

# An Empirical Investigation of the Short Term and Long Term Impact of Recent International Terrorist Attacks on the Japanese Equity Market.

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## Abstract

In this paper, the impact of five recent terrorist attacks on equities listed on the Japanese Stock Exchange is examined. We analyse how these events affect the different sectors in Japan using the Global Industry Classification Standard. Using parametric and non-parametric tests, we investigate the relationship between stock returns for equities listed in these sectors and terrorist attacks. The empirical evidence shows significant short-term negative abnormal returns around the September 11 attacks and to a lesser extent, the London and Bali Bombings. There is also evidence of a weak positive equity response to the Bali bombing, and a weak negative response to the Madrid attack in the Japanese market. We document negative industry abnormal returns as high as 9.67% in response to the September 11 attack. Our findings show that systematic risk of certain sectors increased after the events of September 11, but remained unchanged for the other attacks.

**Keywords:** Terrorism, Equity Market, Abnormal Returns, Non-Parametric test, Japan

## I. Introduction

Richman, Santos and Barkoulas (2005) provides a detailed analysis of the short and long term effects of the September 11, 2001 terrorist attacks on 28 countries by applying the International Capital Asset Pricing Model (ICAPM). The empirical evidence shows that there was a negative stock market reaction on the Japanese returns but no change in systematic risk days surrounding the attack. Chen and Siems (2004) supported their findings and also studied the terrorist attacks prior to September 11. Drakos (2004) investigates the effects of September 11 attacks on a set of airline stocks at various international stock markets and argue that terrorism is an exogenous factor adversely affecting demand shock for the airline industries. Drakos (2004) shows an immediate impact on the world stock exchanges with all Nippon airline stocks falling sharply and also document an apparent shift in the riskiness of airlines stocks after the attack through an increase in systematic risk. Ito and Lee (2005), on the other hand, argue that there is a substitution effect between international travel and domestic travel. They show an upward spike of 6% in the Japanese domestic demand and a dramatic drop of 8.9% in international demand after the September 11 event. Positive reactions and substitution effects of terrorist attacks are not isolated events, such effects were also observed by Cam (2006) and Ramiah, Calabro, Maher, Ghafouri, and Cam (2007) in the United States and Australian markets.

Following Ito and Lee (2005), Cam (2006), Ramiah et al. (2007) we do not assume that investors necessarily react negatively to terrorist attacks. Equity holders tend to respond negatively to such events only when they perceive an increase in the expected costs of terrorist activities. We argue that market participants may well not

react if they do not perceive that the attack has an impact on expected returns. It is possible that stock markets do not react negatively on days surrounding a major terrorist attack. We believe that markets can respond differently to the different attacks and that the variability in risk and returns differs significantly across different sectors within an economy.

The Japanese Stock Exchange provides an ideal testing ground for our arguments. Japan's strong ties with the United States and the 'war on terror' may attract terrorist activity. Furthermore the Japanese Stock Exchange was among the first market to open immediately following September 11 events. The bulk of the literature of terrorist attacks and the Japanese market is limited to firstly the September 11, secondly the overall Japanese market and thirdly to only one industry within that economy. Moreover the results of the airline industry appear to be conflicting. On the one hand, Drakos (2004) argues a negative impact on the airline industry in Japan while Ito and Lee (2005) show a positive impact in the domestic airlines.

As such, we identify three gaps in the existing literature. First, there have been several attacks after September 11 in both Europe and Asia which the current literature does not address. Secondly, most of the studies in Japan focus on the overall market and other segments of the markets have been neglected. Thirdly, an industry analysis will allow us to shed lights on the debate of substitution effect in the Japanese market. Our contributions are as follows. First, we identify precisely which industries in Japan were affected and the direction they were affected. Second, we look at how subsequent attacks impacted on these industries. Third we modify the methodologies used in the existing literature by excluding firm specific information, using regression analysis and using non-parametric tests, to reinforce our findings.

Most of the existing literatures fail to exclude firm specific information and thus report results which contain both the impact of terrorist attacks and other non terrorist components. Global investors as well as Japanese investors can use this study as a guide to make their investment decision in Japan in the event of another terrorist attack. Such analysis will be beneficial to portfolio managers that use the top-down investment process. The second stage of the top-down investment process is to deal with the factors influencing the industry and we contribute to this debate by adding the terrorist impact on the different industries.

Most of the above literature may lead one to believe that terrorist attacks result in an increase in terrorist risk, and therefore reflect a negative sentiment. We argue that such conclusions should not be drawn until one considers the industry effects of terrorist attacks in other nations and also terrorist attacks post September 11. To support our hypothesis, we study the impact of the September 11 and subsequent four terrorist attacks that occurred in Bali, Madrid, London and Mumbai on the Japanese Stock Exchange. By observing the industry effects in Japan, we can determine how Japanese investors reacted to the recent major terrorist attacks. Our conclusions support Drakos (2004) as almost half of the Japanese industries studied did result in an increase in their systematic risk following. However, we identified other sectors with no increase in their systematic risk. We thus argue that one must be careful in generalising the findings of Drakos (2004) as there are variations in systematic risk changes across industries.

This study is unique in the sense that it is the first study that looks at the short term effects of the five recent attacks on the different Japanese industries. Most of the current literature attempt to study the impact of one attack on the world capital

markets whereas we study how the major international terrorist attacks had an impact on one single country. Our results are consistent with the prior literature, in that September 11 did, indeed, have a negative impact on the Japanese market. Furthermore, we observe that terrorism has a significant industry effect. Our contribution to this debate is that we show that September 11 had the most negative impact on the Japanese industries and that the subsequent attacks generated mixed results. For instance, Bali bombings produced a positive substitution effect while London and Mumbai had no impact on the industries studied. In Section II, we present the data and methods used in this paper. Section III presents the empirical findings and Section IV provides some concluding remarks.

## **II. Data and Methods**

### **Data**

We use daily stock return indexes, returns calculated from the share price index and the 3 months treasury bills, for the period July 1999 to February 2007, obtained from Datastream. We have a total of 1859 stocks in our sample. The number of firms in each of these industry sectors is shown in Table 1. Table 1 reports the descriptive statistics for each of the different industries. The average daily return for the Beverages, Electronic, Food and Drug, Health Care, Household Goods, Leisure Goods, Life and Non-Life Insurance, Media, Pharmaceuticals, Retailers, Software, Support Service, Technology, Telecommunication and Travel and Leisure sectors are negative. Table 1 also includes the standard deviation, skewness, excess kurtosis, range of returns and the number of firms in each of the industry sectors. Details of the five terrorist attacks that occurred in the United States, Bali, Madrid, London and Mumbai, are summarised in Table 2.

## Methodology

We define daily return as:

$$DR_{it} = \ln\left(\frac{SRI_{it}}{SRI_{it-1}}\right) \quad (1)$$

where  $DR_{it}$  is the daily return for stock  $i$ ,  $SRI_{it}$  is the stock return index for stock  $i$  at time  $t$  and  $SRI_{it-1}$  is the stock return index for stock  $i$  at time  $t-1$ .

The *ex-post* abnormal returns ( $AR_{it}$ ) are calculated following Brown and Warner (1985), Cam (2006) and Ramiah et al. (2007). These are calculated as the difference between observed returns of firm  $i$  at event day  $t$ , and the expected return,  $E(R_{it})$ :

$$AR_{it} = R_{it} - E(R_{it}) \quad (2)$$

The daily expected return  $E(R_{it})$  is calculated using the market model with a window of the last 260 observed daily returns:

$$E(R_{it}) = \beta_0 + \beta_1 R_M \quad (3)$$

The abnormal return for industry  $I$  at time  $t$ ,  $AR_{It}$ , is obtained by averaging the abnormal return of each firm within the industry:

$$AR_{It} = \frac{1}{N} \sum_{i=1}^N AR_{it} \quad (4)$$

## Parametric Tests

The parametric tests used in this study rely on the important assumption that the industry abnormal returns and cumulative abnormal returns are normally distributed.

The standard  $t$ -statistic for the abnormal return is:

$$t_{AR_{It}} = \frac{AR_{It}}{SD(AR_{It})} \quad (5)$$

where  $SD(AR_{It})$  is an estimate of the standard deviation of the abnormal returns. By cumulating the periodic abnormal return for each industry over five days, we obtain

the five day cumulative abnormal return,  $CAR5_{it}$ :

$$CAR5_{it} = \sum_{t=1}^5 AR_{it} \quad (6)$$

The  $t$ -statistic for the five day cumulative abnormal return is obtained by dividing  $CAR5_{it}$  by the standard deviation of the five day cumulative abnormal return,  $SD(CAR5_{it})$ :

$$t_{CAR5_{it}} = \frac{CAR5_{it}}{SD(CAR5_{it})} \quad (7)$$

### Non-Parametric Tests

The literature dealing with abnormal returns show that they are not normally distributed. More specifically, the distribution of the abnormal returns tends to exhibit fat tails and positive skewness. Under these circumstances, parametric tests tend to reject the null too often when testing for positive abnormal performance and too seldom when testing for negative abnormal returns. As a robustness test, we turn to an alternative test developed by Corrado (1989). This non-parametric test is more powerful at detecting the false null hypothesis of no abnormal returns.

We transform each firm's abnormal returns,  $AR_{it}$  into ranks,  $K_i$  over the combined period,  $T_i$  of 260 days, and is denoted as:

$$K_i = rank(AR_{it}) \quad (8)$$

Following Cam (2006) and Ramiah et al. (2007), the period is broken up into the 244 days prior to the event, the event day and 15 days after the event. The ranks in the event period for each firm are then compared with the expected average rank  $\bar{K}_i$  under the null hypothesis of no abnormal returns. This is given by:

$$\bar{K}_i = 0.5 + \frac{T_i}{2} \quad (9)$$



As such, the non-parametric  $t$ -statistic,  $t_{np}$ , for the null hypothesis of no abnormal returns for each industry is given by:

$$t_{np} = \frac{\frac{1}{N} \sum_{i=1}^N (K_i - \bar{K}_i)}{SD(\bar{K})} \quad (10)$$

where  $SD(\bar{K})$  is the standard deviation of the average rank, and is denoted by:

$$SD(\bar{K}) = \sqrt{\frac{1}{T} \sum_{t=1}^T \frac{1}{N^2} \sum (K_{it} - \bar{K}_i)^2} \quad (11)$$

### Regression Analysis

Using the CAPM, we then test if terrorist attacks have had an impact on the systematic risk of Japanese industries on the days of the attack. We include a multiplicative dummy variable in the standard CAPM to test this possibility. The model we estimate is therefore:

$$\tilde{r}_{it} - \tilde{r}_{ft} = \phi_I + \beta_I^1 [\tilde{r}_{mt} - \tilde{r}_{ft}] + \beta_I^2 [\tilde{r}_{mt} - \tilde{r}_{ft}] * D + \tilde{\epsilon}_{it} \quad (12)$$

where  $\tilde{r}_{it}$  is industry  $I$ 's return at time  $t$ ,  $\tilde{r}_{ft}$  is the risk free return at time  $t$ ,  $\tilde{r}_{mt}$  is the return on the market at time  $t$  and  $D$  is a dummy variable that takes the value of 1 on the day of the event, and 0 otherwise. This variable is meant to capture the effect of terrorist attacks on the systematic risk.

The inclusion of an additive dummy variable in equation (12) results in a near singular variance-covariance matrix. As a result, we estimate a separate equation to test if the intercept was affected by the attacks:

$$\tilde{r}_{it} - \tilde{r}_{ft} = \phi_I + \alpha_I^1 [\tilde{r}_{mt} - \tilde{r}_{ft}] + \alpha_I^2 D + \tilde{\epsilon}_{it} \quad (13)$$

We gathered the returns for each industry 244 days prior to the event, and 15 days after the event. Standard tests and residual diagnostics revealed no major concerns

with the above two econometric models. We also test if these dummy variables were redundant in the above equations using a Wald test for restrictions.

Further, we considered the long term impact of the terrorist events on the market. The test determines whether the level of risk; specifically captured by structural changes, was altered after the event day:

$$\tilde{r}_{it} - \tilde{r}_{ft} = \beta_0 + \beta_1[\tilde{r}_{mt} - \tilde{r}_{ft}] + \beta_2[\tilde{r}_{mt} - \tilde{r}_{ft}] * SD + \beta_3(SD) \quad (14)$$

where  $SD$  is a dummy variable that takes the value of 0 prior to the event, and 1 after the day of the event. This variable is meant to capture the structural changes and influence of terrorist attacks on the systematic risk, over a long term horizon.

### III. Empirical Findings

This section reports the results of five different terrorist attacks on the Japanese Stock Exchange. Using parametric tests and a non-parametric test we test whether the returns and systematic risk of 34 Japanese industries were affected by these five events. We confirm that there is a strong negative impact on returns for most of the industries and a general increase in systematic risk of some industries during the US September 11 attacks. Interestingly, we do not find similar evidence for the subsequent attacks. We observe that Bali bombings have a weak positive substitution effect on Japanese industries while the London and Mumbai attacks had no effect on the equity markets.

## United States- September 11

Table 3 and Table 4 summarise the parametric empirical results for September 11 for the different sectors. Following Cam (2006) and Ramiah et al. (2007), we report the abnormal return on the day, and the five day cumulative abnormal return as well as their respective *t*-statistics for the 34 different industries. It should be noted that, unlike the US market that opened 6 days after the attack, the Japanese market opened the day after the attack. In other the words, we are assessing the performance of the Japanese stock market on the 12<sup>th</sup> of September of 2001. The results reported in Table 3 and Table 4 show a consistent negative effect on equities listed in the Japanese Stock Exchange following the September 11 attack. Figure 1 supports this hypothesis, except for the Gas and Oil and Telecommunication industry in the five day cumulative abnormal return in a positive position; all the other industries illustrate both a negative abnormal return and a negative five day cumulative abnormal return.

Columns 2 and 3 of Table 3 report the abnormal returns and the parametric *t*-statistics for the various sectors. Table 3 shows that the returns in the Equity and Non-Equity Investment sector fell by 9.67% after the September 11 attacks, and the *t*-statistic shows that this value is statistically different from zero. With the exception of Banks, Insurance, Energy and General Financials, all the other industries exhibited a negative and significant abnormal return. Note that the exclusion of firms with firm specific information surrounding the events may account for these unexpected results in these sectors. In other words 29 out of 34 sectors were affected by the event. The sector that was affected the most was the Equity and Non-Equity Investment sector, which fell by 9.67%. Such a relatively large percentage fall is not unusual, given Cam (2006), reports a 35% fall in the returns of Airline and Airport industry and after the September 11 attacks in the US. Some similarities can be observed in the Real Estate

industry. This industry suffered on September 11 in both the US and Japan, though the magnitude of the impact is moderately higher in the United States.

Chen and Siems (2004) assess the short term effect of September 11 on the global capital market. Using a major market index, they showed that the Australian equity market fell by 6.2%. Using an ICAPM, Richman *et al.* (2005) document a negative impact of about 6.5% on the Japanese stock market. Our findings are thus consistent with Chen and Siems (2004) and Richman *et al.* (2005) as we show a clear and consistent fall in various industries in Japan. Whilst our analysis does not specifically look at the airline industry, we are consistent with Ito and Lee (2005) in terms of negative sentiment surrounding the event and as our analysis does not look specifically at the domestic airline industry we cannot comment on their positive substitution effect. Figure 1 shows the ranking of the abnormal returns in descending order. From the Figure 1, we can observe that Aerospace, Gas and Oil and General Financial sectors are the least affected by the September 11 terrorist attack.

Except for the Aerospace, Gas and Oil and Telecommunication sectors, all other sectors exhibit a negative cumulative abnormal return over the following five days (see Table 4). Note that our approach is consistent with most studies as this methodology supports the hypothesis of negative sentiment after the September 11 attack. The second column of Table 4 shows that the Life and Non-Life Insurance sector was the worst performing sector with -10.3% as CAR over the next five days (see Figure 1) though the *t*-statistic (see Table 4) implies that this is not statistically different from zero. The sectors that recorded statistically significant drop were Automobile (-8.9%) and Leisure Goods (-8.8%). Note that all these sectors also exhibit a negative abnormal return on the day following the attack. From Figure 1, we

observe a positive five day CAR for Aerospace, Gas and Oil and Telecommunication sectors but a quick look at the  $t$ -statistic in Table 4 (column 3) reveals that this is not statistically significant. It is noticeable from Figure 1 that the CAR is marginally higher than the event day AR for most industries, implying that the market continued to plummet over the following five days. Our findings are consistent with Chen and Siems (2004) who showed that cumulative abnormal return is around -6.81% six days after the event and -8.60% eleven days after the attack. This result is inconsistent with the Cam (2006) who found that the CAR over the following six days is lower than the abnormal return for US firms.

