

Impact of Turkey-Syria Earthquakes on Indian Textile Industry: Empirical Evidence from Select Indian Textile Companies

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ABSTRACT

Indo-Turkish trade relations date back to Vedic Age (before 1500 BCE). Turkey was one of the first countries to establish a trade relationship after India's independence. India-Turkey economic and commercial cooperation constitutes an important dimension of the bilateral relationship. In light of the above facts, the present study attempts to examine the relationship between the 2023 Kahramanmaras earthquake and the stock prices of the companies constituting the textile industry in India. It is found that while some of the companies have been affected, the earthquake's impact on the Indian textile industry is minimal and for a very short period. The market sentiments are duly affected in the run but the market recovered swiftly. The study is vital to know the short-term impacts of the Kahramanmaras earthquake on the textile industry and the market sentiments of Indian investors and traders and possible repercussions in the long term. The study shall give a deeper insight into the trade relations between the two nations and also shed light on the ripple effect of any disaster in other linked nations.

Keywords: Event study, Kahramanmaras earthquake, Textile Industry, market sentiments, stock prices

INTRODUCTION

The History of Indo-Turkey trade relations

India and Turkey share a very old trade relationship since time immemorial. In modern history, The Bilateral Trade Agreement between India and Turkey was signed in 1973. The Joint Committee for Economic and Technical Cooperation (JCETC) was established in 1983, and in 1996, the Federation of Indian Chambers of Commerce and Industry (FICCI) and the Foreign Economic

Relations Board of Turkey (DEIK) established a Joint Business Council (JBC). Petroleum products, auto parts, man-made yarn, fabrics, made-ups, aircraft and spacecraft parts, plastic raw materials, organic chemicals, dyes, industrial machinery, and other items are among the most important exports from India to Turkey. In 2021-22, India's products to Turkey remained at about USD 9 billion, while imports were amassed at USD 2 billion.

The Event

The country of Turkey is majorly situated in the Anatolian Plate, considered one of the most active plates around the world. The 2 faults, East and North Anatolian faults are responsible for the majority of the earthquakes in Turkey's history such as the 1939 Erzincan earthquake. The 2023 Turkey–Syria earthquakes arose along the active East Anatolian fault where the Arabian plate is sliding past the Anatolian plate.

The impact

The Earthquake of 2023 has disrupted the economy in Turkey and Indian trade along with it. The Turkish Enterprise and Business Confederation estimates the total cost of the quake at \$84.1 billion, the mammoth share of which would be for housing, at \$70.8 billion, with lost national income estimated at \$10.4 billion and lost working days at \$2.91 billion. (Abbas Al Lawati, 2023). While the Indian stock market is yet to see any long-term repercussions, the short-term impacts might be studied which is the main objective of this report.

The earthquake has crippled Turkey and its economy which has affected the bilateral trade relations with India. The earthquake has not only destroyed the lives and livelihoods of millions to count but has also affected the Indian stock market in its wake. Many industries have been affected among which Textile Industry ranks significantly high due to Turkey being one of the top importers from India. The trade carries economic and political relevance since the country's religious differences have come to the limelight in the international arena. Turkey and India have had a pacific relationship and international trade plays a pivotal role in maintaining the same. Globalisation is one of the major forces that the world has witnessed in the last 500 years. Foreign trade has been an integral part of the Indian subcontinent since the time it was discovered by Europeans. Post-Independence the concept of Liberalization, Privatisation, and Globalisation boosted trade relations. While Indo-Turkey trade volume seems trivial when compared to India's EXIM relations with other countries, it is still relevant for the textile companies for which Turkey is a momentous market.

In light of the above discussion, the present study tries to gauge the impact of the Kahramanmaras earthquake on the textile industry and the market sentiments of Indian investors and traders and possible repercussions in the long term.

LITERATURE REVIEW

Sakariyahu et al. (2023) found out significant relationship between the disaster and the returns of the stock markets under consideration. Investors are sceptical, under the situations of death, destruction and stagnant condition of the economy. They reacted negatively and the markets faced some decline as a consequence leading to the variation in returns before and after the event. The returns were most affected on the first and third days but gradually started recovering thereafter. Geography also played a role in the event with markets within closer proximity to the earthquakes suffering more than those at a relatively larger distance.

