

Taxes: Fiscal Policy Changes and Its Effect on the Stock Market

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Abstract

Fiscal policy changes are methods employed by the federal government to control the growth of the economy. An expansionary fiscal policy such as a tax cut would boost the economy during recessions and drive up corporate profits. As corporate stock valuation is not only reflective of the corporation's income, but more importantly a reflection of investors' opinion on the corporation, a perceived boost in profit would have an impact on share value as well. This honours thesis focuses on the effects that a major tax cut would have on the stock valuation of American, and Canadian firms. It aims at exploring the stock market related consequences of a fiscal policy change by examining abnormal returns and abnormal volatility using an event study. Preliminary results show that abnormal returns rose for US corporations but fell for Canadian corporations on the day prior to the announcement of the tax cut, whereas abnormal volatility rose for both markets, with Canadian firms exhibiting much higher volatility compared to the US corporations.

1-Introduction

Corporations and organizations make decisions based on both external factors and internal factors. While organizations are constantly being changed external factors that surround them; they also have the ability to manipulate their environment (Thompson & McHugh, 2002). An organization is able to change its environment based on its size and political leverage (e.g., political party sponsorship). However, there are also situations where organizations are forced into changing their own strategies in order to meet outside pressures. One such pressure that arises out of political institutions is corporate tax. According to a study done by Laamanen, Tomi, Tatu Simula, & Sami Torstila (2012), the main reasons for corporations to relocate their headquarters are employment and taxes. Corporate taxes are a significant concern for corporations, to the extent that most corporations would rather take up significant moving costs (i.e., direct costs from physically relocating and indirect costs such as loss of established relationships) to change this external factor than to cope with higher corporate taxes of their original location (Ghosh, Chinmoy, Mauricio Rodriguez, & C. F. Sirmans, 1995). As a result of lowered corporate taxes, a higher profit could potentially be generated.

On the other hand, the value of a corporation's shares is based on the demand for these shares from investors. While the profitability of individual corporations is a factor that affects investors' decision to purchase the corporation's shares, it is not the only variable that will sway investors to purchase the shares of one particular corporation over another. Brand loyalty, corporate social responsibility (Barnea, Heinkel, & Kraus, 2013), and taxonomies used to explain a business and hide corporate flaws (*The Economist*,

2018) could all be used to influence public perception. In fact, Van Staalduinen (2017) found that the stock price of publicly traded firms fell a day after the relocation of the company's HQ, and that stock volatility increased throughout the days of the relocation due to the perceived risk from investors. This suggests that there is often a misalignment between corporate belief and public perception. Even though from an internal perspective, firms believe they could become more profitable by moving their headquarters and thus changing their political environment; the uncertainty and worry from external shareholders actually drive share value down. This reinforces the idea that share price is influenced by public perception rather than profitability of the firm alone.

Although the impact on share prices of publicly traded companies that actively relocate to mitigate corporate taxes and thus becoming potentially more profitable seemed to be a negative one (Van Staalduinen, 2017), little research had been done to show the effects of a tax reform on the domestic stock market. In this situation, there is a change in the political environment rather than the corporation. An expansionary fiscal policy such as a tax cut is meant to boost the economy during a time of recession to encourage consumer/investor confidence in the market (Hayes, 2018). In addition, major fiscal policy reforms have the potential to eliminate most of, if not all, inefficiencies in corporate taxes and in doing so generate gains for corporations (Dharmapala, 2017). Therefore, a tax reform would positively impact the profitability of domestic corporations that are affected by this political decision while at the same time boost the confidence of consumers and investors.

One study conducted by Mbagan & Darrat (2015) examined publicly listed companies on the S&P500 from 1960-2010 and compared that to the change in US

budget deficit. They found that throughout a 50-year period, fiscal policies that were generally deficit increasing (expansionary/enhancing policies) tended to have a positive long-run impact on the stock market (Mbagan & Darrat, 2015). At the same time, past US fiscal policy actions are still relevant today and have a statistically significant short-run relation with current stock returns (Mbagan & Darrat, 2015). Therefore, the research done by Mbagan & Darrat (2015) suggests that fiscal policies imposed by the federal government will likely affect stock returns in a positive way both short term and long term.

Another study done by El Montasser, Ghassen, Rangan Gupta, Charl Jooste, & Stephen M. Miller (2016) examined the government budget deficits and its relations to both asset returns and the volatility of the stock market. In their research, they used budget deficits to represent fiscal policies as the lower the government taxes, the higher the deficit (Montasser et al., 2016). They found that after an expansionary fiscal policy represented by an increase in primary deficit, there is a misalignment between asset return and public perception. While there might not be an increase in asset return, which could be due to profits gained from the fiscal policy not being reinvested, the public reacted positively to this expansionary policy as shown by increased stock returns (Montasser et al., 2016). This shows that while a corporation might not be more profitable, public perception is more important in driving stock returns higher, especially after an expansionary policy.

It is evident that there is a relationship between fiscal policymaking done by the government and stock market growth and volatility. Taylor (2014) argued that it is important to make sure that the policies made are straightforward and concise, or else

certain fiscal policies that were designed to boost the economy could have a negative effect instead. He suggested that more convoluted fiscal policies would result in poorer performance (Taylor, 2014). Furthermore, he suggested that, “the policy is the problem”, where “specific policy actions, such as holding rates too low for too long, had adverse consequences” (Taylor, 2014, pp.65). This means that even though a fiscal policy might have been meant to boost the economy, there could still be consequences in the long run.

Finally, contrary to other research, Foresti & Napolitano (2017) found that fiscal consolidation activities such as government spending cuts could have a positive effect, whereas lax fiscal policies such as tax cuts could have a potentially negative effect on the stock market instead. They concluded their research by saying that:

In normal times, the stock market welcomes fiscal consolidations and it behaves as predicted by the NKV [non-Keynesian view]. Nevertheless, when financial markets are troubled and are not self-sufficient, they do not seem to follow this approach and behave as expected from a pure Keynesian perspective by reacting positively following expansionary fiscal policies. As a result, in order to stabilize (or stimulate) the stock market, the fiscal authorities are required to be very careful in order to assess the effects of the fiscal maneuvers (Foresti & Napolitano, 2017, pp. 302).

This finding further reinforces Taylor’s argument by saying that if not used properly, expansionary fiscal policies could have dire economic consequences.

On November 2, 2017, President Donald J. Trump proposed such a fundamental tax reform in order to boost the American economy (Floyd, 2018). Within the reform policy that he proposed, changes were made to various brackets of individual and household income taxes in an attempt to boost consumer spending/investing (Floyd, 2018). More dramatically however, were his reductions to corporate taxes. Prior to the tax reforms, the top statutory rate within the US was 39.1% (Floyd, 2018). The tax break offers a standardized corporate tax rate of 21%, and combined with state and local taxes, the statutory rate becomes 26.5%, which is a 12.6% reduction (Floyd, 2018). Although Dharmapala (2017) suggested that modest reforms are likely to generate only modest gains, the corporate tax reform appears to be significant at a glance. Coupled with the modest decrease in personal income tax, this reform could potentially boost investor willingness to pay for corporate shares at higher prices due to increased demand for these shares.

