The impact of terrorism on Dhaka stock exchange: an event study of the holey artisan attack

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I. Introduction

Terrorism is defined as coercive use of force against civilians to acquire political aim. As there is no universal internationally recognized definition, the issue of subjectivity about which incidents to classify as terrorist activity still remains a grey area. It is difficult to distinguish between politically violent crimes and terrorist activity that involves committing atrocity for an economic, political, religious or social purpose for e.g. ISIS has a fundamental objective of establishing Islamic caliphate. Another key characteristic to classify violence as terrorism is the far-reaching psychological repercussions beyond the immediate loss of lives and property damage. Such activities have underlying intention to create fear among general mass or specific target group.

Most widespread terror attack of the century is the perpetration by Al Qaeda of Twin tower USA on 11 September, 2001. This incident listed a death toll of 2,995 but had radical transformation to world security, threat and business. In this world-shaken attack, 19 militants hijacked four airplanes to conduct suicide attacks; two of the planes were flown to crash into the World Trade Center – the business hub of USA – and third plane was flown towards Washington DC hitting Pentagon. Al Qaeda had clear, concise objective to destruct major trade center and intelligence agency to attract the largest attention to its militant group. This had defined the presidency of George W Bush since USA reformed its reaction to combat & prevent terrorist activities. Fast forward decades, the world experienced countless other major and minor terrorist incidents. After the twin tower attack, the next deadliest attack is considered the Paris attack 2015 that also stunned the world. On 13 November 2015, suicide bombers bombed outside a stadium and theatre, injuring and killing a total of 413 civilians.

Bangladesh witnessed a devastating terrorist attack where militants seized a restaurant named "Holey Artisan". Five extremists took diners in the restaurant hostage among which many foreigners were present. The 12-hour siege was the deadliest combat of Bangladesh that left 22 victims dead of which majority of the hostages were Japanese and Italian. The Holey Artisan attack by Islamist organization not only instilled fearful environment throughout the country, it had significant economic impact too. Direct economic impact is the loss in investors' confidence that curbed inward foreign direct investment (FDI) and increased capital flight. Local investments had suffered as well following the same pattern of foreign investments. Post-event large infrastructural programs such as Metro Rail, Matarbari power plant was delayed as foreigners became reluctant to stay. As a consequence, investment risk rating of Bangladesh had declined capturing unwillingness to invest in financial markets.
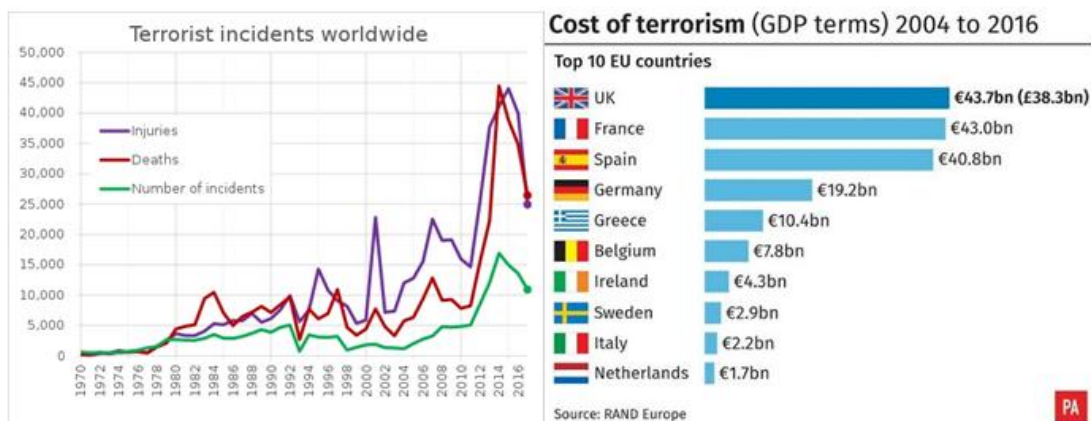
The efficient market hypothesis put forth by Fama(1965) suggests that ideally stock market will rapidly reflect all public and private information into the individual stock prices in conjunction to the market indices. Developed countries such as Bangladesh do not have strong form market efficiency, rather is characterized by weak form efficiency. Weak form efficiency states that past events, volume and earnings information do not correspondingly reflect all stock price which cannot be utilized as a measure of estimating future price movement. Intuitively this fact depicts that study of impact of terrorism activities to Bangladeshi Stock Market might not result in significant correlation.

The remainder of the study is outlined as literature review to understand empirical results from previous research divided into economic consequences and later on more specifically delving into financial market impacts. In order to conduct thorough secondary research, terrorist activities throughout several decades that affected stock market performance around the globe in countries such as USA, Switzerland, India, Turkey, Philippines were examined. Further, our research question was established followed by econometric methodology and analysis of empirical results found corresponding to the Holey Artisan Attack effect on the Dhaka Stock Exchange.

II. Literature Review

2.1 Definition of terrorism

Terrorism has recently taken over the world by a wave as unprecedented terrorist activities occur all over the globe leading to several hundreds of thousands of causalities, material damage and panic-stricken conditions obscuring daily lives of civilians in general. The exact definition of terrorism has not been agreed upon by our world leaders, thus debatingabout which incidences to classifyas an act of terror and which incidence should be categorized as sporadic gun violence and isolated events. Federal Bureau of Investigation (FBI) proposed the definition of terrorism as "Unlawful proponents of force or violent activities against civilians or any infrastructure to coerce the Government or influential citizens in order to engender a political and/or social agenda." (Austintexus.gov, 2020) Universal legal definition of terrorism does not currently exist, however somewhat controversial customary legal definition has been proposed by Special Tribunal for Lebanon 2011 that exists within the jurisdiction of international law. "Transnational terrorism" must contain four key elements which are

  i.   Perpetration of a violent and/or criminal act
 ii.   Fear-mongering intention among general mass
iii.   Intent to force Government social entity to take certain anti-nationalist actions (such as release of extremist leaders after capture by law enforcement agencies)
 iv.   The act must be of transnational nature(interlocutory decision ,2011, paragraph,85)

The implications of a non-existent universal definition of terrorism implies that terrorism can be manipulated for political agendas and misused for numerous personal gains which can be against public welfare. The other substantial issue is the lack of harmonized regional, national, supranational and normative standards for countering terrorism. For instance, after the most impactful terrorist attack of 9/11 in United States of America, the resolution 1373(2001) was adopted by the Security council mandating states to take proper national legislative actions to curb global terrorism effects. United Nations has put forth definition of terrorism; definition by United Nations approach does not serve as universally agreed upon term of terrorism but provides a benchmark for states and national governments to assess upon the incidence and take further actions to prevent reoccurrence.

