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Using Social Media Analytics: The Effect of President Trump's Tweets on Companies' Stock Performance

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Using Social Media Analytics: The Effect of President Trump's Tweets on Companies' Stock Performance

An honors thesis presented to the Department of
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Research Advisor: Alfred Liu, Ph.D.

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Abstract

With the recent political development in the United States I was presented with a unique opportunity to examine social media's influences on the stock market. Specifically, I analyzed the impact of tweets from President Trump's official Twitter accounts from his election to the office to February 1st, 2019 that targeted a publicly traded company. I find that these tweets have a very minimal effect on companies' stock prices, but there is a significant effect on the stocks' trading volumes.

Acknowledgments

There are many people who I would like to thank during my time here at the University at Albany. Frist I would like to thank my family for all the support they have given me throughout my entire life. I want to specifically thank my mom, even though we but heads sometimes, I know that you have wanted nothing but the best for me. Next, I want to thank all of the Professors and advisors I have had the pleasure of getting to know during my time here. You all have helped me grow both as a student and as person. I want to specifically thank Professor Alfred Liu with all of the help you have given me on this thesis. I know I wasn't the easiest person to work with, but you made me work hard and we put together a great paper. I want to thank my friends both back home and the ones I made here. I have made friendships that will last a life time. We have shared countless memories, good times, bad times, and survived some of the hardest classes given here at the university. I would not be where I am today without you guys. Finally, I want to thank my girlfriend. You have done nothing but support me and encourage me during the process of writing this paper. I cannot thank you enough, you have no idea how much you helped me and kept me motivated to finish this paper.

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1. Introduction

Media coverage helps disseminate news by eliminating constraints of informational access. Historical research has studied the impact of traditional news on financial markets, including the role of local media (Engelberg & Parsons, 2011), the impact of newspaper reports on stock returns (Hillert, Jacobs, & Müller, 2014), sources of news stories (Ahern & Sosyura, 2014; Dougal, Engelberg, Garcia, & Parsons, 2012), convergent evidence on media coverage and stock returns (Fang & Peress, 2009), and the role of investor relations firms (Solomon, 2012). The drastic increase in the popularity of social media, such as Facebook and Twitter, as the new platforms for instant news delivery has raised many new questions in academia. This new wave of social media addiction has made us question and better understand the impact of news on financial markets. Recent research delves deep into the linguistic content of social media to measure investor sentiment and examine its impact in the financial markets (Azar & Lo, 2016; Bartov, Faurel, & Mohanram, 2016; Bollen, Mao, & Zeng, 2011; Siganos, Vagenas-Nanos, & Verwijmeren, 2014; Sprenger, Sandner, Tumasjan, & Welpe, 2014).

New political developments in the United states offer a rare occasion to expand this line of research by examining the stock market responses to presidential social media posts that target specific publicly traded companies. Donald J. Trump, the current and 45th President of the United States, was elected on November 8, 2016. President Trump has challenged the long-lasting traditional standards of the position. He is the first president, or highest ranking official, to make targeted social media posts about specific companies by name. He specifically uses the Twitter platform to target companies on his political agenda. Anecdotal evidence suggests that his tweets can have a direct impact on a company stock price. Figure 1 shows the direct impact of a tweet

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by President Trump on Nordstrom's stock price and trading volume. As we can see there is a

large jump in both stock price and trading volume around the day of the tweet.