First, there is no actual change in the strategic choices made by the corporation; rather there is a change in tax policy (i.e., a political/economic factor). Second, consumer purchasing power is increased during this tax break. Even though this is a modest increase, this suggests that consumers now have a better chance of either saving, investing, or spending this additional money. Third, as mentioned previously, a fiscal policy is meant to boost consumer confidence in the market and encourage spending to boost the economy during recessions. Therefore, on a macro-level, the American economy should be better off. There is however, a twist in this scenario: the tax break was proposed and initiated even though the US economy was relatively healthy and already recovering from the recession of 2008 (Stein, 2018).

2-Research Question

This honours thesis seeks to examine the change in stock valuation and volatility related to the tax break in the US as compared to Canada. Specifically, by examining the change in stock prices of various US stock markets before, during, and after the implementation of this tax change, further implications for investor confidence and market volatility could be derived.

This honors thesis will isolate the impacts that this specific tax cut policy has had in a North American (i.e., US and Canada) context. Therefore, it ignores the effects that analysts might have on investor opinion and other policies that might have been implemented prior to, concurrent with, or soon after the implementation date of this tax break (e.g., lesser fiscal or monetary policies that might have been put in place prior to this tax cut).

Finally, this honors thesis seeks to examine the abnormal returns in stock price related to the tax breaks, which is a change in the political environment rather than a change in corporate strategy (i.e., such as HQ relocation). Due to the fact that this tax cut happened recently, little research has been conducted on this event. Finally, this event is unique in that it is a fiscal policy implemented during a time of healthy and recovering economy, while previously fiscal policies had been used to bring markets out of recessions or depressions.

3-Data, Sample and Research Design

This honors thesis will use the event study model to determine the effects of an expansionary fiscal policy. This will be done using 30 publicly traded companies listed on NASDAQ in the US, and 31 technology companies listed on the TSX in Canada.

Data and Sample

This honors thesis is conducted using data gathered from the publicly traded companies on the NASDAQ and S&PTSX. Specifically, the daily returns and volatility of in stock price of the top 30 companies listed on the NASDAQ index as compared to their benchmark and 31 technology companies from the S&PTSX index as compared to their benchmark. Market capitalization is calculated using the number of shares traded on the stock market multiplied by the stock price of the company. If there is a significant tax policy change in the environment, then the share price of these large market cap companies will be more likely to exhibit higher than usual returns as compared to the benchmark for the US as compared to Canada. The information for the share prices was collected from Yahoo Finance for a period between 02 November 2016 and 02 November 2018, which is one year before and after the release of the federal tax cuts. An additional set of data for the same period was collected for the NASDAQ index itself as the base comparison.

Similarly, data from the S&P/TSX was also taken from Yahoo Finance. Here, the Canadian data from the Toronto Stock Exchange was used as a comparison to the NASDAQ stocks. By comparing the abnormal returns and abnormal volatility of an

American Index with another country, observations could be made to determine if the fiscal policy change of America had an impact as compared to its neighboring market.

Research Design

The purpose of this paper is to show that fiscal policy changes such as tax cuts are relevant to not only the domestic market, but also foreign markets. Specifically, abnormal returns should ensue such a change in policy. This study will be conducted by comparing the abnormal returns and abnormal volatility of US stocks (Domestic) to that of Canadian stocks (Foreign) over a 2-year period: one year prior to the event and one year after the event has taken place.

Abnormal Return Event Study

An assumption of this case study is that the change in stock price reflects the change in public attitude towards that stock because of the underlying assumption of market efficiency. Along this line, the fiscal policy proposed (i.e., the cutting of taxes) was announced publicly; therefore, all individuals were expected to have access to the same information at the same time. Hence there should also be a change in stock prices if the public sees these cuts as a positive influencer for the domestic capital market.

This event study is two-fold. First, abnormal return and abnormal volatility analyses are made by comparing the NASDAQ index with the top 30 companies listed on the index. The assumption being that if there is a multi-level tax cut, then the bigger the corporation, the more it will benefit from this cut. Therefore, compared to the rest of the index, the companies with the largest market capitalization will benefit the most from this tax cut. The public would presumably also have a more favorable attitude towards these

companies compared to the rest of the companies listed on the index. The second part of this analysis involves examining the volatility and return statistics of stocks listed on the Toronto Stock Exchange to see the impact that a US (i.e., domestic) policy change would have on a Canadian (i.e., foreign) market.

AR and CAR

In order to conduct the abnormal return analysis of individual firms, the Capital Asset Pricing Model was used (Schimmer, Levchenko, & Muller, 2014):

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i \cdot R_{m,t}) \quad (1)$$

Where:

$R_{i,t}$ is the actual return of stock “i” on day “t”

$R_{m,t}$ is the return of the reference market (NASDAQ, S&P TSX) on day “t”

β_i is the regression coefficient, a sensitivity measurement of firm “i” returns on the reference market

$\alpha_i + \beta_i \cdot R_{m,t}$ is the relationship between the firm and the market

When this formula is used on multiple firms during the same event, it will show the general attitude of the market towards specific events, in this case the change in fiscal policy. This is important because it will reinforce the findings from prior research on this

topic. It will also determine if the changes in tax regulations will indeed provide firms with larger stock valuation an edge over the remainder of the market.

Upon adding all abnormal returns gathered from Equation (1) and then averaging the outcome, Equation (2) could be derived:

$$AAR = \frac{1}{n} \sum_{i=1}^n AR_{i,t} \quad (2)$$

Furthermore, in order to understand the full impact of the policy, the Cumulative Abnormal Return (CAR) equation (3) will be used:

$$CAR_i = \sum_{t=T_1+1}^{T_2} AR_{i,t} \quad (3)$$

In this case, the event date, as explained previously, is the 2nd of November 2017; the date the policy was announced. For this study, the event window chosen is ± 2 days (T1, T2) of the event while the parameters chosen for this event analysis is 120 days prior-to the event in order to capture and analyze the full impact of the tax cut.

BHAR

The BHAR (i.e., Buy and Hold Abnormal Return) model is used in order to measure abnormal returns in the long run (i.e., several months, up to years) (Schimmer et al., 2014). Although this event study is conducted to find the immediate impact of tax cuts (i.e., with the parameters being the same as above), it is a good alternative to the

CAR model (i.e., robustness test). Therefore, the BHAR model will also be used in this event study:

$$BHAR_{t;t+k}^i = \Pi_k(1 + AR_{i,t+k}) \quad (4)$$

Abnormal Volatility Event Study

Volatility measures the amount of risk in relation to uncertainty in the market. According to Investopedia (2019), volatility is a measurement of risk for a security, the higher the volatility, the riskier it is. Therefore, by measuring the volatility of the stocks using the overall domestic and foreign capital markets as references, the results could provide insight as to whether there is in fact an impact on investors' attitude, making the market more turbulent compared to a non-impacted market (Schimmer et al., 2014).

