Do positive actions relating to social issues affect the US stock market?

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Semester: Spring 2020-2021

MSc Finance Thesis

University of Cyprus

Abstract

This research uses a sample of S&P 500 constituents which had events concerning Social Issues and more specifically Black Lives Matter, Women rights and LGBTQ community people rights which were considering only positive actions towards them, the events were for the period January 2018 – August 2020. Most of the events were concerning LGBTQ community followed by the other 2 issues 72 and 14 respectively from a total of 85 events used (there were events which considered more than 1 issue. These events were evaluated in three ways, initially an event study was carried out for the sample using Market-Model to calculate the cumulative abnormal returns (CAR) for the event windows used 21 days (-10,10), 11 days (-5,5) and 3 days (-1,1).

The main research hypothesis for the event study was that CAR would be very small which would show that the investing community did not find the news significant to them to change their investment strategy towards these firms, followed by another hypothesis of investors reacting negatively to this news. To furtherly evaluate the hypotheses bid-ask spreads and trading volume were analysed.

For CAR analysis the results were as expected except some negative results for all windows considering Black Lives Matter, it could indicate a negative view from the investors to the issue, but the small sample of articles for it deem it not significant. For Bid-Ask spread analysis the liquidity of the firms did not change at a considerable level which is due to the already good liquidity of the stock of the firms being in S&P 500. Finally, for Trading volume there was observed a decline in 3-days window (-1,1) for all events which could be due to disinterest of investors in these issues, it was more prevalent in Women Rights sample Approximately 20%), but as it was very small it was not considered significant. The results overall indicate these actions from the firms are not concerning the investing community in any significant way except some evidence in CAR for Black Lives Matter and in trading volumes for Women Rights, which are very small samples though, so they are not significant results.

1. Introduction

This research aim is to identify whether recent positive news relating to three Social Issues, specifically Black Lives Matter (in short BLM), Lesbian-Gay-Bisexual-Transexual- Queer (in short LGBTQ) and Women Rights (in short WR) can affect investors trading decisions for the period January 2018 – August 2020. The recent events of the death of George Floyd on May 2020 and the society's movement to include people of colour and LGBTQ issues, and issues related to the gap between men and women in wage and benefits, has been seen to also affect corporations. In particular, companies have started having pride days for the LGBTQ people, diversity officers have been allocated, and companies are also becoming more welcoming to women by both increasing wages and being considerate with their needs such as maternity leave. All the above started a change in the culture of business more prevalent in the US. This shift could also affect the operation of the firms as people could reward these firms for trying to improve the lives of people once ignored. The reward could also have an economic value to the firm as people way of rewarding the firms could be choosing their product or service against a competitor which act on the matter. It can also increase costs by either monetary contributions to NGOs or creating a fund for the people being in the groups mentioned above.

This research examines the premise that information of this type could change investors behaviour. As this type of actions are recent their evaluation could be difficult, and their value could not be perceived by investors. This is due to their aim to maximize their wealth and use stable models to consider investing. The main research hypothesis (hypothesis 1) considers that and considers that investors will not change their decisions if they learn of such an event. Moreover, the clearer news to investors would be the ones were the firm contributes a sum of money to a cause, which could be received negatively as the money are not invested to increase the firm's value. From it the second hypothesis was derived which says that investors could react negatively to this type of news.

This analysis has been done using the following methodology. Initially an evaluation of Cumulative abnormal returns (CAR) was carried out. It was accomplished by calculating them using an event study analysis for three event windows, 3-day (-1,1), 11-day (-5,5) and 21-day (-10,10). The returns used were daily. After this analysis, a liquidity measure was considered, the bid-ask spread which we use as a measure liquidity of the firm and identify possible changes due to the event. For these measures, two types of samples were used: a control sample not affected by the events, i.e. days (-30, -11) and (11, 30), and a sample for which had the results for each event. From them a mean bid-ask spread was calculated and for each event the outside of the sample event was subtracted to arrive at an abnormal bid-ask spread, this would be an indication of the change in liquidity, the sign showing increase or decrease and value showing significance (the higher the more significant).

The last measure we use is trading volume. To capture abnormal volume during the events, our methodology was close to the previous measure in the way that the outside of sample data was for the same period for consistency. For abnormal volume calculation a division of the event average volume by the outside of sample event volume was carried out, the volume was higher if the ratio was higher than 100% and decreasing if it was lower. This has been done by collecting a sample of articles from LexisNexis using corresponding keywords relating to each issue, for Black Lives Matter, "Black Lives Matter", "BLM" and "Ethnicity" were used, for LGBTQ, "LGBTQ", "LGBT"," gay" were used lastly for women rights, "pay-gap", "Women Rights" and "Gender" were used, also the positive news were assumed to be either relating to Monetary Contribution or a policy change which would benefit the people affected. This results in 90 articles which concern firms from S&P 500 divided to 74 articles considering LGBTQ 10 articles considering Black Lives Matter and 11 articles considering Women Rights. Considering the articles formats, they were using plain text with no graphs, or any media attached to them, most of the articles taken were emphasizing on a single issue with only 4 having more than one issue related news.