2.2 Economic consequence of terrorist activities:

Violence is a hallmark of terrorism, coupled with political agendato create widespread revulsion is termed as terrorism. Although subnational nature of the groups limit state terrors. A study by Sandler portrayed graphs of economic consequences of terrorism over four decades (From 1968 to 2010) depicting proportional economic cost to private parties, officials, business and military organization. Direct cost involved in terrorism includes casualties, value of damaged structures, injuries, wages lost. Indirect cost post incident is higher allocation to security costs, reduced trade and commerce among fear-stricken environment, loss of international reputation and sharp decline in future foreign investment. (Sandler, 2013)

It is difficult to assess exact negative impact of such incidence; however, literatures express same argument that in regional arena, the negative costs are small but significant effect on per capita GDP growth (Blomberg, Hess &Orphanides, 2004).There are other substantial proofs that terrorism does not have any effect on long-term economic growth since majority of the impact is localized through loss of lives and/or property. The ability to tackle and exert appropriate crisis reaction with minimal property damage differs significantly due to the size of the economy in terms of GDP, diversity of the nation and political strategy towards the adverse situation. After the terrorist attack on USS Cole and the Limburg, half of Yemen's port had to be shut off,

transferring the port loads to nearby competitive facilities in Djibouti and Oman as insurance claim skyrocketed 300% (U.S Department State Fact 2002)

Previous research works have outlined the impact of terrorism and trade in empirical form that have found strong correlation between the two variables. However,the extent of impact on international trade due to terrorist activities heavily depend on time, place, type of violence, magnitude of the casualty & property damage etc. Terrorism affects a country's consumption and production patterns that negatively impacts the overall economic performance as people become less inclined to travel, shop; it has spiraling upshot in the tourism industry. After the terrorist attack on 9/11, US borders were temporarily closed with thousands of trucks carrying goods being stuck on the borders having to wait up to 20 hours that normally takes few minutes to cross, this disrupted the flow of supply chain within the country. Incendiaries often target a country's trade when the country is at peril of disrupted supply chain within the industries in the nation. A study done on 200 countries where terrorist incidents took place between the time period of 1960 to 1993 by applying augmented gravity model in analysis of bilateral trade flows has depicted that a doubling in the number of terrorist activity in a year is associated with a reduction in 4% trade flow in that same year. One important structural factor in consideration was the size of military in the country that has proved to be economically and statistically significantin estimating reduction in international trade flows. Further, all kinds of terrorist activities including but not limited to assassination, guerrilla activities, local riots, purge – had indicated sizeable decrease in trade. (Nitsch and Schumacher, 2004)

One empirical research suggested that over a span of 17 fiscal years since the event of 9/11, Pakistan's economy endured a total of direct and indirect economic loss of $126.79 billion. Due to negative impact in the cost of doing business and international security in business environment, Pakistan had lost its market share in the international arena thereby failed to acquire its targeted GDP growth. Terrorism had significantly affected FDI inflow to the countryas foreign investors lack confidence in the political situation and become concerned over the expected rate of return on their investment. Empirical evidence had provided a quantitative measure of effect on terrorism on FDI – a crucial indicator of economic activity – 1 percent increase in terrorism activity declined 0.086% of inward FDI into a country. A 1 percent increase in domestic income (GDP) increases FDI by 0.961%, therefore terrorism and GDP growth also has negative correlation as implied by these figures. (Zakaria, Jun and Ahmed, 2019)

Changes in income inequality distribution and regional GDP distribution both have been found to have strong correlation with terrorist activities in Turkey. A research modelled differentiation of income inequality and differentiation of regional GDP distribution and examined how these two modelled variables changed terrorist incidents in Turkey. According to the econometrics results, 1.5 % changes in income distribution resulted in 0.5% fall in terrorist activities. This data suggests that income inequality among general mass is a cause for poverty ridden people to fall into the traps of extremist activities. Often times, the leaders and recruiters of terrorist organizations such as ISIS, Al Qaeda actively seek impoverished youths to partake in their politicized agenda of mass destruction as poor recruits can be motivated by monetary gains. A new model is proposed to conduct analysis of economic changes due to terrorism in the context of Turkey – Terrorist attack vulnerability evaluation model (TAVE). This model looks in depth into origins of terrorism and the subsequent economic impact classified as origins of terrorist attack, the event itself, post terrorist attack phase. The underlying assumption behind the novel TAVE model is the specific country's vulnerabilities to attacks from both domestic and international terrorist organizations. As in the case of Turkey, the primary major threat is the domestic Kurdistan party of PKK and the primary external threat to Turkey is the Islamist insurgent group ISIS that occupied in Iraq and Syria. Both these vulnerabilities from local and international terrorist organizations computed jointly determined the economic growth leakage from the system. (Ruiz Estrada, Park and Khan, 2018)

2.3 Financial consequence of terrorist activities

When terrorist activity has been considered for financial market impact, significant negative impact has been outlined in European, American, and Swiss stock markets. 55 out of 77 terrorist activities has been found to have negative significance according to the GARCH methodology. Interestingly, out of the 77 terrorist events, the Swiss market is the most susceptible to terrorist incidents and the American market was least affected by such occurrence. One plausible reason may have been the American stock market will not be affected by any event in that magnitude after 9/11 devastating attack. Other qualitative factors for such difference in sensitivity include lower number of companies in index – SMI index comprises of lower number compared to S&P 500 in American market. This broader index absorbs the shock of black swan events more evenly than SMI index absorbing in a concentration. US banking and financial industry was relatively more stable during the time span the terrorist attacks have been sampled in the research. Industry wise financial impact due to terrorism has also been considered; insurance and airline industry is the most sensitive to reaction of extremist events and banking industry is least sensitive. As violent events cause severe material damage,

civilians rush to claim insurance for the damage sustained. Further, it encompasses security threat and panic-stricken conditions that hinders willingness to travel. Oil and gas industry have demonstrated notable positive and negative effect in return of stocks in an inexplicable phenomenon. The negative returns are attributed to oil industry affiliated with air travels since declined air travel leads to contraction in oil demand and positive return is attributable to whether attack has been particularly in oil fields or oil production areas. Lastly the paper examined extent of effect in event window and post event window. Statistical significance of impact is stronger in event window followed by a gradual decline in strength in post event window. Among the different indices analyzed, S&P 500 had the largest negative effect as opposed to other indices in question that are FTSE world, MSCI Europe.(Chesney, Karaman and Reshetar, 2010)

According to an empirical study(ASLAM et al., 2018) conducted on various stock exchange and 101 terrorist events lead to a conclusion that Mumbai stock exchange is resilient to such terrorist attacks as there were no perceptible changes in abnormal return in BSESN index return. Terrorist attacks in terms of suicide bombings and explosions are terrible for the Philippines stock market. Every suicide bombing reduced PSE index return by 104 basis point and bomb/ explosion attack declined PSE index by 79 basis points. In contrast, every terrorist attack was found to decline Colombo stock exchange by 40 basis points irrespective of the type of incendiary attack. Investors like to shift their investment to a safer environment when terrorist activities are conducted thus the negative impact on stock market occurs.