Figure 1. Nordstrom's Stock Prices and Trading Volumes before and after Trump's Tweets on February 8, 2017
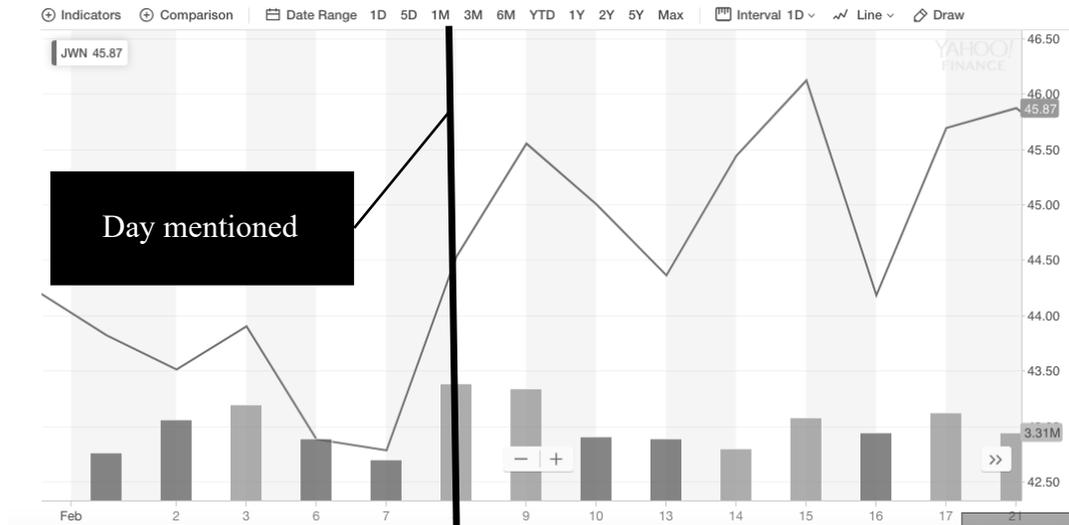
(Source: Yahoo! Finance)

Figure 2 shows the stock of Rexnord Corporation on the days before and after a tweet by

President Trump which mentioned the company. There is a significant increase in trading

volume, from 751.3 thousand shares to 4.15 million shares.

Figure 2. Rexnord's Stock Prices and Trading Volumes before and after Trump's Tweets on November 30, 2016
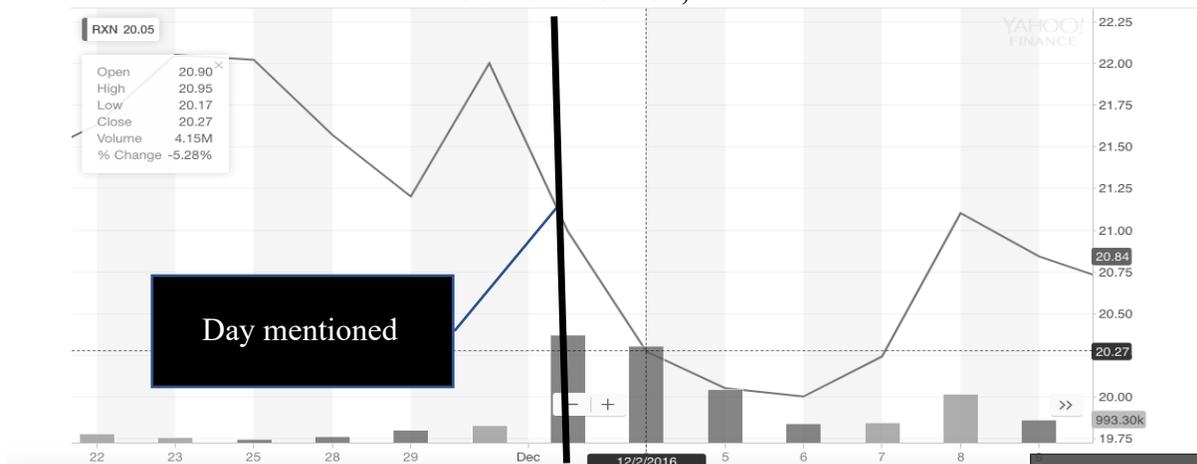
(Source: Yahoo! Finance)

In this Study, I analyze the financial impact of all the tweets from @realDonaldTrump and @POTUS, twitter accounts used by President Trump, on the stock returns of the publicly traded companies mentioned in his tweets. I analyzed a sample of President Trump's tweets from November 8, 2016 to February 1, 2019. I found that the tweets affect companies' stock prices, and trading volumes.

This study contributes to the understanding of social media's impact on the financial market in several ways. First, although not the first research on this subject, the findings in this study help interpret the conflicting findings in several prior studies. This study shows that people in powerful positions can influence the stock price of a particular company. Second, compared with many other social media studies, the events used in this study, i.e., presidential social media posts, are sporadic and unpredictable. On the other hand, many prior studies derive investor sentiment from social media reactions to pre-scheduled events from the financial markets or the overall economy, such as quarterly earnings announcements (Bartov et al., 2016) and monetary policy announcements (Azar & Lo, 2016).