The results were according to the major hypothesis expectations, but the second hypothesis could be accepted as the results of the CAR were not significantly negative. The event study analysis CAR was close to 0 for 3-days and 11-days and close to 2% on 21-days event window. To furtherly investigate these results, the CAR was calculated according to each issue, by averaging the CAR of the events included in it. For LGBTQ the results were very close to the whole sample which was expected as the majority of the events were due to this issue (as mentioned above 74). The other two issues were considered both individually and combined as they were very small in comparison with the total sample size. The combined sample gave results close to the other issue slightly higher, but for the 11-day window it gave a negative CAR close to 1% which is significantly bigger and opposite than what the LGBTQ one gave (close to 0.1% positive). Separating the two issues give the following, for Black Lives Matter the results are high and negative for all event windows, which could be an indication of negative impression of such events in the minds of investors due to recent events of the past year (George Floyd death, riots, protests). For Women Rights the results were also higher than LGBTQ, not as high and opposite sign compared to the previous issue mentioned, this could be due to the more positive view of investors on the issue, it can also be said that due to the #Metoo movement in previous years the awareness of such issues and ways to improve has been around for more time.

For abnormal bid-ask spread analysis the results were essentially zero for medians with the maximums only rising to 0.17%. This is expected as shares traded by firms which are constituents of S&P 500 enjoy a stable liquidity which could not be disturbed by such events. Finally, for abnormal volume the results considering LGBTQ and all events were very close to the out of the event sample period with a small negative deviation. This continued for the combination of the other two events. The other events separated had shown something interesting though, for Women Rights the results for the 21-day and 11-day window were close to the previous and even more close to the" normal" period (out of the event sample). For the 3-day window we found a sharp decline of close to 21% less trading for these issues. This could indicate that investors will not react to such events, also showing that the positive CAR could be due to other reasons. For Black Lives Matter the results were also close to the "normal period'. The results in 11-days showing an increase in trading by around 1%, this could be combined with the negative CAR to infer that there was a negative reaction to such events. The small size of the sample though does not make the finding significant. The awareness of this issues in the society has recently started rising, with corporates trying to adapt to this by taking actions which could benefit the people affected and trying to lower the negative actions which could have happened in the past without them caring.

This study opens the research for this issues effect in the stock market with some interesting findings. The possible negative view of Black Lives Matter and positive for Women Rights. The time these issues are being making the news could be a reason for the investors to react (Women Rights has been advocated for years before Black Lives Matter started rising). The introduction of indexes on these issues which rank firms according to information arising. Could be a reason for concern to them, and a measure to help furtherly delve into the matter. Fundamentally through investors will always react to straightforward information for the firm concerning its financial standing. For events considering not economic matters, to start making them care. An introduction of reputable measures which could link the company with its performance by indexes or sovereigns would be needed. This could bring a step closer the investors to a credible evaluation model with these issues accounted for. Also, this could benefit the firms by being an advertising for their actions, also being a more usable information for investors, because it could signal more revenues from potential clients which are involved or care for them.

2. Background

Starting with Dimpfl (2011). research results on the reaction speed of investors in Germany on US based stocks. They have access to them when DAX is open compared to the US investors which have 1 hour lag. The findings were that Germans truly take advantage of the news right away to reassess the value of the individual stocks. Also, abnormal returns were 50% of the average daily returns of the sample used. In case of the US investors no abnormal returns were found. This has proved that German Investors did not wait for the US investors to assess the value of the new announcements. Moreover, the quick absorption of the information by the prices in Germany. Supported the theoretical concept of information efficiency in global financial markets. Moreover, it was found to be valuation insecurity on announcement days which was higher than average, more was in the afternoon, this was reflected by higher volatility levels on the specific days. Finally, after the US stock exchanges open there is a peak in DAX on the afternoon volatility which had W-shape pattern on announcement days.

Yucheng, Gang (2017). Research was an event study based in a macroeconomic framework to study the responses of a broad class of assets to monetary policy surprises in the US. The asset classes used were US government fixed income and equities, US dollar against major G-10 and emerging market currencies, international stock markets and commodity prices. They used GARCH model for one day event horizon and found that T-bill and exchange rates of developed countries were significantly affected by Monetary policy unexpected changes from 1989 up to 2008, the opposite happened to emerging markets which had a weak response. For the international equity and commodity market there was no sensitivity to the monetary policy changes in one day horizon. The next step taken was to use an 11-day window which yielded different results, most of the financial assets responded in a significant way for the five days after the meeting. There was a major difference in the responses between T-bills and midterm notes and long-term bonds, it being the former responded late. This infers that the fixed income market is more informative than other financial markets. For the exchange rates there was a mean reversion on post-meeting days which meant that after rate decision date they recovered back. Lastly the surprise monetary policy had an effect for several days in US stock market which could influence emerging markets.

Curran, Moran (2007). Researched if a then new index FTSE4GOOD considering CSR signalling good performance, impacts investors decisions. This study furtherly reinforced that those new forms of evaluation of a firm’s operations such as CSR (or in the case of this study Social Issues) are more difficult to evaluate than straight forward financial information (for example, earnings announcements). This is due to the complexity of these forms of information, and as they are new to the market’s investors research does not considers them as the fundamentals. This study also shows that for this type of information to become relevant to the investors. New indexes such as FTSE4GOOD should flag correctly firms leaving or entering the index with exact reasons. This because, some firms were removed cause of a merger or change in market capitalization. This is irrelevant to what the index tries to capture. Lastly there are also merits in firms to be included in such indexes are constituents of them could prove beneficial as the inclusion of a logo could increase customers and thus earnings could also rise.