Terrorism and stock market sentiment can be indicated through probability density of option prices as futures are forward-looking financial instruments that are able to capture probable investor sentiments quite well. Nikkiken and Vahamaa applied this technique to come to a quantitative result of shift in investors' sentiments due to terrorist activity. Analysis of dataset showed negative changes in skewness implying investors were quick to unfavorably react on the event day. There was significant downward spiral in returns and dispersion expectation in FTSE 100 index; again,deterioration of stock market sentiment was observed on the second day of the attack. (Nikkinen and Vähämaa, 2010)

One IMF research (Nedelescu and Johnston, 2005) stated that efficient, liquid and diversified stock markets are much better absorbers of shock incurred from extreme unpredictable events such as terrorist activities. Most importantly proper timely response from the authority plays a major role in stabilizing financial markets after black swan phenomenon. System must be able to quickly recover resumption loss of critical function after considerable material damage. A coordinated approach from the relevant stakeholders i.e. regulators, financial industry leaders, supervisors, government, international organizations to maintain integrity along with ability to withstand external undesirable shocks.

III. Research gap and objective

Overall, the literature review has outlined common phenomenon throughout decades where terrorism has led to negative impact both in terms of economic activity, financial markets and market sentiments of the investors.After extensive literature review, no dedicated study has been done on the impact of the Holey Artisan incident on Dhaka Stock exchange. Our research on this particular subject fills the gap.

The objective of this research is to analyze the impact of the Holey Artisan terror attack on Dhaka Stock Exchange and conclude whether the event had any statistically significant effect or not.

IV. Methodology

4.1 Hypothesis

$Ho : \mu = \mu o:$ Holey Artisan attack had no significant effect on large cap stock trading on Dhaka Stock Exchange
$H\alpha : \mu \neq \mu o$ Holey Artisan attack had significant effect on large cap stocks trading on Dhaka Stock Exchange

4.2 Event study

To test the effects of this particular extreme event, event study methodology is followed after determining the efficacy of event study in regards to our research. Event study methodology attempts to explain statistically significant movement in stock prices due to related events such as earnings announcement, mergers, extreme events (terrorist activity, natural disasters etc.(Hiranto, 2019) According to Chen and Siem (2004), news of terrorist attacks isquickly absorbed into the stock market returns. Thus, average returns are able to reflect this crucial piece of information.

We selected the 10 largest cap stocks on the Dhaka Stock Exchangeto test our hypothesis. The companies chosen are Square pharmaceuticals Limited, Grameenphone (GP), British American Tobacco Bangladesh (BATB), ICBL, United power, Renata, Brac bank, Lafarge Holcim Bangladesh Limited, Olympic Industries Limited, Summit Power Limited.

Market model analysis which is the most common form of event study methodology is applied on these 10 large market cap stocks. Following the standard event study methodology, the individual stocks returns, **(Ri,t)** are regressed over **(Rm,t)**to build a reference market using actual returns. In other words, the regression

produces normal return had the extreme event not taken place in the stock market. Abnormal returns are computed by the difference between actual return on event window and the normal return from reference market based on two variables **α** and relationship between a firm's stock and the market index **β.**

As the terrorist event is unpredictable, the event study is not contaminated by any anticipation prior to the event that can have any influence upon the stock price. We divided the period into two parts: estimation period [-90, -1] and event window [0, +9]. In order to establish the reference market, the estimation window time period (1st April, 2016 to 30th June, 2016) is used to calculate alpha and beta. Computed regression is used to stock returns on event window [1st July, 2016 to 10th July, 2016] to find normal returns; subtraction of the two returns gives us abnormal return according to the following model:

$$AR_{i,t} = R_{i,t} - \hat{\alpha}_i - \hat{\beta}_i \times R_{m,t}$$

Such an analysis is performed for each company on each date during the event window. The abnormal return associated with a distinct point of time is defined as:

$$CAAR = \frac{1}{N} \times \sum_{i=1}^{N} CAR_i \quad where \quad CAR_i = \sum_{i=t_1}^{t_2} AR_{i,t}$$

In order to extract more accurate estimation of effect, cumulative average abnormal return (CAAR) of each day in the event window for the 10 companies serves as mean value of the effect of entire event window. Further, test of significance (t- test) is found for cumulative average abnormal return (CAAR) in each event date. The following formula of t-test has been utilized for test of significance.

$$TS = \frac{1}{\sqrt{T}} \times \frac{CAAR}{\bar{s}} \sim N(o,1) \quad where \quad \bar{s} = \sqrt{\frac{1}{T-1} \times \sum_{t=T_1}^{T_2} (CAAR_t - CAR^*)^2}$$

*As the Dhaka Stock Market was closed on the exact event date (1st July, 2016), the immediate aftermath is taken to be the next operational day.

V. Findings

The event study was done to find the number of days in the event window [0.9] where the company had significant abnormal returns at 5% confidence level. The results are shown in the table 1.1.

Company	Industry	No. of days with significant abnormal return
Grameenphone	Telco	2
Square Pharma	Pharmaceutical	0
British American Tobacco	Food and allied	1
Investment Corporation of Bangladesh	Financial	1
United Power	Utility	0
Renata	Pharmaceutical	0
Brac Bank	Financial	0
Lafarge	Cement	0
Olympic	Food and allied	1
Summit Power	Utility	1

Table 1.1- Summary of findings

The data largely supports the null hypothesis. Out of the ten large cap companies chosen-only three (Grameenphone , Investment Corporation of Bangladesh and Olympic) show significant abnormal returns in the

event window but that too only for a maximum of two days, suggesting that effects of the attack where largely inconsequential on the stock performance and did not persist for long.

The remaining eight companies show no significant abnormal returns at 5% confidence level.

5.1 Company wise analysis
Grameenphone

Grameenphone is the only company in the telco industry listed on Dhaka Stock Exchange. Telco is considered to be a defensive sector. However, it seems to have been somewhat affected by the Holey Artisan Terrorist Attack with significant abnormal returns on the eighth and ninth day of the event window. This suggests that the stock market was slow to react to the news of the attack and did not show immediate effect on stock price.

GP							
Date	Actual return	Market return	Expected return	Abnormal Return	CAR	t-test	Significance
10-Jul-16	-0.63%	-0.28%	-0.20%	-0.43%	-0.43%	-0.8934	no
11-Jul-16	0.59%	0.22%	0.59%	0.00%	-0.42%	0.00581	no
12-Jul-16	0.55%	0.88%	1.00%	-0.45%	-0.88%	-0.9563	no
13-Jul-16	0.20%	-0.15%	0.35%	-0.15%	-1.03%	-0.3217	no
14-Jul-16	0.16%	0.00%	0.45%	-0.29%	-1.32%	-0.6054	no
16-Jul-16	0.12%	0.46%	0.74%	-0.62%	-1.94%	-1.3014	no
17-Jul-16	0.39%	0.28%	0.63%	-0.24%	-2.17%	-0.4944	no
18-Jul-16	-0.08%	-0.33%	0.24%	-0.32%	-2.49%	-0.6708	no
19-Jul-16	1.74%	-0.05%	0.42%	1.32%	-1.17%	2.78225	yes
20-Jul-16	2.06%	-0.02%	0.44%	1.62%	0.46%	3.41497	yes

Table 1.2- Findings for Grameenphone

Square Pharmaceuticals Ltd

Square is one of the leading conglomerates of Bangladesh. It operates in the pharmaceutical industry which is a defensive industry. Square shows no significant abnormal returns for any day of the event window.