Gürsoy et al. (2023) in their study concluded that the impacts of the seismic tremor vary for the areas. While it was found that the quake measured impact didn't have an impact in the Food, REIT and Mining areas exchanged Borsa Istanbul, it was observed that there was a causality impact in the unpredictability in the Banking, Business, IT, SME and material areas. Other sectors such as food, REIT and mining sectors were not under the same impact as the others. The study focused on the short effects which are under the macroeconomic variables, especially on the financial markets.

Shubham and V. S. Sundaram (2021) in their paper tried to capture the effect of budget announcements on NSE indices. While the stocks mostly acted negatively, NIFTY IT showed positive posting after the budget. This is direct cause of the incentives and concessions declared by each budgetary session aligned with the government plans. The share market reacts as per the declaration of the parliament and the government's future roadwork in various sectors. Since there are many changes brought in it, market reacts turbulently but in recent trends it has been consistent with positive outlook specially on the IT indices due to the uproar in IT services in recent times in the Indian ecosystem.

Vikas Agarwal, Pulak Ghosh and Haibei Zhao (2019) took the Mumbai attack as a natural experiment to capture investors behaviour and volume traded on that day. It was found that Mumbai investors trade less, perform inferior, take an ample time to react to business news statements, are less likely to initiate trades on new stocks, and accomplish worse on familiar stocks compared with other traders. Individual investors whose locations are closer to the attack site trade less

and perform less after the attacks than those whose locations are further away. The overall findings indicate that the cognitive impairment brought on by prolonged and extreme stress is most likely the cause of the decline in individual investor trading and poor trading performance.

Holger Breinlich et al. (2018) touched on another aspect and event, choosing BREXIT as an event and its impact on UK-listed firms. Correlation between the share of EU immigrants in different industries and stock market returns was absent. Share price activities during this period were also affected by the depreciation of Sterling. It also showed that although the UK's economic growth has slowed since 2016 in comparison to that of other major economies, the Leave vote did not cause an immediate recession.

Ferreira S, Karali B (2015) looked at what serious earthquakes meant for the profits and unpredictability of total securities exchange records in 35 monetary businesses . They found that worldwide monetary business sectors are strong to shocks brought about by tremors regardless of whether these are homegrown. a few macroeconomic factors and seismic tremor qualities (GDP per capita, exchange transparency, respective exchange streams, quake extent, a tidal wave pointer, distance to the focal point, and number of fatalities) intercede the effect of seismic tremors on financial exchange returns, bringing about a zero net impact. The results likewise showed that securities exchange unpredictability is unaffected by tremors, with the exception of Japan.

Davy Ghanem and David Rosvall (2014) examined the impact of major world events on international stock market prices. The phenomenon concerns the negative economic, neutral- and positive political sub-groups. Natural disasters do not generate significant spillover effects during the event period of fifteen days, nor do neutral economic and adverse political events. They found that stock markets react differently from specific categories of major global events. The only significant occurrence of spillover effects following a major world event was found to be relevant for positive and neutral political events and adverse economic events. Europe's stock markets are somewhat united because they coarsely adhere to the same patterns and volatility concerning the influence of various major world events (MWE) categories.

Jurgita Stankevičienė and Simas Akelaitis (2014) also studied the effect of the public announcements on the Lithuanian stock market. They found out that public announcements significantly impacted stock prices of different ranges. In

addition to that, the observed linkage was fairly tenuous – the lower stock price ranges the higher abnormal returns were estimated.

Zhengru Tao (2012) made an event study to measure the fluctuations in market returns and the impact on the value of the firms due to the economic event. The study found results at a significance level of 0.01. The research indicated that the stock prices of major companies in the field of insurance, automobile and electronic goods were affected which came into agreement with the actual scenario in Japan.