Grinblatt, Keloharju (2001). The research they made tried to find when investors trade. They found that tendency to sell stocks held is positively related to recent returns. Positive returns were found to be more important than negative ones. This showed that investors are more reluctant to realise a loss through the year except December. That is when they do so for tax purposes, specifically in the last two weeks of the year. The research separated investors to sophisticated such as institutional investors and less sophisticated (households, general government and NPOs). The results showed that sophisticated investors put less weight on past returns when considering buying or selling, compared to the less sophisticated ones. For the less sophisticated it was observed that for a stock with high past return they would sell it than buy it.

3. **Data**

There were 90 articles based in 69 S&P 500 constituents gathered through LexisNexis for the period January 2018 – August 2020. They were further analysed to be categorized in either of the three movements of interest (LGBTQ, Black Lives Matter and Women Rights). This has been done by creating Boolean variables for each movement. The variable considered positive actions of the firms by either Monetary contribution or through the firm's policy. An article could be for more than one social issue of the ones considered. It is always considering positive actions. Then from these articles 5 were removed due to the event date being a holiday or a day in the weekend when markets are closed. Due to the small number of observations from dividing to contribution and Policy, for each social issue the articles were grouped together for analysis use. For the two smaller social issues Black Lives Matter and Women Rights there was a sample created combining both of them to see their effect as one due to the small sample size each had. The 85 articles were used for the event study analysis through EVENTUS which was accessed via WRDS. PERMNO code was used for the identification of each firm, the events used are 21 days (-10,10), 11 days (-5,5) and 3 days (-1,1). Data for the calculation of the bid-ask spread of the firms in the 85-article sample were gathered from CRSP through WRDS. This dataset included daily bid ask spreads from 20 days before the event more specifically from 30 days before the event up to 11 days before (-30,-11) and 20 days after the event corresponding to the ones before 11 days after up to 30 days after (11,30).These results were the normal period bid-ask spreads of the sample. Three events were used for comparison, 21 days (-10,10), 11 days (-5,5) and 3 days (-1,1) for more accuracy of the analysis close to the event day. Lastly, trading volume data were also taken from CRSP. Considering   the same normal period and three events as bid-ask spread analysis.

4. Research Hypothesis

Hypothesis 1: Investors will not react to events considering social issues.

This hypothesis assumes that investors are basing their investments in analysis of the fundamentals for the firms. For example, earnings and profitability which are more straight forward. This could be in the form of news earnings announcements. As Social issue positive actions are contributions and policy changes benefiting the population affected. Investors could negatively perceive the cash outflow with not any monetary gain to be expected (in short 0% return on the firm's action). Moving to policy change there is not any clear advantage to the firm's operation from it. This hypothesis was accepted as the CAR found were negligible as well as the other two measures considering all the sample and the major issue covered LGBTQ.

Hypothesis 2; Investors would react negatively to events considering social issues.

This hypothesis considers that the cash outflows from contributions or salary for a position in relation to diversity being opened due to the event negatively impacting the perception of investors. This hypothesis was rejected, because most of the sample did not have a monetary contribution in either form previously mentioned. Also, from this rejection it could be derived that if not any monetary contribution appears, investors will not react negative.

5. Methods

For this research three methods were used for an 85 events sample, the event windows used universally through all methods are. 21 days (-10,10), 11 days (-5,5) and 3 days (-1,1). The usage of different lengths gave a more complete perspective to the affect.

I) Event Study analysis

The event study was carried out using the Market-Model, using daily returns for each stock. The equation used is the following:

Equation 1

$$AR_{it} = R_{it} - (\widehat{a}_i - \widehat{\beta}_i R_{mt})$$

Abnormal returns (AR) are calculated as follows, taking the actual return (R) for the day in the window for a specific firms event (news article) the predicted normal return (the calculation in the parenthesis of Equation 1), which is predicted using two inputs, the actual market return (R_{mt}) and an index which is the ordinary relationship between the firm's stock and a reference index (α,β parameters)

Equation 2

$$AAR = \frac{1}{N}\sum_{i=1}^{N} AR_{it}$$

Measuring typical abnormal returns (AAR) on a specific day before or after the event would utilize equation 2 which sums the abnormal returns for the specific day and divides them by the sample size (N)

As mentioned above this research uses three event windows, so CAR was used instead.

Equation 3

$$CAR(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{i,t}$$

To calculate Cumulative Abnormal Returns (CAR) equation 3 was used which measures the impact of the event over the period designated (t_1, t_2). In other words, the event window, in this study case taking in consideration the 21-day event window $t_1 = -10$ and $t_2 = 10$.

II) Bid-Ask analysis

The next methodology was using bid-ask spread analysis. Calculated by using the bid-ask spread of the price (BA) of each stock divided by the closing price (CP) to arrive to a percentage for each day considered (it is shows in equation 4).

Equation 4

$$BA_i = \frac{1}{CP_i} CB_i - CA_i$$

There were two datasets used for this analysis a dataset which included the 'normal" period, it was constituted with 20 days before the event which were from 30 days up to 11 days before (-30, -11) and 20 days after event from 11 days after up to 30 days after (11,30) these days were used to capture the bid-ask spread effect more appropriately than using only pre-event data as it would capture the trading activity around the event with up to 1 month distance to it, the analysis was carried out by subtracting from each event used in event study analysis average bid-ask spread the bid-ask spread of the normal period spread which would give the "abnormal" bid-ask spread that resulted from each event. This measure was used to consider if the liquidity of the firms that the event took place change in any direction which prove there is interest in the event but not to the extent of changing the price drastically.

