An event study of the 2020 Biden election and its determinants

Bachelor Thesis Financial Economics

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Abstract

This paper aims to determine the abnormal returns in the presidential election of 2020 with an event study, and its determinants with a cross-sectional regression. The analysis is performed with daily returns and end-of-year accounting data consisting of the S&P 500 constituents from 1 January 2019 to 13 November 2020. The results are in line with past studies, showing that a Democratic win is in general negative for markets. Heavy industries that performed exceptionally well under Trump, were some of the biggest losers when Biden got elected. Low-beta and large market cap stocks performed significantly better during the election week, though no clear relation has been found between stock market returns and Biden's tax plan and foreign policies.

Contents

1 Introduction

The presidential election of Joseph R. Biden as the 46^{th} President of the United States on 3 November 2020 was a narrow race. For months, Joseph R. Biden led Donald J. Trump by great margins in the polls, but the announcement of the projected winner after the election could not be called until days later.[1] Back in 2016, the democratic candidate Hillary Clinton also led Donald Trump in the polls by great margins, but election night was a shock as the Electoral College swung in Trump's favor. Substantial movements in securities, bonds and exchange rates were observed as the two candidates had totally different stances on a wide range of policies (Wagner et al., 2017). As these movements provide insight to how market participants respond to possible changes in policy making, it is interesting to examine for both academics and policy makers. Furthermore, investors can also benefit by gaining a better understanding to how markets react to possible policy implementation as they can rebalance their portfolios accordingly to offset possible future risks. To my understanding, very few studies have tried to examine how different industries react to a new president in general and no study until now has examined how industries reacted to the 2020 election.

This paper, therefore, aims to examine the impacts of the United States (US) presidential election of 2020 on stock prices, whether the markets expected this outcome, which industries advances or deteriorates under the expected policies of the new administration, and its determinants. It is generally known that presidential elections in the United States have significantly impacted the stock market due to the fact that the ruling administration have the ability to steer its economy into different directions by implementing various policies (Li and Born, 2006).

An event study is conducted as it is often used in the literature to assess abnormal returns during the election period. Furthermore, following the procedure by Wagner et al. (2017), a cross-sectional regression is performed to assess the effects of company characteristics on abnormal returns (AR) and cumulative abnormal returns (CAR). The daily returns and end-of-year accounting data is obtained from Compustat (2020) and consists of the Standard & Poor's (S&P) 500 constituents from 1 January 2019 to 13 November 2020. The reason for choosing this data set is that the S&P 500 index includes the most liquid and largest stocks in the United States, representing approximately 80% of the equity market capitalization. They also get the strongest attention of investors and the greatest coverage by analysts.

In general, the results agree with that when a Democratic becomes president, stock markets react negatively or less positively (Oehler et al., 2013, Obradović and Tomić,

[1] https://ig.ft.com/us-election-2020/polls/

2017 and Wong and McAleer, 2009). However, this could also be due to markets already expecting the event (i.e. Biden becoming president), and consequently, price it accordingly, if instead there was an unexpected event. Analysing the median abnormal and cumulative abnormal returns for the industries, it is compelling to observe that heavy industries that have performed exceptionally under Trump, were some of the biggest losers when Biden got elected. This analysis reflects greatly the contrasting viewpoints or policy plans between Biden and Trump. Biden who is in favour of a greener sustainable future as well as his intention to better foreign relations compared to Trump. In the second part, the cross-sectional results examine the impact of expectations about overall growth, taxation, and trade policy. Concerning growth, low-beta stocks such as utilities, consumer staples and health care have performed better or less worse than high-beta stocks such as financials, materials, industrials and consumer discretionary during the election week. However, in the week after the election, investors seem to have shifted from quality to more growth or risky stocks after positive vaccin study announcements by Pfizer and BioNTech. Regarding taxation and foreign operations, no clear relations has been found. This is likely because the Biden administration has yet to make any proposals that could be implemented, and as a result, markets react accordingly with reduced impact. The same is true for leverage, interest expense and capital expenditures.

In what follows, I first present a literature review in section 2. Section 3 explains the data and methodology used, that is, the event study and cross-sectional regression. Following this, section 4 demonstrates the most important results, either in tables or graphs, with interpretation. Finally, a conclusion is provided with suggestions for further research in section 5.

2 Literature Review

In this section, a literature review is provided in which the following topics are discussed: policy differences between Trump and Biden, the efficient market hypothesis, event studies, and finally, abnormal returns after elections.

2.1 Policies: growth, taxes and trade

Both Trump and Biden have a goal to improve economic growth and cut down employment rates. To achieve this, Biden proposed to increase domestic investments and government spending, while Trump approaches this by keeping taxes low and trimming regulations. Also, Trump campaigned to continue the Tax Cuts and Jobs Act (TCJA), which stimulated economic output and included changes such as a reduction in corporate taxes from 35% to 21%. So far, evidence from Tax Policy Center (2020b) have shown that

the TCJA raised output in the short term and will most likely continue in the long term. On the other hand, Biden has been critical of the TCJA, campaigning that the benefits are biased towards high net worth individuals and big corporations, thus he proposed to increase taxes for both corporations and individuals when he becomes president.

With regard to foreign trade policy, Trump campaigned that we would "Keep America Great" by continuing his America First policy as President in the second term. Stiglitz (2018) argued that his protectionist stance is likely to bring significant adverse effects towards global trade and US geo-political interest while Kroenig (2017) suggests that Trump's policies are overall well suited for future challenges. Biden (2020) argues that Trump disparaged and undermined US allies, and vows to renew alliances while still protecting the economic future of the US.

2.2 Efficient market hypothesis

One of the earliest documented works, belonging to Bachelier (1900), has attempted to model the random nature of the stock markets price evolution. This randomness in prices is usually known in the literature as a 'random walk' (Fama, 1965). Proponents argue that past movements cannot be used to infer future price movements. This also lays the foundation for the efficient market hypothesis. In his seminal work, Fama (1970) coined the term the 'efficient market' by which he argues that financial markets incorporate all possible available information as soon as it becomes available to the investing public. Consequently, consistent alpha generation — that is, beating the markets, usually a benchmark such as the S&P 500 on a risk-adjusted basis — is not possible, and therefore, traders who seek for abnormal returns might be in search for vain.

Furthermore, three forms of efficient markets are distinguished, namely the weak-, semi-strong-, and strong-form. While the weak-form suggests that the current stock prices reflects all past information, the semi-strong-form advocates that all public information are reflected in stock prices as well as newly available information. Consequently, in the former, technical analysis, and for the latter, both technical and fundamental analysis might not be the edge investors can seek out to obtain higher profits than the market average. Finally, the strong-form argues that even inside information cannot produce higher returns than the benchmark (Fama, 1970).

2.3 Event studies

To measure the impact of a specific economic event, an event study can be constructed using financial data (MacKinlay, 1997). The event study methodology has been introduced and developed in the 1960s by Fama et al. (1969), and has become the common method of measuring price reactions of securities to an event (Binder, 1998). Examples

of specific events are mergers and acquisitions, issuance of equity or debt, announcement of earnings, and in this research, the event study is used to investigate the impact of the US presidential election of 2020.

2.4 Abnormal returns after elections

In order to beat the markets, traders have to take more risk to obtain higher returns. The Capital Asset Pricing Model (CAPM) describes this linear relationship (Markowitz, 1952) and is a model that can be used to test the efficient market hypothesis — that is, a framework which states that markets are efficient.

A significant number of event studies are dedicated to the effect of US presidential elections on stock return as it is the largest and most developed market, but recent research has also shown interest in other less developed markets such as the Nairobi securities exchange (Menge, 2013) and the Indonesia securities exchange (Chandra, 2015). The ANOVA results by Menge (2013) indicate that abnormal returns before elections were significantly higher than abnormal returns after elections, covering the election periods in December 2002, December 2007 and March 2013. On the other hand, Chandra (2015) shows that there are no significant abnormal returns and trading volume activity before and after the Indonesia's 2014 presidential elections. These inconsistencies can also be found in the US presidential elections, but general conclusions could be drawn. For example, Oehler et al. (2013), having analyzed the results of the 1980 to 2008 US presidential elections on stock market performance of eight industries and factors that could affect firms' stock returns, conclude that either a Republican or Democratic win does not produce consistent industry returns. These returns differ among industries as well as across the presidential elections due to the newly elected preferences regarding spending, taxation, regulation and foreign policy. The researchers do agree that the win of a Democratic is in general negative for the stock market while a Republican win could cause mixed results. This is in line with the results by Obradović and Tomić (2017), having studied the November 2012 presidential elections, the reelection of Barack Obama has had a negative impact on the stock markets. In general, Wong and McAleer (2009) conclude that stock prices in the first half of a four decade presidency fell from January 1965 to December 2003. Additionally, Oehler et al. (2013) state that a change in presidency has stronger effects on stock markets compared to the incumbent of the same party being reelected. This can be seen from the unexpected 2016 election of Donald Trump. Wagner et al. (2017) show that stock prices have incorporated investors' expectations relatively quickly regarding Trump's plan on economic growth, taxation, but not so much on trade policy. Hanke et al. (2020) found that stock market participants reacted after the 2020 election as evidence increased for a Democratic victory and the probability of a Republican win

decreased. Finally, Li and Born (2006) generalize the effects of presidential elections on stock market performances consistent with the market efficiency hypothesis: there is risk in not knowing the next presidential candidate. To illustrate this, there was more uncertainty with Trump's presidential election, and therefore, given the surprise win of Trump, stocks that would do great under a Trump regime, jumped in price a lot as Trump won the elections.