As a robustness test, we consider the non-parametric results in Table 5 in our discussion. The negative impact of the events of September 11 on Japanese industries was also detected by the non-parametric tests. The results in Table 5 show that all the industries have a negative non-parametric  $t$ -statistic. For instance, column 2 of Table 5 shows that the non-parametric  $t$ -statistic is -1.69 for the Equity and Non-Equity Investment industry. This reflects the negative abnormal returns identified earlier in the parametric tests. Generally speaking the results of the non-parametric tests supports the results observed in the parametric analysis.

Based on the above discussion, we can conclude that all the industries except for Aerospace, Gas and Oil and General Financial sectors were strongly negatively affected on the day following the September 11 attack. It is generally assumed that following a terrorist attack, returns of equities fall as a result of an increase in systematic risk. Our next objective will be to test if the industries negatively affected by the events of September 11 experienced a general increase in their systematic risk. The multiplicative regression analysis (see Equation 12) attempts to test this

hypothesis. Columns 2 to 4 of Table 6 report the results of the multiplicative dummy variable model (equation 12). A positive (negative) coefficient of the multiplicative dummy variable ( $\beta_i^2$ ) reflects an increase (decrease) in systematic risk. The sign of the coefficient ( $\beta_i^2$ ) appears to be positive all of the industries discussed above. When the coefficient of the multiplicative dummy variable is statistically different from zero, it implies a significant statistical change in the systematic risk of the industry. The  $t$ -statistics results from column 4 of Table 6 show that systematic risk statistically increased in 16 sectors namely Automobile, Beverages, Chemicals, Construction, Electronic, Engineering, Food and Drug, General, Health Care, Leisure Goods, Life and Non-Life Insurance, Pharmaceutical, Retailer, Software, Support Service and Technology sectors out of the 31 sectors that recorded a statistical dropped in their abnormal return. For example the systematic risk of Pharmaceuticals was 0.16 (see column 3 of Table 6) prior to the attack and increased by 1.73 (see column 4 of Table 6) after the attack. The systematic risk increased from 0.16 to 1.89 after the attack. The Wald test reveals that for this industry and for the industries listed above, that the dummy variable is not a redundant variable. The results of the Wald test are not reported in this paper. However, the results are available from the author upon request. On the other hand, in the remaining 15 industries, ten industries show no statistical evidence of an increase in systematic risk and five industries reveal through the Wald Test that the dummy variable is a redundant variable. Another key finding of this study is that terrorist attacks do not always lead to an increase in systematic risk and that terrorist risk varies significantly across industries. These results are consistent with Drakos (2004) who finds evidence of an increase in the systematic risk of Nippon Airlines. The general observation of Drakos (2004) on the other hand is that systematic risk generally increased for all the major international airline companies.

On the other hand the additive dummy variable equation 13 shows the impact of September 11 on the intercept of the CAPM. Once more we focus the industries stated in the previous paragraph. Columns 5 to 7 of Table 6 present the findings of the regression. As from Column 7, we can observe that the intercept was statistically decreased all the sectors except for Aerospace and Gas and Oil. The empirical evidence on structural change in the systematic risk of these industries shows a strong evidence of an increase in systematic risk post September 11.

### **Bali**

Among all the terrorist attacks studied in this paper, the Bali bombing is geographically the closest to Japan soil. The event occurred on Saturday 12<sup>th</sup> October 2002 and the first day that the Japanese market traded after the attack, was on the Saturday 12<sup>th</sup> October 2002. The results of the parametric test on sector returns for this day are shown in Table 3 (Columns 4 and 5). Interestingly, all the sectors show positive and insignificant results, i.e. Bali terrorist attack did not have any immediate effect of the Japanese industries. The robustness test also support the claim of a positive effect and insignificant effect of the Bali bombings on the first day of trading in Japan. The third column of Table 5 shows the results on the non-parametric test on the various Japanese industries. Over the 5 day trading period, there were approximately half of the 34 industries with significant cumulative abnormal cumulative returns recorded (see Table 4) for Bali bombing. We can therefore conclude that a week after the Bali attack, half of the sectors was positively affected while all other sectors were still insensitive to the event. Such findings support our initial hypothesis that terrorist attacks do not always impact negatively on stock markets. A decomposition of the market shows us that industries can either have a positive, negative or no impact following a terrorist attack. The regression analysis in

Appendix 1.1 shows no evidence of a change in the systematic risk on these industries immediately after the attack. However there has been a positive structural change in the systematic risk as shown in see Appendix 2.1, i.e. the level of systematic risk has increased over the long run in the region following Bali Bombings.

### **Madrid**

The bombings in Madrid occurred on Thursday 11<sup>th</sup> March 2004. We examine the Japanese industry reactions both immediately, and five day following the event. The results of the parametric test immediately after the attacks and five day after the attacks are shown in columns 6 and 7 of Table 3 and Table 4 respectively. Based on the two parametric tests, we find a very weak evidence of a negative impact of Madrid bombings on the Japanese industries. However, five days later the Japanese market rebound to a weak positive influence. The non-parametric test also detects a negative sentiment on the event day and supports the weak statistical significance. Of the five terrorist events that we examine, Madrid suffered the second highest injury and fatality rate, and yet we do not observe the same strong negative results. Similar to the Bali findings, we find no evidence of a change in systematic risk on the day of the attack (see Appendix 1.2) and we observe few industries with a structural change in their systematic risk level (i.e. an increase in systematic risk- see Appendix 2.3). This result can be regarded as another contribution to the literature as at present there is no study that looks at the impact of Madrid bombings on the Japanese market.

### **London and Mumbai**

On Thursday 7<sup>th</sup> July 2005, London was subject to terrorist attacks. Surprisingly enough, the Japanese stock market's response to the attack was rather insignificant on both returns and systematic risk. The abnormal returns and cumulative abnormal



returns are not statistically different from zero implying that Japanese industries were insensitive to the London attack. The non-parametric *t*-statistic also supports these findings. Once more, the London evidence shows that it is wrong to assume that terrorist attacks will impact negatively on stock markets. The empirical evidence provided in Appendix 1.3 and Appendix 2.4 shows no change in systematic risk in both the short run and long run.

Mumbai's terrorist attacks claimed 207 lives and injured 714 persons; the response from Japanese equity market was surprisingly marginal. The empirical testing of this event produce no response on the systematic risk (both long term and short term), no statistical effect on the day of the attack and a weak negative effect five days after the attack.

#### **IV. Conclusion**

Studying the impacts of the recent terrorist attacks on the Japanese industries, we are able to identify various market effects. The events of September 11 had the greatest effect on the Japanese market. The majority of the industries were down on the day of the event, and around 30% of the industries were still negatively affected 5 days after the event. Approximately 80% of the industries studied showed an increase in systematic risk following the September 11 attacks. Bali and London bombings had weak negative impact on the Japanese industries. Interestingly, the lesson learnt from the Bali attacks was positive for Japan and this can be attributable to substitution effect. Using the Bali Bombing evidence, we argue that terrorist attacks do not always nurture negative sentiment. Another interesting finding is that the Mumbai bombing had no effect on the Japanese market. The Mumbai evidence can be used to demonstrate that some capital markets can be insensitive to some terrorist attacks

and hence investment heaven do exist after a terrorist attack. Japan has not been drastically affected by terrorist attacks post September 11 and that each separate attack has a unique way of affecting the Japanese industries.

## References

- Brown, S. J., & Warner, J. B., 1985, 'Using daily stock returns: The case of event studies', *Journal of Financial Economics*, vol. 14, no. 1, 3-31.
- Cam, M., 2006, 'The impact of terrorism on United States Industry indexes', School of Economics, Finance and Marketing, Royal Melbourne Institute of Technology, Melbourne.
- Chen, A. H., & Siems, T. F., 2004, 'The effects of terrorism on global capital markets', *European Journal of Political Economy*, vol. 20, 349-366.
- Corrado, C. J., 1989, 'A non parametric test for abnormal security price performance in event studies', *Journal of Financial Economics*, vol. 23, 385-395.
- Drakos, K., 2004, 'Terrorism-induced structural shifts in financial risk: airline stocks in the aftermath of the September 11<sup>th</sup> terror attacks', *European Journal of Political Economy*, vol. 20, 435-446.
- Ito, H., & Lee D., 2005, 'Comparing the Impact of the September 11<sup>th</sup> Terrorist Attacks on International Airline Demand', *International Journal of the Economics of Business*, vol. 12, no. 2, 225-249.
- Ramiah, V., Calabro M., Maher D., Ghafouri S., and Cam M. (2007). 'The Short Term Impact of the Recent Terrorist Attacks on the Australian Equity Market', School of Economics, Finance and Marketing, Royal Melbourne Institute if Technology, Melbourne.
- Richman, V., Santos M. R., & Barkoulas J. T., 2005, 'Short- and Long-Term effects of the September 11 Event: The International Evidence', *International Journal of Theoretical and Applied Finance*, vol. 8, no. 7, 947-958.



**Table 1: Descriptive Statistics of daily Returns, for sectors in Japan from July 1999 to February 2007.**

<b>Return</b>	<b>Mean</b>	<b>Stdev</b>	<b>Skewness</b>	<b>Excess Kurt</b>	<b>Min</b>	<b>Max</b>	<b>Range</b>	<b>Count</b>	<b>T-Test Statistic</b>	<b>JB-Statistic</b>
Aerospace	0.0451%	0.00041	1.98	3.97	0.02%	0.12%	0.11%	6	2.73	5
Automobiles	0.0146%	0.00063	-2.91	14.46	-0.35%	0.14%	0.49%	75	2.00	115
Banks	0.0101%	0.00043	0.91	16.15	-0.16%	0.25%	0.41%	75	2.01	21
Beverages	-0.0469%	0.00157	-3.01	9.58	-0.53%	0.05%	0.58%	12	-1.03	22
Chemical	0.0118%	0.00081	-4.52	28.38	-0.53%	0.17%	0.70%	75	1.26	289
Construction	0.0037%	0.00046	0.23	2.06	-0.13%	0.15%	0.28%	73	0.69	1
Electricity	0.0477%	0.00035	2.83	8.72	0.02%	0.15%	0.13%	12	4.75	19
Electronics	-0.0266%	0.00104	-2.50	7.88	-0.52%	0.11%	0.63%	75	-2.21	81
Engineering	0.0070%	0.00150	-3.39	19.27	-0.81%	0.49%	1.30%	75	0.41	159
Equity & Non-Equity Investment	0.0227%	0.00052	-0.60	2.53	-0.09%	0.13%	0.23%	16	1.76	1
Food Product	0.0072%	0.00041	-1.70	6.75	-0.18%	0.11%	0.30%	75	1.53	38
Food & Drug	-0.0058%	0.00088	-1.97	5.64	-0.36%	0.17%	0.54%	75	-0.57	50
Forest	0.0056%	0.00018	-0.35	0.89	-0.04%	0.05%	0.09%	24	1.51	1
Gas	0.0158%	0.00033	-1.15	1.85	-0.07%	0.06%	0.14%	22	2.27	5
Oil & Gas	0.0461%	0.00050	1.27	1.57	-0.01%	0.18%	0.19%	16	3.67	4
General Industrial	0.0077%	0.00033	-0.52	1.52	-0.09%	0.07%	0.16%	33	1.33	2
General Financial	0.0087%	0.00228	3.17	17.33	-0.48%	1.25%	1.74%	72	0.32	133
Health Care	-0.0062%	0.00090	-0.11	1.00	-0.24%	0.25%	0.48%	68	-0.57	0
Household Goods	-0.0084%	0.00090	-2.43	9.32	-0.47%	0.17%	0.64%	75	-0.81	77
Industrial Transportation	0.0193%	0.00046	-1.40	3.68	-0.16%	0.10%	0.26%	74	3.64	25
Leisure Goods	-0.0452%	0.00163	-3.37	13.43	-0.90%	0.14%	1.04%	68	-2.29	136
Life & Non-Life Insurance	-0.1413%	0.00547	-3.17	10.24	-1.77%	0.08%	1.85%	11	-0.86	23
Media	-0.1228%	0.00247	-2.88	10.02	-1.35%	0.11%	7400.00%	74	-4.28	106
Metal	0.0388%	0.00045	-0.50	2.68	-0.12%	0.15%	0.27%	74	7.45	3

Personal Goods	0.0167%	0.00046	0.71	2.94	-0.08%	0.20%	0.28%	74	3.10	7
Pharmaceuticals	-0.0037%	0.00092	-1.83	3.66	-0.34%	0.15%	0.49%	67	-0.32	38
Real Estate	0.0506%	0.00137	-1.50	5.98	-0.58%	0.36%	0.93%	75	3.19	30
Retailers	-0.0253%	0.00111	-1.31	3.74	-0.45%	0.27%	0.71%	74	-1.96	22
Software	-0.1003%	0.00215	-2.30	6.78	-1.04%	0.32%	1.36%	72	-3.95	66
Support Service	-0.0756%	0.00206	-1.84	3.70	-0.83%	0.25%	1.08%	75	-3.17	43
Technology	-0.0413%	0.00189	-0.46	10.58	-0.84%	0.84%	1.68%	75	-1.89	7
Telecommunication	-0.0467%	0.00097	-1.11	0.86	-0.27%	0.08%	0.34%	14	-1.81	3
Travel & Leisure	-0.0410%	0.00175	-2.66	8.30	-0.84%	0.19%	1.03%	72	-1.98	88
Others	0.0164%	0.00042	-0.63	-1.07	-0.05%	0.06%	0.11%	6	0.95	0
ALL	0.0120%	0.00140	-3.11	33.42	-1.77%	1.25%	3.02%	1859	-3.70	90641

**Table 2: The Five Major Terrorist Attacks and Their Consequences.**

<b>Terrorist Attack</b>	<b>Date</b>	<b>Event</b>	<b>Effective Date</b>	<b>Injuries</b>	<b>Fatalities</b>
September 11 - United States	11/09/2001	Four U.S. planes hijacked by terrorists crashed into the World Trade Center, the Pentagon and a field in Pennsylvania killing nearly 3,000 people in a matter of hours.	12/09/2001	5,000	3,025
Bali Bombing – Indonesia	12/10/2002	Two deadly explosions, one detonated by a suicide bomber and the other one carried out by a large van, ripped through two popular nightclubs, Sari Club and Padi's Bar, in Kuta on the island of Bali killing 202 people, most of them young Australians, and injured more than 300.	12/10/2002	300	202
Madrid - Spain	11/03/2004	Deadly bombings which consisted of a series of coordinated bombings against the commuter train system left 191 dead and 1,824 injured in Madrid, Spain.	12/03/2004	1,800	191
London - United Kingdom	7/07/2005	At the peak of the rush hour, bombs were detonated in three crowded subway trains and aboard a London bus which killed at least 52 people with 700 injured.	08/07/2005	700	55
Mumbai - India	11/07/2006	A series of seven bombs that took place over a period of 11 minutes on the suburban railways in Mumbai with 209 people losing their lives and over 700 injured in the attacks.	11/07/2006	714	207