Square Pharma							
Date	Actual return	Market return	Expected Return	Abnormal Return	CAR	T-stat	Significance
10-Jul-16	-0.31%	-0.28%	-0.05%	-0.26%	-0.26%	-0.6672	no
11-Jul-16	0.12%	0.22%	0.13%	-0.01%	-0.27%	-0.0277	no
12-Jul-16	1.02%	0.88%	0.37%	0.65%	0.38%	1.67002	no
13-Jul-16	-0.41%	-0.15%	0.00%	-0.41%	-0.03%	-1.0449	no
14-Jul-16	-0.19%	0.00%	0.05%	-0.24%	-0.27%	-0.6193	no
16-Jul-16	0.26%	0.46%	0.22%	0.04%	-0.23%	0.10869	no
17-Jul-16	-0.19%	0.28%	0.15%	-0.34%	-0.57%	-0.8796	no
18-Jul-16	-0.56%	-0.33%	-0.07%	-0.49%	-1.06%	-1.2628	no
19-Jul-16	0.19%	-0.05%	0.03%	0.16%	-0.90%	0.40302	no
20-Jul-16	-0.08%	-0.02%	0.04%	-0.12%	-1.03%	-0.3183	no

Table 1.3- Findings for Square

British American Tobacco Bangladesh

British American Tobacco Bangladesh is one of the leading multi nationals operating in Bangladesh and one of the largest taxpayers. It operates in the food and allied industry which is a defensive sector. The company shows no significant abnormal returns on any day in the event window.

BATBC						
Date	Actual Return	Market Return	Expected Return	Abnormal Return	CAR	t-stat	significance
10-Jul-16	-0.93%	-0.28%	0.80%	-1.73%	-1.73%	-2.1984	yes
11-Jul-16	0.30%	0.22%	0.81%	-0.51%	-2.23	-0.6476	no
12-Jul-16	0.04%	0.88%	0.83%	-0.79%	-3.02	-1.0002	no
13-Jul-16	0.00%	-0.15%	0.80%	-0.80%	-3.82	-1.0179	no
14-Jul-16	0.00%	0.00%	0.80%	-0.80%	-4.62	-1.0227	no
16-Jul-16	-0.15%	0.46%	0.81%	-0.96%	-5.59	-1.2286	no
17-Jul-16	-0.63%	0.28%	0.81%	-1.44%	-7.03	-1.8343	no
18-Jul-16	-0.49%	-0.33%	0.79%	-1.28%	-8.31	-1.6362	no
19-Jul-16	0.00%	-0.05%	0.80%	-0.80%	-9.11	-1.0211	no
20-Jul-16	0.91%	-0.02%	0.80%	0.11%	-9.00	0.13718	no

Table 1.4- Findings for British American Tobacco

Investment Corporation Bangladesh Limited

ICBL is a government organization operating in the financial industry. It shows a significant abnormal return only on the first day of the event window.

ICBL						
Date	Actual Return	DSEX	Expected Return	Abnormal Return	CAR	T-stat	Significance
10-Jul-16	-4.34%	-0.28%	0.09%	-4.43%	-4.43%	-3.32	yes
11-Jul-16	-0.09%	0.22%	0.50%	-0.59%	-5.02	-0.443	no
12-Jul-16	-0.56%	0.88%	1.04%	-1.60%	-6.62	-1.201	no
13-Jul-16	-1.12%	-0.15%	0.20%	-1.32%	-7.94	-0.987	no
14-Jul-16	0.48%	0.00%	0.32%	0.16%	-7.78	0.1199	no
16-Jul-16	1.22%	0.46%	0.70%	0.52%	-7.26	0.3913	no
17-Jul-16	-1.02%	0.28%	0.55%	-1.57%	-8.83	-1.177	no
18-Jul-16	-0.47%	-0.33%	0.05%	-0.52%	-9.35	-0.389	no
19-Jul-16	-1.51%	-0.05%	0.28%	-1.79%	-11.14	-1.341	no
20-Jul-16	-0.09%	-0.02%	0.30%	-0.39%	-11.53	-0.295	no

Table 1.5- Findings for Investment Corporation Bangladesh

United Power

United Power operates in the utilities industry which is defensive by nature. It shows no significant abnormal returns throughout the event window at 5% significance level.

United Power						
Date	Actual Return	DSEX	Expected Return	Abnormal Return	CAAR	T-stat	Significance
10-Jul-16	-1.28%	-0.28%	-0.87%	-0.41%	-0.41%	-0.2279	no
11-Jul-16	0.76%	0.22%	-0.07%	0.83%	0.42%	0.45964	no
12-Jul-16	0.81%	0.88%	0.98%	-0.17%	0.25%	-0.0914	no
13-Jul-16	-0.27%	-0.15%	-0.66%	0.39%	0.64%	0.21553	no
14-Jul-16	2.17%	0.00%	-0.42%	2.59%	3.24%	1.43072	no
16-Jul-16	0.59%	0.46%	0.31%	0.28%	3.52%	0.1554	no
17-Jul-16	-1.38%	0.28%	0.02%	-1.40%	2.12%	-0.7741	no
18-Jul-16	-0.80%	-0.33%	-0.95%	0.15%	2.26%	0.08082	no

19-Jul-16	-0.94%	-0.05%	-0.50%	-0.44%	1.82%	-0.2419	no
20-Jul-16	0.27%	-0.02%	-0.45%	0.72%	2.55%	0.3996	no

Table 1.6- Findings for United Power

Renata Ltd

Renata is a local pharmaceutical company. It shows no significant abnormal returns on any of the days in the event window at 5% significance level.

Renata							
Date	Actual Return	DSEX	Expected Return	Abnormal Return	CAR	T-stat	Significance
10-Jul-16	-1.09%	-0.28%	0.13%	-1.22%	-1.22%	-1.42	no
11-Jul-16	-0.15%	0.22%	0.24%	-0.39%	-1.62%	-0.46	no
12-Jul-16	0.01%	0.88%	0.39%	-0.38%	-2.00%	-0.44	no
13-Jul-16	-0.02%	-0.15%	0.16%	-0.18%	-2.18%	-0.21	no
14-Jul-16	0.01%	0.00%	0.19%	-0.18%	-2.36%	-0.21	no
16-Jul-16	-0.13%	0.46%	0.30%	-0.43%	-2.79%	-0.50	no
17-Jul-16	-0.60%	0.28%	0.26%	-0.86%	-3.65%	-1.00	no
18-Jul-16	0.17%	-0.33%	0.12%	0.05%	-3.60%	0.06	no
19-Jul-16	-1.13%	-0.05%	0.18%	-1.31%	-4.91%	-1.52	no
20-Jul-16	-0.80%	-0.02%	0.19%	-0.99%	-5.90%	-1.15	no

Table 1.7- Findings for Renata

Brac Bank

Brac Bank operates in the financial industry which is cyclical by nature. However, it shows no significant abnormal returns throughout the event window at 5% significance level.