3 Data and Methodology

3.1 Event Study

Before going into the event study methodology, the data set is set-up by splitting it into an estimation window and two separate event windows. The estimation window (T0, T1) is from 1 January to 31 December 2019, the year before the election. Furthermore, two different event windows (T2, T3) — that is, from 2 to 6 November and 9 to 13 November — are considered because of the tight race in the 2020 election and delays caused by mail-in ballots in some important swing-states. In this way, market reactions in the first week can be captured, when uncertainties appear of who becomes the next president, separately from the second week, when market reactions appear after the announcement of the projected winner. Lastly, the gap between the estimation window and event window is chosen to avoid possible biases that could occur because of severe stock market shocks in the first quarter of 2020 by the global pandemic and uncertainties thereafter. This is summarized in Table 1 as follows:

Election date	President	Estimation window (T0, T1)	Event window (T2,T3)
03/11/2020	Joseph R. Biden	01/01/2019 – 31/12/2019	02/11/2020 – 06/11/2020
03/11/2020	Joseph R. Biden	01/01/2019 – 31/12/2019	09/11/2020 – 13/11/2020

Table 1: Event study set-up

Next, in the event study methodology, I first obtain stock prices with adjustment factors from Compustat (2020) and adjust them for splits and net dividends by dividing them by the adjustment factor. The daily stock returns in the chosen period, $R_{i,t}$, is calculated by,

$$R_{i,t} = \left(\frac{P_{i,t}}{P_{i,t-1}} - 1 \right), \tag{1}$$

where $P_{i,t}$ is the stock price for stock i on day t and $P_{i,t-1}$ is the stock price on day $t-1$. Then, I perform for each stock $i = 1, ..., N$ an OLS regression across time of the daily excess stock returns, $R_{i,t} - R_t^f$, on the daily excess S&P 500 index returns, $R_t^m - R_t^f$, for

the estimation window (T0, T1) given by,

$$R_{i,t} - R_t^f = \hat{\alpha}_i + \hat{\beta}_i \left(R_t^m - R_t^f \right) \tag{2}$$

where $t = T0, .., T1$ and R_t^f is the risk-free rate. As a result, I only control for the market beta and not other factors such as size, value and momentum (Wagner et al., 2017). The risk-free rate is the one month Treasury-bill rate obtained from Fama French & Liquidity Factors (2020). If the data is not available for the entire estimation window, $\hat{\beta}_i$ should be estimated using returns from the date the firm was first traded to 31 December 2019. Now that $\hat{\beta}_i$ estimates are obtained, the expected returns, $E(R_{i,t})$, are then calculated for each $i = 1, ..., N$ assuming CAPM holds:

$$E(R_{i,t}) = R_t^f + \hat{\beta}_i \left(R_t^m - R_t^f \right), \tag{3}$$

where $t = T2, .., T3$. Finally, the abnormal returns, $AR_{i,t}$, for all days surrounding the 3 November 2020 election for each $i = 1, ..., N$ are computed as the daily excess returns on the stock minus beta times the daily excess S&P 500 returns by substituting Equation 3 in Equation 4 as follows:

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) = R_{i,t} - R_t^f - \hat{\beta}_i \left(R_t^m - R_t^f \right), \tag{4}$$

where $t = T2, .., T3$. Figure 1 shows the abnormal returns for the average, median, lower and upper 25% quartiles for each day during the election weeks, that is, 2 to 13 November 2020. These figures are computed each day repeatedly. The spread between the lower and upper 25% quartiles is most pronounced on Monday 9 November 2020.

Moreover, the cumulative abnormal return is calculated by,

$$CAR_i = \sum_{t=T2}^{T3} AR_{i,t}. \tag{5}$$

To test the average abnormal and average cumulative abnormal returns for significance, the average abnormal returns, AAR_t, and the cumulative average abnormal returns, $CAAR_t$, for each t, are obtained by,

$$AAR_t = \frac{1}{N} \sum_{i=1}^{N} AR_{i,t}, \tag{6}$$

$$CAAR = \sum_{t=T2}^{T3} AAR_t, \tag{7}$$

where $t = T2, .., T3$. The cross-sectional t-test can then be conducted by,

$$t_{AAR_t} = \sqrt{N} \frac{AAR_t}{S_{AAR_t}}, \tag{8}$$

$$t_{CAAR} = \sqrt{N} \frac{CAAR}{S_{CAAR}}, \tag{9}$$

where S is the sample standard deviation. Lastly, in order to examine stock returns at the industry level, stocks will be classified according to the Fama and French (2020) 30-industry classification. Different stocks will be classified based on their four-digit SIC-code.

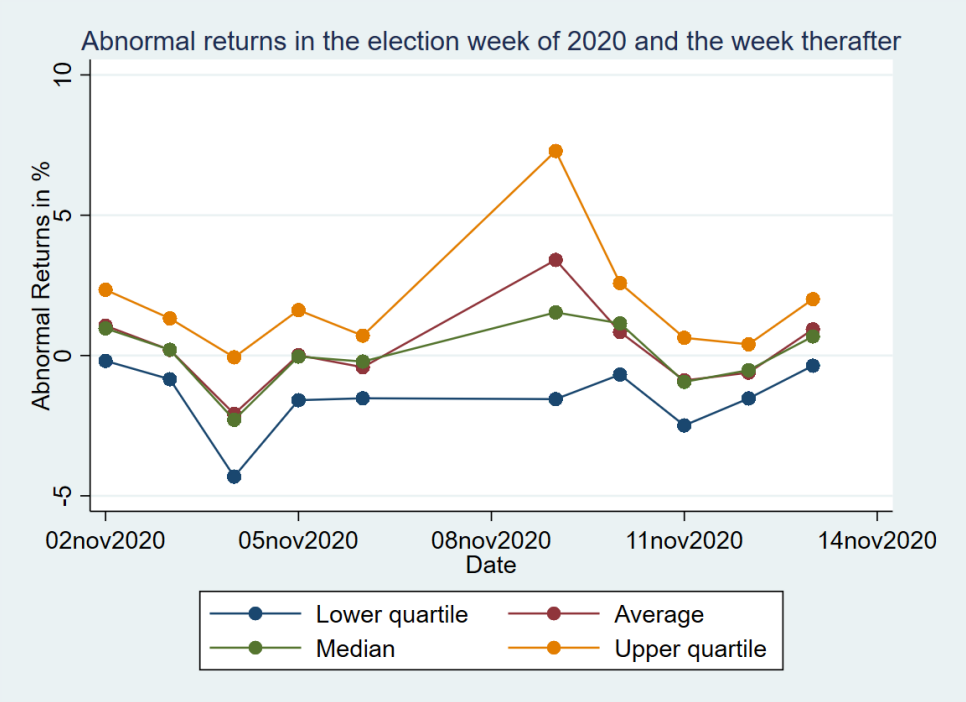

Figure 1: Abnormal returns in the election week and the week thereafter

3.2 Cross-sectional regression

The cross-sectional regression, based on Wagner et al. (2017), examines which company characteristics have a significant influence on the ARs and CARs. These explanatory variables are either directly obtained from Compustat (2020) or derived versions, where the most up to date end-of-year accounting data is used, that is, 31 December 2019. In case the fiscal year ends in other months, e.g., November or January, those are taken. These variables are summarized in Table 2 and named as follows (mnemonics are in parentheses and definitions can be found in Appendix A, Table 10): Total Assets (AT), Market value of equity ($CSHO*PRCC\_F$), Percent revenue growth ($100*(SALE-SALE_{t-1})/SALE_{t-1}$), Profitability ($100^*(PI/AT)$), Cash taxes paid in percent of current year pre-tax income ($100^*(TXPD/PI)$), Deferred tax liability in percent of assets ($100^*TXNDBL/AT$), Percent profits from foreign activities ($100^*PIFO/PI$), Foreign operations in percent of assets ($100^*abs(PIFO)/AT$), Leverage ($(DLTT+DLC)/AT$), Interest expenses in percent of assets ($100^*XINT/AT$), Capital expenditures in percent of assets ($100*CAPX/AT$).