Equation 5

$$ABA_i = MBA_{i,Event} - MBA_{i,Pre-Event}$$

The above equation shows in mathematical form how the calculation of abnormal Bid-Ask spread (ABA) was calculated, the averages for the pre-event ($MBA_{i,Pre-Event}$)and the event windows ($MBA_{i,Event}$)were initially calculated by average the BA (Calculated by equation 4) for each of the samples (3 for the events and 1 for the pre-event) then each MBA from the event (were Event could take either 3-days, 11-days or 21-days) were subtracted by the pre-event MBA, giving the abnormal volume. If the abnormal was positive then it would show liquidity decreased, else it would increase.

III) Volume analysis

Trading volumes were also analysed to capture the potential interest of investors out of the change in CAR. For this measure also a “normal” period sample was used for (-30, -11) and (11,30) which was the “normal” volume and the event windows used for the other two methods before it, 21 days (-10,10), 11 days (-5,5) and 3 days (-1,1) for the “abnormal” volume. The measure for this method was the quotient resulting from the division of the “abnormal” volume by the “normal” volume for each event window.

Equation 6

$$AV_i = \frac{MV_{i,Event}}{MV_{i,Pre-event}}$$

The calculation for the abnormal volume (AV), came from equation 6 which used the averge trading volume for each event ($MV_{i,Event}$) and divided it by the average of the pre-event ($MV_{i,Pre-event}$). This tried to capture the changes introduced during the event period, this would be observed when the ratio would either pe above 100% which shows an increase in trading or less than it, this would show a decline in interest to trade, deeming the event not important to the investors

6. **Results**

Starting with the results of the event study, the results of CAR for the whole sample were very small. Specifically, for both 3-days (-1,1) and 11-days (-5,5) with a median of 0.3885% and -0.0292% respectively, for the 21-days (-10,10) the median was 1.5801% which the highest of the three. The high median can not be considered as a signficant indicator for the sample as both the event windows closer to the event were magnitudes lower than it. This could be due to another event which affected the CAR to the levels it reach on that window. From the whole sample the first indication is not a significant effect was found from this analysis. The next step was to divided the sample into two subsamples to observe the effect of specific social issues to the CAR. The two subsamples were LGBTQ related events which were the dominant issue found in the sample, and other social issues which combined the remaining two together as they were very small in comparison (8 and 9 observations for Black lives Matter and Women Rights respectively). The results for LGBTQ were as follows for the 3-days window (-1,1) the median CAR was 0.4053%, for 11-days (-5,5) -0.0919% and for 21-days (-10,10) 1.4270%. These results are very similar to the whole sample as these events were the biggest in the sample (72 events from 85 events total).

For the other issues the results were very close to the whole sample and LGBTQ for 21-days (-10,10) slightly higher though at 1.6523%. For the 3-days (-1,1) and 11-days (-5,5) they were higher at 0.6873% and significantly lower at -0.9917% respectively. The results for 11 days showed a decline of around 1% considering the other issues. This could indicate these social issues may have given a negative impression on the investing community, the small sample size of 14 observations total though doesn't make this result significant.

To get a further inside for the reason of this negative effect, the samples of Black Lives Matter and Women Rights social issues were created to observe if one of them is causing this or both. From this further investigation Black Live Matters community social issues always gave negative CARs and singificantly big ones at -1.1158%, -3.3036% and -3.6724% for 3-days window (-1,1), 11-days window (-5,5) and 21-days window (-10,10) respectively. This could be attributed to the majority of these events being in 2020, were George Floyd was killed that year by police officers in the US. That event caused riots in a lot of states and unrest in the country to some extent. Taking into consideration institutional investors companies have shown a slight interest in equality of Color which was shown by an HBR article published on August 27, 2020. It showed only 25% of partners ask about due diligence for diversity. For Women Rights sample results are varying, being 0.9867%, 0.5179% and 2.0306% for 3-days (-1,1), 11-days (-5,5) and 21-days (-10,10) respectively. For this sample the results are always positive, but only in 21-days the results are at a level of consideration at around 2%. Due to this a clear indication can be taken, as for this social issue as the 21-days event window is big to be sure is the event's effect.

From the CAR analysis there not a clear effect on them as for the bigger issue LGBTQ the returns are negligiable except for 21-day. For the other issues the small sample size can not give a signficant picture of their effect only a small indication for possible negative reaction to Black Lives Matter. Considering the research hypothesis the results are as expected considering the major component of the sample does not show close to the event signficant CARs. The Results for Bid-Ask spreads were very small showing mostly no effect to the liqudity of the firms. This is shown by the value of the highest result for median been 0.0017% which is essentially zero. This was expected as the news are not for fundemental actions for the firms which could not change the liquidity and also the firms being from S&P 500 implicates they already have strong liquidity in their shares.

Lastly for trading volume the results for “abnormal” volume to “normal” volume quotinent are as follows, 85.6555%, 89.1063% and 93.1331% for 3-days (-1,1), 11-days (-5,5) and 21-days (-10,10). From this a decrease in trading around the event of around 15% and 11% on 3-days and 11-days. We observed that it was possible the investors don’t deem this news as worth taking action for. This goes in line with the hypothesis and with the previous results. Taking the analysis to social issues specific as before, LGBTQ results were the following, 86.1005%, 87.6481% and 92.4738% for (-1,1), (-5,5) and (-10,10) respectively. They are close to the whole sample results asd expected from the number of events. Moving to other issues the results were 81.7977%, 92.8745% and 96.5226% for 3-days (-1,1), 11-days (-5,5) and 21-days (-10,10). This shows close to the event a reduction of around 18% on 3 days to be big, but for the other 2 windows the difference was small.