Robert Schweitzer (1989) discussed how stock returns react to special events. He briefly discussed how an event is identified and how to deal with the event study methodologies. It was found that the companies generally announce a new capital structure post such events to find the optimum leverage position. The market does not react to leverage increasing events in the same way as it does to leverage decreasing events. Mergers and acquisitions also affect the firms' returns and the shareholders gain positive returns upon merger announcement but lose if it does not go through.

RESEARCH OBJECTIVES

1. To understand the impact of a natural calamity in a foreign trading partner on the Indian economy
2. To find the extent of change in investor sentiments in response to the disaster

DATA AND METHODOLOGY

The present study utilises event study methodology to capture the impact of the earthquakes on the Indian Textile Industry. The data set consists of the daily closing prices of 10 Indian companies in the textile industry and the corresponding values of the National Stock Exchange. The companies taken are:

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| 1. Arvind Ltd. (ARVN) | 2. Alok Industries Ltd. (ALOK) |
| 3. Trident Ltd (TRIE) | 4. Raymond Ltd (RYMD) |
| 5. Indo Rama Synthetics (India) Ltd (IRSY) | 6. Filatex India Ltd (FLTX) |
| 7. Nahar Spinning Mills Ltd (NHRS) | 8. Sutlej Textiles and Industries Ltd (SUTI) |
| 9. Banswara Syntex Ltd (BANS) | 10. Sangam India Ltd (SANG) |

The stocks are chosen by their net sales with few of the names being added due to their promoters being the first to express their views on the incident and its impact on the respective companies.

The time frame taken for the event study ranges from January 3, 2022 to February 28, 2023. All the calculations and inference has been extracted within this time frame.

The study selects “Kahramanmaras earthquake” as a natural experiment and tries to check its impact on textile stocks. The event is considered to be one of the worst natural disasters in recent history and has created severe damage in the countries of impact. Also, the paper incorporates only the chosen companies for the study.

To measure the impact of the news on indices and stocks, t-test has been used to check the significance of the abnormal return observed. Here abnormal return is calculated as the difference obtained from indices/stock's actual return and normal return.

- Stock Return = $\ln \frac{P_1}{P_0}$
 - Where P1 = Closing price of the stock on the present day
P0 = Closing price of the stock on the previous day
- Market Return = closing prices of NIFTY50(Benchmark Index) converted into return form by taking logarithmic difference
- Normal return of the stock is calculated using the market return model of Mckinlay which stands as follows:
 - Normal return= $\alpha + \beta * \text{market return}$
- Abnormal return = The difference between Stock return and Normal return
- T-test of abnormal return is calculated by dividing obtained abnormal return by standard error Normal return and standard error are computed taking an estimation window of 261 days and an event window of 10 days. The rationale behind taking the window period of 10 days is linked to the reference to earlier similar studies which have taken the window period of the same duration.

DATA ANALYSIS

The paper focuses on the effect of the earthquake, on Indian Textile Industry. For that purpose, as already mentioned, some selected companies are taken into consideration. The companies are Sangam India Ltd., Banswara Syntex Ltd., Sutlej Industries, and Nahar spinning mills.

Graphical representation of stock performance of some selected companies



Source: www.moneycontrol.com

Table 1 Abnormal Returns and Cumulative Abnormal Returns of Selected Stocks

Sangam India Ltd.		
Sl. No.	Abnormal Return	Cumulative Abnormal Return
0(Event day)	0.06321*	0.06321*
1	0.01510	0.07832*
2	-0.01935	0.05897
3	0.01166	0.07063
4	-0.02715	0.04349
5	-0.01496	0.02853
6	-0.01831	0.01022
7	-0.00812	0.00210
8	-0.02178	-0.01968
9	0.02944	0.00976
10	0.09613*	0.10589

Banswara Syntex Ltd

Sl. No.	Abnormal Return	Cumulative Abnormal Return
0(Event day)	0.06864*	0.06864*
1	-0.01887	0.04977
2	-0.01198	0.03779
3	-0.02402	0.01378
4	-0.03018	-0.01641
5	0.06499	0.04858
6	-0.03954	0.00904
7	0.02042	0.02945
8	0.01840	0.04786
9	0.05026	0.09812
10	0.01061	0.10872