Brac Bank							
Date	Actual Return	DSEX	Expected Return	Abnormal Return	CAR	T-stat	Significance
10-Jul-16	0.00%	-0.28%	0.66%	-0.66%	-0.66%	-0.41	no
11-Jul-16	-0.16%	0.22%	0.59%	-0.75%	-1.42%	-0.46	no
12-Jul-16	0.16%	0.88%	0.50%	-0.34%	-1.76%	-0.21	no
13-Jul-16	0.94%	-0.15%	0.65%	0.29%	-1.46%	0.18	no
14-Jul-16	3.00%	0.00%	0.62%	2.38%	0.91%	1.46	no
16-Jul-16	0.00%	0.46%	0.56%	-0.56%	0.36%	-0.34	no
17-Jul-16	0.19%	0.28%	0.58%	-0.39%	-0.04%	-0.24	no
18-Jul-16	3.25%	-0.33%	0.67%	2.58%	2.54%	1.59	no
19-Jul-16	-0.51%	-0.05%	0.63%	-1.14%	1.40%	-0.70	no
20-Jul-16	0.18%	-0.02%	0.63%	-0.45%	0.95%	-0.28	no

Table 1.8- Findings for Brac Bank

Lafarge Holcim Ltd

Lafarge operates in the cement industry which is cyclical by nature. However, it shows no significant abnormal returns throughout the event window at 5% significance level

Lafarge							
Date	Actual Return	DSEX	Expected Return	Abnormal Return	CAR	T-stat	Significance
10-Jul-16	-2.02%	-0.28%	-0.008237148	-1.20%	-1.20%	-0.45	no

Date	Actual return	DSEX	Expected return	Abnormal return	CAR	Expected	T-stat	Significance
11-Jul-16	-1.68%	0.22%	0.009818536	-2.66%	-3.86%	-1.01	no	
12-Jul-16	0.66%	0.88%	0.033652039	-2.71%	-6.56%	-1.02	no	
13-Jul-16	-0.65%	-0.15%	-0.00354267	-0.30%	-6.86%	-0.11	no	
14-Jul-16	-0.26%	0.00%	0.001874035	-0.45%	-7.31%	-0.17	no	
16-Jul-16	-0.53%	0.46%	0.018485265	-2.38%	-9.69%	-0.90	no	
17-Jul-16	-0.53%	0.28%	0.011985218	-1.73%	-11.41%	-0.65	no	
18-Jul-16	-0.27%	-0.33%	-0.010042717	0.73%	-10.68%	0.28	no	
19-Jul-16	-0.67%	-0.05%	0.00	-0.68%	-11.36%	-0.26	no	
20-Jul-16	-0.54%	-0.02%	0.001151808	-0.66%	-12.01%	-0.25	no	

Table 1.9- Findings for Lafarge

Olympic Ltd

Olympic operates in the food and allied industry which is cyclical by nature. It shows a significant abnormal return only on the fourth day of the event window.

	Olympic							
Date	Actual return	DSEX	Expected return	Abnormal return	CAR	Expected	T-stat	Significance
10-Jul-16	-0.96%	-0.28%	0.04%	-1.00%	-1.00%	0.00%	-0.9666	no
11-Jul-16	0.06%	0.22%	0.33%	-0.27%	-1.27%	0.00%	-0.2575	no
12-Jul-16	2.10%	0.88%	0.70%	1.40%	0.13%	0.00%	1.34768	no
13-Jul-16	2.58%	-0.15%	0.12%	2.46%	2.59%	0.00%	2.37696	yes
14-Jul-16	0.59%	0.00%	0.20%	0.39%	2.98%	0.00%	0.37475	no
16-Jul-16	-0.28%	0.46%	0.46%	-0.74%	2.24%	0.00%	-0.7174	no
17-Jul-16	-0.28%	0.28%	0.36%	-0.64%	1.60%	0.00%	-0.6185	no
18-Jul-16	0.75%	-0.33%	0.01%	0.74%	2.33%	0.00%	0.71052	no
19-Jul-16	-1.16%	-0.05%	0.17%	-1.33%	1.00%	0.00%	-1.286	no
20-Jul-16	-1.82%	-0.02%	0.19%	-2.01%	-1.01%	0.00%	-1.9392	no

Table 1.10- Findings for Olympic

Summit Power Ltd

Summit Power operates in the utilities industry which is defensive by nature. It shows a significant abnormal return only on the first day of the event window at a 5% confidence level.

	Summit Power						
Date	Actual Return	DSEX	Expected Return	Abnormal Return	CAR	T-stat	Significance
10-Jul-16	-2.06%	-0.28%	-0.33%	-1.73%	-1.73%	-2.18929	yes
11-Jul-16	0.30%	0.22%	0.00%	0.30%	-1.43%	0.381802	no
12-Jul-16	0.00%	0.88%	0.43%	-0.43%	-1.86%	-0.54394	no
13-Jul-16	0.00%	-0.15%	-0.24%	0.24%	-1.62%	0.308618	no
14-Jul-16	-0.30%	0.00%	-0.15%	-0.15%	-1.77%	-0.19498	no
16-Jul-16	-0.30%	0.46%	0.16%	-0.46%	-2.22%	-0.57574	no
17-Jul-16	0.00%	0.28%	0.04%	-0.04%	-2.26%	-0.0473	no
18-Jul-16	-1.21%	-0.33%	-0.36%	-0.85%	-3.11%	-1.07281	no
19-Jul-16	-0.61%	-0.05%	-0.18%	-0.43%	-3.54%	-0.54569	no
20-Jul-16	-0.62%	-0.02%	-0.16%	-0.46%	-4.00%	-0.58317	no

Table 1.11- Findings for Summit Power

VI. Conclusion

Throughout literature review, it has been found that terrorism poses damaging threat to the financial market. However, the stock market has a prerequisite for such effect which is the financial market must be efficient enough to quickly absorb exogenous information and react accordingly. As per our study findings, Bangladesh stock market lacks efficiency to a great extent which is evident in the market's unreactive characteristic. On another note, the Dhaka Stock Exchange was closed due to holidays during the event date that might have contributed to the inability to react as the initial shock effect dwindled down over the next few days. This terror attack had other significant economic consequences including decrease in foreign investments, loss of investors' confidence in the market and overall negative market sentiments. Law enforcement agency must take precautionary actions to prevent such further incidents that would severely ruin the reputation and investment climate of the country.