To check for the reason of this reduction the two constituent social issues samples were used, for Black Lives Matter 88.7803%, 101.3995% and 98.1802% for (-1,1), (-5,5) and (-10,10) respectively. For this issue a different pattern is observed as from a decrease of around 11% on 3-days, an increase is observed on 11-days of around 1% and then a small decrease in 21-days. Essentially, showing less trading around the event. Examining this result having in mind thr CAR results shows that the negative reaction could be due to another event not taken into consideration. Lastly for Women Rights the percentages are as follows, 79.3355%, 91.6768% and 96.3270%, for 3-days (-1,1), 11-days (-5,5) and 21-days (-10,10) respectively. The results on the 3-days event window show a decrease of more than 20% with the other two events been very close to “normal” volumes. This could indicate this events also being of less importance to the investors or problematic to them to trade, but the small size of observations makes it not significant.

Summary of results for all the methods used.

	(-10,10)				(-5,5)				(-1,1)			
Categories/Measure	Mean	Median	Min	Max	Mean	Median	Min	Max	Mean	Median	Min	Max
CAR												
All Social Issues	0.5341%	1.5801%	-18.4666%	15.5460%	-0.3041%	-0.0292%	-19.1235%	11.0350%	0.1418%	0.3885%	-7.9428%	11.8861%
LGBTQ	0.7721%	1.4270%	-18.4666%	14.6218%	-0.1321%	-0.0919%	-19.1235%	11.0350%	0.2894%	0.4053%	-6.9427%	11.8861%
Other Social Issues (BLM + WR)	-0.9241%	1.6523%	-16.7060%	15.5460%	-1.4121%	-0.9917%	-10.8707%	8.1769%	-0.3203%	0.6873%	-7.9428%	4.1047%
BLM	-2.9620%	-3.6724%	-10.2842%	5.4924%	-2.9896%	-3.3036%	-8.0214%	2.3859%	-1.5540%	-1.1158%	-7.9428%	4.1047%
WR	0.3400%	2.0306%	-16.7060%	15.5460%	-1.0159%	0.5179%	-10.8707%	8.1769%	0.7404%	0.9867%	-3.5752%	2.7531%
Bid-Ask Spreads												
All Social Issues	-0.0003%	-0.0005%	-0.0200%	0.0562%	-0.0002%	-0.0008%	-0.0218%	0.0561%	0.0018%	-0.0008%	-0.0187%	0.1720%
LGBTQ	-0.0004%	-0.0005%	-0.0200%	0.0562%	0.0001%	-0.0006%	-0.0218%	0.0561%	0.0017%	-0.0008%	-0.0187%	0.1720%
Other Social Issues (BLM + WR)	0.0001%	0.0006%	-0.0084%	0.0054%	-0.0005%	-0.0013%	-0.0070%	0.0111%	0.0044%	0.0006%	-0.0084%	0.0286%
BLM	0.0003%	0.0017%	-0.0084%	0.0054%	-0.0008%	-0.0008%	-0.0066%	0.0045%	0.0076%	0.0015%	-0.0084%	0.0286%
WR	-0.0008%	-0.0006%	-0.0084%	0.0042%	-0.0003%	-0.0013%	-0.0070%	0.0111%	0.0029%	-0.0010%	-0.0074%	0.0286%
Volume												
All Social Issues	94.7490%	93.1331%	52.4582%	172.2475%	92.7579%	89.1063%	49.4363%	182.3597%	91.6928%	85.6555%	40.3131%	274.2743%
LGBTQ	94.6524%	92.4738%	52.4582%	172.2475%	93.0295%	87.6481%	49.4363%	182.3597%	92.3959%	86.1005%	40.3131%	274.2743%
Other Social Issues (BLM + WR)	92.4775%	96.5226%	57.8798%	130.2530%	87.7673%	92.8745%	59.4436%	113.9630%	85.6072%	81.7977%	50.7196%	137.9667%
BLM	89.8905%	98.1802%	57.8798%	105.9784%	92.3359%	101.3995%	59.4436%	113.9630%	90.5226%	88.7803%	56.3001%	137.9667%
WR	94.0335%	96.3270%	65.2984%	130.2530%	86.3731%	91.6768%	60.5442%	113.9630%	81.3141%	79.3355%	50.7196%	122.3284%

The above table summarizes the results of these study. Starting with CAR in the (-10,10) window, the minimum and maximum of the whole sample are high at -18.47% and 15.55% respectively. If the median is considered, then it shows that these were not representative of the sample as it was only 1.58%. This was the case for all windows with the change that the medians were significantly smaller for both (-5,5) and (-1,1), at -0.03% and 0.39%. Moving to the issues, for LGBTQ the results are very similar to whole sample with the biggest difference being the three times higher median for (-5,5) at -0.09% (from -0.03%). Even this big difference though results in returns that are close to 0. For the other issues combined the results are also in line with the previous. The difference being at (-5,5), the return was close to -1%, although the result here is significant the small sample size of 14. The results do not add much to the research, but only gives an indication for further studying these two issues included.