The rest of the paper is organized as follows. Section 2 is a literature review. Section 3 presents the empirical data and analysis of the study. Section 4 concludes the paper.

2. Literature review

There is an emerging stream of literature examining media coverage and the ensuing impact on the financial markets. The influence of social media on the financial markets has been growing interest in the literature. Previous studies have focused on the number of Tweets directed towards relevant news information and the proceeding investor reaction. Linguistically analysis has also been done to asses investors reactions. Most of the existing studies have shown

the relationship between investor sentiment and stock returns at both individual and market stock level, where sentiment can be formed from opinions posted on online investment forums (Chen, De, Hu, & Hwang, 2014), Facebook posts (Karabulut, 2013; Siganos et al., 2014), and Twitter feeds (Bollen et al., 2011; Mao et al., 2015; Sprenger et al., 2014).

News and media announcements provide the building blocks for event studies in the financial world. Many studies have been done for firm-specific news events (see MacKinlay (1997) for a survey of event study literature) and macro announcements (for example, Andersen, Bollerslev, Diebold, & Vega, 2003; Balduzzi, Elton, & Green, 2001; Kurov, Sancetta, Strasser, & Wolfe, 2017). Although these studies rarely show the role that social media plays when it comes to specific news announcements. Some exceptions include Bartov et al. (2016) that investigate the impact of pre-earnings announcement opinions expressed via tweets on post-announcements returns, and Azar and Lo (2016) that study how tweets related to the Federal Open Market Committee (FOMC) meetings can predict future returns. Both of these studies, however, examine the impact from prescheduled news events. There have been studies that have also looked at the impact of random and unpredictable news events. (Brooks, Patel, & Su, 2003; Knittel & Stango, 2013). These studies are similar to the theme of this paper. But this paper in contrast looks into the relationship between unpredictable tweets made by President Trump and the impact on the stock price of a company. This paper makes considerable contributions to the social medias impact on financial markets study.

To my best knowledge, few prior studies have studied the impact of the president's tweets targeting particular companies in the financial market. This lack of research is understandable given that the president typically does not tweet about specific companies in his public communications. The popularity of social media, coupled with President Trump's use of

twitter to target companies, provides a rare opportunity to examine the impact of the president's tweets on the financial markets.

2.1 Social media's impact on the stock market

Social media is one of the biggest and most utilized information exchange platforms in the world today. Almost every single person in the world, with internet access, has a social media account or has used social media in some way. Most people tend to have multiple social media accounts. Social media has quickly become the biggest news consuming platform in the world. Information can be shared to everyone in the world within seconds. A recent platform called StockTwits.com has taken the financial world by storm. StockTwits is a social media platform where users are able to share information about stocks to their followers. The interesting thing about StockTwits however is that users are able to share opinions and interact with each other in real time. This platform uses key words so would be investors can look up real time information about every stock being traded. The platform also gives a breakdown of every member and explains their investment break downs. This platform has a very profound impact on the financial markets. A recent study had been done that was able to prove that this platform had an impact on the Chicago Board Options Exchange. They were able to find a connection between social media sentiments and the stock market. They found that when there were negative posts about a company or an exchange the investors on this site were less likely to buy stocks of that company and the stock price would decrease. They also found the opposite to be true, if positive information about the company was being shared then the stock price would go increase. But this platform is used by serious investors. The average investor would not be using this platform. Many regular investors go to the more popular social media platforms for their

investment information. Twitter and Facebook are used by many people as their primary source of news consumption. According to Facebook, there are 2.27 billion monthly active Facebook users. Almost 30% of the world population uses Facebook. According to Twitter, there are 326 million active users. But Twitter is a very different platform. Facebook is used to keep in touch with friends and many people don't even post on Facebook. Twitter is a much more interactive platform. Tweets are constantly shared and discussed. Also twitter has a more influential user base. Almost every celebrity, athlete, and government official has and uses his/her twitter account regularly. Even if you don't have a twitter account. Many popular tweets are posted and talked about in traditional media sources.