The variable, cash taxes paid in percent of pretax income, is computed following Dyreng et al. (in Wagner et al. 2017) as the percentage taxes paid in cash divided by the pretax income, where the sample is restricted to the firms with positive pre-tax income (all but 24 firms) and a tax rate of not higher than 100% (all but 3 firms). Also, three firms did not start trading until 2020, for those firms, the market value of equity can

not be computed.[2] All explanatory variables are winsorized at the 1% and 99% levels except for market value of equity to reduce the effect of possible biases that may occur by outliers.

	N	Min	P25	Mean	Median	P75	Max	Std. Dev.
CAR from Nov 3 to Nov 6	500	-27.07	-4.67	-1.22	-1.22	2.00	28.92	5.67
CAR from Nov 9 to Nov 13	500	-24.66	-1.30	3.67	2.29	7.86	33.83	8.00
AR on Nov 4 (The day after election)	500	-13.39	-4.32	-2.08	-2.29	-0.05	42.26	4.09
AR on Nov 9 (Biden projected winner)	500	-29.07	-1.59	3.39	1.53	7.25	37.59	8.62
Total assets (In millions)	500	1643	9464	63871	20369	52990	944760	136851
Market value of equity (In millions)	497	33089	13515	56808	22493	49794	1023856	114064
Beta	500	0.17	0.73	0.99	1.02	1.26	2.04	0.385
Percent revenue growth	500	-26.56	-0.38	5.12	3.78	8.99	78.55	13.14
Profitability	500	-8.22	3.07	8.22	6.66	12.12	30.66	7.27
Cash taxes paid in percent of pretax income	487	-74.05	6.97	15.51	17.25	23.52	67.35	17.58
Deferred tax liability in percent of assets	476	0.00	1.89	5.22	4.11	7.66	16.68	4.25
Percent profits from foreign activities	358	-135.94	13.37	52.74	43.18	74.8	422.61	67.09
Foreign operations in percent of assets	358	0.00	1.03	4.41	2.75	6.61	20.76	4.52
Leverage	500	0.01	0.19	0.33	0.32	0.44	0.98	0.19
Interest expenses in percent of assets	470	0.00	0.61	1.22	1.12	1.69	4.27	0.82
Capital expenditures in percent of assets	500	0.00	1.02	3.32	2.27	4.81	16.62	3.30

Table 2: Descriptive statistics

Next, a cross-sectional regression of the firms abnormal returns, $AR_{i,t}$, for $t = 4, 9$ November is performed on the independent variables given by,

$$AR_{i,t} = \hat{\alpha}_{1i} + \hat{\beta}_{2i}x_{2i} + \hat{\beta}_{3i}x_{3i} + \cdots + \hat{\beta}_{ki}x_{ki} + f_{ff30}, \tag{10}$$

where $i = 1, ..., N$ and f_{ff30} are dummy variables in order to control for Fama-French 30 industries fixed effects. Also, a cross-sectional regression of the firms cumulative abnormal returns, CAR_i, is performed on the same independent variables given by,

$$CAR_i = \hat{\alpha}_{1i} + \hat{\beta}_{2i}x_{2i} + \hat{\beta}_{3i}x_{3i} + \cdots + \hat{\beta}_{ki}x_{ki} + f_{ff30}, \tag{11}$$

where $i = 1, ..., N$ and f_{ff30} are dummy variables in order to control for Fama-French 30 industries fixed effects. Lastly, all regressions are conducted with robust standard errors to correct for heteroskedasticity.

3.2.1 Growth expectations

Growth expectations are examined by $x_2 = \ln$(market value of equity), $x_3 =$ beta, $x_4 =$ percent revenue growth, and $x_5 =$ profitability. These are also control variables used for further regressions. Furthermore, Table 11 shows a correlation matrix for all independent variables. The highest correlation between the control variables are profitability (21.4%) and percent revenue growth (12.1%) with ln(market value of equity), respectively. It is therefore expected that multicollinearity is not an issue.

[2] Otis Worldwide Corp, Carrier Global Corp, and Vontier Corp did not start trading until 2020.

3.2.2 Corporate taxes

The effects of corporate taxes are determined by a regression with the control variables and additional variable x_6 = cash taxes paid in percent of current year pretax income. I also perform another regression with x_6 = deferred tax liability in percent of assets and x_7 = cash taxes paid in percent of current year pretax income, with a correlation of 11.9% between x_6 and x_7.

3.2.3 Foreign operations

To assess foreign operations, a regression is performed with x_6 = percent profits from foreign activities and x_7 = cash taxes paid in percent of current year pretax income. The second regression is with x_6 = foreign operations in percent of assets and x_7 = cash taxes paid in percent of current year pretax income. Hence, two regressions are performed with different x_6 variables to capture foreign operations, which are marginally correlated at 37.7%.

3.2.4 Leverage, interest expense and capital expenditures

Finally, the effects of leverage, interest expense and capital expenditures is examined by a regression with x_6 = leverage, x_7 = capital expenditures in percent of assets, x_8 = cash taxes paid in percent of current year pretax income, and x_9 = percent profits from foreign activities.[3] As the leverage variable is highly correlated with interest expenses in percent of assets (86.7%) — that is, higher leverage means higher interest expenses — it also captures the effect of interest expense. Another regression is performed with x_6 = interest expenses in percent of assets, x_7 = capital expenditures in percent of assets, x_8 = cash taxes paid in percent of current year pretax income, and x_9 = percent profits from foreign activities.

[3]The variable, percent revenue from foreign sources, as used in Wagner et al. (2017), could not be easily obtained. Therefore, the variable, foreign profits in percent of assets, is used as a proxy.

4 Results

This section discusses in the first part the event study results, that is, the median abnormal and cumulative abnormal returns. In the second part, I discuss the cross-sectional results following the procedure by Wagner et al. (2017).

4.1 Results of industry level stock returns

Figure 2, after clustering based on the Fama-French 30 industries, shows the median abnormal returns on the day after the election, 4 November, and the median cumulative abnormal returns for the first week of the election, 2 to 6 November. The same is displayed in Figure 3 for 9 November and 9 to 13 November, the second election week. It can been seen in Figure 2 that mainly steel works etc.; precious metals, non metallic, and industrial metal mining; followed by electrical equipment, are inferior in terms of median AR at approximately -5% to -10% compared to the other industries. Interestingly, the aforementioned industries were some of the better performing industries in terms of AR at approximately 5% to 10% after Trump got elected in 2016 to year-end (Wagner et al., 2017) which is in line with the results in Appendix A, Figure 11 which covers only the election week of 2016. According to Wagner et al. (2017), this was due to Trump's promises to resurrect the heavy industry.

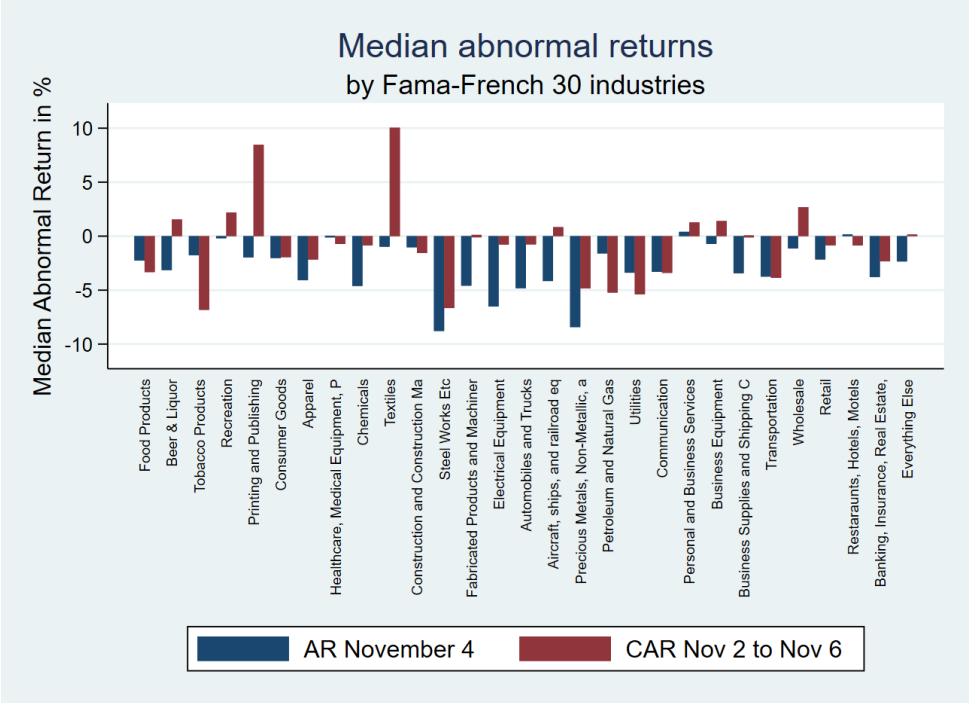

Figure 2: Median abnormal returns on 4 November 2020 and from 2 to 6 November 2020 by Fama-French 30 industries

If we compare the AR with the CAR for the aforementioned industries in Figure 2,

we observe that the CAR is usually less in magnitude than the AR and the sign may not always align. This can be explained by that traders with a short-term view, after having taken short positions the day after the election, may already have taken profits in that same week, causing the CAR to be less than the AR in magnitude. Another reason could be that investors have bought the dip in price. The converse is true for Wagner et al. (2017), but Appendix A, Figure 11 shows a higher CAR which could be due to tax-loss selling in the December month that is included in Wagner et al. (2017).