*Source: Adapted and adjusted from Cam (2006) and various media releases.*

**Table 3: Abnormal Returns on Japanese Industry Indices Following Five Terrorist Attacks**

Industry	11-Sep		Bali		Madrid		London		Mumbai	
	AR	T-Stat	AR	T-Stat	AR	T-Stat	AR	T-Stat	AR	T-Stat
Aerospace	0.80%	0.55	0.10%	0.05	0.45%	0.33	-1.47%	-1.37	-1.27%	-0.70
Automobile	-6.10%	-7.13	0.02%	0.03	-0.27%	-0.37	-0.11%	-0.19	-0.53%	-0.52
Banks	-2.25%	-2.67	0.05%	0.04	-1.68%	-1.93	0.32%	0.45	-0.54%	-0.39
Beverages	-6.20%	-6.81	0.11%	0.15	-0.46%	-0.78	-0.47%	-0.86	-0.65%	-0.88
Chemicals	-6.21%	-6.99	0.05%	0.06	-0.38%	-0.52	0.00%	0.00	-0.58%	-0.54
Construction	-4.65%	-6.24	0.16%	0.20	-0.09%	-0.13	-0.23%	-0.39	-0.59%	-0.56
Electricity	-3.70%	-3.91	0.07%	0.08	-0.49%	-0.90	-0.13%	-0.26	-0.77%	-0.80
Electronics	-5.57%	-4.56	0.09%	0.09	-0.32%	-0.30	0.36%	0.52	-0.76%	-0.61
Engineering	-6.42%	-6.38	0.09%	0.10	-0.18%	-0.21	-0.32%	-0.48	-1.20%	-0.89
Equity & Non-Equity Investment	-9.67%	-6.01	0.06%	0.04	-1.15%	-0.97	-0.02%	-0.03	-0.32%	-0.29
Food Producers	-3.48%	-6.69	0.09%	0.19	0.16%	0.36	0.18%	0.42	-0.69%	-1.04
Food & Drug	-3.39%	-5.91	0.03%	0.06	-0.26%	-0.63	-0.02%	-0.05	-0.56%	-0.75
Forest	-4.41%	-4.76	0.05%	0.06	-0.80%	-1.17	-0.23%	-0.40	-0.25%	-0.28
Gas	-2.71%	-3.47	0.19%	0.27	-0.71%	-1.39	0.10%	0.22	-0.40%	-0.51
Gas and Oil	-1.27%	-0.78	0.40%	0.31	-1.24%	-1.19	-0.78%	-0.77	-1.09%	-0.75
General Industrial	-6.38%	-6.48	0.07%	0.06	-0.46%	-0.55	0.49%	0.72	-0.60%	-0.56
General Financial	-6.00%	-0.48	0.19%	0.15	-1.24%	-0.82	0.11%	0.12	-0.95%	-0.51
Health Care	-5.53%	-6.01	0.11%	0.15	0.68%	0.91	0.38%	0.56	0.21%	0.21
Household Goods	-6.07%	-8.37	0.05%	0.07	2.50%	0.37	-0.08%	-0.15	-0.12%	-0.11
Industrial Transportation	-4.24%	-5.60	0.04%	0.06	-0.87%	-1.26	-0.15%	-0.23	-0.44%	-0.47
Leisure Goods	-7.16%	-5.81	0.07%	0.06	-0.55%	-0.54	-0.37%	-0.49	-1.19%	-0.90
Life & Non-Life Insurance	-8.38%	-5.97	0.10%	0.06	-2.77%	-1.57	-0.26%	-0.21	-0.98%	-0.49
Media	-4.68%	-3.39	0.18%	0.17	0.03%	0.02	-0.32%	-0.37	-1.49%	-0.88
Metal	-7.36%	-6.49	0.12%	0.10	-0.84%	-0.64	-0.10%	-0.10	-1.67%	-1.04
Personal Goods	-7.08%	-7.69	0.10%	0.11	-0.24%	-0.30	-0.43%	-0.64	-0.63%	-0.54
Pharmaceuticals	-6.88%	-7.12	0.05%	0.06	-0.67%	-0.98	0.06%	0.09	-0.67%	-0.67
Real Estate	-8.72%	-6.38	0.38%	0.35	0.89%	0.76	0.10%	0.11	-1.88%	-1.21
Retailers	-4.91%	-5.66	0.04%	0.05	-0.24%	-0.36	0.06%	0.09	-0.64%	-0.53
Software	-8.05%	-4.33	0.26%	0.21	-0.08%	-0.05	-1.10%	-1.00	-2.57%	-1.25
Support Service	-6.38%	-6.26	0.16%	0.20	-0.67%	-0.71	-0.48%	-0.55	-0.99%	-0.61
Technology	-7.92%	-4.95	0.13%	0.10	-1.04%	-0.83	-0.03%	-0.04	-1.14%	-0.77
Telecommunication	-6.56%	-2.51	0.17%	0.08	-1.20%	-0.52	-0.59%	-0.38	-2.39%	-1.11
Travel & Leisure	-3.90%	-5.81	0.30%	0.53	-0.12%	-0.21	0.03%	0.04	-0.42%	-0.41
Others	-4.01%	-2.46	0.27%	0.15	-2.04%	-0.91	0.12%	0.08	-0.17%	-0.08
ALL	-5.57%	-6.82	0.11%	0.15	-0.42%	-0.59	-0.10%	-0.16	-0.85%	-0.74

*This table presents abnormal returns and the parametric t-test results for 34 Japanese Industries after September 11, Bali, Madrid, London and Mumbai terrorist attacks.*



**Table 4: Cumulative Abnormal Returns on Japanese Industry Indices Following Five Terrorist Attacks**

Industry	11-Sep		Bali		Madrid		London		Mumbai	
	CAR5	T-Stat	CAR5	T-Stat	CAR5	T-Stat	CAR5	T-Stat	CAR5	T-Stat
Aerospace	6.27%	2.09	4.24%	1.05	5.98%	1.55	-0.79%	-0.31	-3.62%	-0.88
Automobile	-8.96%	-3.94	4.89%	2.20	0.07%	0.04	1.10%	0.76	-3.89%	-1.47
Banks	-2.08%	-1.14	3.00%	1.23	2.29%	1.11	-0.24%	-0.15	-4.37%	-1.28
Beverages	-3.86%	-1.81	2.72%	1.57	1.45%	1.05	0.34%	0.25	-3.31%	-2.08
Chemicals	-4.98%	-2.10	2.97%	1.35	1.75%	0.83	0.49%	0.32	-4.50%	-1.65
Construction	-3.58%	-1.72	1.82%	0.89	4.65%	2.20	-0.44%	-0.28	-4.61%	-1.75
Electricity	-1.04%	-0.52	1.31%	0.69	0.52%	0.43	0.04%	0.04	-4.20%	-2.07
Electronics	-2.29%	-0.72	5.34%	1.92	1.27%	0.42	2.72%	1.48	-5.51%	-1.81
Engineering	-5.40%	-2.08	4.11%	1.72	2.74%	1.11	0.59%	0.35	-5.32%	-1.60
Equity & Non-Equity Investment	-2.71%	-0.86	5.78%	1.26	1.43%	0.46	0.86%	0.55	-3.99%	-1.53
Food Producers	-2.98%	-2.32	2.86%	2.04	1.83%	1.57	0.70%	0.61	-2.46%	-1.56
Food & Drug	-2.33%	-1.51	0.80%	0.64	2.24%	2.24	0.98%	0.91	-2.41%	-1.26
Forest	-3.12%	-1.39	0.78%	0.37	0.90%	0.54	0.30%	0.21	-2.55%	-1.22
Gas	-2.65%	-1.73	0.24%	0.15	1.75%	1.55	-0.15%	-1.39	0.26%	-1.35
Gas and Oil	2.10%	0.53	5.56%	1.88	1.63%	0.71	-1.43%	-0.56	0.26%	0.08
General Industrial	-4.12%	-1.57	3.19%	1.25	1.44%	0.66	1.02%	0.57	-4.32%	-1.66
General Financial	-4.74%	-1.32	5.93%	1.77	4.88%	1.19	0.66%	0.30	-6.03%	-1.38
Health Care	-1.85%	-0.72	4.38%	1.98	1.25%	0.91	1.38%	0.79	-3.45%	-1.36
Household Goods	-4.66%	-2.36	2.81%	1.44	3.72%	2.02	0.20%	0.14	-3.02%	-1.16
Industrial Transportation	-5.06%	-2.51	2.00%	1.12	2.69%	1.39	0.58%	0.34	-3.69%	-1.58
Leisure Goods	-8.84%	-2.83	5.16%	1.78	0.20%	0.07	1.18%	0.64	-5.66%	-1.74
Life & Non-Life Insurance	-10.31%	-3.21	1.70%	0.48	4.17%	1.10	-0.13%	-0.05	-7.36%	-1.70
Media	-4.44%	-1.19	6.20%	2.24	0.12%	0.03	1.56%	0.67	-5.65%	-1.36
Metal	-5.16%	-1.68	4.77%	1.26	2.26%	0.61	-0.34%	-0.13	-5.66%	-1.44
Personal Goods	-4.34%	-1.83	3.58%	1.40	2.64%	1.07	1.24%	0.68	-4.33%	-1.49
Pharmaceuticals	-3.36%	-1.41	4.99%	2.30	-0.14%	-0.08	0.89%	0.54	-2.89%	-1.27
Real Estate	-6.16%	-1.81	5.76%	1.85	3.32%	1.02	2.72%	1.09	-5.42%	-1.46
Retailers	-4.25%	-1.71	3.88%	2.09	3.27%	1.76	1.75%	0.97	-4.97%	-1.63
Software	-6.99%	-1.34	7.10%	1.99	1.06%	0.22	1.56%	0.53	-6.58%	-1.29
Support Service	-6.00%	-2.20	4.59%	1.79	0.08%	0.03	0.44%	0.19	-4.91%	-1.21
Technology	-6.80%	-1.62	6.61%	1.81	-0.27%	-0.07	1.34%	0.65	-6.12%	-1.64
Telecommunication	3.85%	0.57	10.89%	2.21	-0.94%	-0.16	3.39%	0.91	-6.53%	-1.29
Travel & Leisure	-5.33%	-3.13	2.51%	1.75	1.18%	0.72	1.12%	0.72	-3.63%	-1.40
Others	-1.54%	-0.41	5.13%	1.10	2.52%	0.49	-0.32%	-0.09	-4.31%	-0.90
All	-4.48%	-2.03	3.94%	1.90	1.90%	0.91	0.87%	0.57	-4.46%	-1.58

*This table presents five day cumulative abnormal returns and the parametric t-test results for 34 Japanese Industries after September 11, Bali, Madrid, London and Mumbai terrorist attacks*

**Table 5: The Impact of Five Terrorist Attacks on Japanese Industry Indices- Non-Parametric Results**

<b>Industry</b>	<b>11-Sep</b>	<b>Bali</b>	<b>Madrid</b>	<b>London</b>	<b>Mumbai</b>
Aerospace	-0.74	0.57	-0.13	-1.07	-0.86
Automobile	-3.92	-0.14	-1.22	-0.52	-0.51
Banks	-2.22	0.02	-2.09	0.80	-0.20
Beverages	-3.89	0.50	-1.48	-0.65	-1.09
Chemicals	-3.98	0.30	-1.16	-0.06	-0.49
Construction	-4.31	0.24	-0.84	-0.01	-0.29
Electricity	-2.27	0.37	-0.97	-0.29	-0.89
Electronics	-3.20	0.16	-0.94	0.12	-0.89
Engineering	-4.12	0.56	-1.28	-0.34	-1.10
Equity & Non-Equity Investment	-1.69	-0.11	-1.64	-0.10	-0.57
Food Producers	-4.34	0.91	-0.55	0.82	-0.76
Food & Drug	-4.39	-0.24	-1.68	0.36	-0.47
Forest	-2.72	0.48	-1.82	-0.25	0.22
Gas	-3.02	0.51	-2.48	0.46	-0.59
Gas and Oil	-0.87	-0.08	-1.87	-1.42	-0.50
General Industrial	-4.06	-0.46	-1.10	0.68	-0.65
General Financial	-3.05	0.81	-1.48	0.22	-0.69
Health Care	-3.34	0.43	-1.35	-0.08	0.10
Household Goods	-4.21	0.01	-0.82	-0.20	-0.05
Industrial Transportation	-3.41	0.55	-1.87	0.55	-0.34
Leisure Goods	-3.64	0.21	-0.97	-1.09	-0.85
Life & Non-Life Insurance	-2.69	-0.20	-2.07	-0.36	-0.42
Media	-3.22	0.93	-1.24	-0.79	-0.89
Metal	-3.80	0.41	-1.38	-0.05	-1.01
Personal Goods	-4.75	0.59	-1.28	-0.68	-0.35
Pharmaceuticals	-4.51	0.21	-1.70	0.15	-0.15
Real Estate	-3.86	0.24	-0.47	-0.51	-1.76
Retailers	-4.48	0.40	-1.46	-0.22	-0.94
Software	-3.27	0.51	-0.94	-0.76	-1.41
Support Service	-4.06	1.10	-2.06	-0.87	-0.94
Technology	-3.46	0.19	-1.41	-0.51	-1.15
Telecommunication	-1.98	0.20	-1.09	-0.69	-1.55
Travel & Leisure	-4.60	0.36	-1.03	-0.71	-0.67
Others	-2.06	0.70	-2.12	0.45	-0.20
ALL	-4.41	0.40	-1.63	-0.24	-0.76

*This table presents the non-parametric t-test results for 34 Japanese Industries after September 11, Bali, Madrid, London and Mumbai terrorist attacks.*

**Table 6: The Impact of September 11 Attack on Japanese Industry Indices- Regression Analysis**

$$\tilde{r}_{it} - \tilde{r}_{jt} = \phi_i + \beta_i^1[\tilde{r}_{mt} - \tilde{r}_{jt}] + \beta_i^2[\tilde{r}_{mt} - \tilde{r}_{jt}] * D + \tilde{\epsilon}_{it} \quad \tilde{r}_{it} - \tilde{r}_{jt} = \phi_i + \alpha_i^1[\tilde{r}_{mt} - \tilde{r}_{jt}] + \alpha_i^2 D + \tilde{\epsilon}_{it}$$

Industry	$\phi_i$	$\beta_i^1$	$\beta_i^2$	$\beta_i^1 = \beta_i^2 = 0$	$\phi_i$	$\alpha_i^1$	$\alpha_i^2$	$\alpha_i^1 = \alpha_i^2 = 0$
Aerospace	-0.05	0.08	-0.77	0.00	-0.05	0.08	0.22	0.00
<i>T-Statistics</i>	-31.27	1.17	-1.15	0.28	-31.27	1.17	1.15	0.28
Automobile	-0.05	0.15	1.48	0.00	-0.05	0.15	-0.04	0.00
<i>T-Statistics</i>	-41.84	3.13	3.02	0.00	-41.84	3.13	-3.02	0.00
Banks	-0.05	0.13	0.21	0.00	-0.05	0.13	-0.01	0.00
<i>T-Statistics</i>	-39.43	2.51	0.40	0.04	-39.43	2.51	-0.40	0.04
Beverages	-0.05	0.12	1.55	0.00	-0.05	0.12	-0.05	0.00
<i>T-Statistics</i>	-39.45	2.25	2.96	0.00	-39.45	2.25	-2.96	0.00
Chemicals	-0.05	0.15	1.51	0.00	-0.05	0.15	-0.05	0.00
<i>T-Statistics</i>	-40.53	2.91	2.97	0.00	-40.53	2.91	-2.97	0.00
Construction	-0.05	0.14	1.01	0.00	-0.05	0.14	-0.03	0.00
<i>T-Statistics</i>	-41.35	2.86	2.03	0.00	-41.35	2.86	-2.03	0.00
Electricity	-0.05	0.12	0.71	0.00	-0.05	0.12	-0.02	0.00
<i>T-Statistics</i>	-38.08	2.26	1.31	0.03	-38.08	2.26	-1.31	0.03
Electronics	-0.05	0.17	1.27	0.00	-0.05	0.17	-0.04	0.00
<i>T-Statistics</i>	-34.69	2.86	2.11	0.00	-34.69	2.86	-2.11	0.00
Engineering	-0.05	0.14	1.58	0.00	-0.05	0.14	-0.05	0.00
<i>T-Statistics</i>	-37.97	2.52	2.89	0.00	-37.97	2.52	-2.89	0.00
(E&N) <sup>1</sup> Investment	-0.05	0.20	2.65	0.00	-0.05	0.20	-0.08	0.00
<i>T-Statistics</i>	-29.76	2.89	3.91	0.00	-29.76	2.89	-3.91	0.00
Food & Drug	-0.05	0.14	1.58	0.00	-0.05	0.14	-0.05	0.00
<i>T-Statistics</i>	-37.97	2.52	2.89	0.00	-37.97	2.52	-2.89	0.00
Food Products	-0.05	0.16	0.62	0.00	-0.05	0.16	-0.02	0.00
<i>T-Statistics</i>	-44.74	3.50	1.36	0.00	-44.74	3.50	-1.36	0.00
Forest	-0.05	0.16	0.91	0.00	-0.05	0.16	-0.03	0.00
<i>T-Statistics</i>	-39.27	2.92	1.74	0.00	-39.27	2.92	-1.74	0.00
Gas	-0.05	0.14	0.36	0.00	-0.05	0.14	-0.01	0.00
<i>T-Statistics</i>	-40.68	2.83	0.72	0.01	-40.68	2.83	-0.72	0.01
Gas & Oil	-0.05	0.14	-0.12	0.00	-0.05	0.14	0.00	0.00
<i>T-Statistics</i>	-30.87	2.16	-0.17	0.10	-30.87	2.16	0.17	0.10
General Industrial	-0.05	0.15	1.58	0.00	-0.05	0.15	-0.05	0.00
<i>T-Statistics</i>	-39.69	2.79	3.05	0.00	-39.69	2.79	-3.05	0.00
General Finance	-0.05	0.19	1.45	0.00	-0.05	0.19	-0.04	0.00
<i>T-Statistics</i>	-32.28	3.02	2.33	0.00	-32.28	3.02	-2.33	0.00
Health Care	-0.05	0.15	1.31	0.00	-0.05	0.15	-0.04	0.00
<i>T-Statistics</i>	-38.99	2.88	2.50	0.00	-38.99	2.88	-2.50	0.00
Household Goods	-0.05	0.16	1.48	0.00	-0.05	0.16	-0.04	0.00
<i>T-Statistics</i>	-42.00	3.25	3.05	0.00	-42.00	3.25	-3.05	0.00
Industry Transportation	-0.05	0.13	0.89	0.00	-0.05	0.13	-0.03	0.00
<i>T-Statistics</i>	-41.43	2.61	1.79	0.01	-41.43	2.61	-1.79	0.01
Leisure Goods	-0.05	0.15	1.84	0.00	-0.05	0.15	-0.06	0.00
<i>T-Statistics</i>	-35.54	2.55	3.18	0.00	-35.54	2.55	-3.18	0.00
Life & Non-Life Insurance	-0.05	0.11	2.28	0.00	-0.05	0.11	-0.07	0.00
<i>T-Statistics</i>	-33.43	1.81	3.72	0.00	-33.43	1.81	-3.72	0.00
Media	-0.05	0.20	1.00	0.00	-0.05	0.20	-0.03	0.00
<i>T-Statistics</i>	-31.38	3.16	1.57	0.00	-31.38	3.16	-1.57	0.00
Metal	-0.05	0.19	1.87	0.00	-0.05	0.19	-0.06	0.00
<i>T-Statistics</i>	-37.13	3.40	3.40	0.00	-37.13	3.40	-3.40	0.00
Personal Goods	-0.05	0.15	1.84	0.00	-0.05	0.15	-0.06	0.00
<i>T-Statistics</i>	-39.39	2.96	3.58	0.00	-39.39	2.96	-3.58	0.00
Pharmaceuticals	-0.05	0.16	1.73	0.00	-0.05	0.16	-0.05	0.00