A study, done in 2008 by Cogent Research, surveyed about 4,000 investors whose investment assets were more than $100,000 and found that 34% of them used social networking platforms such as Twitter, Facebook, YouTube, LinkedIn and personal blogs to research potential financial investments. It found of this 34%, 8% used Twitter as their main source of financial news consumption. This study is over ten years old, so we can assume these numbers have gone up. Another study that was done estimated that 70% of investors are influenced by social media in their investment decisions. Another study concluded that emotionally charged tweets on Twitter can be used to predict how the stock market will do that day (Kasian-Lew, 2014).

2.1.1 Social media as an information source

Although social media is quickly becoming the place where people get all of their news information, it is very hard to figure out exactly whether information posted on social media is real or fake. Since everyone can have an account and make posts saying whatever they want, it

can be hard to tell facts from fictions. News feeds are filled with constant information overload. Yet many people, especially younger people, use social media for all of their news consumption. This can be both good and bad for society. There are many very creditable people on social media who make posts that are 100% factual. There are also very smart people who give very well-informed opinions on certain topics. Listening to and being able to interact in real time can help everyone make the best decision they possibly can with the correct information.

However, there is also a pleather of negatives to getting news only from social media. Many posts on social media are emotionally charged and are not factual. Theses posts are used to get reactions out of people. It is very hard to bring attention to one's post with the ocean of messages on social media. So, the main way to get a post notoriety is to make it provocative. A study done by Golf Marketing review found that 6 out of 10 people surveyed get their news from social media platforms. Since many people use social media for their news, the world can be full of people who are misinformed. Another problem with social media is that things come on one's news feed are based on similar things based on personal preference. So, it is very common for people to get news that is very biased and echoes their own opinions.

2.1.2 Twitter and related research on its role in the stock market

Twitter is quickly becoming one of the words most popular social media platforms, especially in the younger generations. It is also quickly becoming a topic of interest for research. Twitter is used as a platform for research because it's very easy to find lists of similar tweets. You are able to search keywords on twitter and every tweet with that word will come up. You can also do this with hashtags. Twitter also has a character limit, so it is very easy to read over many tweets in a short period of time. There has been a lot of new research being done to look at how tweets have an effect on things, especially on the stock market. The stock market and twitter are starting to become very connected platforms.

Twitter is used to post news and reactions in real time and the stock market tends to react the same way that Twitter does. An article posted in 2011 titled "Twitter Mood Predicts the Stock Market" by Johan Bollen, was able to predict with an 86.7 percent accuracy the up-down trend of the Dow Jones Industrial Average based on the way Twitter was reacting. This article was able to link Twitter sentiment with stock market sentiment. There have been numerous other studies that have gone very in-depth to see if there was a connection. Every single one, even if the connection is small, has found some type of connection between twitter reactions and stock market trends. There was also another study done in the Accounting review, which was able to show that regular people are better at predicting company quarterly returns better then experts. They were able to find that Twitter as a whole was better at predicting company performance than experts were. This was very evident in smaller companies who information wasn't as readily available. They concluded that you should look at individual opinions as well as the experts to better predict stock futures. Other studies have been done to look at the linguistics of tweets. These studies have looked at tweets to see what kind of words were used in the tweet. Then the words were deemed either negative or positive. These studies then found that negative tweets tend to have a negative reaction in the stock market. They also found that positive tweets tend to have positive reactions in the stock market. The newest research is being done on President Trumps tweets and the impact on the stock market. Only a few studies have been done and the results have been different. But one study found that President Trumps tweets alone have be able to cause the stock price of a company to change. Since the president has a lot of power, people tend to listen to his opinion. This study found that when he targeted companies in his tweets the stock price of the company would change according to the direction of the tweet. A positive tweet lead to an increase in price and a negative price lead to a decrease in price. A lot of research has been done and will be done to figure out how twitter can affect the stock market.