For this event study, four different tests will be used to measure volatility:

$$R_{it} = \alpha_i + \beta_i \cdot R_{mt} + \gamma_i \cdot D_{i,t} + \varepsilon_{it} \quad (5)$$

$$\sigma_i^2 = \omega + \gamma_{i,1} \cdot \varepsilon_{t-1}^2 + \delta_1 \cdot \sigma_{t-1}^2 + \delta_i \cdot D_{i,t} \quad (6)$$

$$t_{AV,BMP,t} = \frac{\bar{\delta}}{\left(\frac{1}{n \cdot (n-1)} \sum_{i=1}^N (\delta_i - \bar{\delta}_i)\right)^{0.5}} \quad (7)$$

$$\text{Where, } \bar{\delta} = \frac{1}{N} \sum_{i=1}^N \gamma_i$$

$$t_{AV,cBMP,t} = \frac{\bar{S}}{\left(\frac{1}{n \cdot (n-1)} \sum_{i=1}^N (S_i - \bar{S}_i)\right)^{0.5}} \quad (8)$$

$$\text{Where, } \bar{S} = \frac{1}{N} \sum_{i=1}^N S_i \text{ and } S_i = \frac{\delta_i}{h_{i,0}}$$

Equation (5) is a market model with a GARCH model in order to control for time series errors (Schimmer et al., 2014) It is used for estimating abnormal return and time-varying volatility. The conditional variance could be written using equation (6), with $D_{i,t}$ modeled as the dummy variable such that $D_{i,t} = 1$ on the event date and 0 otherwise (Schimmer et al., 2014). Equations (7) and (8) are the abnormal volatility and corrected cross-sectional tests for abnormal volatility respectively (Schimmer et al., 2014). These latter two equations would provide this event study with insight on cross-sectional correlations between firms.

Since this event study has an extremely small sample size, with the American sample being 30 firms, and the Canadian sample being 31 firms, the non-parametric tests will be used (i.e., no assumption of normality of the data). Please note that the sample size limitation is related to the fact that the financial data are unavailable at Mount Allison University and the data had to be hand collected as opposed to downloaded directly from *COMPUSTATS* or *DATASTREAM* or *BLOOMBERG* for example. Non-parametric tests are used because the data is not required to fit any normal distribution due to its size. If more sample firms were extracted from the indexes (e.g. 100 firms), then parametric tests would have been used with an assumption of normal distribution.

4-Results

This study aims to show that fiscal policies, such as tax cuts, do indeed have an impact on investor decision making. By decreasing corporate taxes, larger firms would generate more net income compared to smaller firms. Therefore, there will be more abnormal returns for larger firms within an index, and more abnormal returns for the domestic index compared to a foreign index on the day of the event.

Descriptive Statistics

The data sample in this event is made up of 30 firms listed on the NASDAQ and 31 firms on the S&P/TSX index. The period of the information used for this study is between 02 November 2016 and 02 November 2018, one-year prior-to and one-year after the event taking place. While the American companies were selected based on highest market cap, the Canadian companies were not. Therefore, in terms of the Canadian organizations, there might be more firm-specific turbulence due to size. All information was downloaded from Yahoo!Finance.

Non-Parametric Statistics

Table 1 shows the results of the non-parametric tests for the 30 companies listed on NASDAQ from Rank Z tests to Skewness Corrected T, while Table 2 displays the results of these same tests for the 31 S&P/TSX companies. As mentioned before, unlike parametric tests, non-parametric tests do not assume that there is a normal distribution, choosing instead to compare the results of these tests to zero to see if there is a significant relationship.

Table 3 and Table 4, shows the results of the Rank Z test for NASDAQ and S&P/TSX firms respectively.

The results from the tests above are also consistent with the initial hypothesis that upon the release of a major expansionary fiscal policy change, the domestic stock market will display a favourable attitude before re-adjusting to the news. The more interesting results came from the Canadian data. The stock prices of the Canadian stocks displayed a more drastic change on the day after the announcement compared to the US stocks. This shows that a change in the American market has a definite impact on the Canadian market as well.

This shows that the markets have adjusted to announcement and returned to equilibrium. The results from the tests above are also consistent with the initial hypothesis that upon the release of a major expansionary fiscal policy change, the domestic stock market will display a favorable attitude before re-adjusting to the news. The valuation of the Canadian stocks displayed a change on the day after the announcement compared to the US stocks. This shows that a change in the American market has an impact on the Canadian market as well.

Abnormal Returns Event Study (AR, CAR, and BHAR)

According to basic macro-economic theory, an expansionary fiscal policy is implemented to provide a boost to the economy during recessions (Martin, 2012). Therefore, even though the US is experiencing a period of healthy economy,

expansionary fiscal policy should still provide an additional boost to the economy, which is reflected by the change in stock prices and positive abnormal returns.

Table 5 and Figure 1 show the Abnormal Return of each stock in the NASDAQ Index and the trend for Average Abnormal Return respectively. Both show the abnormal return of the five days surrounding the event (two days prior, the day of, and two days after). As shown in Table 5, there is a slight increase (0.0059) in the average abnormal return the day prior to the event day, and a slight increase (0.0035) in average abnormal return the day after the event. Even though these changes are small, they still demonstrate that the announcement of an expansionary fiscal policy will have a positive impact on the market. The trendline in Figure 1 also show that there is an increasing pattern to the change in average abnormal return due to this event. The positive change in Average Abnormal Return the day before the event could also be another supporting factor showing that there might be insider information before the announcement of the event, allowing for certain groups of investors to be better off than others. Overall, there is higher abnormal return for these 30 firms compared to the US market surrounding the announcement of the event. The number of positive AAR values being greater than the negative ones demonstrates this.

On the other hand, the Canadian results show a different outcome compared to the American AAR results. According to Table 6 and Figure 2, there was more negative than positive change in Average Abnormal Return within the same period. Although there was a spike in AAR of 0.506 on the day following the announcement, the market quickly adjusted itself on the second day after, and there appears to be an overall negative trend,

suggesting lower abnormal returns. This is aligned with the non-parametric tests and shows that even though the Canadian market is indeed affected by the US market, there are still differences between these two markets respectively. Furthermore, there could be a chance that the day prior to the announcement, investors could move assets from one market to the other (Canadian to American) in order to capture the gains following the announcement.

Overall, the AR and AAR results from the American market are congruent with the hypothesis that when there is an expansionary fiscal policy being implemented, there will be higher abnormal returns that follow the announcement.

Abnormal Volatility Event Study (AVy)

Volatility within the market shows the uncertainty surrounding a major event. Therefore, increasing volatility would mean that there is increasing uncertainty in the market through investors.

Table 7 and Figure 3 display the volatility in the NASDAQ index within the same 5 days surrounding the event day, the same days as the abnormal return analysis. Although Figure 3 shows that the average volatility is decreasing, a closer look at Table 7 will show that the volatility for these 30 firms in the market was in fact higher than the market index. This shows that there was investors' anticipation, and that anticipation was quite constant at around 0.35 higher than the market throughout the 5 days. This once again could mean that there was word on the market before this policy was announced, and investors were anticipating this policy change beforehand. The decreasing trend

shown in Figure 3 could mean that after the announcement, investors are now confident that this event will take place, and are no longer anticipating an outcome, therefore making these firms less volatile compared to the pre-event days.