<i>T-Statistics</i>	-38.67	2.95	3.26	0.00	-38.67	2.95	-3.26	0.00
Real Estate	-0.05	0.22	2.32	0.00	-0.05	0.22	-0.07	0.00
<i>T-Statistics</i>	-32.28	3.51	3.74	0.00	-32.28	3.51	-3.74	0.00
Retailer	-0.05	0.13	1.13	0.00	-0.05	0.13	-0.03	0.00
<i>T-Statistics</i>	-39.43	2.49	2.19	0.00	-39.43	2.49	-2.19	0.00
Software	-0.05	0.22	2.10	0.00	-0.05	0.22	-0.06	0.00
<i>T-Statistics</i>	-26.58	2.84	2.78	0.00	-26.58	2.84	-2.78	0.00
Support Service	-0.05	0.10	1.63	0.00	-0.05	0.10	-0.05	0.00
<i>T-Statistics</i>	-38.25	1.90	3.04	0.00	-38.25	1.90	-3.04	0.00
Technology	-0.05	0.15	2.08	0.00	-0.05	0.15	-0.06	0.00
<i>T-Statistics</i>	-30.32	2.18	3.04	0.00	-30.32	2.18	-3.04	0.00
Telecommunication	-0.05	0.21	1.63	0.00	-0.05	0.21	-0.05	0.00
<i>T-Statistics</i>	-20.65	2.15	1.69	0.02	-20.65	2.15	-1.69	0.02
Travel & Leisure	-0.05	0.13	0.89	0.00	-0.05	0.11	-0.02	0.00
<i>T-Statistics</i>	-41.43	2.61	1.79	0.02	-42.80	2.28	-1.61	0.02
Others	-0.05	0.17	0.79	0.00	-0.05	0.17	-0.02	0.00
<i>T-Statistics</i>	-29.62	2.42	1.15	0.02	-29.62	2.42	-1.15	0.02
All	-0.01	-0.02	-0.36	0.00	-0.01	-0.02	0.01	0.00
<i>T-Statistics</i>	-10.28	-0.30	-0.71	0.73	-10.28	-0.30	0.71	0.73

*This table presents the regression analysis results for 34 Japanese Industries after September 11 terrorist attack (see equation 12 & 13). The first multiplicative dummy variable equation illustrates the impact on systematic risk and the second additive dummy variable equation shows the impact on the intercept*

<sup>1</sup> *Equity and Non- Equity*

**Table 7: The Impact of September 11 Attack on Japanese Industry Indices- Regression Analysis**

$$\tilde{r}_{it} - \tilde{r}_{ft} = \beta_0 + \beta_1[\tilde{r}_{mt} - \tilde{r}_{ft}] + \beta_2[\tilde{r}_{mt} - \tilde{r}_{ft}] * SD + \beta_3(SD)$$

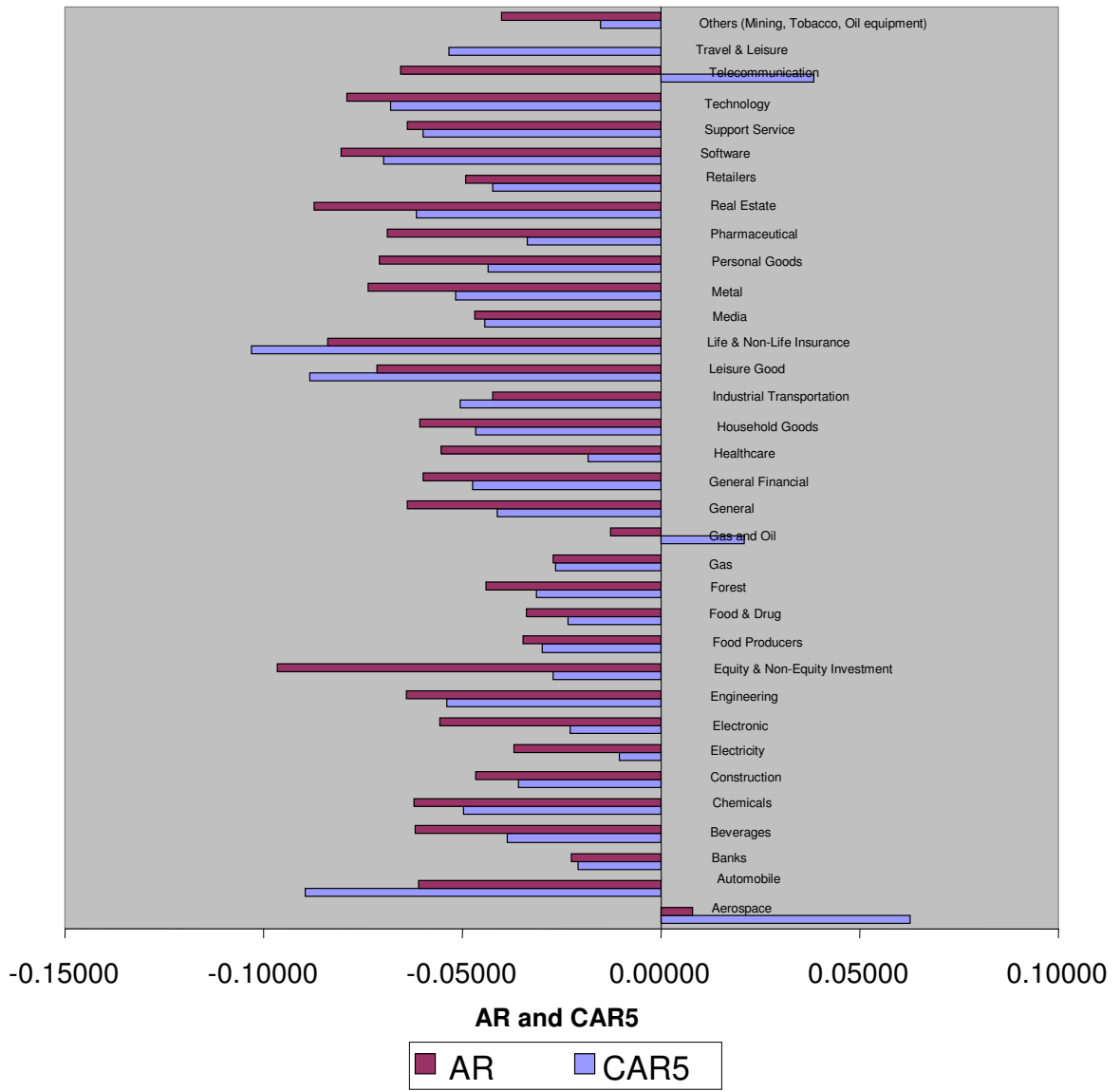
Industry	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	Wald Test
Aerospace	-0.05	0.03	-0.19	0.03	0.00
<i>T-Statistics</i>	-32.74	0.44	-0.74	5.52	0.00
Automobile	-0.05	0.10	0.33	0.02	0.00
<i>T-Statistics</i>	-42.80	2.01	1.72	5.45	0.00
Banks	-0.05	0.07	0.22	0.03	0.00
<i>T-Statistics</i>	-42.31	1.31	1.11	6.67	0.00
Beverages	-0.05	0.06	0.32	0.03	0.00
<i>T-Statistics</i>	-41.48	1.06	1.64	6.39	0.00
Chemicals	-0.05	0.09	0.38	0.02	0.00
<i>T-Statistics</i>	-42.24	1.68	1.95	6.05	0.00
Construction	-0.05	0.08	0.30	0.02	0.00
<i>T-Statistics</i>	-44.14	1.61	1.64	6.74	0.00
Electricity	-0.05	0.08	-0.03	0.02	0.00
<i>T-Statistics</i>	-39.86	1.50	-0.15	5.84	0.00
Electronics	-0.05	0.11	0.20	0.03	0.00
<i>T-Statistics</i>	-36.31	1.87	0.89	5.81	0.00
Engineering	-0.05	0.07	0.47	0.02	0.00
<i>T-Statistics</i>	-39.63	1.27	2.25	5.89	0.00
(E&N) <sup>1</sup> Investment	-0.05	0.10	0.91	0.03	0.00
<i>T-Statistics</i>	-31.23	1.41	3.49	5.56	0.00
Food & Drug	-0.05	0.07	0.47	0.02	0.00
<i>T-Statistics</i>	-39.63	1.27	2.25	5.89	0.00
Food Products	-0.05	0.11	0.13	0.02	0.00
<i>T-Statistics</i>	-47.43	2.51	0.79	6.54	0.00
Forest	-0.05	0.10	0.29	0.02	0.00
<i>T-Statistics</i>	-40.73	1.86	1.44	5.51	0.00
Gas	-0.05	0.10	0.11	0.02	0.00
<i>T-Statistics</i>	-42.46	1.91	0.59	5.74	0.00
Gas & Oil	-0.05	0.08	0.35	0.02	0.00
<i>T-Statistics</i>	-31.60	1.15	1.37	4.38	0.00
General Industrial	-0.05	0.08	0.43	0.02	0.00
<i>T-Statistics</i>	-41.13	1.57	2.21	5.77	0.00
General Finance	-0.05	0.12	0.45	0.02	0.00
<i>T-Statistics</i>	-33.29	1.93	1.87	4.99	0.00
Health Care	-0.05	0.10	0.20	0.03	0.00
<i>T-Statistics</i>	-41.40	1.83	1.04	6.63	0.00

Household Goods	-0.05	0.09	0.52	0.02	0.00
<i>T-Statistics</i>	-44.37	1.82	2.85	6.45	0.00
Industry Transportation	-0.05	0.07	0.40	0.02	0.00
<i>T-Statistics</i>	-43.71	1.33	2.15	6.15	0.00
Leisure Goods	-0.05	0.08	0.59	0.02	0.00
<i>T-Statistics</i>	-36.50	1.30	2.64	5.10	0.00
Life & Non-Life Insurance	-0.05	0.03	0.77	0.02	0.00
<i>T-Statistics</i>	-34.03	0.51	3.24	4.60	0.00
Media	-0.05	0.12	0.54	0.03	0.00
<i>T-Statistics</i>	-33.14	1.90	2.27	5.57	0.00
Metal	-0.05	0.11	0.69	0.03	0.00
<i>T-Statistics</i>	-39.17	1.90	3.33	6.12	0.00
Personal Goods	-0.05	0.08	0.52	0.02	0.00
<i>T-Statistics</i>	-41.11	1.60	2.69	6.14	0.00
Pharmaceuticals	-17.14	-2.10	12.02	0.58	0.00
<i>T-Statistics</i>	-40.98	-2.16	3.31	8.26	0.00
Real Estate	-0.05	0.15	0.60	0.02	0.00
<i>T-Statistics</i>	-32.58	2.34	2.46	4.51	0.00
Retailer	-0.05	0.07	0.30	0.02	0.00
<i>T-Statistics</i>	-41.17	1.38	1.56	5.88	0.00
Software	-0.05	0.13	0.64	0.03	0.00
<i>T-Statistics</i>	-27.41	1.72	2.19	4.62	0.00
Support Service	-0.05	0.04	0.39	0.02	0.00
<i>T-Statistics</i>	-39.01	0.82	1.89	5.14	0.00
Technology	-0.05	0.07	0.55	0.03	0.00
<i>T-Statistics</i>	-31.23	1.06	2.10	5.00	0.00
Telecommunication	-0.05	0.11	0.69	0.03	0.00
<i>T-Statistics</i>	-21.46	1.14	1.87	4.11	0.00
Travel & Leisure	-0.05	0.05	0.33	0.02	0.00
<i>T-Statistics</i>	-44.64	1.10	1.80	5.79	0.00
Others	-0.05	0.09	0.52	0.03	0.00
<i>T-Statistics</i>	-31.01	1.25	2.00	5.10	0.00
All	-0.01	-0.05	0.14	0.01	0.00
<i>T-Statistics</i>	-10.78	-0.94	0.71	2.99	0.03

*This table presents the regression analysis results for 34 Japanese Industries after September 11 terrorist attack. The first multiplicative dummy variable equation illustrates the impact on systematic risk and the second additive dummy variable equation shows the impact on the intercept (see equation 12).*