2.2 President Trump's use of Twitter

President Trumps use of twitter is unlike anything the world has ever seen before. It is not uncommon for people in positions of power to have social media accounts. Most of the world leaders have their own twitter accounts. Most of the world's government agency have twitter accounts too. With the increase as twitter for a news consumption medium many of these accounts are used to post important news and make announcements. President Trump on the other hand uses his Twitter account like no other government official has used before. He is the first president to use his own twitter account as his presidential twitter account. Twitter does have an account for the president to use but he doesn't use that one he uses his own personal account. He is also the first president to tweets as often as he does. President Trump tweets numerous times a day at all hours of the day. His tweets are very sporadic and unpredictable in both when they are going to happen and content. No one knows when his is going to tweet or what he is going to tweet about. His tweets are also always very emotionally charged. He is not the first government official to post emotional tweets, but he does it almost constantly. He is the first president who uses twitter almost as a venting forum. He is constantly complaining about the way the government is acting. If he doesn't like how things are going, he will let his opinions be known on twitter. He is also the first president to openly attack companies and people who don't agree with him. He has made numerous tweets targeting companies who have spoken out against him or have not agreed with his agenda. President Trump gives us a very unique opportunity to study how the president's tweets can have an impact on the world and more precisely the stock markets. When he targets these companies there is going to be some type of reaction. He is very good at getting people riled up with his tweets. President Trump uses twitter like no president has ever used it before.

3. Research design and analysis

I use the event study approach to investigate this topic. According to Kothari et al. (2005), an event study is a study that examines the behavior of firms' stock prices around corporate events. Event studies have become a mainstream research method in financial economics research and provide robust results as to what happens when an unanticipated event occurs. There are two different types of event studies: short and long horizons. Although there are advantages and disadvantages to both short- and long-horizon event studies, I focus on short horizon event studies in this paper. I use short horizon event studies to examine the initial impact of President Trump's tweets on target companies' stock prices and trading volumes. The use of the short horizon event study will help determine the magnitude of the impact and provide an empirical representation of what actually happened to the companies' stocks. I then extend the event window to longer periods to examine whether the impact of the tweet on stock price and trading volume is enduring when investors have more time to digest the content of the tweet. A long event window thus sheds light on whether a tweet truly has an impact on a company's valuation. If there is only a short-term impact and the stock price returns to normal after a few days, then it is proper to conclude that President Trump's tweets really do not have a significant impact on the stock market. If there is a long-term impact on the stock and the price is still affected days after the tweet, then President Trump's tweets appear to have a significant impact on the stock market.

3.1 Sample presidential tweets used in this study

To investigate whether President Trump's tweets have any impact on specific company's stock performance, I examine a sample of 21 tweets made by President Trump in which he referred to specifically U.S. public companies. These tweets were made after he was elected into office, and both before and after President Trump's inauguration. These tweets include both positive and negative sentiments towards these companies. Most of the tweets were posted on weekdays while a few were posted during weekends. I also categorize the tweets into two different groups, one related to media companies and the other related to non-media companies.

President Trump and the media have been at odds with each other, and he has been continually blasting media companies who report unfavorably about him. The general tone of the tweets involving the media is negative, and he thinks that media companies are out to get him by reporting "fake" news about him. Below is a list of the tweets for media companies:

"Just watched the totally biased and fake news reports of the so-called Russia story on NBC and ABC. Such dishonesty!" -3/23/17

"The FAKE NEWS media (failing @nytimes, @NBCNews, @ABC, @CBS, @CNN) is not my enemy, it is the enemy of the American People! – 2/17/17

"So funny to watch Fake News Networks, among the most dishonest groups of people I have ever dealt with, criticize Sinclair Broadcasting for being biased. Sinclair is far superior to CNN and even more Fake NBC, which is a total joke." – 4/2/18

"NBC news is #FakeNews and more dishonest than even CNN. They are a disgrace to good reporting. No wonder their news ratings are way down!" – 10/4/17

"ESPN is paying a really big price for its politics (and bad programming). People are dumping it in RECORD numbers. Apologize for untruth!" - -9/15/17

"The failing @nytimes has been wrong about me from the very beginning. Said I would lose the primaries, then the general election. FAKE NEWS!" -1/28/17

"Is Fake News Washington Post being used as a lobbyist weapon against Congress to keep Politicians from looking into Amazon no-tax monopoly?"- 7/24/17

In his tweets mentioning non-media companies, President Trump demonstrates very strong opinions about the targeted companies. These tweets are mostly negative in nature and follow a similar trend. He does not like companies that intend to take advantage of cheap labor overseas. He also doesn't like companies that are reluctant to help the U.S. government. However, there are some positive tweets. He praises a company when it does something he likes, in the same passionate way as he bashes a company when it does things he doesn't like. I list below President Trump's tweets about non-media companies:

"Boeing is building a brand new 747 Air Force One for future presidents, but costs are out of control, more than $4 billion. Cancel order!"- 12/6/16

"Only 109 people out of 325,000 were detained and held for questioning. Big problems at airports were caused by Delta computer outage....." – 1/30/17

"Based on the tremendous cost and cost overruns of the Lockheed Martin F-35, I have asked Boeing to price-out a comparable F-18 Super Hornet!" – 12/22/16

"General Motors is sending Mexican made model of Chevy Cruze to U.S. car dealers-tax free across border. Make in U.S.A.or pay big border tax!" – 1/3/17

"Toyota Motor said will build a new plant in Baja, Mexico, to build Corolla cars for U.S. NO WAY! Build plant in U.S. or pay big border tax." – 1/5/17

"Ford said last week that it will expand in Michigan and U.S. instead of building a BILLION-dollar plant in Mexico. Thank you, Ford & Fiat C!" – 1/9/17

"My daughter Ivanka has been treated so unfairly by @Nordstrom. She is a great person -- always pushing me to do the right thing! Terrible!" – 2/8/17

"Now that Ken Frazier of Merck Pharma has resigned from President's Manufacturing Council,he will have more time to LOWER RIPOFF DRUG PRICES!" – 8/14/17

"Wow, Twitter, Google and Facebook are burying the FBI criminal investigation of Clinton. Very dishonest media!" – 10/30/16

"Crooked Hillary Clinton spent hundreds of millions of dollars more on Presidential Election than I did. Facebook was on her side, not mine!" – 10/21/17

"Rexnord of Indiana is moving to Mexico and rather viciously firing all of its 300 workers. This is happening all over our country. No more!" – 12/21/16

"Look forward to going to Indiana tomorrow in order to be with the great workers of Carrier. They will sell many air conditioners!" – 10/30/16

"Boycott all Apple products until such time as Apple gives cellphone info to authorities regarding radical Islamic terrorist couple from Cal" – 2/19/16

"Only fools, or worse, are saying that our money losing Post Office makes money with Amazon. THEY LOSE A FORTUNE, and this will be changed. Also, our fully tax paying retailers are closing stores all over the country...not a level playing field!" – 4/2/18

In the next section we will analyze these tweets and see if they had any impact on the stock.

3.2 Analysis

To analyze if president Trumps tweets have an impact on the stock market, we did a statistical analysis of the stock market price change for 9 days after the stock. We looked at the mean cumulative average returns for these stocks. The mean cumulative average return (MCAR) is the Sum of the differences between the expected return on a stock (systematic risk multiplied by the realized market return) and the actual return divided by the sample size used. If the MCAR is negative, that means expected return was greater than the actual return. A negative MCAR means that something else must have occurred to cause the stock price to go down. If MCAR is positive, then actual return was greater than expected return. I also ran a trading volume analysis to see how the trading volume of the stock was affected. Since stock price has to

do with the valuation of the firm and volume has to do with investor sentiment, there is a possibility that President Trump's tweets can affect one and not the other.

I break up the firms into two different categories, media and non-media. Since President Trump is not a fan of media companies, I decide to lump all of the media companies together. Also, since president Trump tweets every day of the week, and the market is closed on weekends, I break up my analysis into three categories: 1) tweets posted on weekdays and weekends for all sample firms, 2) tweets posted on weekdays and weekends for non-media sample firms, and 3) tweets posted only on weekdays for non-media sample firms. I then analyze the stock returns of the three groups, respectively.

I first examine tweets made on both weekdays and weekends for all sample firms. I find that there was little to no effect of President Trump's tweets on stock prices of the specific companies targeted. There was a small influence on the day of the tweet, but once investors had time to digest the information of the tweet stock prices returned to normal. Again, once investors had time to read his tweet and compilate it, they were not influenced by it anymore. Table 1 Panel A shows the effects of President Trump's tweets on the stock prices of all the companies that are used in our sample. It shows that the Mean Cumulative Abnormal Returns (MCAR) is very low and close to zero, meaning there was little to no effect of the tweet on the stock price, especially in short windows.