On the other hand, the volatility of the S&P/TSX is presented on Table 8 and Figure 4. There is a growing trend of the volatility of these 31 stocks compared to the index. Looking closer at Table 8, it is observed that on all 5 days, the volatility of these stocks are hovering around 1, three times that of the American stocks. There might be a few potential reasons for this. One reason being that while the American stocks are from well established firms with the largest market capitalization within the index, some of the Canadian stocks are not as well-established, making investors more anxious about their profitability. Furthermore, as there are very little limitations to transfer between the American market and the Canadian market, the increasing trend in volatility could suggest the uncertainty of Canadian investors as they determine the best course of action. There are also other factors not considered within this study, which will be discussed below.

Limitations

There are many factors that may limit the conclusions for this study. First, this event study only took into consideration the one event that happened on the day of 02 November 2017, without taking into consideration the many other events that might have had an impact on investor decisions. Especially in the Canadian portion of the analysis, there might be many factors within Canadian politics that could influence the return and volatility of these stocks. As was suggested throughout the analysis portion of this event

study, insider knowledge was a major concern while conducting this study. The results from the tests above suggest that pre-announcement knowledge is present (i.e., insider trading) and has a role to play in affecting the return and volatility of stocks. Furthermore, although this study shows that there are definite abnormal returns and volatility changes for specific stocks compared to the rest of the market index, due to the fact that a fiscal policy change affects the entire market, not just the top 30 firms with the largest market capitalization, the abnormal returns and volatility are much less significant compared to the type of volatility and returns generated from firm specific events. This may be related to the size of the sample. Please note, as described before, that this sample size limitation is related to the fact that the financial data are unavailable at Mount Allison University and the data had to be hand collected as opposed to downloaded directly from *COMPUSTATS* or *DATASTREAM* or *BLOOMBERG*, for example.

5-Discussion and Conclusion

In the literature review section of this vent study, it was noted that there were many different reasons why a firm's stock prices would rise or fall. In particular, Van Staalduinen (2017) suggested that firm specific uncertainty increases while share prices decrease following the relocation of a firm's headquarters, even though this relocation strategy would benefit the firm. This means that regardless of the firm-specific benefits for strategic decision-making, investors generally react negatively to relocation decisions. While Foresti & Napolitano (2017) pointed out that even though the market welcomes expansionary fiscal policies during times of hardship, the same might not be true during a

healthy economy. This in turn suggests that well-intended policies, when used improperly, could in fact result in more harm than good.

The results of this study show that an expansionary fiscal policy in America would not only affect the American market, but also the Canadian market, as it is very close by geographically. Within the American economy, firms with larger market capitalization displayed a trend of more positive abnormal returns and lower volatility compared to the NASDAQ index around the day of the event (i.e., the policy was announced). This could mean that when all firms are affected the same by this change in fiscal policy, investors placed more importance and more anticipation on firms with larger market capitalization than smaller firms within the same index. Similarly, the Canadian market was also potentially affected by this policy change. This could be observed through the trend of the lower abnormal returns and higher volatility of the 31 firms compared to the rest of the market around the event day. However, the Canadian analysis was much more uncertain compared to the American analysis as the firms selected do not necessarily hold large market capitalization, and their volatility could stem from multiple factors including investor confidence in the successfulness of the firms.

One extra piece of information suggested by the event study analysis of both the American and the Canadian market was the involvement of insider knowledge (i.e., movement of stock price starting previous to the public announcement itself). Specifically, investors who know that there would be a policy change before the change was announced. Both volatility analyses provided positive results, which may suggest

that investors were anticipating a tax cut to happen even though it had not been formally announced.

Finally, this event study was conducted based upon a single event on a single day. Therefore, the results are short term. It would be interesting to conduct follow-up research and see how this policy would affect the American economy in the long run. Would the market react positively and show increased growth? Or would the market react negatively after one year of bullish market reaction, as Foresti & Napolitano (2017) suggested? Furthermore, another study could be conducted comparing the market reaction to the announcement of this fiscal policy change to that of the actual implementation day. Perhaps there will be less volatility as the market was already expecting this policy to be in place.

Appendix A: Original Firms Taken from NASDAQ

Event ID	Firm Ticker	Firm Name	Event Date
1	AAPL	Apple	2017-11-02
2	ADBE	Adobe	2017-11-02
3	AMGN	Amgen	2017-11-02
4	AMZN	Amazon	2017-11-02
5	AVGO	Broadcom	2017-11-02
6	BIIB	Biogen	2017-11-02
7	BKNG	Booking Holdings	2017-11-02
8	CELG	Celgene	2017-11-02
9	CHTR	Charter Comms	2017-11-02
10	CMCSA	Comcast	2017-11-02
11	CME	CME Group	2017-11-02
12	COST	Costco	2017-11-02
13	CSCO	Cisco	2017-11-02
14	FB	Facebook	2017-11-02
15	FOX	21 st Century Fox	2017-11-02
16	GILD	Gilead Sciences	2017-11-02
17	GOOG	Google	2017-11-02
18	GOOGL	Google	2017-11-02
19	INTC	Intel	2017-11-02
20	MDLZ	Mondelez	2017-11-02
21	MSFT	Microsoft	2017-11-02
22	NFLX	Netflix	2017-11-02
23	NVDA	Nvidia	2017-11-02
24	PEP	Pepsi Co.	2017-11-02
25	PYPL	Paypal	2017-11-02
26	QCOM	Qualcomm	2017-11-02
27	QQQ	PowerShares QQQ	2017-11-02
28	SBUX	Starbucks	2017-11-02
29	TXN	Texas Instruments	2017-11-02
30	WBA	Walgreens Boots	2017-11-02

Note: The list above provides the names, event date, as well as the tickers for the 30 firms from NASDAQ used for this event study. The Event IDs will be used for the remainder of the NASDAQ related research corresponding to each firm.

Appendix B: Original Firms Taken from S&P/TSX

Event ID	Firm Ticker	Firm Name	Event Date
1	ABT.TO	Absolute Software	2017-11-02
2	CAE.TO	CAE Inc.	2017-11-02
3	CGY.TO	Calian Group	2017-11-02
4	CLS.TO	Celestica Inc.	2017-11-02
5	CMG.TO	Computer Modelling	2017-11-02
6	DBO.TO	D-Box Technology	2017-11-02
7	DSG.TO	Descartes Systems	2017-11-02
8	ENGH.TO	Enghouse Systems	2017-11-02
9	EXF.TO	Exfo Inc.	2017-11-02
10	FTG.TO	Firan Techonology	2017-11-02
11	GIB-A.TO	CGI Group	2017-11-02
12	GPS.TO	BSM Technologies	2017-11-02
13	IMP.TO	Intermap Technologies	2017-11-02
14	ITC.TO	Intrinsyc Technologies	2017-11-02
15	ITX.TO	Intertain Group	2017-11-02
16	MDF.TO	Mediagrif	2017-11-02
17	OPS.TO	Opsens Inc.	2017-11-02
18	OPT.TO	Optiva	2017-11-02
19	OTEX.TO	OpenText	2017-11-02
20	PATH.TO	CounterPath Corp	2017-11-02
21	PHO.TO	Photon Control	2017-11-02
22	PTG.TO	Pivot Technology Sol.	2017-11-02
23	PTS.TO	Points International	2017-11-02
24	QTRH.TO	Quarterhill	2017-11-02
25	SEV.TO	Spectra 7 Microsystem	2017-11-02
26	SUM.TO	Solium	2017-11-02
27	SW.TO	Sierra Wireless	2017-11-02
28	TCS.TO	Tecsys Inc.	2017-11-02
29	TSGI.TO	Stars Group Inc	2017-11-02
30	UR.TO	Urthecast	2017-11-02
31	XCT.TO	ExactEarth Inc.	2017-11-02

Note: The list above provides the names, event date, as well as the tickers for the 31 firms from the S&P/TSX used for this event study. The Event IDs will be used for the remainder of the S&P/TSX related research corresponding to each firm.