<sup>1</sup> *Equity and Non- Equity*

**Figure 1: AR and CAR5 on Japanese Industry Indices Following September 11**



## Appendix 1.1: Regression Analysis (Bali)

**Table 8: The Impact of Bali Attack on Japanese Industry Indices- Regression Analysis**

$$\tilde{r}_{it} - \tilde{r}_{jt} = \phi_i + \beta_i^1[\tilde{r}_{mt} - \tilde{r}_{jt}] + \beta_i^2[\tilde{r}_{mt} - \tilde{r}_{jt}] * D + \tilde{\varepsilon}_{it} \quad \tilde{r}_{it} - \tilde{r}_{jt} = \phi_i + \alpha_i^1[\tilde{r}_{mt} - \tilde{r}_{jt}] + \alpha_i^2 D + \tilde{\varepsilon}_{it}$$

$$\alpha_i^1 \equiv \alpha_i^2 \equiv 0$$

Industry	$\phi_i$	$\beta_i^1$	$\beta_i^2$	$\beta_i^1 \equiv \beta_i^2 \equiv 0$	$\phi_i$	$\alpha_i^1$	$\alpha_i^2$	
Aerospace	-0.01	0.10	2.41	0.00	-0.01	0.10	-0.02	0.00
<i>T-Statistics</i>	-7.75	1.28	1.54	0.13	-7.75	1.28	-1.54	0.13
Automobile	-0.01	0.05	1.89	0.00	-0.01	0.05	-0.06	0.00
<i>T-Statistics</i>	-17.94	1.93	6.89	0.00	-17.94	1.93	-6.89	0.00
Banks	-0.01	0.08	-0.20	0.00	-0.01	0.08	0.00	0.00
<i>T-Statistics</i>	-11.06	1.49	-0.19	0.32	-11.06	1.49	0.19	0.32
Beverages	-0.01	-0.01	0.93	0.00	-0.01	-0.01	-0.01	0.00
<i>T-Statistics</i>	-16.91	-0.13	1.14	0.52	-16.91	-0.13	-1.14	0.52
Chemicals	-0.01	0.02	0.29	0.00	-0.01	0.02	0.00	0.00
<i>T-Statistics</i>	-13.69	0.53	0.32	0.82	-13.69	0.53	-0.32	0.82
Construction	-0.01	0.02	0.63	0.00	-0.01	0.02	0.00	0.00
<i>T-Statistics</i>	-14.30	0.41	0.73	0.70	-14.30	0.41	-0.73	0.70
Electricity	-0.01	0.07	0.48	0.00	-0.01	0.07	0.00	0.00
<i>T-Statistics</i>	-16.63	1.77	0.67	0.17	-16.63	1.77	-0.67	0.17
Electronics	-0.01	0.08	-0.26	0.00	-0.01	0.08	0.00	0.00
<i>T-Statistics</i>	-11.75	1.51	-0.25	0.31	-11.75	1.51	0.25	0.31
Engineering	-0.01	-0.01	0.80	0.00	-0.01	-0.01	-0.01	0.00
<i>T-Statistics</i>	-12.62	-0.12	0.82	0.71	-12.62	-0.12	-0.82	0.71
(E& N) <sup>1</sup> Investment	-0.01	0.07	0.31	0.00	-0.01	0.07	0.00	0.00
<i>T-Statistics</i>	-12.48	1.38	0.32	0.37	-12.48	1.38	-0.32	0.37
Food & Drug	-0.01	0.01	0.29	0.00	-0.01	0.01	0.00	0.00
<i>T-Statistics</i>	-22.23	0.44	0.48	0.81	-22.23	0.44	-0.48	0.81
Food Products	-0.01	0.02	-0.01	0.00	-0.01	0.02	0.00	0.00
<i>T-Statistics</i>	-20.23	0.70	-0.02	0.78	-20.23	0.70	0.02	0.78
Forest	-0.01	0.02	0.59	0.00	-0.01	0.02	0.00	0.00
<i>T-Statistics</i>	-15.23	0.43	0.69	0.72	-15.23	0.43	-0.69	0.72
Gas	-0.01	0.11	1.39	0.00	-0.01	0.11	-0.01	0.00
<i>T-Statistics</i>	-7.96	1.45	0.93	0.22	-7.96	1.45	-0.93	0.22
Gas & Oil	-0.01	0.05	0.14	0.00	-0.01	0.05	0.00	0.00
<i>T-Statistics</i>	-18.26	1.59	0.20	0.28	-18.26	1.59	-0.20	0.28
General Industrial	-0.01	0.03	0.07	0.00	-0.01	0.03	0.00	0.00
<i>T-Statistics</i>	-10.36	0.52	0.06	0.87	-10.36	0.52	-0.06	0.87
General Finance	-0.01	0.01	-0.42	0.00	-0.01	0.01	0.00	0.00
<i>T-Statistics</i>	-12.67	0.19	-0.42	0.90	-12.67	0.19	0.42	0.90
Health Care	-0.01	0.00	-0.25	0.00	-0.01	0.00	0.00	0.00



<i>T-Statistics</i>	-12.74	0.09	-0.25	0.96	-12.74	0.09	0.25	0.96
Household Goods	-0.01	0.01	0.41	0.00	-0.01	0.01	0.00	0.00
<i>T-Statistics</i>	-15.96	0.33	0.52	0.83	-15.96	0.33	-0.52	0.83
Industry transportation	-0.01	0.00	0.49	0.00	-0.01	0.00	0.00	0.00
<i>T-Statistics</i>	-13.91	-0.05	0.51	0.88	-13.91	-0.05	-0.51	0.88
Leisure Goods	-0.01	0.04	0.83	0.00	-0.01	0.04	-0.01	0.00
<i>T-Statistics</i>	-11.13	0.76	0.76	0.56	-11.13	0.76	-0.76	0.56
(L& N) <sup>2</sup> Insurance	-0.01	0.09	0.54	0.00	-0.01	0.09	0.00	0.00
<i>T-Statistics</i>	-7.37	0.94	0.29	0.62	-7.37	0.94	-0.29	0.62
Media	-0.01	0.02	0.79	0.00	-0.01	0.02	-0.01	0.00
<i>T-Statistics</i>	-9.39	0.24	0.60	0.81	-9.39	0.24	-0.60	0.81
Metal	-0.01	0.05	0.43	0.00	-0.01	0.05	0.00	0.00
<i>T-Statistics</i>	-8.29	0.66	0.29	0.77	-8.29	0.66	-0.29	0.77
Personal Goods	-0.01	0.01	0.87	0.00	-0.01	0.01	-0.01	0.00
<i>T-Statistics</i>	-13.69	0.24	0.90	0.65	-13.69	0.24	-0.90	0.65
Pharmaceuticals	-0.01	0.01	0.18	0.00	-0.01	0.01	0.00	0.00
<i>T-Statistics</i>	-13.39	0.18	0.19	0.97	-13.39	0.18	-0.19	0.97
Real Estate	-0.01	0.02	0.08	0.00	-0.01	0.02	0.00	0.00
<i>T-Statistics</i>	-10.01	0.26	0.06	0.96	-10.01	0.26	-0.06	0.96
Retailer	-0.01	-0.03	0.18	0.00	-0.01	-0.03	0.00	0.00
<i>T-Statistics</i>	-14.09	-0.58	0.19	0.83	-14.09	-0.58	-0.19	0.83
Software	-0.01	0.00	1.90	0.00	-0.01	0.00	-0.01	0.00
<i>T-Statistics</i>	-8.01	0.03	1.17	0.50	-8.01	0.03	-1.17	0.50
Support Service	-0.01	0.04	0.99	0.00	-0.01	0.04	-0.01	0.00
<i>T-Statistics</i>	-9.72	0.58	0.77	0.62	-9.72	0.58	-0.77	0.62
Technology	-0.01	0.03	0.31	0.00	-0.01	0.03	0.00	0.00
<i>T-Statistics</i>	-10.81	0.44	0.26	0.88	-10.81	0.44	-0.26	0.88
Telecommunication	-0.01	0.03	1.19	0.00	-0.01	0.03	-0.01	0.00
<i>T-Statistics</i>	-5.16	0.27	0.51	0.85	-5.16	0.27	-0.51	0.85
Travel & Leisure	-0.01	-0.02	0.19	0.00	-0.01	-0.02	0.00	0.00
<i>T-Statistics</i>	-16.45	-0.40	0.23	0.90	-16.45	-0.40	-0.23	0.90
Others	-0.01	0.13	0.06	0.00	-0.01	0.13	0.00	0.00
<i>T-Statistics</i>	-5.26	1.11	0.03	0.54	-5.26	1.11	-0.03	0.54
All	0.00	0.34	0.60	0.00	0.00	0.34	0.00	0.00
<i>T-Statistics</i>	-1.02	1.48	0.13	0.33	-1.02	1.48	-0.13	0.33

*This table presents the regression analysis results for 34 Japanese Industries after Bali terrorist attack (see equation 12 & 13). The first multiplicative dummy variable equation illustrates the impact on systematic risk and the second additive dummy variable equation shows the impact on the intercept*

<sup>1</sup> *Equity and Non- Equity*

<sup>2</sup> *Life and Non- Life*

## Appendix 1.2: Regression Analysis (Madrid)

**Table 9: The Impact of Madrid Attack on Japanese Industry Indices- Regression Analysis**

$$\tilde{r}_{it} - \tilde{r}_{jt} = \phi_i + \beta_i^1[\tilde{r}_{mt} - \tilde{r}_{jt}] + \beta_i^2[\tilde{r}_{mt} - \tilde{r}_{jt}] * D + \tilde{\varepsilon}_{it} \quad \tilde{r}_{it} - \tilde{r}_{jt} = \phi_i + \alpha_i^1[\tilde{r}_{mt} - \tilde{r}_{jt}] + \alpha_i^2 D + \tilde{\varepsilon}_{it}$$

$$\alpha_i^1 \equiv \alpha_i^2 \equiv 0$$

Industry	$\phi_i$	$\beta_i^1$	$\beta_i^2$	$\beta_i^1 \equiv \beta_i^2 \equiv 0$	$\phi_i$	$\alpha_i^1$	$\alpha_i^2$	
Aerospace	-0.00	0.02	-0.17	0.00	0.00	0.02	0.00	0.00
<i>T-Statistics</i>	-1.47	0.35	-0.26	0.92	-1.47	0.35	0.26	0.92
Automobile	0.00	0.03	0.12	0.00	0.00	0.03	0.00	0.00
<i>T-Statistics</i>	-4.31	0.93	0.36	0.59	-4.31	0.93	-0.36	0.59
Banks	0.00	-0.01	0.79	0.00	0.00	-0.01	-0.02	0.00
<i>T-Statistics</i>	-3.92	-0.15	1.99	0.14	-3.92	-0.15	-1.99	0.14
Beverages	0.00	0.02	0.23	0.00	0.00	0.02	-0.01	0.00
<i>T-Statistics</i>	-4.69	0.60	0.88	0.54	-4.69	0.60	-0.88	0.54
Chemicals	0.00	0.01	0.20	0.00	0.00	0.01	0.00	0.00
<i>T-Statistics</i>	-3.73	0.41	0.59	0.75	-3.73	0.41	-0.59	0.75
Construction	0.00	0.03	0.07	0.00	0.00	0.03	0.00	0.00
<i>T-Statistics</i>	-2.81	1.03	0.21	0.56	-2.81	1.03	-0.21	0.56
Electricity	0.00	-0.03	0.26	0.00	0.00	-0.03	-0.01	0.00
<i>T-Statistics</i>	-7.49	-1.37	1.03	0.26	-7.49	-1.37	-1.03	0.26
Electronics	0.00	0.04	0.17	0.00	0.00	0.04	0.00	0.00
<i>T-Statistics</i>	-1.57	0.94	0.36	0.58	-1.57	0.94	-0.36	0.58
Engineering	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00
<i>T-Statistics</i>	-2.20	0.08	0.36	0.93	-2.20	0.08	-0.36	0.93
(E& N) <sup>1</sup> Investment	0.00	-0.01	0.60	0.00	0.00	-0.01	-0.01	0.00
<i>T-Statistics</i>	-1.41	-0.11	1.10	0.54	-1.41	-0.11	-1.10	0.54
Food & Drug	0.00	0.02	0.14	0.00	0.00	0.02	0.00	0.00
<i>T-Statistics</i>	-6.97	0.89	0.75	0.48	-6.97	0.89	-0.75	0.48
Food Products	0.00	-0.01	-0.03	0.00	0.00	-0.01	0.00	0.00
<i>T-Statistics</i>	-6.63	-0.73	-0.12	0.75	-6.63	-0.73	0.12	0.75
Forest	0.00	-0.01	0.41	0.00	0.00	-0.01	-0.01	0.00
<i>T-Statistics</i>	-4.16	-0.27	1.31	0.42	-4.16	-0.27	-1.31	0.42
Gas	0.00	-0.02	0.35	0.00	0.00	-0.02	-0.01	0.00
<i>T-Statistics</i>	-6.98	-0.71	1.53	0.27	-6.98	-0.71	-1.53	0.27
Gas & Oil	0.00	-0.06	0.65	0.00	0.00	-0.06	-0.01	0.00
<i>T-Statistics</i>	-2.98	-1.26	1.37	0.21	-2.98	-1.26	-1.37	0.21
General Industrial	0.00	-0.02	0.28	0.00	0.00	-0.02	-0.01	0.00
<i>T-Statistics</i>	-2.79	-0.50	0.74	0.69	-2.79	-0.50	-0.74	0.69
General Finance	0.00	0.01	0.67	0.00	0.00	0.01	-0.01	0.00
<i>T-Statistics</i>	-0.02	0.18	0.98	0.60	-0.02	0.18	-0.98	0.60
Health Care	0.00	-0.03	-0.23	0.00	0.00	-0.03	0.01	0.00

<i>T-Statistics</i>	-3.04	-0.79	-0.68	0.55	-3.04	-0.79	0.68	0.55
Household Goods	0.00	0.02	-0.07	0.00	0.00	0.02	0.00	0.00
<i>T-Statistics</i>	-2.73	0.86	-0.24	0.68	-2.73	0.86	0.24	0.68
Industry Transportation	0.00	-0.02	0.46	0.00	0.00	-0.02	-0.01	0.00
<i>T-Statistics</i>	-3.49	-0.60	1.48	0.30	-3.49	-0.60	-1.48	0.30
Leisure Goods	0.00	0.02	0.29	0.00	0.00	0.02	-0.01	0.00
<i>T-Statistics</i>	-2.10	0.37	0.62	0.75	-2.10	0.37	-0.62	0.75
(L & N) <sup>2</sup> Insurance	0.00	-0.09	1.43	0.00	0.00	-0.09	-0.03	0.00
<i>T-Statistics</i>	-0.74	-1.13	1.78	0.13	-0.74	-1.13	-1.78	0.13
Media	0.00	0.04	0.05	0.00	0.00	0.04	0.00	0.00
<i>T-Statistics</i>	-0.65	0.71	0.08	0.77	-0.65	0.71	-0.08	0.77
Metal	0.00	0.01	0.44	0.00	0.00	0.01	-0.01	0.00
<i>T-Statistics</i>	-1.41	0.14	0.74	0.75	-1.41	0.14	-0.74	0.75
Personal Goods	0.00	0.02	0.15	0.00	0.00	0.02	0.00	0.00
<i>T-Statistics</i>	-2.73	0.55	0.39	0.78	-2.73	0.55	-0.39	0.78
Pharmaceuticals	0.00	0.00	0.33	0.00	0.00	0.00	-0.01	0.00
<i>T-Statistics</i>	-4.82	-0.01	1.05	0.57	-4.82	-0.01	-1.05	0.57
Real Estate	0.00	0.02	-0.33	0.00	0.00	0.02	0.01	0.00
<i>T-Statistics</i>	-0.56	0.41	-0.62	0.78	-0.56	0.41	0.62	0.78
Retailer	0.00	0.02	0.15	0.00	0.00	0.02	0.00	0.00
<i>T-Statistics</i>	-3.04	0.64	0.51	0.69	-3.04	0.64	-0.51	0.69
Software	0.00	-0.01	0.16	0.00	0.00	-0.01	0.00	0.00
<i>T-Statistics</i>	0.04	-0.12	0.23	0.97	0.04	-0.12	-0.23	0.97
Support Service	0.00	0.02	0.37	0.00	0.00	0.02	-0.01	0.00
<i>T-Statistics</i>	-1.00	0.53	0.88	0.56	-1.00	0.53	-0.88	0.56
Technology	0.00	0.03	0.51	0.00	0.00	0.03	-0.01	0.00
<i>T-Statistics</i>	-1.44	0.51	0.89	0.57	-1.44	0.51	-0.89	0.57
Telecommunication	0.00	0.14	0.48	0.00	0.00	0.14	-0.01	0.00
<i>T-Statistics</i>	-0.55	1.44	0.46	0.30	-0.55	1.44	-0.46	0.30
Travel & Leisure	0.00	0.01	0.10	0.00	0.00	0.01	0.00	0.00
<i>T-Statistics</i>	-3.76	0.28	0.39	0.88	-3.76	0.28	-0.39	0.88
Others	0.00	0.01	0.99	0.00	0.00	0.01	-0.02	0.00
<i>T-Statistics</i>	-0.84	0.10	0.96	0.62	-0.84	0.10	-0.96	0.62
All	0.00	-0.07	0.73	0.00	0.00	-0.07	-0.02	0.00
<i>T-Statistics</i>	-0.51	-0.31	0.30	0.92	-0.51	-0.31	-0.30	0.92

*This table presents the regression analysis results for 34 Japanese Industries after Madrid terrorist attack (see equation 12 & 13). The first multiplicative dummy variable equation illustrates the impact on systematic risk and the second additive dummy variable equation shows the impact on the intercept*