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8. 0 Appendix

Date	GP return	Market return	Date	Square Return	Market return	Date	BATBC return	Market return
2-May-16	-0.81%	-0.58%	2-May-16	0.40%	-0.58%	2-May-16	0.78%	-0.58%
3-May-16	1.47%	2.42%	3-May-16	1.45%	2.42%	3-May-16	0.22%	2.42%
4-May-16	-0.85%	-0.33%	4-May-16	0.35%	-0.33%	4-May-16	-0.48%	-0.33%
5-May-16	0.98%	1.14%	5-May-16	0.89%	1.14%	5-May-16	0.26%	1.14%
8-May-16	0.40%	0.77%	8-May-16	0.00%	0.77%	8-May-16	-1.33%	0.77%
9-May-16	1.48%	-0.25%	9-May-16	0.95%	-0.25%	9-May-16	1.13%	-0.25%
10-May-16	0.71%	0.02%	10-May-16	-0.68%	0.02%	10-May-16	0.59%	0.02%
11-May-16	-0.78%	-0.27%	11-May-16	-0.42%	-0.27%	11-May-16	-0.33%	-0.27%
12-May-16	-0.08%	-0.46%	12-May-16	-0.19%	-0.46%	12-May-16	0.52%	-0.46%
15-May-16	0.08%	-0.54%	15-May-16	-0.11%	-0.54%	15-May-16	-0.59%	-0.54%
16-May-16	0.08%	0.31%	16-May-16	-0.04%	0.31%	16-May-16	-0.63%	0.31%
17-May-16	0.24%	0.89%	17-May-16	0.38%	0.89%	17-May-16	0.78%	0.89%
18-May-16	0.67%	0.87%	18-May-16	-0.11%	0.87%	18-May-16	-0.11%	0.87%
19-May-16	-0.04%	0.65%	19-May-16	-0.34%	0.65%	19-May-16	-1.26%	0.65%
22-May-16	0.94%	0.03%	22-May-16	-0.16%	0.03%	22-May-16	0.49%	0.03%
24-May-16	-0.39%	-0.01%	24-May-16	-0.23%	-0.01%	24-May-16	-1.01%	-0.01%
25-May-16	-0.82%	-0.64%	25-May-16	0.15%	-0.64%	25-May-16	-0.53%	-0.64%
26-May-16	0.00%	0.50%	26-May-16	0.04%	0.50%	26-May-16	0.61%	0.50%
29-May-16	0.90%	0.88%	29-May-16	0.31%	0.88%	29-May-16	-0.45%	0.88%

Date			Date			Date		
30-May-16	0.04%	-0.09%	30-May-16	0.31%	-0.09%	30-May-16	-0.61%	-0.09%
31-May-16	-0.70%	-0.08%	31-May-16	-0.23%	-0.08%	31-May-16	-0.04%	-0.08%
1-Jun-16	0.51%	0.05%	1-Jun-16	0.19%	0.05%	1-Jun-16	1.90%	0.05%
2-Jun-16	-0.16%	0.55%	2-Jun-16	0.15%	0.55%	2-Jun-16	0.22%	0.55%
5-Jun-16	0.20%	-0.45%	5-Jun-16	0.04%	-0.45%	6-Jun-16	1.04%	-0.45%
6-Jun-16	-0.08%	-0.34%	6-Jun-16	-0.12%	-0.34%	7-Jun-16	-0.92%	-0.34%
7-Jun-16	-0.43%	0.04%	7-Jun-16	0.04%	0.04%	8-Jun-16	0.34%	0.04%
8-Jun-16	0.24%	0.18%	8-Jun-16	0.00%	0.18%	9-Jun-16	1.71%	0.18%
9-Jun-16	-0.08%	-0.03%	9-Jun-16	-0.04%	-0.03%	12-Jun-16	-1.64%	-0.03%
12-Jun-16	-0.20%	-0.22%	12-Jun-16	-0.07%	-0.22%	13-Jun-16	0.26%	-0.22%
13-Jun-16	-0.04%	-0.09%	13-Jun-16	-0.19%	-0.09%	14-Jun-16	0.22%	-0.09%
14-Jun-16	0.08%	0.08%	14-Jun-16	-0.08%	0.08%	15-Jun-16	0.04%	0.08%
15-Jun-16	-0.08%	0.07%	15-Jun-16	-0.11%	0.07%	16-Jun-16	-0.07%	0.07%
16-Jun-16	-0.94%	-0.38%	16-Jun-16	-0.50%	-0.38%	19-Jun-16	-1.03%	-0.38%
19-Jun-16	-0.32%	-0.17%	19-Jun-16	0.35%	-0.17%	20-Jun-16	0.97%	-0.17%
20-Jun-16	-0.16%	-0.43%	20-Jun-16	-0.15%	-0.43%	21-Jun-16	-0.63%	-0.43%
21-Jun-16	-0.04%	-0.13%	21-Jun-16	-0.11%	-0.13%	22-Jun-16	0.00%	-0.13%
22-Jun-16	-0.32%	0.07%	22-Jun-16	-0.04%	0.07%	23-Jun-16	-0.48%	0.07%
23-Jun-16	0.04%	0.35%	23-Jun-16	0.16%	0.35%	26-Jun-16	0.04%	0.35%
26-Jun-16	-0.12%	-0.03%	26-Jun-16	1.00%	-0.03%	27-Jun-16	0.52%	-0.03%
27-Jun-16	-0.16%	0.74%	27-Jun-16	-0.27%	0.74%	28-Jun-16	0.00%	0.74%
28-Jun-16	1.04%	0.87%	28-Jun-16	0.69%	0.87%	29-Jun-16	0.41%	0.87%
29-Jun-16	-0.12%	0.42%	29-Jun-16	0.08%	0.42%	30-Jun-16	0.00%	0.42%
30-Jun-16	0.99%	0.83%	30-Jun-16	1.07%	0.83%			