References

- Ardagna, Silvia. "Financial Markets' Behaviour Around Episodes of Large Changes in the Fiscal Stance." *European Economic Review* 53, no. 1 (January 2009): 37–55. <https://doi.org/10.1016/j.euroecorev.2008.07.003>.
- Barnea, A., Heinkel, R., and Kraus, A. "Corporate social responsibility, stock prices, and tax policy." *The Canadian Journal of Economics* 46, no. 3 (2013): 1066-1084.
- Dharmapala, Dhammika. "The Economics of Corporate and Business Tax Reform." In *The Economics of Tax Policy*. New York, NY: Oxford University Press, 2017.
- El Montasser, Ghassen, Rangan Gupta, Charl Jooste, and Stephen M. Miller. "The Times-Series Linkages Between US Fiscal Policy and Asset Prices." Text, University of Connecticut, 2015. <http://ideas.repec.org/p/pre/wpaper/201519.html>.
- Floyd, David. "Trump's Tax Reform Plan Explained." Investopedia, October 30, 2018. <https://www.investopedia.com/taxes/trumps-tax-reform-plan-explained/>.
- Foresti, Pasquale, and Oreste Napolitano. "On the Stock Market Reactions to Fiscal Policies." *Review of World Economics* 154, no. 1 (2017): 177–201. <https://doi.org/10.1002/ijfe.1584>.
- Ghosh, Chinmoy, Mauricio Rodriguez, and C. F. Sirmans. "Gains from Corporate Headquarters Relocations: Evidence from the Stock Market." *Journal of Urban Economics* 38, no. 3 (November 1995): 291–311.
- Hayes, Adam. "Fiscal Policy vs. Monetary Policy: Pros & Cons." Investopedia, February 6, 2018. <https://www.investopedia.com/articles/investing/050615/fiscal-vs-monetary-policy-pros-cons.asp>.
- Laamanen, Tomi, Tatu Simula, and Sami Torstila. "Cross-Border Relocations of Headquarters in Europe." *Journal of International Business Studies* 43, no. 2 (February 2012): 187–210.
- Martin, Fernando M. "Fiscal Policy in the Great Recession and Lessons from the Past." Federal Reserve Bank of St. Louis: *Economic Synopses*. no. 1 (2012). http://research.stlouisfed.org/publications/es/12/ES_2012-01-06.pdf.

- Mbanga, Cedric L., and Ali F. Darrat. "Fiscal Policy and the US Stock Market." *Review of Quantitative Finance and Accounting* 47, no. 4 (November 2016): 987–1002.
<http://dx.doi.org.libproxy.mta.ca/10.1007/s11156-015-0528-y>.
- Schimmer, M., Levchenko, A., and Muller, S. (2014). EventStudyTools (Research Apps), St. Gallen. Retrieved on December 2, 2018, from <http://www.eventstudytools.com>
- Schumpeter. "Michel Foucault's Lessons for Business." *The Economist*, June 21, 2018.
<https://www.economist.com/business/2018/06/21/michel-foucaults-lessons-for-business?frsc=dg%7Ce>.
- Stein, Jeff. "The Federal Debt Is Headed for the Highest Levels since World War II, CBO Says." *The Washington Post*, June 26, 2018.
https://www.washingtonpost.com/news/wonk/wp/2018/06/26/the-federal-debt-is-headed-for-the-highest-levels-since-world-war-ii-cbo-says/?noredirect=on&utm_term=.76470066799a.
- Taylor, John B. "The Role of Policy in the Great Recession and the Weak Recovery." *The American Economic Review* 104, no. 5 (May 2014): 61–66.
- Thompson, P, and D McHugh. "Organizations and Environments." In *Work Organizations: A Critical Introduction*, 3rd ed., 54–69. Basingstoke: Palgrave, 2002.
- Van Staalduinen, Matthys. "Headquarter Relocation and Its Impact on Stock Price: A Canadian Story." Text, Mount Allison University, 2018. Thesis (B.Com.)--Mount Allison University, 2018.

Table 1: Parametric and Non-Parametric test p-value for NASDAQ

Grouping Variable	Addition
CAAR Type	(-2, 2)
CAAR Value	0.0077
Precision Weighted CAAR Value	0.0061
ABHAR	0.0074
pos:neg CAR	17:13
Number of CARs considered	30
Patell Z	1.8792
Csect T	1.2172
Generalized Sign Z	0.7333
StdCsect Z	1.2541
Rank Z	-0.0106
Generalized Rank T	0.6784
Adjusted Patell Z	1.822
Adjusted StdCsect Z	1.1893
Generalized Rank T	0.7893
Skewness Corrected T	1.3764
ABHAR Csect T	1.1843
ABHAR Skewness Corrected T	1.3335

Note: The table above demonstrates the results for the Parametric/Non-parametric tests for NASDAQ firms. The results from Rank Z to Skewness Corrected T illustrate the non-parametric test results used for this study.

Table 2: Parametric and Non-Parametric test p-value S&P/TSX

Grouping Variable	Addition
CAAR Type	(-10,10)
CAAR Value	0.6219
Precision Weighted CAAR Value	0.4952
ABHAR	-712.346
pos:neg CAR	19:10
Number of CARs considered	29
Patell Z	0.7239
Csect T	2.3478
Generalized Sign Z	1.7927
StdCsect Z	2.3119
Rank Z	0.8379
Generalized Rank T	2.2992
Adjusted Patell Z	0.5451
Adjusted StdCsect Z	1.4598
Generalized Rank T	3.0222
Skewness Corrected T	2.7095
ABHAR Csect T	-0.9984
ABHAR Skewness Corrected T	-1.5342

Note: The table above demonstrates the results for the Parametric/Non-parametric tests for S&P/TSX firms. The results from Rank Z to Skewness Corrected T illustrate the non-parametric test results used for this study.