The better performing industries in terms of CAR were textiles; and printing and publishing at approximately 5% to 10%, which were some of the worst performing industries in terms of CAR at approximately -5% to -10% when Trump got elected in 2016 to year-end (Wagner et al., 2017). Wagner et al. (2017) argue that the stock price decline in the textile industry, which are largely dependent on imports, is because of Trump's tough stance on trade. On the contrary, Biden, the winner of the 2020 elections, has a more accommodative stance towards trade and foreign relations. However, when examining the results more closely, we found that both industries were made out of one company and both reported surprise earnings results which coincided with the election week.[4] Overall, the market reacted negatively in the first week.

Figure 3 shows the week after the elections and we observe huge AR between the 5% to 20% for petroleum and natural gas; aircraft, ships, and railroad equipment; banking, insurance, real estate, trading; and recreation after positive vaccine study announcements by Pfizer and BioNTech on 9 November 2020.[5] Similarly, the CAR aligns with the AR as investors price in an economy after COVID-19. Given that it appears that the markets have already priced in Biden as the next president in the first week, less attention is payed to the second week in further sections.

Table 3 shows the mean in percentage and t-statistic of the AR and CAR. We find significant negative AR(+1) on the day after the election, 4 November, and significant negative CAR(-1,+3) from 2 to 5 November. Moreover, the Monday after the election, 9 November, has significant positive AR(+6), and the week after the election has significant positive CAR(+6,+10) from 9 to 13 November. All in all, the results agree with that when a Democratic becomes president, stock markets in general react negatively or less positively (Oehler et al., 2013, Obradović and Tomić, 2017 and Wong and McAleer, 2009). However, this could also be due to markets already expecting the event (i.e. Biden becoming president), and consequently, price it accordingly, if instead there was an unexpected event.

[4]Mohawk industries, an American flooring manufacturer, reported a 41% surprise in earnings; and News Corp stock surged on better than expected quarterly profits.

[5]https://www.bloomberg.com/news/articles/2020-11-09/pfizer-s-covid-vaccine-prevents-90-of-infections-in-large-study

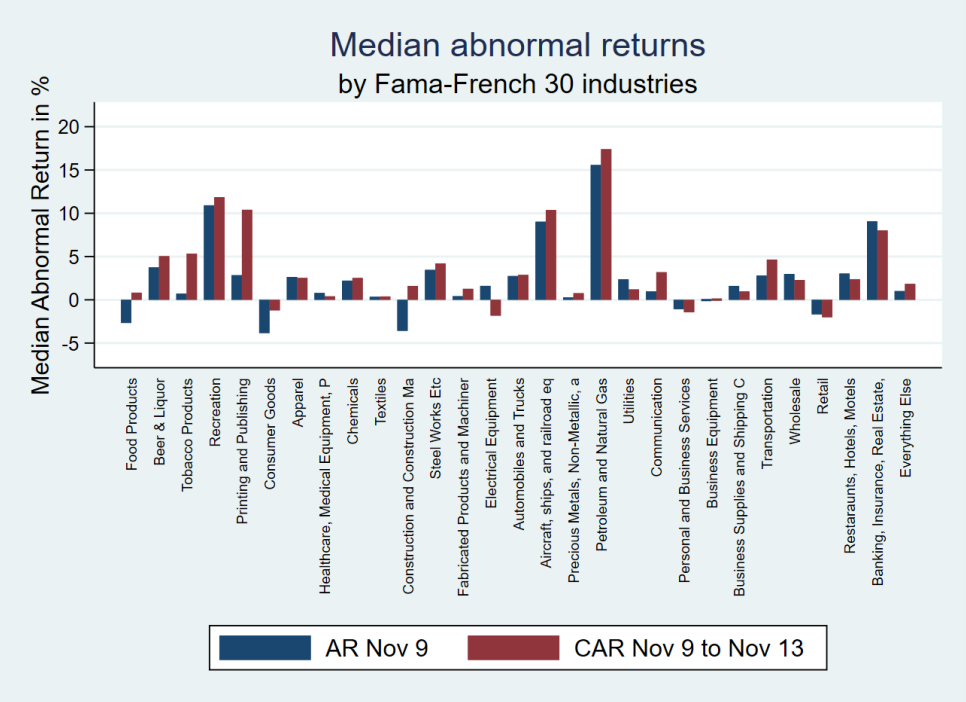

Figure 3: Median abnormal returns on 9 November 2020 and from 9 to 13 November 2020 by Fama-French 30 industries

	Mean	t
AR(-1)	1.07***	11.46
AR(0)	0.20**	1.98
AR(+1)	-2.08***	-11.38
AR(+2)	0.012	0.10
AR(+6)	3.39***	8.79
AR(+7)	0.85***	7.06
CAR(-1, +3)	-1.22***	-4.81
CAR(+6, +10)	3.67***	10.25

*** p<0.01, ** p<0.05, * p<0.1

Table 3: Mean and t-statistic of the abnormal returns and cumulative abnormal returns

4.2 Cross-sectional results

This section examines what determines the cross-sectional stock returns of the Biden election by looking at growth, taxes and trade policy.

4.2.1 Growth expectations

Having a first look at the results, Figure 4 shows binned scatter plots of beta against abnormal returns, controlled for both market beta (see Equation 4) and industry fixed effects. All analyzed stocks have been first classified into 20 bins of equal size by their beta, and then, the average abnormal return of each bin is calculated. The figures suggest a negative relation between beta and abnormal returns in the first week of the election,

that is, 2 to 6 November 2020. Effectively, low-beta stocks such as utilities, consumer staples and health care have performed better or less worse than high-beta stocks such as financials, materials, industrials and consumer discretionary.

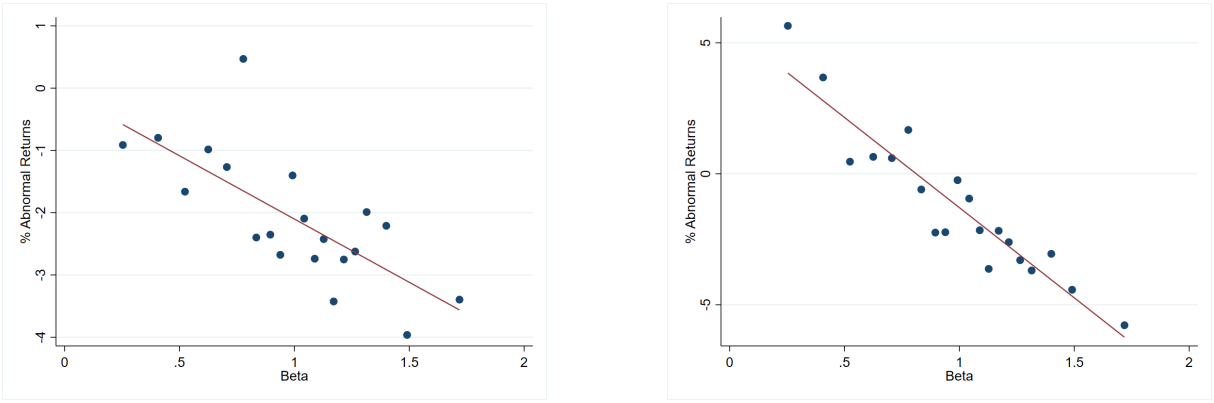

Figure 4: Binned scatter plots of beta against abnormal returns on 4 November 2020 (left) and abnormal returns from 2 to 6 November 2020 (right)

Table 4 shows the results of the corresponding regressions. A strong negative significance of beta on abnormal returns can be noticed in the election week, 2 to 6 November, while it is insignificant for the second week, 9 to 13 November. This effect is also more prominent for the whole week, 2 to 6 November, even though the effect on 4 November accounts for a sizable part. If we look at the size effect, the market seems to favor large cap stocks in the first week and small cap stocks in the second week, with an estimate of 0.555 and -0.827, respectively. This can be explained by that investors flock to quality companies, mainly large cap stocks, in times of uncertainty and transition to growth or risky companies, mainly small cap stocks, when the markets are more stable. Additionally, small cap stocks are usually unprofitable as well, which is reflected in the significant negative profitability at -0.201 for 9 to 13 November. However, it should be noted that it is not controlled for the positive vaccine news which could have affected investors' exuberance to take more risk. This is implied from column 2 which has a significant negative profitability at -0.210, larger than the CAR in column 4. Lastly, while no other conceivable significant results are found, firms with high percent revenue growth seem to have marginally benefited in the first week.