For this reason, the two issues were examined individually, for Black Lives Matter all the results were significantly bigger, at -3.67%, -3.30% and -1.12% for (-10,10), (-5,5) and (-1,1) respectively. Women Rights results were also bigger compared to the LGBTQ at 2.03%, 0.52% and 0.99% for the 21-day, 11-day and 3-day windows. Between the last two it can be said that the results sign differs for all windows. Black Lives Matter being negative and Women Rights positive. This could further indicate preference in companies which become more mindful of women by providing better conditions for them in society. For Black Lives Matter it shows a clear negative perception of the news. It could be due to the negative press this issue covered from the death of George Floyd as most articles for the issue are in 2020 (it is shown in a table in the appendix).

The next part of the table is considering the bid-ask spread analysis. This part is consistent through all the issues and windows in the insignificant abnormal bid-ask spread found which is very small. The highest being the max in the 3-day window at 0.17%. These results show the liquidity of the 69 firms did not change due to this news significantly. The reason could be due to their position as constituents in S&P 500. As firms included in it tend to be very liquid so the events could hardly change it. It can be said here also that it could be due to this news being not as important to the investors as news for fundamentals. Lastly, the abnormal volume analysis for the whole sample had shown a decrease in volume traded of 7%, 11%, 14% for the 21-day, 11-day and 3-day windows, respectively. The results for LGBTQ were very similar at 8%, 13% and 14% lower.

For the other two issues combined the decrease was smaller, at 3% for the 21-day and 11-day windows at only 4% and 8% (compared to 7% and 11%), For the 3-day window the decrease was steeper by 5% at 19%. Separating the two issues shows the following, Black Lives Matter had the higher trading volume retention from the pre-event period (also called "normal") for the 21-day and 3-day windows with a decrease of 2% and 12% respectively. The results for the 11-day window surpassed the pre-event period by around 1%. The results could be considered together with CAR. Showing that investors trading volume being higher than other events due to selling the shares of the firms as CAR was negative. Women Rights results were close to the other results with a decrease of 4% and 9%, for 21-day and 11-day window. The 3-day window decrease was the highest of all the issues at 21%, this indicates that close to the event trading had decreased significantly. The small number of results could be a reason of this big decrease. When considering the result on its own could show that investors don't react in Women rights event by increasing their trading actively.

7. Conclusion

Social Issues started becoming more important to firms in the US as the years pass. The recent news of the death of George Floyd in May 2020 and the rise of human rights indexes which give ratings. Incentivized the firms to increase their actions considering their social responsibility. This research aims to see if this change in the firms could change the behaviour of investors in the US stock market in relation with S&P 500 constituents. Only positive actions towards three of the most prevalent social issues at the time were covered. Specifically, Black Lives Matter, Women Rights and LGBTQ community rights. This has been done by gathering data of positive actions taken by the firms and using an event study methodology in conjunction with an analysis considering Bid-ask spreads and trading volumes. Aiming to observe possible "abnormal" reactions in each measure. For the CAR taken from the event study methodology the overall results did not show a significant reaction in issues such as LGBTQ and Women Rights, but showed a decrease for Black Lives Matter. The sample for those issues was small (8 observations), thus the result is not significant. This could be improved by a new research using a larger sample to further investigate these findings. Considering Bid-ask spread analysis the S&P 500 constituents' strong liquidity has not changed by a significant value and is nearly the same with very small changes as it should be expected.

Finally for trading volume analysis the 3-day window close to event proved to have the smallest percentage for all issues combined. Considered individually, it could indicate the investors interest was not captured by news not relating to fundamentals which they are mostly concerned with. Women Rights showed the biggest decline of around 20%, though had a small number of observations. Concluding the results are for an 85-event sample which is small so inflated results and low statistical power are of concern. Lastly, as the awareness of such issues in society has surfaced in the recent past, that is in a meaningful way (meaning not just be aware of it, but also caring about them). There are not many events as of the time of writing to measure the effects for Black Lives Matter, given nearly are the events considering it are in 2020.

Another thing which is important to be aware of is that investors tend to react to fundamental changes in firms and news to them mostly. For such events to be important to them, there should be robust models incorporating such events. This has yet to happen, as the society is early on to incorporating the inclusion of this groups of people. In the future measures could become more meaningful and accountable, combined with a more considerate population the results could be significant and positive. For future research it would be essential to monitor the evolution of the indexes and other ways to rate the firms. Also, the people perspective should be incorporated into such measures. Having a more specific sample by age or by involvement in the market such as the one in Grinblatt, Keloharju (2001) research could show a different story as the effect will not be moving to the way the institutional investors trade.

APPENDIX

Distribution of Social Issues Based in the Period used

This graph shows how many articles each social issues, Black Lives Matter as "BLM", LGBTQ as "LGBTQ" and Women Rights as "WR" had for each of the three years used the period (2018-2020)