Table 3: Parametric and non-parametric test Abnormal Returns for NASDAQ firms

Grouping Variable/N	AAR(-2)	AAR(-1)	AAR(0)	AAR(1)	AAR(2)
Tax	-0.002	0.0059	-0.0012	0.0034	0.0016
N(Tax, AAR(i))	30	30	30	30	30
Pos:Neg(Tax, AAR(i))	14:16	20:10	12:18	14:16	14:16
Patell Z	-1.0687	3.5999	-0.2034	1.9036	-0.0294
Generalized Sign Z	-0.3621	1.8288	-1.0924	-0.3621	-0.3621
Csect T	-0.552	2.6745	-0.4722	0.7537	0.4453
StdCSect Z	-0.5049	2.7139	-0.135	0.7626	-0.0183
Rank Z	-1.0967	2.6402	-0.7599	-0.1036	-0.7038
Generalized Rank T	-0.5837	2.3771	-0.6969	0.0494	-0.535
Adjusted Patell Z	-1.0702	3.6049	-0.2037	1.9063	-0.0294
Adjusted StdCSect Z	-0.5056	2.7178	-0.1352	0.7637	-0.0183
Generalized Rank Z	-0.6795	2.7651	-0.8102	0.0575	-0.622
Skewness Corrected T	-0.5836	3.4604	-0.4501	0.9579	0.5712

Note: The table above demonstrates the Average Abnormal Returns for the NASDAQ firms on the days surrounding the event date. The results given from the Rank Z test to the Skewness Corrected T test were used in the event study.

Table 4: Parametric and non-parametric test Abnormal Returns for S&P/TSX firms

Grouping Variable/N	AAR(-2)	AAR(-1)	AAR(0)	AAR(1)	AAR(2)
Tax	0.3734	-0.2089	-0.2741	0.5061	-0.0745
N(Tax, AAR(i))	31	31	31	31	31
Pos:Neg(Tax, AAR(i))	18:13	12:19	9:22	23:8	18:13
Patell Z	1.0917	-0.4597	-1.2707	2.6443	-0.3796
Generalized Sign Z	1.0234	-1.1324	-2.2103	2.8199	1.0234
Csect T	1.5661	-1.0706	-1.3657	2.3859	-0.3627
StdCSect Z	1.1058	-0.4983	-1.3883	2.4065	-0.4178
Rank Z	0.7236	-0.6215	-1.607	2.1664	-0.1864
Generalized Rank T	0.7276	-0.598	-1.5931	1.9539	-0.1821
Adjusted Patell Z	1.0862	-0.4573	-1.2643	2.6309	-0.3776
Adjusted StdCSect Z	1.0997	-0.4955	-1.3806	2.3932	-0.4155
Generalized Rank Z	0.9572	-0.7863	-2.0923	2.564	-0.2393
Skewness Corrected T	1.7879	-1.0938	-1.2323	2.7642	-0.3766

Note: The table above demonstrates the Average Abnormal Returns for the S&P/TSX firms on the days surrounding the event date. The results given from the Rank Z test to the Skewness Corrected T test were used in the event study.

Table 5: Abnormal Return Values for NASDAQ Firms

Event ID	AR(-2)	AR(-1)	AR(0)	AR(1)	AR(2)
1	0.0084	-0.0107	0.0076	0.0164	0.006
2	-0.0103	0.008	0.0263	-0.0016	-0.0124
3	-0.0002	0.0017	-0.0178	-0.0001	-0.0184
4	-0.0099	0.0009	-0.008	0.0071	0.0045
5	0.0034	-0.0145	0.0016	0.041	0.009
6	-0.0191	0.0137	-0.0211	0.0059	-0.0005
7	0.0128	0.0027	-0.0004	-0.0162	0.0014
8	-0.0041	-0.003	-0.0234	0.0117	0.0127
9	0.0286	0.0134	-0.0012	-0.011	0.0362
10	-0.0149	0.0038	-0.0248	0.0107	-0.0052
11	0.0054	-0.0083	0.0289	-0.0049	-0.0157
12	0.0049	0.0113	0.0147	0.0076	-0.0085
13	0.0005	0.0155	-0.0112	0.0025	-0.0037
14	-0.0049	0.0162	-0.0207	-0.0099	0.0024
15	-0.0124	-0.0008	-0.0077	-0.0311	0.0856
16	-0.0174	-0.0015	-0.0145	-0.0106	-0.0179
17	-0.0054	0.0108	0.0005	-0.0018	-0.0101
18	-0.005	0.0113	0.0008	-0.0017	-0.0106
19	0.0212	0.0273	0.0081	-0.0224	0.0107
20	0.0517	-0.0019	-0.0014	-0.0073	-0.0141
21	-0.0134	0.0015	0.0103	-0.0072	0.0001
22	-0.0184	0.0103	0.0064	-0.0108	-0.0061
23	0.0011	0.0021	-0.0092	-0.0071	-0.0065
24	0.0045	-0.0004	-0.0005	0.0001	-0.0093
25	0.0124	-0.0024	-0.0034	0.0047	0.0123
26	-0.0722	0.0491	0.0264	0.1138	0.0093
27	-0.0009	0.0015	-0.0016	0.0016	-0.0001
28	-0.0071	0.0071	-0.0036	0.0184	0.009
29	0.0009	-0.0021	0.0043	0.0029	0.0013
30	0.0004	0.0143	-0.001		-0.0133
	-0.00198	0.005896667	-0.001186667	0.003472414	0.001603333

Note: The table above illustrates the Abnormal Returns for each individual firm listed on the NASDAQ index used in this study. Each number represents their respective firm listed on Appendix A. The average of these Abnormal Returns are displayed at the bottom bar.

Table 6: Abnormal Return Values for S&P/TSX Firms

Event ID	AR(-2)	AR(-1)	AR(0)	AR(1)	AR(2)
1	-0.23	-0.083	0.1113	0.0973	-0.7674
2	-0.0817	1.1815	-0.3548	-1.2302	0.4924
3	0.0235	-0.5691	-1.0214	0.1389	0.557
4	0.0968	-0.0365	-0.1398	-0.584	0.0988
5	1.3989	-0.5455	-0.4242	0.5297	0.4548
6	-0.2805	-0.8575	0.1804	0.6229	0.1301
7	-0.1371	-0.0329	-0.598	0.7773	-0.2801
8	-1.213	-0.0083	0.6593	0.404	0.093
9	-1.0526	0.9942	-0.0514	1.0831	-0.7781
10	1.2307	-1.1044	0.6815	0.2697	-1.1945
11	0.0576	0.5082	-0.1557	0.3621	-0.5794
12	0.2745	-0.6357	-1.3549	1.3316	-0.5173
13	0.7872	0.2716	-1.9896	1.293	1.1622
14	2.365	0.8907	-1.055	0.1115	0.9596
15	-0.319	0.5295	-0.7972	1.1331	0.0718
16	0.7179	-2.3132	2.9179	0.1522	0.3313
17	-2.3114	2.2173	-0.6793	1.1416	-1.6591
18	-0.0092	-0.9734	-2.0977	3.0472	-1.2642
19	-0.1631	0.0255	-0.2425	0.6343	-0.088
20	0.088	1.3177	-1.7075	-0.384	-2.2259
21	-0.3529	-0.2589	-0.3364	0.5292	0.1327
22	-0.7645	0.7485	-0.0909	-0.0983	1.9097
23	4.0793	-0.8246	-0.4255	0.3753	0.3061
24	0.0566	-0.2435	-0.8762	1.5432	-0.047
25	1.3665	0.9037	-1.7759	-0.0692	0.1422
26	3.9792	-1.9723	-0.3992	-0.4512	1.1187
27	0.0366	0.1574	0.0057	1.2722	0.0095
28	-0.6765	-1.3946	-0.9444	4.3146	-3.1572
29	0.5939	-1.0676	1.2493	-1.3102	0.7872
30	0.3793	-0.5542	0.8357	0.6134	-1.1082
31	1.6365	-2.7458	2.3802	-1.96	2.5995
	0.373435484	-0.208877419	-0.274070968	0.50613871	-0.074509677

Note: The table above illustrates the Abnormal Returns for each individual firm listed on the S&P/TSX index used in this study. Each number represents their respective firm listed on Appendix B. The average of these Abnormal Returns are displayed at the bottom bar.