Table 4: Industries and growth

This table presents an Ordinary Least Squares regression of the abnormal returns on 4 November 2020 (column (1)), 9 November 2020 (column (2)), from 2 to 6 November 2020 (column (3)), and from 9 to 13 November 2020 (column (4)) on firm characteristics and industry fixed effects classified by the Fama and French 30-industry classification. Standard errors in parentheses.

	(1)	(2)	(3)	(4)
VARIABLES	AR Nov 4	AR Nov 9	Car Nov 2 to Nov 6	CAR Nov 9 to Nov 13
Ln(Market value of equity)	0.814***	-0.782**	0.555***	-0.827***
	(0.146)	(0.330)	(0.208)	(0.312)
Beta	-1.997***	-0.009	-6.876***	-1.113
	(0.396)	(0.992)	(0.578)	(0.896)
Percent revenue growth	0.029*	-0.024	0.048**	-0.041
	(0.017)	(0.025)	(0.022)	(0.026)
Profitability	0.126***	-0.210***	0.044	-0.201***
	(0.037)	(0.060)	(0.036)	(0.054)
Constant	-15.866***	11.697***	-5.380**	13.845***
	(1.685)	(3.607)	(2.431)	(3.272)
Industry fixed effects	yes	yes	yes	yes
Observations	497	497	497	497
R-squared	0.320	0.344	0.402	0.378

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.2.2 Corporate tax rate

Under the Biden administration, corporate taxes are expected to be raised from 21% to 28% [6], but not back to the previous level of 35%, before Trump was elected president in 2016. Also, a minimum tax of 15% on book income is expected for firms exceeding $100 million in book income. With a raise in corporate tax rate, firms are expected to perform worse as they have to pay more taxes. However, when examining the results of Table 5, no significant relation between the cash effective tax rate and abnormal returns have been found. This could be due to Biden has yet to be inaugurated on 20 January 2020 and new laws have yet to be accepted by the US congress. Hence, any tax proposals takes time before they are implemented, reducing the overall impact on the markets in the short term. A survey of corporate CFOs by CNBC reveals that 58% do not expect that a corporate tax raise will take place within the first two years of the Biden administration.[7]

In the second regression, Figure 5 plots the deferred tax liabilities in percent of assets against abnormal returns. It shows an upward sloping line for 4 November and 2 to 6 November, which is also significant according to Table 6. This is contrary to expectations as Biden is expected to hike taxes. To illustrate, if the future corporate tax rate is expected to be higher, the present value of the deferred tax liabilities increases, which

[6] https://joebiden.com/two-tax-policies/

[7] https://www.cnbc.com/2020/12/02/biden-wont-be-able-to-raise-corporate-tax-rate-to-28percent-cfo-survey.html

Table 5: Corporate tax

This table presents an Ordinary Least Squares regression of the abnormal returns on 4 November 2020 (column (1)), 9 November 2020 (column (2)), from 2 to 6 November 2020 (column (3)), and from 9 to 13 November 2020 (column (4)) on firm characteristics and industry fixed effects classified by the Fama and French 30-industry classification. This regression includes firms with a positive pre-tax income and a cash effective tax rate below 100%. Standard errors in parentheses.

	(1)	(2)	(3)	(4)
VARIABLES	AR Nov 4	AR Nov 9	Car Nov 2 to Nov 6	CAR Nov 9 to Nov 13
Cash taxes paid in percent of pretax income	-0.013	0.003	0.017	0.000
	(0.008)	(0.018)	(0.012)	(0.016)
Ln(Market value of equity)	0.836***	-0.832**	0.498**	-0.862***
	(0.149)	(0.330)	(0.211)	(0.315)
Beta	-2.003***	0.234	-6.859***	-0.971
	(0.402)	(0.987)	(0.588)	(0.897)
Percent revenue growth	0.031*	-0.029	0.041*	-0.042
	(0.018)	(0.026)	(0.022)	(0.027)
Profitability	0.133***	-0.210***	0.041	-0.199***
	(0.038)	(0.061)	(0.038)	(0.055)
Constant	-7.325***	9.658***	11.057***	10.888***
	(1.361)	(2.991)	(1.950)	(2.809)
Industry fixed effects	yes	yes	yes	yes
Observations	487	487	487	487
R-squared	0.323	0.330	0.404	0.370

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

results in a lower firm value. On the other hand, if the corporate tax rate is expected to go down, the present value is reduced and the firm value increases. Having said that, the major explanation is that Biden's tax plans have yet to be presented to and accepted by congress, and consequently, markets have not yet responded to these possible changes. However, it could be also argued that with the COVID-19 pandemic, or in crisis times, any incumbent is less likely to hike taxes.

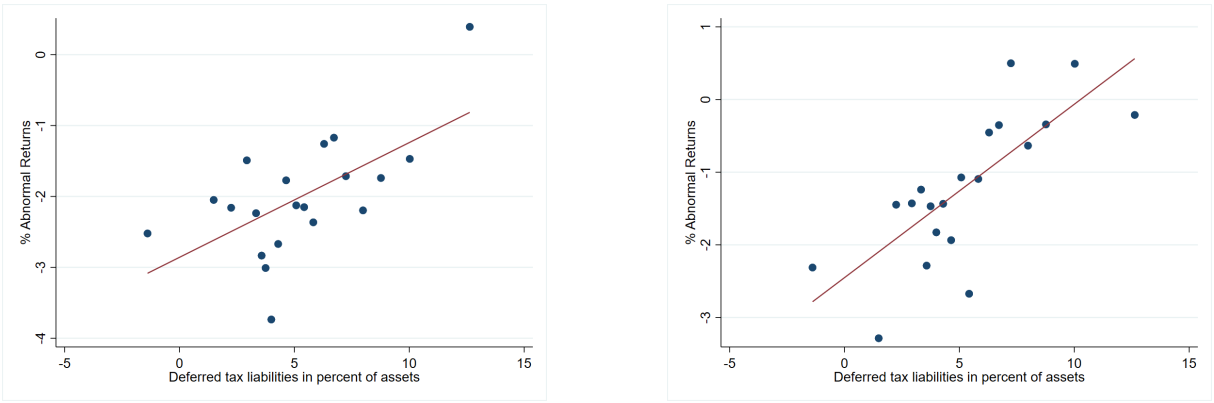

Figure 5: Binned scatter plots of deferred tax liabilities in percent of asset against abnormal returns on 4 November 2020 (left) and from 2 to 6 November 2020 (right)

Table 6: Deferred tax liabilities

This table presents an Ordinary Least Squares regression of the abnormal returns on 4 November 2020 (column (1)), 9 November 2020 (column (2)), from 2 to 6 November 2020 (column (3)), and from 9 to 13 November 2020 (column (4)) on firm characteristics and industry fixed effects classified by the Fama and French 30-industry classification. Standard errors in parentheses.

	(1)	(2)	(3)	(4)
VARIABLES	AR Nov 4	AR Nov 9	Car Nov 2 to Nov 6	CAR Nov 9 to Nov 13
Deferred tax liabilities in percent of assets	0.172*	-0.285**	0.194**	-0.146
	(0.091)	(0.126)	(0.080)	(0.107)
Cash taxes paid in percent of pretax income	-0.011	0.006	0.018	0.002
	(0.008)	(0.018)	(0.012)	(0.017)
Ln(Market value of equity)	0.797***	-0.749**	0.466**	-0.781**
	(0.152)	(0.343)	(0.224)	(0.326)
Beta	-2.013***	-0.021	-6.775***	-1.000
	(0.389)	(1.011)	(0.613)	(0.935)
Percent revenue growth	0.027	-0.028	0.040*	-0.038
	(0.017)	(0.027)	(0.022)	(0.027)
Profitability	0.139***	-0.239***	0.049	-0.222***
	(0.039)	(0.061)	(0.040)	(0.055)
Constant	-8.090***	10.832***	10.093***	11.139***
	(1.520)	(3.189)	(2.136)	(2.959)
Industry fixed effects	yes	yes	yes	yes
Observations	470	470	470	470
R-squared	0.349	0.337	0.408	0.368

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.2.3 Foreign operations

After the global economy got hit by the COVID-19 pandemic, many countries had to go into lockdown and restrictions were set in place in order to curb the number of COVID-19 cases. Thereafter, in an effort to support families and firms, governments across the globe provided stimulus and central banks cut rates and purchased government bonds at large scale, that is, quantitative easing. Specifically, in the US, Donald Trump has signed a $900 billion relief bill[8] and FED chairman Jerome Powell has promised to keep rates near 0% through 2023.[9] From this, it is expected that the Biden administration continues government spending on e.g. infrastructure in order to spur domestic growth before focusing on foreign policy, primarily benefiting domestically-oriented firms.[10] Also, Biden's campaign made clear that the US economy is still its top priority. His campaign states: *"Biden will mobilize American manufacturing and innovation to ensure that the future is made in America, and in all of America."* On the other hand, it is anticipated that Biden reestablishes trade relations with America's allies to ease trade tensions, while

[8] https://www-ft-com.eur.idm.oclc.org/content/83cd16cb-b905-4ea9-bc72-bb38b7be2b99

[9] https://www.forbes.com/sites/sergeiklebnikov/2020/09/16/federal-reserve-says-it-will-keep-interest-rates-near-zero-until-2023/

[10] https://www-ft-com.eur.idm.oclc.org/content/4930af61-c51a-4782-a1cd-a0cd1a9a0cde

still following suit on Trump's stance towards relations with China, the second largest economy after the US. Therefore, it is not entirely clear whether the proposed policies are advantageous or disadvantageous for firms with high foreign operations.