Table 1. Cumulative Abnormal Stock Returns surrounding Presidential Tweets

Panel A. All companies and weekday & weekend tweets

Returns Window[1]	# of Obs.	Mean Cumulative Abnormal Returns[2]	t-statistic[3]	p-value[4]
(0, 0)	20	-0.22%	-0.732	0.243
(0, +1)	20	-0.12%	-0.291	0.373
(0, +2)	20	-0.23%	-0.441	0.291
(0, +9)	20	0.36%	0.389	0.322

1. Return windows are defined as follows. Day 0 is the trading day in which President Trump posted a tweet mentioning a sample company. If a tweet is posted in a non-trading day, Day 0 is the first trading day after the tweet was posted. Day 1 is the first trading day after Day 0. Day 2 is the second trading day after Day 0. Day 9 is the 9th trading day after Day 0.

2. Abnormal returns are the residual returns from a market model using the equal-weighted index of returns, computed using the Eventus software.

3. t-statistics are computed after adjusting portfolio time-series properties.

4. p-values are based on the time-series adjusted t-statics. ***, ** means the cumulative abnormal relative volume is different from zero at the 1% level and 5 % level, respectively.

I then analyze the MCAR for President Trump's tweets targeting non-media sample firms posted on both weekends and week days. I choose to exclude media firms form this analysis since Trump's tweets were so consistently negative about media firms. I find that there was no effect of his tweets on media firms' stock prices (see the Appendix). After I run this analysis, I find results similar to those for the first group. President Trump's tweets on these specific non-media companies had little to no effect on the companies' stock prices. Table 1 Panel B shows the results of this analysis.

Table 1. Cumulative Abnormal Stock Returns surrounding Presidential Tweets

Panel B. Non-media company's weekday & weekend tweets

Returns Window[1]	# of Obs.	Mean Cumulative Abnormal Returns[2]	t-statistic[3]	p-value[4]
(0, 0)	13	-0.53%	-1.200	0.225
(0, +1)	13	-0.52%	-0.834	0.223
(0, +2)	13	-0.68%	-0.891	0.207
(0, +9)	13	-0.63%	-0.445	0.242

In my third and final analysis of President Trump's tweets on the stock prices of targeted companies, I analyze MCAR for non-media firms on tweets posted on weekdays only. Again, I

find similar results. The effect of the tweets was a little bit stronger in this analysis, but the effect was still small and short term. Table 1 Panel C shows the effect of President Trump's tweets posted on weekdays only on the stock prices of non-media firms.

Table 1. Cumulative Abnormal Stock Returns surrounding Presidential Tweets

Panel C. Non-media company's weekday tweets only

Returns Window[1]	# of Obs.	Mean Cumulative Abnormal Returns[2]	t-statistic[3]	p-value[4]
(0, 0)	17	-0.46%	-1.542	0.081
(0, +1)	17	-0.55%	-1.306	0.118
(0, +2)	17	-0.84%	-1.643	0.033
(0, +9)	17	-0.85%	-0.908	0.085

After running the MCAR analysis for three different categories I conclude that President Trump's tweets appear to have some but small impact on the stock price of a targeted company. I find that the effect was minuscule and short term. However, there seems to be a greater effect on stock prices by tweets posted during weekdays. His tweet appears to cause some type of initial reaction, but the reaction is short-lived and stock price returns to normal within the day after the tweet was posted.

I then analyze the effect of President Trump's tweets on the trading volumes of the target companies' stocks. I analyze the mean cumulative abnormal relative volume changes for the 21 sample firms, including both media and non-media firms. I find that there was a direct effect of President Trump's tweets on the trading volumes of the stocks. I find that for the day of the tweet and for up to two days after the tweet trading volume was well above the predicted level. Table 2 shows the effect of President Trump's tweets on trading volume of the stocks of companies specifically mentioned in his tweets. This table shows that for the day and for up to two days after the tweet the trading volume was significantly higher than normal.