Table 7: Abnormal Volatility Values for NASDAQ Firms

Event ID	AVy(-2)	AVy(-1)	AVy(0)	AVy(1)	AVy(2)
1	0.3375	0.3377	0.3379	0.3381	0.3384
2	0.3241	0.3242	0.3242	0.3243	0.3243
3	0.3212	0.3213	0.3213	0.3214	0.3215
4	0.3181	0.3181	0.3182	0.3183	0.3184
5	0.3356	0.3357	0.3357	0.3358	0.3358
6	0.3756	0.3757	0.3758	0.3758	0.3759
7	0.4036	0.4037	0.4037	0.4037	0.4045
8	1.1613	0.8042	0.686	0.4692	0.4708
9	0.5479	0.4339	0.4431	0.3714	0.337
10	0.3622	0.3625	0.3628	0.363	0.3633
11	0.3081	0.3081	0.3081	0.3081	0.3081
12	0.3986	0.3985	0.3985	0.3984	0.3984
13	0.2777	0.2779	0.278	0.2782	0.2784
14	0.3266	0.3266	0.3266	0.3266	0.3267
15	0.4251	0.4255	0.4258	0.4261	0.4265
16	0.3503	0.3503	0.3503	0.3503	0.3503
17	0.4853	0.3873	0.2744	0.2433	0.2379
18	0.2925	0.2924	0.2922	0.292	0.2919
19	0.2771	0.2771	0.2771	0.2771	0.2771
20	0.4047	0.4049	0.4051	0.4053	0.4055
21	0.2549	0.2549	0.2549	0.2549	0.2549
22	0.3638	0.3638	0.3637	0.3636	0.3636
23	0.3565	0.3567	0.357	0.3573	0.3575
24	0.3436	0.3834	0.3896	0.3722	0.3617
25	0.2866	0.2749	0.2814	0.2729	0.3482
26	0.4667	0.4672	0.4676	0.4681	0.4686
27	0.3577	0.3577	0.3576	0.3576	0.3575
28	0.2938	0.3088	0.2704	0.2839	0.4208
29	0.2617	0.2617	0.2616	0.2615	0.2614
30	0.3767	0.3768	0.377	0.3771	0.3772
Average	0.379836667	0.362383333	0.354186667	0.343183333	0.348736667

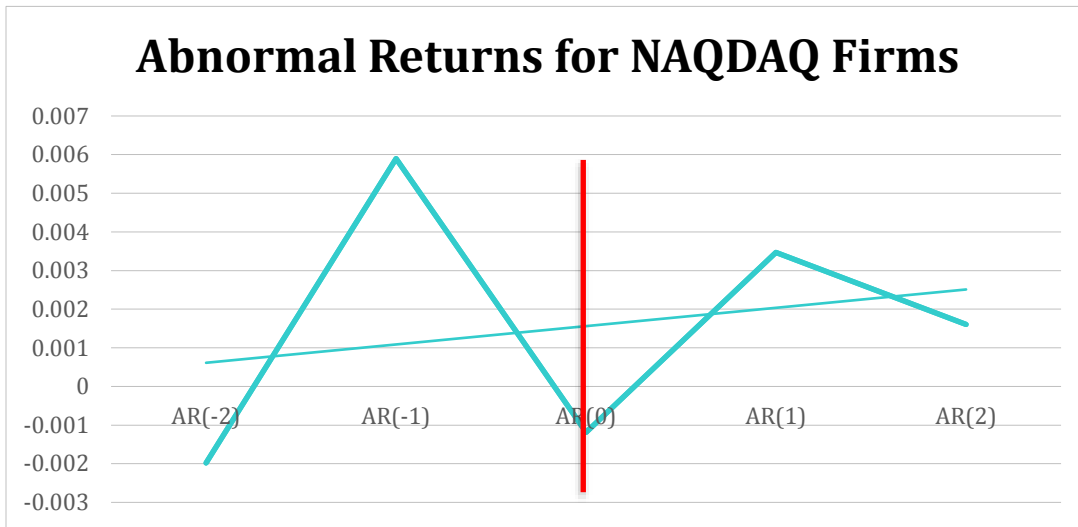
Note: The table above illustrates the Abnormal Volatility for each individual firm listed on the NASDAQ index used in this study. Each number represents their respective firm listed on Appendix A. The average of these Abnormal Volatilities are displayed at the bottom bar.

Table 8: Abnormal Volatility Values for S&P/TSX Firms

Event ID	AVy(-2)	AVy(-1)	AVy(0)	AVy(1)	AVy(2)
1	0.8485	0.8063	0.786	0.7806	0.7812
2	0.6275	0.6278	0.6281	0.6284	0.6287
3	1.1634	1.1634	1.1635	1.1635	1.1635
4	1.209	0.6563	0.4692	0.4191	0.6066
5	0.7798	1.0745	0.8893	0.719	0.6965
6	1.1617	1.1612	1.1607	1.1602	1.1597
7	0.4206	0.4235	0.4156	0.4145	0.5963
8	0.7461	0.8578	0.551	0.551	0.5871
9	1.4157	1.4157	1.4157	1.4157	1.4157
10	1.3397	1.3403	1.3408	1.3414	1.3419
11	0.3751	0.3088	0.4163	0.3291	0.3569
12	1.2477	1.2474	1.2471	1.2467	1.2464
13	1.8195	1.8199	1.8204	1.8209	1.8214
14	1.2737	1.2716	1.2696	1.2676	1.2655
15	1.1819	1.1819	1.1819	1.1819	1.1819
16	1.0088	1.037	1.4509	0.9752	0.9778
17	1.2821	1.5624	1.6928	1.4665	1.379
18	1.1029	1.0741	2.8572	2.4387	2.3578
19	0.4218	0.4214	0.4209	0.4205	0.4201
20					
21	0.6797	0.6795	0.6793	0.6791	0.6789
22	0.8716	0.8719	0.8723	0.8727	0.873
23	1.2824	1.2812	1.28	1.2788	1.2776
24	0.7632	0.7633	0.7633	0.7634	0.7635
25	1.0099	1.0096	1.0093	1.009	1.0087
26	1.5752	1.5744	1.5737	1.573	1.5723
27	0.4552	0.4546	0.4541	0.4536	0.4531
28	1.3852	1.1072	1.5058	2.176	3.847
29	0.7467	0.7475	0.7485	0.7493	0.7503
30	0.8623	0.8427	0.8311	0.8089	0.803
31					
	1.001962069	0.992524138	1.065324138	1.03807931	1.103841379