Table 7: Foreign profits

This table presents an Ordinary Least Squares regression of the abnormal returns on 4 November 2020 (column (1)), 9 November 2020 (column (2)), from 2 to 6 November 2020 (column (3)), and from 9 to 13 November 2020 (column (4)) on firm characteristics and industry fixed effects classified by the Fama and French 30-industry classification. Standard errors in parentheses.

	(1)	(2)	(3)	(4)
VARIABLES	AR Nov 4	AR Nov 9	Car Nov 2 to Nov 6	CAR Nov 9 to Nov 13
Percent profits from foreign activities	0.003	0.000	0.003	-0.003
	(0.003)	(0.005)	(0.005)	(0.005)
Cash taxes paid in percent of pretax income	-0.018**	0.021	0.005	0.022
	(0.008)	(0.018)	(0.012)	(0.016)
Ln(Market value of equity)	0.680***	-0.587*	0.271	-0.600*
	(0.151)	(0.341)	(0.232)	(0.336)
Beta	-1.770***	-1.036	-6.488***	-2.186**
	(0.487)	(1.090)	(0.706)	(1.018)
Percent revenue growth	0.026*	-0.052*	0.033	-0.081***
	(0.013)	(0.029)	(0.023)	(0.026)
Profitability	0.139***	-0.183***	0.070	-0.209***
	(0.044)	(0.066)	(0.043)	(0.060)
Constant	-14.637***	10.734***	-3.958	12.851***
	(1.799)	(4.091)	(2.742)	(3.826)
Industry fixed effects	yes	yes	yes	yes
Observations	355	355	355	355
R-squared	0.346	0.323	0.386	0.379

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Both Table 7 and Table 8 show insignificant results for percent profits from foreign activities, in the first regression, and for foreign operations in percent of assets, in the second regression. This leads to the conclusion that foreign operations do not affect the AR and CAR in the 2020 presidential election, which is counter to Wagner et al. (2017) arguing that there was a relation. The reason given by the authors was the surprise win of Trump in 2016 , who discouraged imports leading to a negative market reaction. In this paper, the insignificant results might be explained by that the CAR is only for the election week instead of through the end of the year as in Wagner et al. (2017). In other words, markets have yet to digest any possible effects on foreign policy.

Table 8: Foreign operations

This table presents an Ordinary Least Squares regression of the abnormal returns on 4 November 2020 (column (1)), 9 November 2020 (column (2)), from 2 to 6 November 2020 (column (3)), and from 9 to 13 November 2020 (column (4)) on firm characteristics and industry fixed effects classified by the Fama and French 30-industry classification. Standard errors in parentheses.

	(1)	(2)	(3)	(4)
VARIABLES	AR Nov 4	AR Nov 9	Car Nov 2 to Nov 6	CAR Nov 9 to Nov 13
Foreign operations in percent of assets	0.069	0.140	0.013	0.058
	(0.045)	(0.113)	(0.074)	(0.102)
Cash taxes paid in percent of pretax income	-0.015*	0.021	0.008	0.019
	(0.009)	(0.017)	(0.012)	(0.015)
Ln(Market value of equity)	0.664***	-0.635*	0.274	-0.628*
	(0.148)	(0.337)	(0.236)	(0.330)
Beta	-1.827***	-1.125	-6.509***	-2.209**
	(0.490)	(1.079)	(0.713)	(1.017)
Percent revenue growth	0.027**	-0.047	0.033	-0.078***
	(0.013)	(0.029)	(0.023)	(0.026)
Profitability	0.116**	-0.220***	0.063	-0.220***
	(0.049)	(0.076)	(0.047)	(0.068)
Constant	-14.225***	11.769***	-3.959	13.383***
	(1.795)	(4.046)	(2.868)	(3.781)
Industry fixed effects	yes	yes	yes	yes
Observations	355	355	355	355
R-squared	0.348	0.327	0.385	0.380

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.2.4 Leverage, interest expense and capital expenditures

In his campaign, Biden proposed to apply a minimum tax rate of 15% on firms with at least $100 million in book income. This proposal could be problematic for firms with high capital expenditures, such as firms in the transportation, energy, or semiconductor industry, or multinational companies with high foreign profits as book income often differs significantly from taxable income due to special deductions, depreciation and other factors.[11] Also, Biden expressed his support to repeal or overhaul the TCJA, which Trump signed into law in 2017 that incentives firms to invest more. Though it is not entirely clear in which way Biden leans on the deduction for business interest expense, his democratic colleague, Bernie Sanders, proposed to limit business net interest deductions even further than the current 30% (Tax Policy Center, 2020a). If Biden leans this way, firms with high interest expense or leverage would be negatively affected as less tax deductability results in a lower tax shield. To test these two assumptions, Table 9 presents the corresponding regressions. Columns (1), (2), (5) and (6) reveal a positive but insignificant relation between firm leverage or interest expense in percent of assets with AR and CAR. On the other hand, we do have a significant negative relation for both leverage and interest

[11] One example is Amazon, in 2019 it paid a 1.2% tax rate on $13 billion of income.

expenses in percent of assets with AR at -4.062 and -0.808 on 9 November in column (3) and (4), respectively. However, it is unlikely to be related to any possible policy implementation by the upcoming Biden administration that financial markets price in as the effect coincides with the announcement of the Pfizer vaccine.

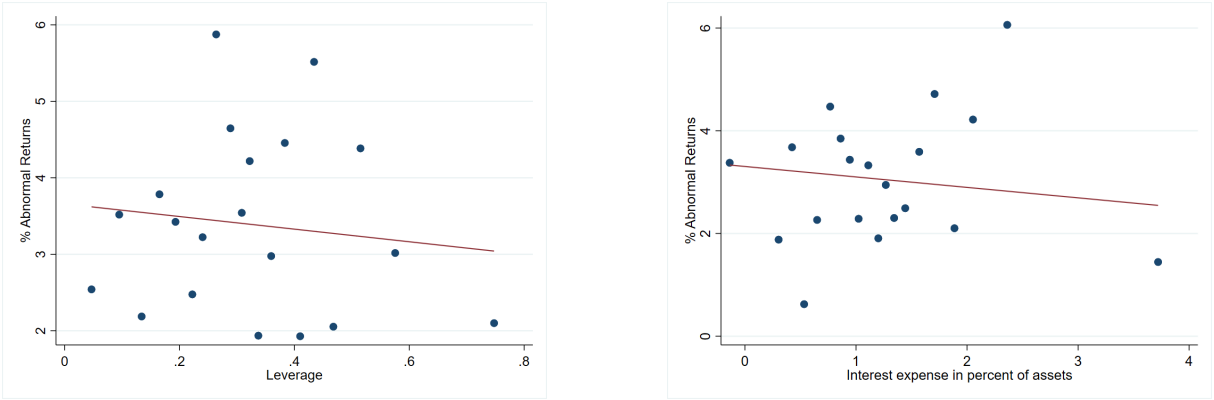

Figure 6: Binned scatter plots of leverage against abnormal returns (left) and interest expense against abnormal return(right) on 9 November 2020

Moreover, no significant relation between capital expenditures and abnormal returns have been found.[12] According to Pomerleau (2020), the minimum tax on book income might be more of a trouble than it is worth. Hence, the market appeared to either believe that the minimum tax is unlikely to have a great impact, or that it is unlikely to be signed into law.

[12]This is controlled for leverage and interest expenses following Wagner et al. (2017). However, when not controlling for these variables, the results stay insignificant.