<sup>1</sup> *Equity and Non- Equity*

<sup>2</sup> *Life and Non- Life*

## Appendix 1.3: Regression Analysis (London)

Table 10: The Impact of London Attack on Japanese Industry Indices- Regression Analysis

$$\tilde{r}_{it} - \tilde{r}_{ft} = \phi_i + \beta_i^1[\tilde{r}_{mt} - \tilde{r}_{ft}] + \beta_i^2[\tilde{r}_{mt} - \tilde{r}_{ft}] * D + \tilde{\varepsilon}_{it} \quad \tilde{r}_{it} - \tilde{r}_{ft} = \phi_i + \alpha_i^1[\tilde{r}_{mt} - \tilde{r}_{ft}] + \alpha_i^2 D + \tilde{\varepsilon}_{it}$$

$$\alpha_i^1 \equiv \alpha_i^2 \equiv 0$$

Industry	$\phi_i$	$\beta_i^1$	$\beta_i^2$	$\beta_i^1 \equiv \beta_i^2 \equiv 0$	$\phi_i$	$\alpha_i^1$	$\alpha_i^2$	
Aerospace	-0.01	-0.10	0.22	0.00	-0.01	-0.10	0.01	0.00
<i>T-Statistics</i>	-5.05	-1.42	0.28	0.37	-5.05	-1.42	0.28	0.37
Automobile	0.00	-0.06	0.08	0.00	0.00	-0.06	0.00	0.00
<i>T-Statistics</i>	-8.84	-1.81	0.25	0.20	-8.84	-1.81	0.25	0.20
Banks	0.00	-0.02	0.05	0.00	0.00	-0.02	0.00	0.00
<i>T-Statistics</i>	-6.20	-0.39	0.11	0.92	-6.20	-0.39	0.11	0.92
Beverages	-0.01	-0.01	0.08	0.00	-0.01	-0.01	0.00	0.00
<i>T-Statistics</i>	-9.82	-0.18	0.26	0.96	-9.82	-0.18	0.26	0.96
Chemicals	-0.01	-0.05	0.10	0.00	-0.01	-0.05	0.00	0.00
<i>T-Statistics</i>	-9.29	-1.58	0.29	0.29	-9.29	-1.58	0.29	0.29
Construction	0.00	0.02	0.06	0.00	0.00	0.02	0.00	0.00
<i>T-Statistics</i>	-8.60	0.55	0.17	0.83	-8.60	0.55	0.17	0.83
Electricity	-0.01	0.00	0.06	0.00	-0.01	0.00	0.00	0.00
<i>T-Statistics</i>	-9.56	0.08	0.18	0.98	-9.56	0.08	0.18	0.98
Electronics	0.00	-0.03	0.09	0.00	0.00	-0.03	0.00	0.00
<i>T-Statistics</i>	-7.28	-0.87	0.22	0.68	-7.28	-0.87	0.22	0.68
Engineering	-0.01	-0.02	0.26	0.00	-0.01	-0.02	0.01	0.00
<i>T-Statistics</i>	-17.04	-0.55	0.54	0.77	-17.04	-0.55	0.54	0.77
(E&N) <sup>1</sup> Investment	-0.01	-0.09	0.24	0.00	-0.01	-0.09	0.01	0.00
<i>T-Statistics</i>	-7.23	-1.49	0.37	0.32	-7.23	-1.49	0.37	0.32
Food & Drug	-0.01	0.01	0.18	0.00	-0.01	0.01	0.00	0.00
<i>T-Statistics</i>	-26.64	0.38	0.60	0.75	-26.64	0.38	0.60	0.75
Food Products	-0.01	0.00	0.23	0.00	-0.01	0.00	0.00	0.00
<i>T-Statistics</i>	-26.58	-0.15	0.76	0.75	-26.58	-0.15	0.76	0.75
Forest	-0.01	-0.01	0.22	0.00	-0.01	-0.01	0.00	0.00
<i>T-Statistics</i>	-15.91	-0.17	0.43	0.91	-15.91	-0.17	0.43	0.91
Gas	-0.01	0.05	0.28	0.00	-0.01	0.05	0.00	0.00
<i>T-Statistics</i>	-19.40	1.61	0.54	0.21	-19.40	1.61	0.54	0.21
Gas & Oil	-0.01	0.05	-0.22	0.00	-0.01	0.02	0.01	0.00
<i>T-Statistics</i>	-11.62	1.10	-1.06	0.38	-12.17	0.49	2.69	0.02
General Industrial	-0.01	0.08	0.17	0.00	-0.01	0.08	0.00	0.00
<i>T-Statistics</i>	-13.49	1.87	0.23	0.16	-13.49	1.87	0.23	0.06
General Finance	-0.01	0.03	0.35	0.00	-0.01	0.03	0.01	0.00
<i>T-Statistics</i>	-12.23	0.61	0.40	0.75	-12.23	0.61	0.40	0.75
Health Care	-0.01	0.06	-0.20	0.00	-0.01	0.06	0.01	0.00

<i>T-Statistics</i>	-18.30	2.14	-0.72	0.09	-18.30	2.14	0.72	0.09
Household Goods	-0.01	0.04	-0.16	0.00	-0.01	0.04	0.00	0.00
<i>T-Statistics</i>	-19.07	1.64	-0.61	0.23	-19.07	1.64	0.61	0.23
Industry Transportation	-0.01	0.07	-0.18	0.00	-0.01	0.07	0.01	0.00
<i>T-Statistics</i>	-19.56	2.83	-0.71	0.02	-19.56	2.83	0.71	0.02
Leisure Goods	-0.01	0.08	-0.19	0.00	-0.01	0.08	0.01	0.00
<i>T-Statistics</i>	-12.62	1.97	-0.48	0.14	-12.62	1.97	0.48	0.14
(L&N) <sup>2</sup> Insurance	-0.01	0.06	-0.17	0.00	-0.01	0.06	0.01	0.00
<i>T-Statistics</i>	-8.76	0.99	-0.31	0.06	-8.76	0.99	0.31	0.06
Media	-0.01	0.01	0.12	0.00	-0.01	0.01	0.00	0.00
<i>T-Statistics</i>	-8.04	0.29	0.27	0.92	-8.04	0.29	0.27	0.92
Metal	-0.01	0.06	-0.19	0.00	-0.01	0.06	0.01	0.00
<i>T-Statistics</i>	-11.22	1.36	-0.44	0.37	-11.22	1.36	0.44	0.37
Personal Goods	-0.01	0.07	-0.20	0.00	-0.01	0.07	0.01	0.00
<i>T-Statistics</i>	-15.83	2.20	-0.63	0.08	-15.83	2.20	0.63	0.08
Pharmaceuticals	-0.01	0.09	-0.19	0.00	-0.01	0.09	0.01	0.00
<i>T-Statistics</i>	-16.12	3.07	-0.62	0.01	-16.12	3.07	0.62	0.01
Real Estate	-0.01	0.08	-0.31	0.00	-0.01	0.08	0.01	0.00
<i>T-Statistics</i>	-13.36	2.16	-0.81	0.08	-13.36	2.16	0.81	0.08
Retailer	-0.01	0.07	-0.16	0.00	-0.01	0.07	0.00	0.00
<i>T-Statistics</i>	-19.37	2.56	-0.64	0.04	-19.37	2.56	0.64	0.04
Software	-0.01	-0.04	0.23	0.00	-0.01	-0.04	0.01	0.00
<i>T-Statistics</i>	-7.76	-0.81	0.45	0.68	-7.76	-0.81	0.45	0.68
Support Service	-0.01	-0.02	0.13	0.00	-0.01	-0.02	0.00	0.00
<i>T-Statistics</i>	-9.64	-0.66	0.37	0.77	-9.64	-0.66	0.37	0.77
Technology	0.00	-0.04	0.12	0.00	0.00	-0.04	0.00	0.00
<i>T-Statistics</i>	-6.07	-0.88	0.24	0.67	-6.07	-0.88	0.24	0.67
Telecommunication	0.00	0.01	-0.25	0.00	-0.01	-0.01	0.01	0.00
<i>T-Statistics</i>	-3.47	0.16	-0.85	0.70	-3.73	-0.09	1.32	0.42
Travel & Leisure	-0.01	0.01	0.34	0.00	-0.01	0.01	0.01	0.00
<i>T-Statistics</i>	-24.80	0.30	1.02	0.55	-24.80	0.30	1.02	0.55
Others	-0.01	0.07	-0.29	0.00	-0.01	0.07	0.01	0.00
<i>T-Statistics</i>	-8.91	1.15	-0.47	0.47	-8.91	1.15	0.47	0.47
All	-0.01	-0.03	0.12	0.00	-0.01	-0.03	0.00	0.00
<i>T-Statistics</i>	-4.68	-0.39	0.18	0.92	-4.68	-0.39	0.18	0.92

*This table presents the regression analysis results for 34 Japanese Industries after London terrorist attack (see equation 12 & 13). The first multiplicative dummy variable equation illustrates the impact on systematic risk and the second additive dummy variable equation shows the impact on the intercept.*

<sup>1</sup> *Equity and Non- Equity*

<sup>2</sup> *Life and Non- Life*

## Appendix 1.4: Regression Analysis (Mumbai)

Table 11: The Impact of Mumbai Attack on Japanese Industry Indices- Regression Analysis

$$\tilde{r}_{it} - \tilde{r}_{jt} = \phi_i + \beta_i^1 [\tilde{r}_{mt} - \tilde{r}_{jt}] + \beta_i^2 [\tilde{r}_{mt} - \tilde{r}_{jt}] * D + \tilde{\varepsilon}_{it} \quad \tilde{r}_{it} - \tilde{r}_{jt} = \phi_i + \alpha_i^1 [\tilde{r}_{mt} - \tilde{r}_{jt}] + \alpha_i^2 D + \tilde{\varepsilon}_{it}$$

$$\alpha_i^1 \equiv \alpha_i^2 \equiv 0$$

Industry	$\phi_i$	$\beta_i^1$	$\beta_i^2$	$\beta_i^1 \equiv \beta_i^2 \equiv 0$	$\phi_i$	$\alpha_i^1$	$\alpha_i^2$	
Aerospace	-0.01	-0.08	0.82	0.00	-0.01	-0.08	-0.01	0.00
<i>T-Statistics</i>	-8.52	-0.87	0.80	0.51	-8.52	-0.87	-0.80	0.51
Automobile	-0.01	-0.04	0.37	0.00	-0.01	-0.04	-0.01	0.00
<i>T-Statistics</i>	-14.87	-0.78	0.63	0.62	-14.87	-0.78	-0.63	0.62
Banks	-0.01	-0.09	0.47	0.00	-0.01	-0.09	-0.02	0.00
<i>T-Statistics</i>	-11.03	-1.24	1.18	0.27	-11.03	-1.24	-1.18	0.27
Beverages	-0.01	-0.01	0.47	0.00	-0.01	-0.01	-0.01	0.00
<i>T-Statistics</i>	-18.78	-0.31	1.12	0.51	-18.78	-0.31	-1.12	0.51
Chemicals	-0.01	-0.03	0.40	0.00	-0.01	-0.03	-0.01	0.00
<i>T-Statistics</i>	-13.97	-0.48	0.65	0.73	-13.97	-0.48	-0.65	0.73
Construction	-0.01	0.00	0.38	0.00	-0.01	0.00	-0.01	0.00
<i>T-Statistics</i>	-14.13	-0.05	0.63	0.82	-14.13	-0.05	-0.63	0.82
Electricity	-0.01	-0.03	0.53	0.00	-0.01	-0.03	-0.01	0.00
<i>T-Statistics</i>	-15.26	-0.74	0.96	0.49	-15.26	-0.74	-0.96	0.49
Electronics	-0.01	-0.01	0.51	0.00	-0.01	-0.01	-0.01	0.00
<i>T-Statistics</i>	-11.46	-0.09	0.70	0.78	-11.46	-0.09	-0.70	0.78
Engineering	-0.01	-0.04	0.75	0.00	-0.01	-0.04	-0.01	0.00
<i>T-Statistics</i>	-11.46	-0.67	0.97	0.51	-11.46	-0.67	-0.97	0.51
(E&N) <sup>1</sup> Investment	-0.01	-0.03	0.30	0.00	-0.01	-0.03	-0.01	0.00
<i>T-Statistics</i>	-12.73	-0.63	0.48	0.74	-12.73	-0.63	-0.48	0.74
Food & Drug	-0.01	0.00	0.38	0.00	-0.01	0.00	-0.01	0.00
<i>T-Statistics</i>	-19.42	-0.08	0.86	0.69	-19.42	-0.08	-0.86	0.69
Food Products	-0.01	0.01	0.46	0.00	-0.01	0.01	-0.01	0.00
<i>T-Statistics</i>	-20.98	0.22	1.20	0.47	-20.98	0.22	-1.20	0.47
Forest	-0.01	-0.04	0.25	0.00	-0.01	-0.04	0.00	0.00
<i>T-Statistics</i>	-16.23	-0.98	0.48	0.56	-16.23	-0.98	-0.48	0.56
Gas	-0.01	0.00	0.30	0.00	-0.01	0.00	0.30	0.00
<i>T-Statistics</i>	-17.75	-0.09	1.29	0.44	-17.75	-0.09	1.29	0.44
Gas & Oil	-0.01	0.01	0.67	0.00	-0.01	0.01	-0.01	0.00
<i>T-Statistics</i>	-9.92	0.20	0.81	0.70	-9.92	0.20	-0.81	0.70
General Industrial	-0.01	0.01	0.40	0.00	-0.01	0.01	-0.01	0.00
<i>T-Statistics</i>	-13.65	0.10	0.64	0.81	-13.65	0.10	-0.64	0.81
General Finance	-0.01	-0.03	0.59	0.00	-0.01	-0.03	-0.01	0.00
<i>T-Statistics</i>	-8.31	-0.29	0.56	0.82	-8.31	-0.29	-0.56	0.82

Health Care	-0.01	-0.01	-0.05	0.00	-0.01	-0.01	0.00	0.00
<i>T-Statistics</i>	-14.82	-0.22	-0.09	0.97	-14.82	-0.22	0.09	0.97
Household Goods	-0.01	-0.02	0.14	0.00	-0.01	-0.02	0.00	0.00
<i>T-Statistics</i>	-14.13	-0.33	0.24	0.92	-14.13	-0.33	-0.24	0.92
Industry Transportation	-0.01	-0.02	0.32	0.00	-0.01	-0.02	-0.01	0.00
<i>T-Statistics</i>	-15.80	-0.42	0.59	0.78	-15.80	-0.42	-0.59	0.78
Leisure Goods	-0.01	-0.02	0.75	0.00	-0.01	-0.02	-0.01	0.00
<i>T-Statistics</i>	-11.20	-0.32	0.99	0.59	-11.20	-0.32	-0.99	0.59
(L&N) <sup>2</sup> Insurance	-0.01	0.04	0.63	0.00	-0.01	0.04	-0.01	0.00
<i>T-Statistics</i>	-6.73	0.41	0.56	0.78	-6.73	0.41	-0.56	0.78
Media	-0.01	-0.02	0.87	0.00	-0.01	-0.02	-0.02	0.00
<i>T-Statistics</i>	-9.25	-0.21	0.91	0.65	-9.25	-0.21	-0.91	0.65
Metal	-0.01	-0.02	0.99	0.00	-0.01	-0.02	-0.02	0.00
<i>T-Statistics</i>	-9.56	-0.30	1.09	0.53	-9.56	-0.30	-1.09	0.53
Personal Goods	-0.01	-0.04	0.42	0.00	-0.01	-0.04	-0.01	0.00
<i>T-Statistics</i>	-13.32	-0.68	0.62	0.66	-13.32	-0.68	-0.62	0.66
Pharmaceuticals	-0.01	-0.01	0.47	0.00	-0.01	-0.01	-0.01	0.00
<i>T-Statistics</i>	-14.28	-0.29	0.82	0.69	-14.28	-0.29	-0.82	0.69
Real Estate	-0.01	-0.06	1.16	0.00	-0.01	-0.06	-0.02	0.00
<i>T-Statistics</i>	-9.68	-0.78	1.31	0.33	-9.68	-0.78	-1.31	0.33
Retailer	-0.01	-0.02	0.44	0.00	-0.01	-0.02	-0.01	0.00
<i>T-Statistics</i>	-11.82	-0.26	0.63	0.80	-11.82	-0.26	-0.63	0.80
Software	-0.01	-0.02	1.46	0.00	-0.01	-0.02	-0.03	0.00
<i>T-Statistics</i>	-7.81	-0.17	1.26	0.45	-7.81	-0.17	-1.26	0.45
Support Service	-0.01	-0.01	0.62	0.00	-0.01	-0.01	-0.01	0.00
<i>T-Statistics</i>	-9.24	-0.16	0.67	0.79	-9.24	-0.16	-0.67	0.79
Technology	-0.01	-0.02	0.71	0.00	-0.01	-0.02	-0.01	0.00
<i>T-Statistics</i>	-10.14	-0.21	0.84	0.69	-10.14	-0.21	-0.84	0.69
Telecommunication	-0.01	-0.05	1.32	0.00	-0.01	-0.05	-0.02	0.00
<i>T-Statistics</i>	-8.14	-0.44	1.10	0.51	-8.14	-0.44	-1.10	0.51
Travel & Leisure	-0.01	-0.02	0.32	0.00	-0.01	-0.02	-0.01	0.00
<i>T-Statistics</i>	-14.03	-0.30	0.55	0.83	-14.03	-0.30	-0.55	0.83
Others	-0.01	-0.07	0.21	0.00	-0.01	-0.07	0.00	0.00
<i>T-Statistics</i>	-7.39	-0.65	0.18	0.80	-7.39	-0.65	-0.18	0.80
All	-0.01	0.13	0.59	0.00	-0.01	0.13	-0.01	0.00
<i>T-Statistics</i>	-3.85	0.74	0.28	0.73	-3.85	0.74	-0.28	0.73