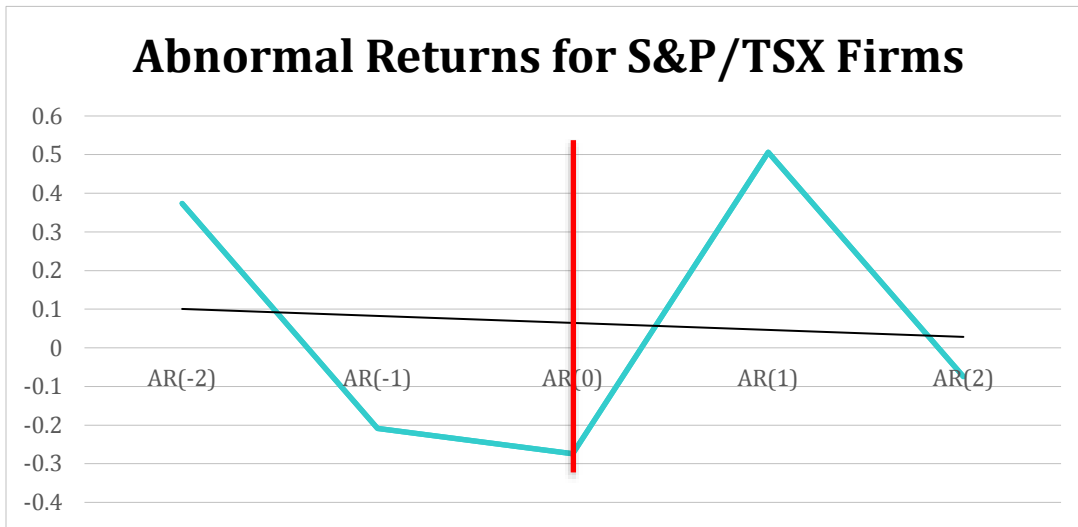
Note: The table above illustrates the Abnormal Volatility for each individual firm listed on the S&P/TSX index used in this study. Each number represents their respective firm listed on Appendix B. The average of these Abnormal Volatilities are displayed at the bottom bar.

Figure 1: NASDAQ AAR Trendline



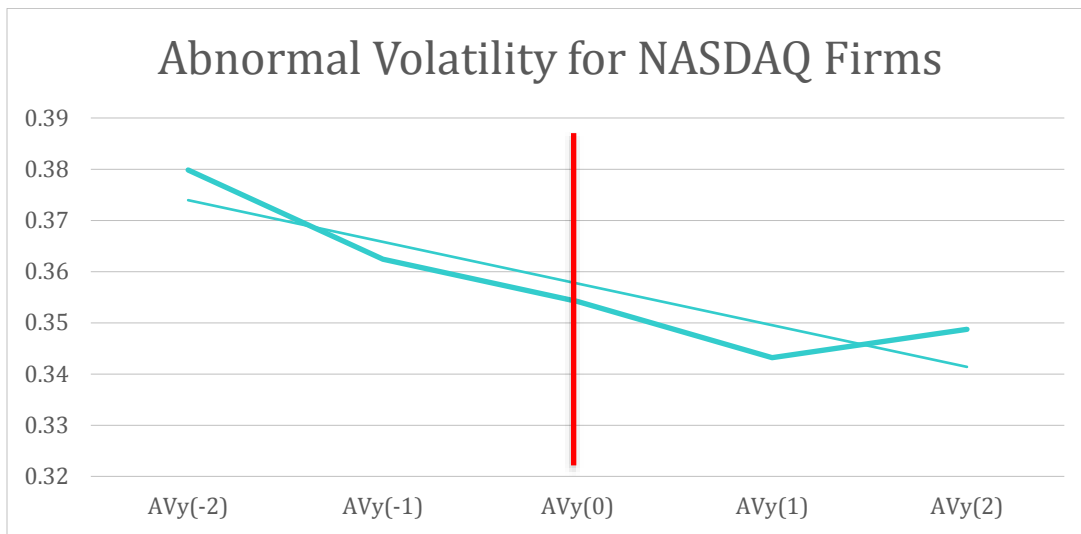
Note: The graph above shows the Abnormal Return of NASDAQ firms on the days surrounding the day of the event. With 3 being the day of the event, 2 being the day before, 4 being the day after, and so on. The upward trendline shows that there is increased abnormal return surrounding the event.

Figure 2: S&P/TSX AAR Trendline



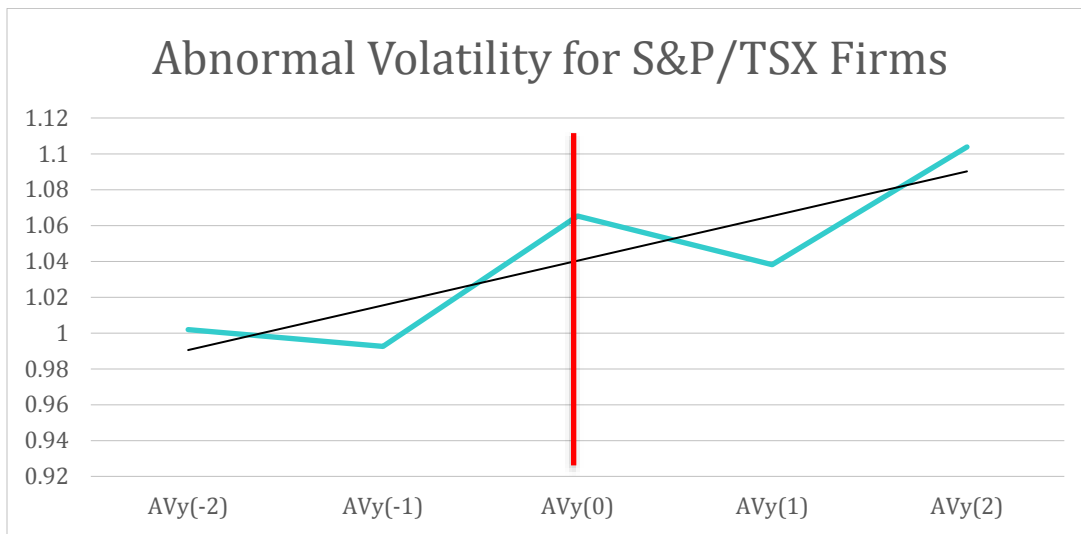
Note: The graph above shows the Abnormal Return of S&P/TSX firms on the days surrounding the day of the event. With 3 being the day of the event, 2 being the day before, 4 being the day after, and so on. The downward trendline shows that there is decreased abnormal return surrounding the event.

Figure 3: NASDAQ AVy Trendline



Note: The graph above shows the Abnormal Volatility of NASDAQ firms on the days surrounding the day of the event. With 3 being the day of the event, 2 being the day before, 4 being the day after, and so on. The downward trendline shows that there is decreased abnormal volatility on the days following the event.

Figure 4: S&P/TSX AVy Trendline



Note: The graph above shows the Abnormal Volatility of S&P/TSX firms on the days surrounding the day of the event. With 3 being the day of the event, 2 being the day before, 4 being the day after, and so on. The upward trendline shows that there is increased abnormal volatility on the days following the event.