Table 2. Cumulative Abnormal Relative Volume surrounding Presidential Tweets

Returns Window[1]	# of Obs.	Mean Cumulative Abnormal Relative Volume[2]	t-statistic[3]	p-value[4]
(0, 0)	21	23.46%	2.898	0.005***
(0, +1)	21	32.80%	2.865	0.015**
(0, +2)	21	21.63%	1.543	0.111
(0, +9)	21	-1.36%	-0.053	0.478

1. Return windows are defined as follows. Day 0 is the trading day in which President Trump posted a tweet mentioning a sample company. If a tweet is posted in a non-trading day, Day 0 is the first trading day after the tweet was posted. Day 1 is the first trading day after Day 0. Day 2 is the second trading day after Day 0. Day 9 is the 9th trading day after Day 0.

2. Abnormal relative volume is the residual volume from a market model using the equal-weighted index of log-transformed volume, computed using the Eventus software.

3. t-statistics are computed after adjusting portfolio time-series properties.

4. p-values are based on the time-series adjusted t-statics. ***, ** means the cumulative abnormal relative volume is different from zero at the 1% level and 5 % level, respectively.

4. Conclusion

After performing a literature review and conducting my own research I have the following observations. First, I can conclude that many people use social media as a major part of their news consumption, even for investing purpose. Average investors will go to websites like Twitter to research stocks. Second, after conducting the MCAR analysis, I find that President Trump's tweets had little to no effect on the stock prices of the companies mentioned in his tweets. This is likely because the stock market is dominated by institutional investors, and stock prices are determined by companies' fundamentals. While average investors might have an initial reaction to President Trump's tweet, institutional investors that run the majority of the stock market may not care what he is saying. They already know all of the news on these

companies motioned. This is why the effect is so minimal and short term. Third, I find the opposite, however, when it comes to trading volume. Trading volume was significantly affected by President Trump's tweets. This is because trading volume has to do with investor sentiment and President Trump's tweets can have a direct impact on investor sentiment. In this case, more trades happening does not lead to stock price movement as institutional investors value stocks based on the valuation of the companies. I consider this a positive thing for our financial market as it shows that the market is efficient and there is a system of checks and balances. The President shouldn't have the power to significantly affect the market by just tweeting. The market is run by institutions that are independent and not affected by his opinions.

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Appendix

Sample companies mentioned in President Trump's Tweets

Date	Company Name	Cumulative Abnormal Returns		
		Window 1	Window 2	Window 3
	Non-Media	**(0, 0)**	**(0, 1)**	**(0, 2)**
12/6/2016	BOEING CO	-0.0046	-0.0061	-0.002
1/30/2017	DELTA AIR LINES INC	-0.0311	-0.0409	-0.0406
12/22/2016	LOCKHEED MARTIN CORP	0.00193	-0.012	-0.0085
1/5/2017	TOYOTA MOTOR CORP	-0.0047	-0.0095	-0.0084
1/9/2017	FORD MOTOR CO DEL	-0.0046	0.01205	-0.0051
2/8/2017	NORDSTROM INC	0.03985	0.0565	0.0406
8/14/2017	MERCK & CO INC NEW	-0.0039	-0.0054	-0.004
4/2/2018	AMAZON COM INC	-0.0256	-0.0267	-0.0277
12/2/2016	REXNORD CORP NEW	-0.0353	-0.0574	-0.0672
11/30/2016	UNITED TECHNOLOGIES CORP	-0.0094	-0.0085	-0.0025
2/19/2016	APPLE INC	-0.0024	-0.0108	-0.0199
10/30/2016	ALPHABET INC C	-0.0145	-0.0095	-0.0215
10/21/2017	FACEBOOK INC A	-0.0174	-0.0167	-0.0187
10/30/2016	TWITTER INC	0.01737	0.00219	0.02075
	Average	**-0.0067**	**-0.0095**	**-0.0118**
	Media			
3/23/2017	DISNEY WALT CO	0.00165	0.00143	0.00421
4/2/2018	TIME WARNER INC NEW	0.00986	0.0095	0.01463
10/4/2017	COMCAST CORP NEW A	0.00658	-0.004	-0.0124
1/28/2017	NEW YORK TIMES CO A	0.00409	0.01903	0.02307
7/24/2017	GRAHAM HOLDINGS CO B	-0.0019	-0.0031	-0.007
2/17/2017	C B S CORP NEW B	0.00141	0.0215	0.01794
9/15/2017	DISNEY WALT CO	0.00536	1.04E-05	0.00281
	Average	**0.00386**	**0.00634**	**0.00619**