Date	ICBL return	Market return	Date	United Power return	Market return	Date	Renata return	Market return
2-May-16	-0.76%	-0.58%	2-May-16	-1.37%	-0.58%	2-May-16	-2.22%	-0.58%
3-May-16	1.87%	2.42%	3-May-16	0.32%	2.42%	3-May-16	1.18%	2.42%
4-May-16	-1.30%	-0.33%	4-May-16	1.76%	-0.33%	4-May-16	1.81%	-0.33%
5-May-16	0.55%	1.14%	5-May-16	7.67%	1.14%	5-May-16	-0.07%	1.14%
8-May-16	2.18%	0.77%	8-May-16	1.54%	0.77%	8-May-16	0.22%	0.77%
9-May-16	3.20%	-0.25%	9-May-16	2.22%	-0.25%	9-May-16	-0.18%	-0.25%
10-May-16	-0.72%	0.02%	10-May-16	-1.83%	0.02%	10-May-16	-0.15%	0.02%
11-May-16	-1.37%	-0.27%	11-May-16	-2.21%	-0.27%	11-May-16	-0.63%	-0.27%
12-May-16	-0.85%	-0.46%	12-May-16	-1.61%	-0.46%	12-May-16	0.76%	-0.46%
15-May-16	-0.41%	-0.54%	15-May-16	-1.33%	-0.54%	15-May-16	0.79%	-0.54%
16-May-16	0.64%	0.31%	16-May-16	-0.36%	0.31%	16-May-16	-0.36%	0.31%
17-May-16	0.32%	0.89%	17-May-16	1.67%	0.89%	17-May-16	-0.74%	0.89%
18-May-16	-0.12%	0.87%	18-May-16	-0.67%	0.87%	18-May-16	-0.35%	0.87%
19-May-16	1.27%	0.65%	19-May-16	1.84%	0.65%	19-May-16	0.45%	0.65%
22-May-16	0.42%	0.03%	22-May-16	-0.85%	0.03%	24-May-16	2.28%	0.03%
24-May-16	0.22%	-0.01%	24-May-16	-1.08%	-0.01%	25-May-16	0.23%	-0.01%
25-May-16	-0.52%	-0.64%	26-May-16	-6.04%	-0.64%	26-May-16	0.42%	-0.64%

26-May-16	-0.42%	0.50%	29-May-16	-0.39%	0.50%	29-May-16	0.08%	0.50%
29-May-16	0.31%	0.88%	30-May-16	1.24%	0.88%	30-May-16	0.13%	0.88%
30-May-16	0.11%	-0.09%	31-May-16	-1.55%	-0.09%	31-May-16	-0.98%	-0.09%
31-May-16	-1.05%	-0.08%	1-Jun-16	-0.79%	-0.08%	1-Jun-16	-0.11%	-0.08%
1-Jun-16	-0.21%	0.05%	2-Jun-16	-2.31%	0.05%	2-Jun-16	0.26%	0.05%
2-Jun-16	1.05%	0.55%	5-Jun-16	-1.96%	0.55%	5-Jun-16	0.29%	0.55%
5-Jun-16	1.78%	-0.45%	6-Jun-16	-0.83%	-0.45%	6-Jun-16	-0.04%	-0.45%
6-Jun-16	0.53%	-0.34%	7-Jun-16	-1.38%	-0.34%	7-Jun-16	-0.06%	-0.34%
7-Jun-16	-0.31%	0.04%	8-Jun-16	3.66%	0.04%	8-Jun-16	-0.14%	0.04%
8-Jun-16	-0.62%	0.18%	9-Jun-16	-0.68%	0.18%	9-Jun-16	-0.01%	0.18%
9-Jun-16	0.53%	-0.03%	12-Jun-16	0.06%	-0.03%	12-Jun-16	-0.14%	-0.03%
12-Jun-16	-0.11%	-0.22%	13-Jun-16	-0.48%	-0.22%	13-Jun-16	0.50%	-0.22%
13-Jun-16	-0.20%	-0.09%	14-Jun-16	-1.02%	-0.09%	14-Jun-16	-0.49%	-0.09%
14-Jun-16	0.41%	0.08%	15-Jun-16	-0.70%	0.08%	15-Jun-16	0.67%	0.08%
15-Jun-16	0.00%	0.07%	16-Jun-16	-0.49%	0.07%	16-Jun-16	0.92%	0.07%
16-Jun-16	-0.10%	-0.38%	19-Jun-16	0.49%	-0.38%	19-Jun-16	1.50%	-0.38%
19-Jun-16	0.00%	-0.17%	20-Jun-16	1.12%	-0.17%	20-Jun-16	-0.88%	-0.17%
20-Jun-16	-0.11%	-0.43%	21-Jun-16	-0.97%	-0.43%	21-Jun-16	-1.17%	-0.43%
21-Jun-16	0.41%	-0.13%	22-Jun-16	-0.28%	-0.13%	22-Jun-16	0.20%	-0.13%
22-Jun-16	0.11%	0.07%	23-Jun-16	1.53%	0.07%	23-Jun-16	1.05%	0.07%
23-Jun-16	6.55%	0.35%	26-Jun-16	-0.55%	0.35%	26-Jun-16	2.07%	0.35%
26-Jun-16	1.74%	-0.03%	27-Jun-16	0.97%	-0.03%	27-Jun-16	0.92%	-0.03%
27-Jun-16	0.65%	0.74%	28-Jun-16	0.34%	0.74%	28-Jun-16	0.97%	0.74%
28-Jun-16	2.92%	0.87%	29-Jun-16	0.54%	0.87%	29-Jun-16	0.52%	0.87%
29-Jun-16	0.09%	0.42%	30-Jun-16	0.68%	0.42%	30-Jun-16	0.11%	0.42%
30-Jun-16	2.92%	0.42%						

Date	Brac bank return	Market return	Date	Lafarge return	Market return
2-May-16	0.25%	-0.58%	2-May-16	-2.26%	-0.58%
3-May-16	1.21%	2.42%	3-May-16	5.34%	2.42%
4-May-16	2.14%	-0.33%	4-May-16	-0.34%	-0.33%
5-May-16	0.92%	1.14%	5-May-16	-0.34%	1.14%
8-May-16	1.63%	0.77%	8-May-16	1.53%	0.77%
9-May-16	2.04%	-0.25%	9-May-16	-2.35%	-0.25%
10-May-16	0.42%	0.02%	10-May-16	0.34%	0.02%
11-May-16	1.34%	-0.27%	11-May-16	-0.51%	-0.27%
15-May-16	-1.96%	-0.46%	12-May-16	-0.34%	-0.46%
16-May-16	2.70%	-0.54%	15-May-16	-1.03%	-0.54%
17-May-16	2.81%	0.31%	16-May-16	0.35%	0.31%
18-May-16	-0.44%	0.89%	17-May-16	9.90%	0.89%
19-May-16	-1.68%	0.87%	18-May-16	6.32%	0.87%
22-May-16	-0.63%	0.65%	19-May-16	4.46%	0.65%
24-May-16	0.00%	0.03%	22-May-16	-1.85%	0.03%
25-May-16	-0.22%	-0.01%	24-May-16	-1.74%	-0.01%