*This table presents the regression analysis results for 34 Japanese Industries after Mumbai terrorist attack (see equation 12 & 13). The first multiplicative dummy variable equation illustrates the impact on systematic risk and the second additive dummy variable equation shows the impact on the intercept.*

<sup>1</sup> *Equity and Non- Equity*

<sup>2</sup> *Life and Non- Life*





## Appendix 2.1: Regression Analysis September 11

Table 16: The Impact of September 11 Attack on Japanese Industry Indices- Regression Analysis

$$\tilde{r}_{it} - \tilde{r}_{ft} = \beta_0 + \beta_1[\tilde{r}_{mt} - \tilde{r}_{ft}] + \beta_2[\tilde{r}_{mt} - \tilde{r}_{ft}] * SD + \beta_3(SD)$$

Industry	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	Wald Test
Aerospace	-0.01	-0.05	0.13	0.01	0.00
<i>T-Statistics</i>	-10.15	-0.88	2.07	5.16	0.00
Automobile	-0.01	0.02	0.08	0.01	0.00
<i>T-Statistics</i>	-16.51	0.66	2.15	8.12	0.00
Banks	-0.01	-0.01	0.09	0.01	0.00
<i>T-Statistics</i>	-14.11	-0.30	2.02	7.09	0.00
Beverages	-0.01	-0.02	0.12	0.01	0.00
<i>T-Statistics</i>	-19.14	-0.82	3.63	9.91	0.00
Chemicals	-0.01	0.01	0.09	0.01	0.00
<i>T-Statistics</i>	-16.74	0.21	2.50	8.59	0.00
Construction	-0.01	0.00	0.11	0.01	0.00
<i>T-Statistics</i>	-16.96	-0.01	2.88	8.62	0.00
Electricity	-0.01	0.00	0.08	0.01	0.00
<i>T-Statistics</i>	-17.65	0.05	2.39	8.58	0.00
Electronics	-0.01	0.03	0.08	0.01	0.00
<i>T-Statistics</i>	-14.20	0.83	1.81	7.80	0.00
Engineering	-0.01	-0.01	0.10	0.01	0.00
<i>T-Statistics</i>	-15.22	-0.23	2.27	8.03	0.00
(E&N) <sup>1</sup> Investment	-0.01	0.02	0.09	0.01	0.00
<i>T-Statistics</i>	-12.04	0.41	1.73	5.93	0.00
Food & Drug	-0.01	0.03	0.06	0.01	0.00
<i>T-Statistics</i>	-21.04	1.22	2.26	9.57	0.00
Food Products	-0.01	0.03	0.05	0.01	0.00
<i>T-Statistics</i>	-22.38	1.45	1.83	10.41	0.00
Forest	-0.01	0.02	0.06	0.01	0.00
<i>T-Statistics</i>	-17.00	0.61	1.57	8.30	0.00
Gas	-0.01	0.02	0.07	0.01	0.00
<i>T-Statistics</i>	-19.72	0.64	2.29	9.44	0.00
Gas & Oil	-0.01	0.00	0.10	0.01	0.00
<i>T-Statistics</i>	-11.24	-0.03	1.80	5.42	0.00
General Industrial	-0.01	0.00	0.09	0.01	0.00
<i>T-Statistics</i>	-14.89	0.08	2.25	7.38	0.00
General Finance	-0.01	0.04	0.06	0.01	0.00
<i>T-Statistics</i>	-9.32	0.80	0.99	4.32	0.00
Health Care	-0.01	0.02	0.07	0.01	0.00
<i>T-Statistics</i>	-15.67	0.47	1.68	7.61	0.00
Household Goods	-0.01	0.01	0.09	0.01	0.00
<i>T-Statistics</i>	-17.27	0.29	2.56	8.45	0.00
Industry Transportation	-0.01	-0.01	0.09	0.01	0.00
<i>T-Statistics</i>	-17.80	-0.46	2.73	8.65	0.00
Leisure Goods	-0.01	0.00	0.10	0.01	0.00
<i>T-Statistics</i>	-13.15	-0.05	2.07	6.76	0.00
Life & Non-Life Insurance	-0.01	-0.05	0.15	0.01	0.00
<i>T-Statistics</i>	-9.22	-0.79	2.17	4.68	0.00
Media	-0.01	0.04	0.06	0.01	0.00
<i>T-Statistics</i>	-10.54	0.88	1.09	5.08	0.00
Metal	-0.01	0.03	0.08	0.01	0.00
<i>T-Statistics</i>	-11.39	0.53	1.48	5.89	0.00

Personal Goods	-0.01	0.00	0.10	0.01	0.00
<i>T-Statistics</i>	-14.38	0.10	2.40	6.78	0.00
Pharmaceuticals	-0.01	0.01	0.08	0.01	0.00
<i>T-Statistics</i>	-17.21	0.17	2.23	8.83	0.00
Real Estate	-0.01	0.07	0.01	0.01	0.00
<i>T-Statistics</i>	-10.32	1.50	0.25	4.77	0.00
Retailer	-0.01	-0.01	0.10	0.01	0.00
<i>T-Statistics</i>	-15.36	-0.23	2.52	7.26	0.00
Software	-0.01	0.05	0.05	0.01	0.00
<i>T-Statistics</i>	-8.88	0.93	0.70	4.37	0.00
Support Service	-0.01	-0.03	0.13	0.01	0.00
<i>T-Statistics</i>	-12.66	-0.81	2.70	6.37	0.00
Technology	-0.01	0.00	0.12	0.01	0.00
<i>T-Statistics</i>	-11.96	-0.10	2.09	6.54	0.00
Telecommunication	-0.01	0.03	0.09	0.01	0.00
<i>T-Statistics</i>	-6.74	0.44	1.06	3.42	0.00
Travel & Leisure	-0.01	-0.03	0.12	0.01	0.00
<i>T-Statistics</i>	-18.81	-0.90	3.53	9.33	0.00
Others	-0.01	0.01	0.12	0.01	0.00
<i>T-Statistics</i>	-7.93	0.11	1.56	4.03	0.00
All	-0.01	-0.05	0.13	0.01	0.00
<i>T-Statistics</i>	-10.15	-0.88	2.07	5.16	0.00
				0.00	

*This table presents the regression analysis results for 34 Japanese Industries after September 11 terrorist attack. The first multiplicative dummy variable equation illustrates the impact on systematic risk and the second additive dummy variable equation shows the impact on the intercept (see equation 14).*

<sup>1</sup> *Equity and Non- Equity*

## Appendix 2.2: Regression Analysis (Bali)

Table 17: The Impact of Bali Attack on Japanese Industry Indices- Regression Analysis

$$\tilde{r}_{it} - \tilde{r}_{ft} = \beta_0 + \beta_1[\tilde{r}_{mt} - \tilde{r}_{ft}] + \beta_2[\tilde{r}_{mt} - \tilde{r}_{ft}]^* SD + \beta_3(SD)$$

Industry	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	Wald Test
Aerospace	-0.01	-0.02	0.15	0.00	0.00
<i>T-Statistics</i>	-5.61	-0.35	2.06	0.01	0.01
Automobile	0.00	-0.03	0.13	0.00	0.00
<i>T-Statistics</i>	-6.21	-0.61	2.50	-1.71	0.00
Banks	0.00	-0.03	0.13	0.00	0.00
<i>T-Statistics</i>	-6.21	-0.61	2.50	-1.71	0.00
Beverages	-0.01	-0.01	0.13	0.00	0.00
<i>T-Statistics</i>	-9.82	-0.43	3.65	-1.28	0.00
Chemicals	0.00	0.00	0.13	0.00	0.00
<i>T-Statistics</i>	-7.73	-0.10	3.03	-1.69	0.00
Construction	0.00	0.00	0.14	0.00	0.00
<i>T-Statistics</i>	0.00	0.91	0.00	0.05	0.00
Electricity	-0.01	0.01	0.09	0.00	0.00
<i>T-Statistics</i>	-10.54	0.21	2.59	-0.92	0.00
Electronics	0.00	0.00	0.14	0.00	0.00
<i>T-Statistics</i>	-6.14	0.11	2.70	-1.43	0.00
Engineering	-0.01	-0.02	0.13	0.00	0.00
<i>T-Statistics</i>	-7.04	-0.47	2.76	-1.20	0.00
(E&N) <sup>1</sup> Investment	-0.01	0.00	0.11	0.00	0.00
<i>T-Statistics</i>	-8.86	0.08	2.06	1.28	0.00
Food & Drug	0.00	0.00	0.11	0.00	0.00
<i>T-Statistics</i>	-10.42	0.17	3.63	-3.02	0.00
Food Products	0.00	-0.01	0.12	0.00	0.00
<i>T-Statistics</i>	-11.25	-0.51	4.17	-2.50	0.00
Forest	-0.01	-0.04	0.14	0.00	0.00
<i>T-Statistics</i>	-8.68	-1.13	3.53	-1.62	0.00
Gas	-0.01	-0.01	0.13	0.00	0.00
<i>T-Statistics</i>	-10.31	-0.48	3.97	-1.84	0.00
Gas & Oil	-0.01	-0.01	0.13	0.00	0.00
<i>T-Statistics</i>	-6.21	-0.21	2.29	-0.74	0.00
General Industrial	-0.01	-0.02	0.14	0.00	0.00
<i>T-Statistics</i>	-7.81	-0.48	3.02	-0.87	0.00
General Finance	-0.01	-0.03	0.17	0.00	0.00
<i>T-Statistics</i>	-5.51	-0.55	2.40	-0.14	0.00
Health Care	-0.01	-0.03	0.14	0.00	0.00
<i>T-Statistics</i>	-8.40	-0.70	3.30	-0.97	0.00
Household Goods	0.00	-0.01	0.14	0.00	0.00
<i>T-Statistics</i>	-8.31	-0.40	3.51	-1.73	0.00
Industry Transportation	-0.01	-0.02	0.12	0.00	0.00
<i>T-Statistics</i>	-8.99	-0.58	3.13	-1.54	0.00
Leisure Goods	-0.01	-0.02	0.14	0.00	0.00
<i>T-Statistics</i>	-6.51	-0.37	2.58	-0.99	0.00
Life & Non-Life Insurance	0.00	-0.04	0.16	0.00	0.00
<i>T-Statistics</i>	-3.97	-0.63	2.01	-1.20	0.01
Media	-0.01	-0.01	0.13	0.00	0.00
<i>T-Statistics</i>	-6.57	-0.10	2.20	0.11	0.00
Metal	-0.01	-0.03	0.16	0.00	0.00
<i>T-Statistics</i>	-5.42	-0.48	2.49	-0.73	0.00

Personal Goods	-0.01	-0.01	0.14	0.00	0.00
<i>T-Statistics</i>	-7.89	-0.30	2.97	-0.85	0.00
Pharmaceuticals	-0.01	-0.02	0.12	0.00	0.00
<i>T-Statistics</i>	-8.31	-0.43	3.00	-1.67	0.00
Real Estate	-0.01	0.00	0.10	0.00	0.00
<i>T-Statistics</i>	-6.12	0.02	1.58	-0.39	0.01
Retailer	0.00	0.00	0.11	0.00	0.00
<i>T-Statistics</i>	-7.33	0.09	2.45	-2.12	0.00
Software	-0.01	0.01	0.11	0.00	0.00
<i>T-Statistics</i>	-5.74	0.23	1.50	0.38	0.01
Support Service	-0.01	0.00	0.12	0.00	0.00
<i>T-Statistics</i>	-6.59	0.02	2.16	-0.45	0.00
Technology	0.00	-0.01	0.15	0.00	0.00
<i>T-Statistics</i>	-5.54	-0.18	2.47	-1.04	0.00
Telecommunication	-0.01	-0.01	0.17	0.00	0.00
<i>T-Statistics</i>	-3.71	-0.14	1.85	-0.53	0.00
Travel & Leisure	-0.01	0.01	0.11	0.00	0.00
<i>T-Statistics</i>	-8.80	0.23	2.73	-1.81	0.00
Others	-0.01	0.02	0.13	0.00	0.00
<i>T-Statistics</i>	-4.75	0.32	1.42	0.44	0.01
All	-0.01	-0.02	0.15	0.00	0.00
<i>T-Statistics</i>	-5.61	-0.35	2.06	0.01	0.01

*This table presents the regression analysis results for 34 Japanese Industries after the Bali terrorist attack. The first multiplicative dummy variable equation illustrates the impact on systematic risk and the second additive dummy variable equation shows the impact on the intercept (see equation 14).*

<sup>1</sup> *Equity and Non- Equity*

## Appendix 2.3: Regression Analysis (Madrid)

Table 18: The Impact of Madrid Attack on Japanese Industry Indices- Regression Analysis

$$\tilde{r}_{it} - \tilde{r}_{jt} = \beta_0 + \beta_1[\tilde{r}_{mt} - \tilde{r}_{jt}] + \beta_2[\tilde{r}_{mt} - \tilde{r}_{jt}] * SD + \beta_3(SD)$$