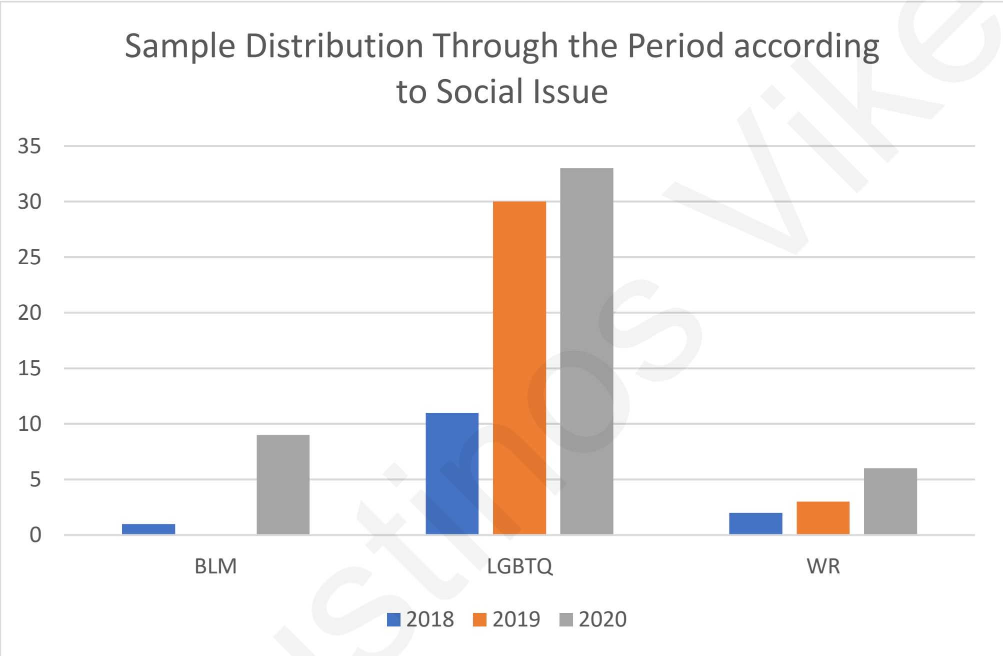

Table 1 List of S&P 500 Constituents and corresponding number of Events

This list shows the 69 firms used in the analysis of this research together with the number of events each had. All the firms were S&P 500 Constituents, from industries such as technology, pharmaceuticals, financial institutions, telecommunications, transportations, food industry.

	Companies	Number of Events
1	Apple	2
2	Bristol Myers Squibb	1
3	Chevron Corp	2
4	Coca-Cola co	1
5	Kellogg Co	1
6	Kroger Co	1
7	Merck & Co	2
8	FirstEnergy CO	1
9	PPG Industries	2
10	Sempa Energy	2
11	PepsiCo inc	2
12	Exelon Corp	1
13	Procter Gamble	1
14	Public Services Entrp.	1
15	Rockwell Automation	1
16	Southern Company	2
17	Whirlpool Corp	2
18	Dupont De Nemours	1
19	Cummins Inc	1
20	General Mills	1
21	Johnson &Johnson	1
22	HP	1
23	Wells Fargo Co	1
24	Intel Corp	1
25	VF Corp	1
26	FEDEX CORP	1
27	Mattel Inc	1
28	Walmart INC	2
29	Brown Forman Corp	1
30	Verizon Communications	2

31	AT&T Inc	1
32	AIR PRODUCTS & CHEMICALS	1
33	GAP INC	1
34	Block H & R inc	1
35	PNC Financial SVCS Group	2
36	Citigroup Inc	1
37	Nike Inc	1
38	ECOLAB INC	1
39	LINDE PLC	1
40	Unum Corp	2
41	Southwest Airlines	1
42	Morgan Stanley	3
43	Macy's	1
44	PPL Corp	1
45	Humana	1
46	Hartford Financial Services	1
47	Fifth Third Bancorp	1
48	AON Plc	1
49	Thermo Fisher Scientific	1
50	Franklin Resources Inc	2
51	Marriot Intl Inc	2
52	U.S Bancorp	3
53	Centurylink Inc	1
54	Moody's inc	1
55	NiSource	1
56	MetLife	1
57	Electronic Arts	2
58	Prudential Financial Inc	1
59	Tapestry Inc	1
60	Estee Lauder	1
61	Wyndham Destinations	1
62	CBRE Group Inc	2
63	Assurant inc	1
64	Akamai Technologies	2
65	Visa Inc	1
66	Netflix inc	1
67	BlackRock Inc	1
68	Chipotle Mexican Grill	1
69	TE Connectivity	1

Table 2 Word Count based on each social issue.

This table shows the number of words each social issue article in the sample had. This table is useful to observe if the word count could become a hurdle to the investor in absorbing the news. Taking into consideration the perspective of a human reading it, which given the length is high could not help absorption. Also, the perspective of an algorithm which goes through them, there could be a higher chance of misclassification. Taking as a base line an abstract of a research article, which is around 500 words. The results show that for the whole sample the median word count is 95 more words which is overall a small increase. The issue with the higher median word count was Black Lives Matter with a count of 780 words which is substantially higher than the base. The max word count shows a count more than 3 times the baseline, the identified articles with word count higher or equal 1000 are only 11 which shows that most of the articles are not very lengthy. Articles that are 250 or less words are only 6. Concluding the articles word count could be described by an adequate word count considering the baseline of 500 words for the majority of the articles. Black Lives Matter related ones though, have a median which is a lot higher, but as the events are on the minority in the sample it does not indicate possible loss of information.

Events/Measure	Mean	Median	Min	Max
All EVENTS	654	595	165	1558
LGBTQ	639	569	165	1558
BLM	695	780	180	1328
WR	678	630	348	1177

How articles were identified

In this section of the appendix, parts of articles gathered from this research will be shown to demonstrate how they were labelled. They were labelled firstly depending to the social issue they were for, also based on if they were related to monetary contribution, or policy change. Below an article found concerning Apple is shown with the highlighted area demonstrating the reason why it became labelled as a Black live Matters article which was due to racial equality and the $100 Million initiative making it a contribution to this issue.