Date			Date		
26-May-16	0.23%	-0.64%	25-May-16	-1.47%	-0.64%
29-May-16	0.19%	0.50%	26-May-16	7.49%	0.50%
30-May-16	0.45%	0.88%	29-May-16	9.89%	0.88%
31-May-16	0.22%	-0.09%	30-May-16	-2.92%	-0.09%
1-Jun-16	-0.22%	-0.08%	31-May-16	6.01%	-0.08%
2-Jun-16	0.45%	0.05%	1-Jun-16	-0.62%	0.05%
5-Jun-16	3.23%	0.55%	2-Jun-16	1.12%	0.55%
6-Jun-16	-0.22%	-0.45%	5-Jun-16	-3.55%	-0.45%
7-Jun-16	3.35%	-0.34%	6-Jun-16	-4.19%	-0.34%
8-Jun-16	5.02%	0.04%	7-Jun-16	-0.27%	0.04%
9-Jun-16	-0.36%	0.18%	8-Jun-16	0.13%	0.18%
12-Jun-16	-1.53%	-0.03%	9-Jun-16	-1.33%	-0.03%
13-Jun-16	2.33%	-0.22%	12-Jun-16	0.40%	-0.22%
14-Jun-16	4.40%	-0.09%	13-Jun-16	2.28%	-0.09%
15-Jun-16	-1.84%	0.08%	14-Jun-16	0.52%	0.08%
16-Jun-16	1.52%	0.07%	15-Jun-16	-1.04%	0.07%
19-Jun-16	-0.57%	-0.38%	16-Jun-16	-1.84%	-0.38%
20-Jun-16	-0.93%	-0.17%	19-Jun-16	-1.88%	-0.17%
21-Jun-16	0.00%	-0.43%	20-Jun-16	-2.05%	-0.43%
22-Jun-16	-0.35%	-0.13%	21-Jun-16	0.98%	-0.13%
23-Jun-16	0.55%	0.07%	22-Jun-16	0.41%	0.07%
26-Jun-16	0.00%	0.35%	23-Jun-16	-0.41%	0.35%
27-Jun-16	-0.55%	-0.03%	26-Jun-16	-0.83%	-0.03%
28-Jun-16	0.19%	0.74%	27-Jun-16	0.42%	0.74%
29-Jun-16	-0.78%	0.87%	28-Jun-16	1.39%	0.87%
30-Jun-16	0.00%	0.42%	29-Jun-16	4.79%	0.42%
			30-Jun-16	3.40%	0.42%

Date	Summit return	Market return	Date	Olympic return	Market return
2-May-16	-1.77%	-0.58%	2-May-16	-1.32%	-0.58%
3-May-16	1.80%	2.42%	3-May-16	1.07%	2.42%
4-May-16	-0.59%	-0.33%	4-May-16	2.54%	-0.33%
5-May-16	-0.89%	1.14%	5-May-16	2.73%	1.14%
8-May-16	-1.20%	0.77%	8-May-16	2.10%	0.77%
9-May-16	0.30%	-0.25%	9-May-16	-0.77%	-0.25%
10-May-16	1.21%	0.02%	10-May-16	0.19%	0.02%
11-May-16	-0.30%	-0.27%	11-May-16	-0.65%	-0.27%
12-May-16	-0.90%	-0.46%	12-May-16	-0.16%	-0.46%
15-May-16	-0.91%	-0.54%	15-May-16	-0.96%	-0.54%
16-May-16	0.30%	0.31%	16-May-16	-0.69%	0.31%
17-May-16	0.30%	0.89%	17-May-16	0.25%	0.89%
18-May-16	0.30%	0.87%	18-May-16	1.04%	0.87%
19-May-16	2.11%	0.65%	19-May-16	-0.91%	0.65%
22-May-16	-0.59%	0.03%	22-May-16	0.41%	0.03%

24-May-16	-1.19%	-0.01%	24-May-16	0.03%	-0.01%
25-May-16	-0.60%	-0.64%	25-May-16	-0.66%	-0.64%
26-May-16	0.91%	0.50%	26-May-16	0.16%	0.50%
29-May-16	0.60%	0.88%	29-May-16	0.35%	0.88%
30-May-16	0.90%	-0.09%	30-May-16	0.57%	-0.09%
31-May-16	0.30%	-0.08%	31-May-16	2.09%	-0.08%
1-Jun-16	-0.59%	0.05%	1-Jun-16	0.34%	0.05%
2-Jun-16	0.00%	0.55%	2-Jun-16	1.34%	0.55%
5-Jun-16	-0.89%	-0.45%	5-Jun-16	-0.45%	-0.45%
6-Jun-16	-1.50%	-0.34%	6-Jun-16	0.82%	-0.34%
7-Jun-16	-0.30%	0.04%	7-Jun-16	2.79%	0.04%
8-Jun-16	0.00%	0.18%	8-Jun-16	-0.67%	0.18%
9-Jun-16	-0.30%	-0.03%	9-Jun-16	-0.24%	-0.03%
12-Jun-16	0.31%	-0.22%	12-Jun-16	2.68%	-0.22%
13-Jun-16	-0.61%	-0.09%	13-Jun-16	-0.03%	-0.09%
14-Jun-16	-0.61%	0.08%	14-Jun-16	-0.60%	0.08%
15-Jun-16	-0.93%	0.07%	15-Jun-16	0.29%	0.07%
16-Jun-16	0.62%	-0.38%	16-Jun-16	-0.60%	-0.38%
19-Jun-16	-0.31%	-0.17%	19-Jun-16	0.03%	-0.17%
20-Jun-16	0.00%	-0.43%	20-Jun-16	-0.17%	-0.43%
21-Jun-16	0.31%	-0.13%	21-Jun-16	-0.35%	-0.13%
22-Jun-16	0.00%	0.07%	22-Jun-16	-0.26%	0.07%
23-Jun-16	-0.31%	0.35%	23-Jun-16	-0.06%	0.35%
26-Jun-16	1.86%	-0.03%	26-Jun-16	-0.55%	-0.03%
27-Jun-16	0.30%	0.74%	27-Jun-16	0.56%	0.74%
28-Jun-16	0.30%	0.87%	28-Jun-16	0.03%	0.87%
29-Jun-16	0.61%	0.42%	29-Jun-16	-0.21%	0.42%
30-Jun-16	2.11%	0.42%	30-Jun-16	1.00%	0.42%

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.620987003
R Square	0.385624858
Adjusted R Square	0.370640098
Standard Error	0.004757474
Observations	43

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.00058246	0.000582	25.73447	0.000008868
Residual	41	0.00092798	2.26E-05		
Total	42	0.00151044			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%

				0.71510			-	
Intercept	-0.000277518	0.000755066	-0.36754	6	-0.00180241	0.00124737	0.001802405	0.00124737
DSEX					0.38095072	0.88488210		0.88488210
market	0.632916413	0.124763841	5.072915	8.87E-06	4	2	0.380950724	2

t-Test: Two-Sample Assuming Unequal Variances

	Abnormal Return	*Dummy*
Mean	-0.00019	0
Variance	7.85E-05	0
Observations	13	2
Hypothesized Mean Difference	0	
df	12	
t Stat	-0.07908	
P(T<=t) one-tail	0.469138	
t Critical one-tail	1.782288	
P(T<=t) two-tail	0.938276	
t Critical two-tail	2.178813	

Silvana Jahir, et. al. "The impact of terrorism on Dhaka stock exchange: an event study of the holey artisan attack." *IOSR Journal of Economics and Finance (IOSR-JEF),* 11(3), 2020, pp. 01-15.