Table 9: Leverage, interest expense and capital expenditures

This table presents an Ordinary Least Squares regression of the abnormal returns on 4 November 2020 (columns (1) and (2)), 9 November 2020 (column (3) and (4)), from 2 to 6 November 2020 (column (5) and (6)), and from 9 to 13 November 2020 (column (7) and (8)) on firm characteristics and industry fixed effects classified by the Fama and French 30-industry classification. Standard errors in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	AR Nov 4		AR Nov 9		Car Nov 2 to Nov 6		CAR Nov 9 to Nov 13	
Leverage	0.263		-4.062**		1.376		-2.912	
	(1.033)		(1.960)		(1.425)		(1.890)	
Interest expenses in percent of assets		0.131		-0.808*		0.274		-0.493
		(0.269)		(0.475)		(0.376)		(0.463)
Capital expenditures in percent of assets	0.009	0.005	-0.119	-0.128	0.103	0.092	-0.201	-0.210
	(0.094)	(0.097)	(0.133)	(0.137)	(0.098)	(0.103)	(0.141)	(0.144)
Cash taxes paid in percent of pretax income	-0.018**	-0.017**	0.016	0.012	0.007	0.010	0.018	0.016
	(0.008)	(0.008)	(0.017)	(0.018)	(0.012)	(0.012)	(0.016)	(0.016)
Percent profits from foreign activities	0.003	0.003	0.002	0.002	0.003	0.002	-0.002	-0.003
	(0.003)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Ln(Market value of equity)	0.680***	0.656***	-0.589*	-0.555*	0.256	0.224	-0.572*	-0.524*
	(0.158)	(0.158)	(0.342)	(0.325)	(0.231)	(0.235)	(0.338)	(0.316)
Beta	-1.771***	-1.682***	-1.030	-1.367	-6.518***	-6.532***	-2.128**	-2.403**
	(0.488)	(0.498)	(1.068)	(1.099)	(0.703)	(0.725)	(1.006)	(1.027)
Percent revenue growth	0.026*	0.026*	-0.057**	-0.052*	0.036	0.033	-0.085***	-0.077***
	(0.013)	(0.014)	(0.028)	(0.028)	(0.022)	(0.023)	(0.025)	(0.025)
Profitability	0.138***	0.146***	-0.174**	-0.190***	0.064	0.070	-0.197***	-0.214***
	(0.047)	(0.049)	(0.068)	(0.065)	(0.044)	(0.047)	(0.061)	(0.057)
Constant	-14.770***	-14.831***	12.682***	13.146***	-4.890*	-4.542	14.749***	8.483
	(1.792)	(1.862)	(4.025)	(4.039)	(2.798)	(2.858)	(3.859)	(3.882)
Industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Observations	355	341	355	341	355	341	355	341
R-squared	0.346	0.351	0.334	0.349	0.390	0.390	0.389	0.405

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

5 Conclusion

The aim of this paper has been to identify AR and CAR during the election week of 2020 with an event study and to examine what determines the AR and CAR with a cross-sectional regression, following the procedure by Wagner et al. (2017). The results in the event study have shown an interesting contrasting relation between when Trump got elected in 2016 and Biden in 2020. In general, the big winners under Trump, such as the heavy industry, were some of the biggest losers when Biden got elected.

In the cross-sectional regression, it became clear that low-beta stocks such as utilities, consumer staples and health care have performed better or less worse than high-beta stocks such as financials, materials, industrials and consumer discretionary during the election week. Unfortunately, less clear results have been found for taxation, foreign operations, leverage, interest expense and capital expenditure, which is likely because the Biden administration has yet to make any proposals that could be implemented, and as a result, reducing the overall impact on the markets in the short term.

For further research it is therefore recommended to take CAR through the end of the year or even longer dated time periods to better capture the policy effects by the

incumbent. Furthermore, the use of possible redundant variables might have caused inefficient estimates, resulting in insignificant estimates.

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Appendix A

Table 10: Compustat mnemonics definition

AT	Assets - Total
CAPX	Capital Expenditures
CSHO	Common Shares Outstanding
DLC	Debt in Current Liabilities - Total
TXPD	Income Taxes Paid
XINT	Interest and Related Expense - Total
DLTT	Long-Term Debt - Total
TXNDBL	Net Deferred Tax Liability
PI	Pretax Income
PIFO	Pretax Income - Foreign
PRCC_F	Price Close - Annual - Fiscal
SALE	Sales/Turnover (Net)

Table 11: Correlation matrix of dependent variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Beta	1.000										
(2) Ln(Market value of equity)	0.009	1.000									
(3) Percent revenue growth	-0.020	0.121	1.000								
(4) Profitability	-0.019	0.214	0.035	1.000							
(5) Cash taxes paid in percent of pretax income	0.032	0.096	0.130	0.152	1.000						
(6) Deferred tax liability in percent of assets	-0.071	-0.030	-0.086	-0.102	-0.037	1.000					
(7) Percent profits from foreign activities	0.035	0.024	-0.033	-0.063	0.249	-0.119	1.000				
(8) Foreign operations in percent of assets	0.072	0.149	-0.097	0.513	0.061	-0.180	0.377	1.000			
(9) Leverage	-0.046	-0.033	-0.113	0.042	-0.068	0.206	0.047	0.015	1.000		
(10) Interest expenses in percent of assets	-0.019	-0.147	-0.124	-0.038	-0.134	0.164	0.030	-0.061	0.867	1.000	
(11) Capital expenditures in percent of assets	0.125	0.105	-0.126	0.121	-0.063	0.193	-0.061	0.047	0.151	0.121	1.000

Table 12: Set-up for previous election years

Election date	President	Estimation Window (T0,T1)	Event window (T2,T3)
07/11/2000	George W. Bush	30/09/1999 - 30/09/2000	06/11/2000 - 10/11/2000
02/11/2004	George W. Bush	30/09/2003 - 30/09/2004	01/11/2004 - 05/11/2004
04/11/2008	Barack Obama	30/09/2007 - 30/09/2008	03/11/2008 - 07/11/2008
06/11/2012	Barack Obama	30/09/2011 - 30/09/2012	05/11/2012 - 09/11/2012
08/11/2016	Donald J. Trump	30/09/2015 - 30/09/2016	07/11/2016 - 11/11/2016

Table 12 presents the set-up for the computation of abnormal returns in previous election years. Figure 7 to Figure 11 shows the median abnormal returns of the previous election years.

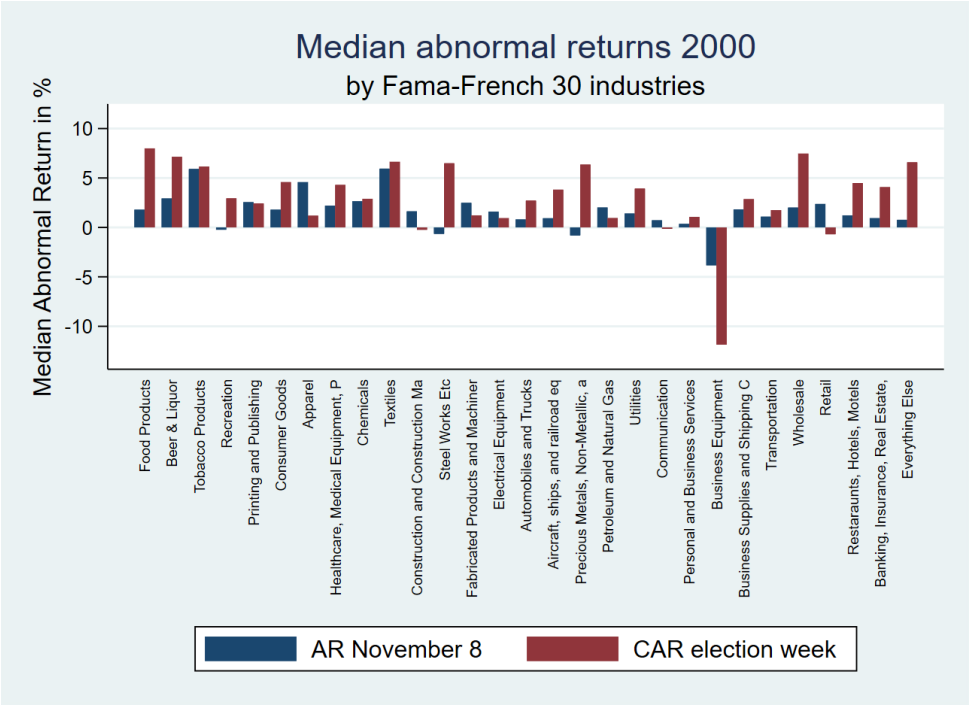

Figure 7: Median abnormal returns on 7 November 2000 and from 6 to 10 November 2004 by Fama-French 30 industries