Industry	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	Wald Test
Aerospace	0.00	0.02	0.08	-0.01	0.00
<i>T-Statistics</i>	-1.58	0.27	1.05	-6.20	0.00
Automobile	0.00	0.03	0.05	-0.01	0.00
<i>T-Statistics</i>	-3.62	0.81	1.03	-9.41	0.00
Banks	0.00	0.00	0.08	-0.01	0.00
<i>T-Statistics</i>	-3.12	-0.03	1.26	-6.95	0.00
Beverages	0.00	0.01	0.07	-0.01	0.00
<i>T-Statistics</i>	-4.02	0.43	1.88	-11.63	0.00
Chemicals	0.00	0.01	0.09	-0.01	0.00
<i>T-Statistics</i>	-3.30	0.31	1.78	-9.09	0.00
Construction	0.00	0.02	0.09	-0.01	0.00
<i>T-Statistics</i>	-2.65	0.43	1.95	-9.92	0.00
Electricity	0.00	-0.04	0.11	-0.01	0.00
<i>T-Statistics</i>	-5.20	-1.00	2.70	-9.01	0.00
Electronics	0.00	0.04	0.07	-0.01	0.00
<i>T-Statistics</i>	-1.68	0.88	1.10	-8.36	0.00
Engineering	0.00	0.00	0.08	-0.01	0.00
<i>T-Statistics</i>	-2.07	0.05	1.38	-8.61	0.00
(E&N) <sup>1</sup> Investment	0.00	0.00	0.10	-0.01	0.00
<i>T-Statistics</i>	-1.63	-0.03	1.68	-8.89	0.00
Food & Drug	0.00	0.01	0.08	-0.01	0.00
<i>T-Statistics</i>	-4.61	0.36	2.24	-12.58	0.00
Food Products	0.00	-0.01	0.11	-0.01	0.00
<i>T-Statistics</i>	-4.85	-0.54	3.27	-13.37	0.00
Forest	0.00	0.00	0.07	-0.01	0.00
<i>T-Statistics</i>	-3.73	-0.02	1.55	-10.59	0.00
Gas	0.00	-0.02	0.13	-0.01	0.00
<i>T-Statistics</i>	-5.69	-0.71	3.54	-10.57	0.00
Gas & Oil	0.00	-0.06	0.20	-0.01	0.00
<i>T-Statistics</i>	-2.75	-1.16	2.96	-6.21	0.00
General Industrial	0.00	-0.02	0.12	-0.01	0.00
<i>T-Statistics</i>	-2.62	-0.47	2.29	-9.20	0.00
General Finance	0.00	0.00	0.08	-0.01	0.00
<i>T-Statistics</i>	-0.21	0.01	0.98	-7.14	0.00
Health care	0.00	-0.02	0.11	-0.01	0.00
<i>T-Statistics</i>	-2.88	-0.50	2.15	-9.02	0.00
Household Goods	0.00	0.01	0.09	-0.01	0.00
<i>T-Statistics</i>	-2.51	0.38	1.83	-10.35	0.00
Industry Transportation	0.00	-0.03	0.12	-0.01	0.00
<i>T-Statistics</i>	-3.15	-0.86	2.58	-10.49	0.00
Leisure Goods	0.00	0.02	0.07	-0.01	0.00
<i>T-Statistics</i>	-2.04	0.43	1.19	-7.85	0.00
Life & Non-Life Insurance	0.00	-0.08	0.20	-0.01	0.00
<i>T-Statistics</i>	-0.94	-1.07	2.14	-5.40	0.00
Media	0.00	0.04	0.03	-0.01	0.00
<i>T-Statistics</i>	-0.77	0.72	0.35	-7.43	0.00
Metal	0.00	0.01	0.09	-0.01	0.00
<i>T-Statistics</i>	-1.65	0.19	1.20	-6.38	0.00

Personal Goods	0.00	0.02	0.08	-0.01	0.00
<i>T-Statistics</i>	-2.69	0.36	1.42	-8.88	0.00
Pharmaceuticals	0.00	-0.01	0.10	-0.01	0.00
<i>T-Statistics</i>	-3.89	-0.18	2.06	-9.13	0.00
Real Estate	0.00	0.01	0.03	-0.01	0.00
<i>T-Statistics</i>	-0.61	0.14	0.35	-7.73	0.00
Retailer	0.00	0.00	0.08	-0.01	0.00
<i>T-Statistics</i>	-2.42	0.06	1.43	-9.38	0.00
Software	0.00	-0.01	0.08	-0.01	0.00
<i>T-Statistics</i>	-0.36	-0.13	0.89	-6.33	0.00
Support Service	0.00	0.02	0.06	-0.01	0.00
<i>T-Statistics</i>	-1.04	0.34	0.90	-7.55	0.00
Technology	0.00	0.03	0.06	-0.01	0.00
<i>T-Statistics</i>	-1.54	0.58	0.81	-7.37	0.00
Telecommunication	0.00	0.15	-0.07	-0.01	0.00
<i>T-Statistics</i>	-0.65	1.63	-0.64	-5.17	0.00
Travel & Leisure	0.00	0.00	0.08	-0.01	0.00
<i>T-Statistics</i>	-2.85	-0.01	1.83	-10.59	0.00
Others	0.00	0.02	0.07	-0.01	0.00
<i>T-Statistics</i>	-1.26	0.21	0.68	-4.53	0.00
All	0.00	-0.05	0.30	-0.01	0.00
<i>T-Statistics</i>	-0.74	-0.26	1.40	-1.66	0.01

*This table presents the regression analysis results for 34 Japanese Industries after Madrid terrorist attack. The first multiplicative dummy variable equation illustrates the impact on systematic risk and the second additive dummy variable equation shows the impact on the intercept (see equation 14).*

<sup>1</sup> *Equity and Non- Equity*

## Appendix 2.4: Regression Analysis (London)

Table 19: The Impact of London Attack on Japanese Industry Indices- Regression Analysis

$$\tilde{r}_{it} - \tilde{r}_{ft} = \beta_0 + \beta_1[\tilde{r}_{mt} - \tilde{r}_{ft}] + \beta_2[\tilde{r}_{mt} - \tilde{r}_{ft}]^* SD + \beta_3(SD)$$

Industry	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	Wald Test
Aerospace	-0.01	0.08	-0.09	-0.01	0.00
<i>T-Statistics</i>	-5.68	0.75	-0.72	-4.59	0.00
Automobile	-0.01	0.02	-0.02	-0.01	0.00
<i>T-Statistics</i>	-9.90	0.27	-0.31	-7.60	0.00
Banks	-0.01	0.09	-0.11	-0.01	0.00
<i>T-Statistics</i>	-6.73	1.00	-1.13	-6.01	0.00
Beverages	-0.01	0.00	0.01	-0.01	0.00
<i>T-Statistics</i>	-13.71	-0.06	0.11	-7.95	0.00
Chemicals	-0.01	0.04	-0.03	-0.01	0.00
<i>T-Statistics</i>	-9.18	0.53	-0.34	-7.07	0.00
Construction	-0.01	0.02	-0.01	-0.01	0.00
<i>T-Statistics</i>	-9.53	0.33	-0.08	-7.32	0.00
Electricity	-0.01	0.08	-0.10	-0.01	0.00
<i>T-Statistics</i>	-9.55	1.23	-1.47	-7.82	0.00
Electronics	-0.01	0.09	-0.06	-0.01	0.00
<i>T-Statistics</i>	-7.79	1.09	-0.71	-5.92	0.00
Engineering	-0.01	0.00	0.00	-0.01	0.00
<i>T-Statistics</i>	-7.77	-0.03	0.01	-6.00	0.00
(E&N) <sup>1</sup> Investment	-0.01	0.07	-0.06	-0.01	0.00
<i>T-Statistics</i>	-8.69	0.97	-0.79	-6.54	0.00
Food & Drug	-0.01	0.01	-0.01	-0.01	0.00
<i>T-Statistics</i>	-14.30	0.29	-0.22	-9.68	0.00
Food Products	-0.01	0.03	-0.01	-0.01	0.00
<i>T-Statistics</i>	-14.99	0.60	-0.22	-9.99	0.00
Forest	-0.01	0.03	-0.05	-0.01	0.00
<i>T-Statistics</i>	-11.36	0.46	-0.80	-7.73	0.00
Gas	-0.01	0.07	-0.06	-0.01	0.00
<i>T-Statistics</i>	-12.22	1.37	-1.08	-9.68	0.00
Gas & Oil	-0.01	0.14	-0.10	-0.01	0.00
<i>T-Statistics</i>	-6.14	1.44	-0.99	-5.16	0.00
General Industrial	-0.01	0.01	0.00	-0.01	0.00
<i>T-Statistics</i>	-9.28	0.19	0.01	-6.82	0.00
General Finance	-0.01	0.04	-0.05	-0.01	0.00
<i>T-Statistics</i>	-5.84	0.33	-0.39	-4.12	0.00
Health Care	-0.01	0.01	0.00	-0.01	0.00
<i>T-Statistics</i>	-9.70	0.22	0.00	-7.03	0.00
Household Goods	-0.01	0.02	-0.01	-0.01	0.00
<i>T-Statistics</i>	-9.99	0.34	-0.16	-7.44	0.00
Industry Transportation	-0.01	0.00	-0.01	-0.01	0.00
<i>T-Statistics</i>	-10.87	0.07	-0.15	-7.23	0.00
Leisure Goods	-0.01	0.06	-0.05	-0.01	0.00
<i>T-Statistics</i>	-7.40	0.68	-0.53	-5.69	0.00
Life & Non-Life Insurance	-0.01	0.12	-0.09	-0.01	0.00
<i>T-Statistics</i>	-5.09	0.91	-0.66	-3.28	0.00
Media	-0.01	0.02	-0.04	-0.01	0.00
<i>T-Statistics</i>	-5.87	0.19	-0.33	-4.94	0.00
Metal	-0.01	0.06	-0.06	-0.01	0.00

<i>T-Statistics</i>	-6.20	0.61	-0.49	-4.60	0.00
Personal Goods	-0.01	0.02	-0.02	-0.01	0.00
<i>T-Statistics</i>	-9.37	0.22	-0.25	-6.25	0.00
Pharmaceuticals	-0.01	0.01	0.00	-0.01	0.00
<i>T-Statistics</i>	-9.89	0.17	-0.06	-6.60	0.00
Real Estate	-0.01	0.02	-0.06	-0.01	0.00
<i>T-Statistics</i>	-7.09	0.17	-0.52	-4.47	0.00
Retailer	-0.01	-0.02	0.02	-0.01	0.00
<i>T-Statistics</i>	-9.11	-0.32	0.25	-5.79	0.00
Software	-0.01	0.00	-0.02	-0.01	0.00
<i>T-Statistics</i>	-5.20	-0.03	-0.14	-4.02	0.00
Support Service	-0.01	0.04	-0.05	-0.01	0.00
<i>T-Statistics</i>	-6.30	0.43	-0.45	-4.76	0.00
Technology	-0.01	0.03	-0.02	-0.01	0.00
<i>T-Statistics</i>	-7.18	0.29	-0.22	-4.88	0.00
Telecommunication	-0.01	0.02	-0.04	-0.01	0.00
<i>T-Statistics</i>	-4.18	0.15	-0.27	-4.04	0.00
Travel & Leisure	-0.01	-0.03	0.03	-0.01	0.00
<i>T-Statistics</i>	-11.15	-0.40	0.45	-6.22	0.00
Others	-0.01	0.15	-0.18	-0.01	0.00
<i>T-Statistics</i>	-4.21	1.12	-1.15	-3.80	0.00
All	0.00	0.20	-0.02	-0.01	0.00
<i>T-Statistics</i>	-1.88	0.78	-0.07	-1.71	0.03

*This table presents the regression analysis results for 34 Japanese Industries after London terrorist attack. The first multiplicative dummy variable equation illustrates the impact on systematic risk and the second additive dummy variable equation shows the impact on the intercept (see equation 14).*

<sup>1</sup> *Equity and Non- Equity*



## Appendix 2.5: Regression Analysis (Mumbai)

**Table 20: The Impact of Mumbai Attack on Japanese Industry Indices- Regression Analysis**

$$\tilde{r}_{it} - \tilde{r}_{ft} = \beta_0 + \beta_1[\tilde{r}_{mt} - \tilde{r}_{ft}] + \beta_2[\tilde{r}_{mt} - \tilde{r}_{ft}] * SD + \beta_3(SD)$$

Industry	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	Wald Test
Aerospace	-0.01	-0.08	0.14	0.00	0.00
<i>T-Statistics</i>	-9.49	-1.04	1.15	-0.42	0.26
Automobile	-0.01	-0.05	0.07	0.00	0.00
<i>T-Statistics</i>	-16.17	-0.99	0.92	-0.44	0.38
Banks	-0.01	-0.09	0.14	0.00	0.00
<i>T-Statistics</i>	-11.74	-1.42	1.41	0.08	0.29
Beverages	-0.01	-0.02	0.02	0.00	0.00
<i>T-Statistics</i>	-19.90	-0.48	0.33	-1.95	0.03
Chemicals	-0.01	-0.03	0.08	0.00	0.00
<i>T-Statistics</i>	-14.92	-0.62	0.99	-0.32	0.43
Construction	-0.01	-0.01	0.03	0.00	0.00
<i>T-Statistics</i>	-15.18	-0.25	0.43	-0.98	0.37
Electricity	-0.01	-0.04	0.02	0.00	0.00
<i>T-Statistics</i>	-15.36	-0.94	0.23	-0.68	0.53
Electronics	-0.01	-0.01	0.05	0.00	0.00
<i>T-Statistics</i>	-12.39	-0.22	0.60	-0.67	0.47
Engineering	-0.01	-0.05	0.09	0.00	0.00
<i>T-Statistics</i>	-12.43	-0.85	0.90	-0.37	0.45
(E&N) <sup>1</sup> Investment	-0.01	-0.04	0.07	0.00	0.00
<i>T-Statistics</i>	-13.82	-0.76	0.90	-0.99	0.14
Food & Drug	-0.01	0.00	-0.02	0.00	0.00
<i>T-Statistics</i>	-21.29	-0.14	-0.34	-1.41	0.42
Food Products	-0.01	0.01	-0.01	0.00	0.00
<i>T-Statistics</i>	-22.76	0.17	-0.15	-2.06	0.07
Forest	-0.01	-0.04	0.01	0.00	0.00
<i>T-Statistics</i>	-17.44	-1.05	0.11	-1.48	0.13
Gas	-0.01	0.00	-0.01	0.00	0.00
<i>T-Statistics</i>	-19.46	0.05	-0.15	-1.67	0.21
Gas & Oil	-0.01	0.02	-0.01	0.00	0.00
<i>T-Statistics</i>	-10.62	0.37	-0.06	-0.91	0.65
General Industrial	-0.01	0.00	0.00	0.00	0.00
<i>T-Statistics</i>	-14.68	-0.02	0.00	-1.23	0.42
General Finance	-0.01	-0.04	0.03	0.00	0.00
<i>T-Statistics</i>	-8.50	-0.46	0.21	-0.65	0.73
Health care	-0.01	-0.01	0.04	0.00	0.00
<i>T-Statistics</i>	-15.80	-0.32	0.59	-0.66	0.49
Household Goods	-0.01	-0.02	0.04	0.00	0.00
<i>T-Statistics</i>	-15.37	-0.39	0.55	-0.99	0.30
Industry Transportation	-0.01	-0.02	0.01	0.00	0.00
<i>T-Statistics</i>	-16.94	-0.54	0.17	-1.02	0.46
Leisure Goods	-0.01	-0.03	0.06	0.00	0.00
<i>T-Statistics</i>	-11.90	-0.45	0.64	-0.45	0.61
Life & Non-Life Insurance	-0.01	0.03	-0.03	0.00	0.00
<i>T-Statistics</i>	-6.97	0.28	-0.18	-1.21	0.52
Media	-0.01	-0.02	-0.01	0.00	0.00
<i>T-Statistics</i>	-9.65	-0.31	-0.11	-0.38	0.94
Metal	-0.01	-0.03	0.06	0.00	0.00
<i>T-Statistics</i>	-10.30	-0.41	0.49	-0.15	0.88

Personal Goods	-0.01	-0.05	0.07	0.00	0.00
<i>T-Statistics</i>	-14.46	-0.92	0.88	-0.17	0.57
Pharmaceuticals	-0.01	-0.02	0.03	0.00	0.00
<i>T-Statistics</i>	-15.06	-0.36	0.37	-0.93	0.45
Real Estate	-0.01	-0.07	0.05	0.00	0.00
<i>T-Statistics</i>	-10.52	-1.06	0.44	-0.32	0.62
Retailer	-0.01	-0.03	0.04	0.00	0.00
<i>T-Statistics</i>	-13.09	-0.58	0.45	-0.78	0.49
Software	-0.01	-0.03	-0.02	0.00	0.00
<i>T-Statistics</i>	-8.24	-0.29	-0.14	-0.30	0.96
Support Service	-0.01	-0.02	0.01	0.00	0.00
<i>T-Statistics</i>	-9.89	-0.27	0.08	-0.35	0.95
Technology	-0.01	-0.02	0.03	0.00	0.00
<i>T-Statistics</i>	-10.81	-0.32	0.30	-0.43	0.84
Telecommunication	-0.01	-0.05	0.06	0.00	0.00
<i>T-Statistics</i>	-8.49	-0.56	0.40	0.48	0.94
Travel & Leisure	-0.01	-0.02	0.03	0.00	0.00
<i>T-Statistics</i>	-15.10	-0.46	0.38	-1.36	0.18
Others	-0.01	-0.07	0.10	0.00	0.00
<i>T-Statistics</i>	-7.89	-0.81	0.70	-0.30	0.62
All	-0.01	0.12	-0.04	0.00	0.00
<i>T-Statistics</i>	-4.19	0.75	-0.14	-0.16	0.86

*This table presents the regression analysis results for 34 Japanese Industries after Mumbai terrorist attack. The first multiplicative dummy variable equation illustrates the impact on systematic risk and the second additive dummy variable equation shows the impact on the intercept (see equation 14).*

<sup>1</sup> *Equity and Non- Equity*