advice and a single user characteristic – such as 
follower count (Sprenger et al., 2013) or geographical location (Giannini, Irvine, & Shu, 2013) – to the 
best of our knowledge, this study is the first to examine how multiple user characteristics and behavioral 
patterns relate to the quality of investment advice, measured by the correct directional forecast of S&P 
500 stocks.¹ Relying on the salience view (e.g. Solomon, Soltes, & Sosyura, 2012) as our theoretical 
 lens, we also seek to answer the question what role Twitter takes for the financial markets when relevant 
information (i.e., stock recommendations) is massively disseminated by users.

By applying machine-learning techniques, we classified a set of 1.4 million stock-related tweets 
(called “stock tweets” hereafter), downloaded between January 2013 and December 2013, as bullish, 
bearish or neutral. To assess the quality of investment advice, we compared a tweet’s attitude with the 
stock price movement. Using a random effects panel regression, we found a number of behavior-based 
and content-based user features to be related to investment advice quality. Among these features were 
the extent to which a user engages in discussions about stocks, the timing and sentiment of the mes-
sages, and the variety of stocks and industries covered. By defining and examining user features that 
are relevant in the domain of stock markets, the study adds to the literature on information quality and 
credibility in online networks.

The remainder of this study is structured as follows. In Section 2, we provide an overview of related 
literature. In Section 3, we develop testable hypotheses. In Section 4, we detail the methodology of this 
study and explain the construction of microblog as well as stock market variables. In Section 5, we pres-
tent the empirical results and discuss our findings. Finally, in Section 6, we summarize the results and 
show implications for theory and practice.

2. THEORY, LITERATURE, AND PREVIOUS WORK

Twitter has more than 215 million monthly active users who post approximately 500 million tweets per 
day (Twitter, Inc., 2013a). Given this largely unorganized Twittersphere, there is a growing body of 
literature attempting to identify high quality sources of information covered by the massive and noisy