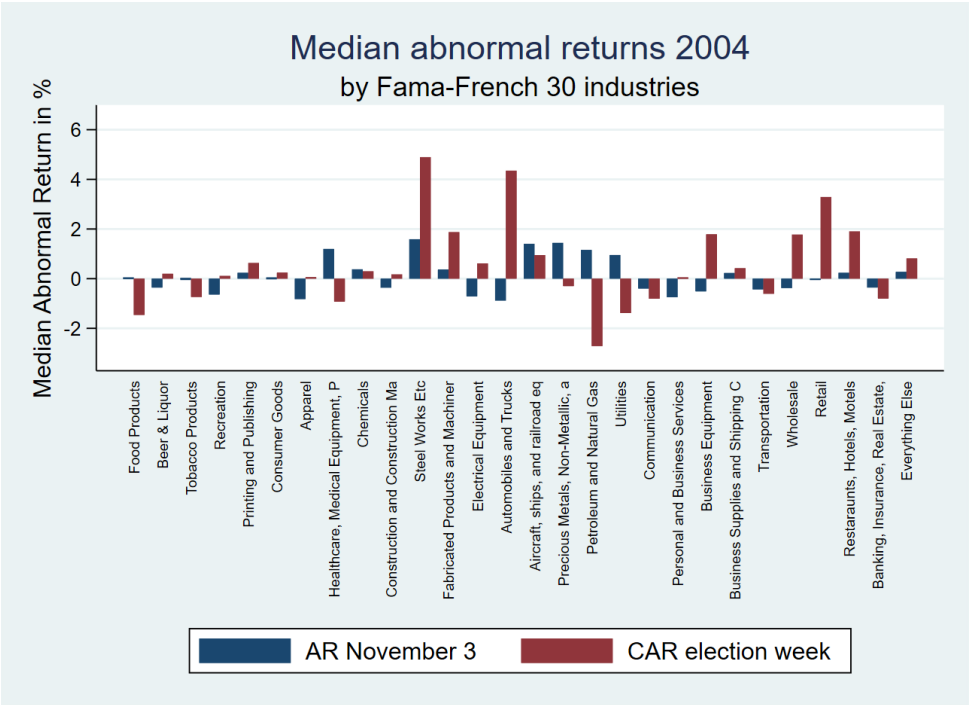

Figure 8: Median abnormal returns on 2 November 2004 and from 1 to 5 November 2004 by Fama-French 30 industries

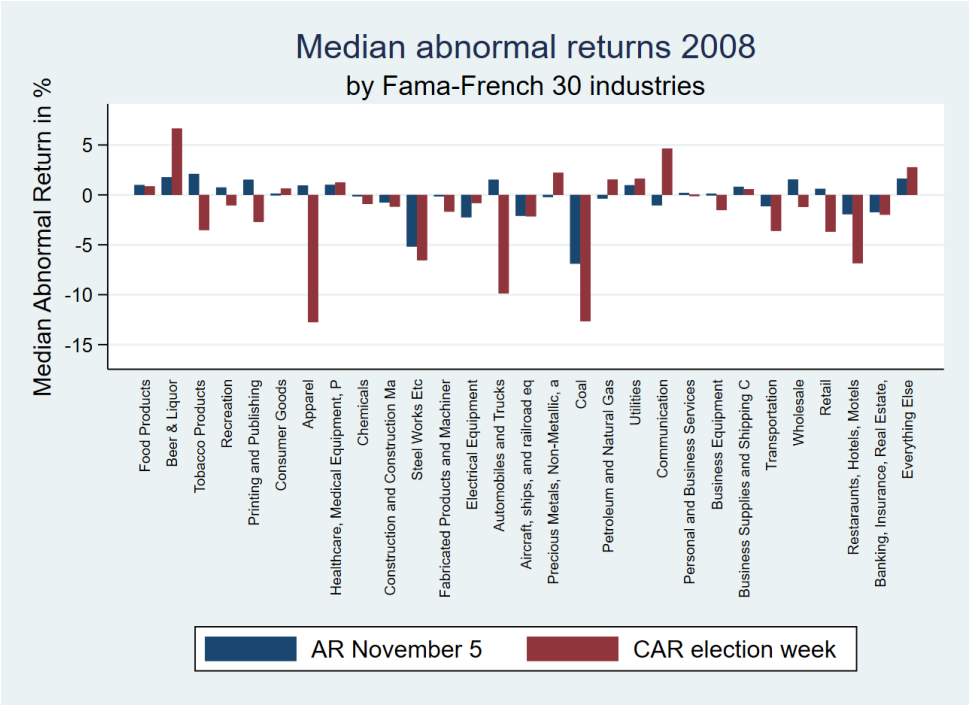

Figure 9: Median abnormal returns on 4 November 2008 and from 3 to 7 November 2008 by Fama-French 30 industries

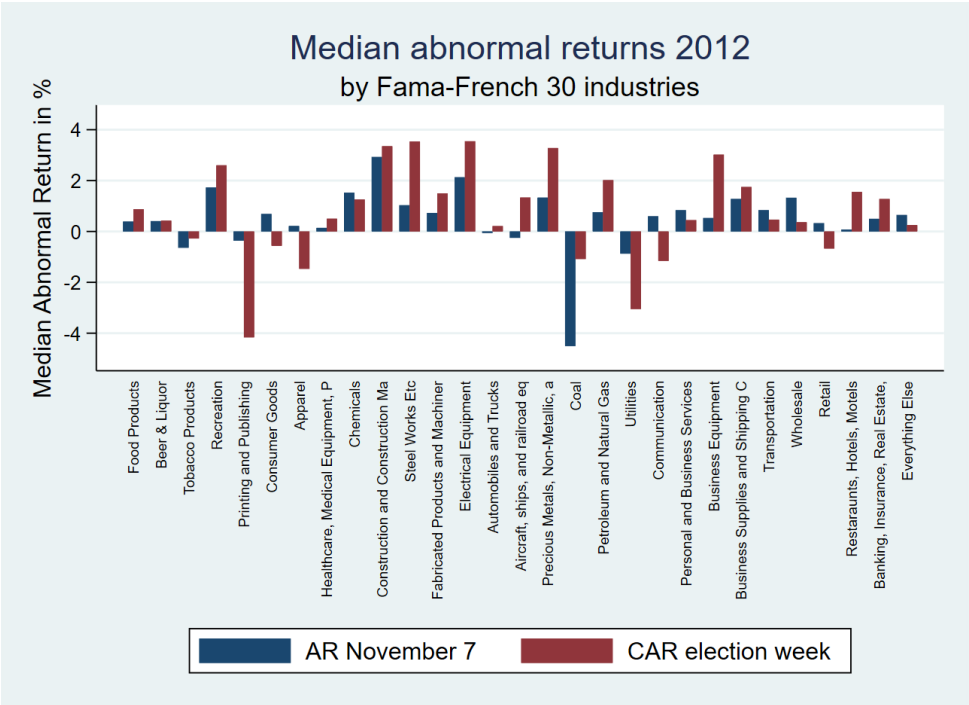

Figure 10: Median abnormal returns on 6 November 2012 and from November 5 to 9 November 2012 by Fama-French 30 industries

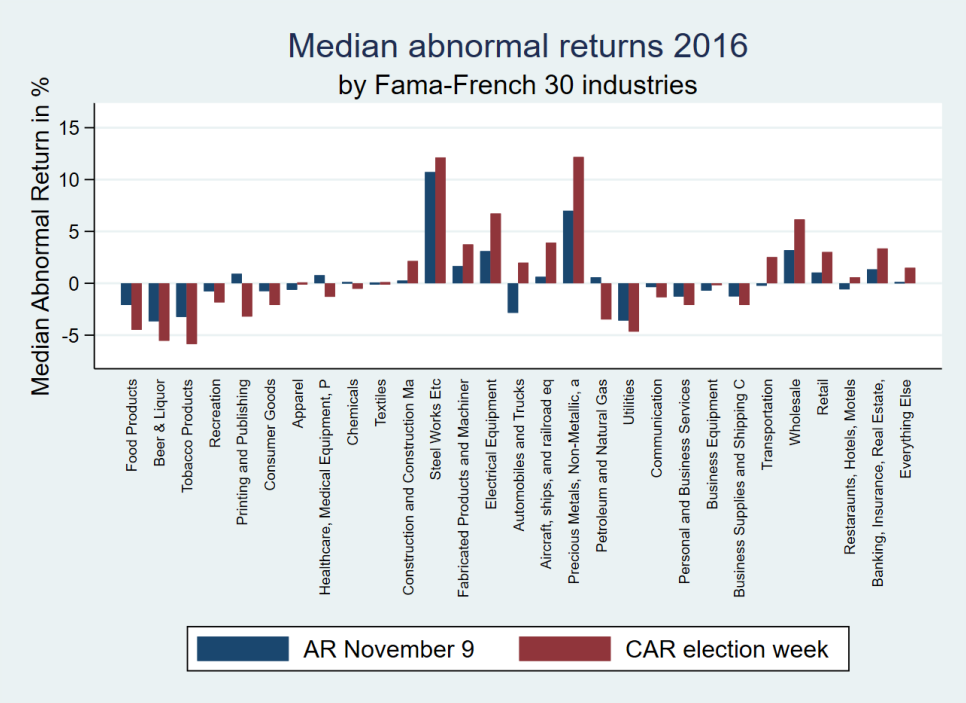

Figure 11: Median abnormal returns on 9 November 2016 and from 7 to 11 November 2016 by Fama-French 30 industries