Jun 11, 2020(MacRumors.com: http://www.macrumors.com Delivered by Newstex) ***Apple*** CEO Tim Cook[1] today took to Twitter to announce ***Apple***'s Racial Equity and Justice initiative, with a $100 million commitment. The effort will be led by ***Apple***'s vice president of environment, policy, and social initiatives, Lisa Jackson. Beginning in the United States and expanding globally over time, the initiative will challenge the systemic barriers to opportunity and dignity that exist for communities of color and particularly for the black community with special focus on issues of education, economic equality and criminal justice reform.Cook says the initiative will build on ***Apple***'s existing work in the racial justice space, significantly broadening its scope and impact through a model that was also used for ***Apple***'s environmental efforts.Lisa has revolutionized our environmental work by looking across the company, bringing existing teams and projects together under one umbrella, dramatically expanding those efforts and compounding and magnifying their results.

We want to bring that same holistic focus and companywide scale to racial justice and breaking down barriers to opportunity across our society.***Apple*** says the effort will build on its work with historically black colleges, community colleges, STEM education, and underserved students and teachers, as well as forging new partnerships with organizations like the Equal Justice Initiative. The unfinished work of racial justice and equality call us all to account. Things must change, and ***Apple***'s committed to being a force for that change. Today, I'm proud to announce ***Apple***'s Racial Equity and Justice Initiative, with a $100 million commitment. pic.twitter.com/AoYafq2xlp[2] — Tim Cook (@tim_cook) June 11, 2020[3] ***Apple*** is announcing a new developer entrepreneurial camp for black developers ahead of WWDC 2020[4]. In the supply chain, ***Apple*** is also committing to increasing its spending with black owned partners and increasing representation across companies it does business with. Fighting for equality and justice for my community has driven my career as an environmentalist. I'll continue the work leading ***Apple***'s Racial Equity and Justice Initiative. #***BlackLivesMatter***[5] https://t.co /JKuaQP3I2r[6] — Lisa P. Jackson (@lisapjackson) June 11, 2020[7] Cook says that within ***Apple***, "significant new steps" toward diversity and inclusion will be made because there is more "we can and must do to hire, develop, and support those from underrepresented groups."This is a comprehensive effort governed by three principles: representation, inclusion, and accountability. I think accountability deserves special attention. Whether it is at ***Apple*** or anywhere else in society, the burden of change must not fall on those who are underrepresented. It falls heaviest on those in positions of power, leadership, and influence to change structures for the greater good.Our commitment is to meet

The second article concerning U.S Bank, was concerning LGBTQ community as the company achieved a perfect score in 2019 on an index benchmarking surveys and reports on the matter. This score shows that the firm through its policy demonstrates positive consideration of the people belonging in that community.

MINNEAPOLIS, April 4 -- ***U.S.*** Bank issued the following news release:

U.S. Bank for the 12th time in a row earns 100 percent on Human Rights Campaign Foundation'***s*** Annual Scorecard on ***LGBTQ*** Workplace Equality.

U.S. Bank received a perfect score of 100 on the 2019 Corporate Equality Index (CEI), the nation'***s*** premier benchmarking survey and report on corporate policies and practices related to ***LGBTQ*** workplace equality, administered by the Human Rights Campaign (HRC) Foundation. ***U.S.*** Bank was named alongside over 560 major ***U.S.*** businesses that also earned top marks this year.

"The top-scoring companies on this year'***s*** CEI are not only establishing policies that affirm and include employees here in the ***United States***, they are applying these policies to their global operations and impacting millions of people beyond our shores," said HRC President Chad Griffin. "Many of these companies have also become vocal advocates for equality in the public square, including the dozens that have signed on to amicus briefs in vital Supreme Court cases and the more than 170 that have joined HRC'***s*** Business Coalition for the Equality Act. Time and again, leading American businesses have shown that protecting their employees and customers from discrimination isn't just the right thing to do -- it'***s*** also good for business."

"Drawing strength from diversity is a core value at ***U.S.*** Bank," said Ismat Aziz, chief Human Resources officer at ***U.S.*** Bank. "We're proud to once again earn a perfect score from the Human Rights Campaign on creating a workplace that welcomes ***LGBTQ*** employees and enables their diverse voices and perspectives to be heard."

The third article demonstrates an article concerning Chevron Corp which gave a grant of $5 million to MARC an initiative for men to help for gender equality, so it was labelled as considering Women Rights through monetary Contribution.

London: The Society for Human Resource Management (SHRM) has issued the following news release: â€People can serve as allies for co-workers through simple actions that will have lasting, beneficial effects on those co-workers' careers and, in the process, create an inclusive work environment. Men play a pivotal role in creating workplaces where male and female employees can succeed, according to Catalyst. The New York City-based global nonprofit helps organizations advance women in the workplace, and it encourages employers to engage men as champions and build inclusive cultures. Many men would take more action to make their workplace inclusive if they knew what to do, according to the National Center for Women & Information Technology.

To teach them, The Ohio State University has an Advocates and Allies for Equity initiative to help advance the professional interests of female faculty and staff and employees in other underrepresented groups. The university is using the program to build a cross-campus network of male allies and introduce them to specific, practical actions to help men better support women at the university. [SHRM members-only resource: Your Culture Shapes What Your Business Becomes] And Catalyst created Men Advocating for Real Change (MARC) to encourage its male employees to improve gender equality in the workplace. Its 1 1/2-day, immersive MARC Leaders Workshop helps men lead diversity and inclusion efforts in the workplace. In February, ***Chevron Corp***. gave Catalyst a $5 million grant to support the MARC initiative. It will be used to roll out MARC Teams to its supporter companies-

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