Celebrities on Social Media and Their Effect on Shareholder Wealth

By: Brenna Logan
Advisor: Dr. Laura Cole

INTRODUCTION

- 2.65 billion social media users across globe (Statista)
- Kylie Jenner sent SNAP stock reeling in February 2018 with a single tweet, causing the company to lose 6% of firm value
- 2018 article by Jelle Fastenau states the term ‘influencer marketing’ increased by 325% in Google searches over 2017.
- Event study will shows impact specifically on share price and provides good aggregate view of the general affect of social media on firm value

BACKGROUND

- Relatively new topic in Finance research with most studies conducted within last ten years
- In 2011, Bollen, et al. found general sentiment on Twitter can be correlated to Dow Jones Industrial Avg closing prices
- Luo et. al found social media to be a strong predictor of firm equity value in 2013

HYPOTHESES

- Null: The announcement of a celebrity posting about a company on their social media page has no effect on the stock price of a company. There are no cumulative abnormal returns for shareholders.
- Alternative: The announcement of a celebrity posting about a company on their social media page has an effect on the stock price of a company. There are either positive or negative cumulative abnormal returns for shareholders.

METHODOLOGY

Building the dataset
- Used Factiva and Google to find 30 different instances where a celebrity mentioned a company in social media post
- Defined a “celebrity” as someone who is verified on social media
- Found PERMNOs for each company using Wharton Research Data Service (WRDS)

Event study
- Establish estimation window
- Create 10 different windows of time centered on the event (0,0)
- Calculate expected return using estimation window
- Expected return calculated using either Market Model or Market Adjusted
- Use EVENTUS software to find actual market returns in each event window
- SAS code applied in EVENTUS to determine these values
- Find Mean Cumulative Abnormal Return across events in sample

RESULTS

- Table 1 shows significant results of the Market Model with an Equally Weighted Index for all events in data.
- Focusing on Mean CAR, we considered any event with a p-value less than 0.10 significant.

<table>
<thead>
<tr>
<th>Time Window</th>
<th>Cumulative Abnormal Return</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(0, +1)</td>
<td>1.13%</td>
<td>0.077</td>
</tr>
<tr>
<td>(0, +3)</td>
<td>-0.06%</td>
<td>0.077</td>
</tr>
<tr>
<td>(0, +270)</td>
<td>18.55%</td>
<td>0.044</td>
</tr>
<tr>
<td>(0, +365)</td>
<td>34.39%</td>
<td>0.006</td>
</tr>
</tbody>
</table>

Immediately following an event, the average company’s stock price was about 1% higher than expected. One year after the event, the stock returns in our sample were 34% higher than expected on average.

<table>
<thead>
<tr>
<th>Time Window</th>
<th>Cumulative Abnormal Return</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(0, +1)</td>
<td>&gt; 3.68%</td>
<td>0.028</td>
</tr>
<tr>
<td>(0, +3)</td>
<td>&lt; 4.68%</td>
<td>0.017</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time Window</th>
<th>Cumulative Abnormal Return</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(-10, 0)</td>
<td>3.62%</td>
<td>0.055</td>
</tr>
<tr>
<td>(0, +1)</td>
<td>0.98%</td>
<td>0.081</td>
</tr>
<tr>
<td>(0, +270)</td>
<td>14.92%</td>
<td>0.058</td>
</tr>
<tr>
<td>(0, +365)</td>
<td>31.75%</td>
<td>0.004</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time Window</th>
<th>Cumulative Abnormal Return</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(0, +270)</td>
<td>160.58%</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>(0, +365)</td>
<td>195.84%</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

Facebook had largest Mean CAR. Twitter saw significant returns most frequently.

CONCLUSION

- Abnormal stock returns were seen immediately following a social media post and again about one year later
- On average, returns were about 34% higher than expected one year after a social media post
- Twitter saw significant returns most frequently

REFERENCES

6. Osborne, Miles, and Mark Dredze. “Facebook, Twitter and Google Plus for Breaking News: Is There a Winner?”
8. Tetlock, Paul C. “Giving Content to Investor Sentiment: The Role of Media in the Stock Market.”

ACKNOWLEDGEMENTS

- Thank you to Dr. Laura Cole for her guidance and support throughout this process
- Smith Global Leadership Scholars Program
- Chancellor’s Honors Program
- My family and friends for their encouragement throughout my education

CONTACT

Brenna Logan
Email: blogan5@vols.utk.edu
Dr. Laura Cole
Email: lcole@utk.edu