Sutlej Textiles and Industries Ltd

Sl. No.	Abnormal Return	Cumulative Abnormal Return
0(Event day)	-0.02668	-0.02668
1	-0.00012	-0.02679
2	-0.01145	-0.03825
3	0.00231	-0.03593
4	-0.01102	-0.04695
5	-0.03087	-0.07783
6	-0.01215	-0.08997
7	-0.00545	-0.09542
8	0.00458	-0.09084
9	-0.00063	-0.09147
10	-0.01620	-0.10768

Nahar Spinning mills

Sl. No.	Abnormal Return	Cumulative Abnormal Return
0	-0.07228*	-0.07228*
1	0.00046	-0.07182*
2	0.04987	-0.02195
3	0.04798	0.02603
4	-0.00967	0.01636
5	-0.03227	-0.01590
6	-0.02076	-0.03667
7	-0.01529	-0.05196
8	0.03295	-0.01901
9	-0.01069	-0.02970
10	0.00017	-0.02953

Source: Computed *indicates significant at 5% significance

Upon conducting t-test on the abnormal returns(on event day) and on Cumulative Abnormal Return(CAR) calculated post the event day (including the event day), the following results were obtained:

- The t-statistic of abnormal return of Sangam India Ltd had a value of $2.17352 > 1.96$. Thus, the abnormal return of Sangam India Ltd is found to be significant at 5% level of significance on the day of the event.
The t-statistic of CAR(2 days including the event day) is $2.278 > 1.96$ thus indicating to be significant at 5% level of significance
- The t-statistic of abnormal return of Banswara Syntex Ltd had a value of $2.03635 > 1.96$
Thus, the abnormal return of Banswara Syntex Ltd is found to be significant at 5% level of significance on the day of event.
The t-statistic of CAR (2 days including the event day) is $1.329 < 1.96$ thus being insignificant at 5% level of significance.
- The t-statistic of abnormal returns of Nahar Spinning Mills had a value of $-2.54037 > -1.96$ (in absolute terms)
Thus, the abnormal return of Nahar Spinning Mills Ltd is found to be significant at 5% level of significance on the day of event.
The t-statistic of CAR (2 days including the event day) is $-2.229 > 1.96$ (in absolute terms) thus indicating to be significant at 5% level of significance.

Other stocks such as Filatex (-1.38450), Welspun India (1.10618), Alok Industries (0.41414) did not pass the threshold of t-test at 5% level of significance.

DISCUSSION

Since the *t-statistic* of abnormal return of certain companies is found to be significant, it implies that the impact was observed on event day and while testing the significance of CAR, the results showed that the impact subsided within two days of the event day.

The data shows that the share prices of the various stocks taken into consideration have shown fluctuations on the day of the event and around it. While the volatility has not been much, it has affected the stock prices of the related stocks of various textile companies. However, it is interesting to know that the changes in the stock prices apply only to only a few companies' stocks not all the players in the textile sector.

The share prices of Sutlej, Banswara Syntex, Sangam India Ltd., Nahar Spinning Mills and Arvind Ltd. have shown the most fluctuations on the event day. The rest of the basket of stocks behaved in the usual pattern without any noticeable changes. So, while some stocks were affected to an extent due to the event, the majority of the stocks were largely unaffected.

Even if there is no significant impact of the earthquake on the majority of the stocks, the incident did cause a dip in the stock value of most of the stocks, which are taken into consideration. While this may not be relevant, it gives insight into the investors' sentiments during that phase of the disaster.

The investors' sentiments got influenced by the statements of promoters of such companies. Updeep Singh Chatrath, President and CEO of Sutlej Textiles and Industries expressed his concern over the fear of exports going down because of the earthquake. Similar concerns were expressed by Dr S.N. Modani who also informed the public regarding the slowing down of production in India. Rakesh Mehra, chairman of Banswara Syntex, which exports yarn to Istanbul and Adana expressed that it was premature to predict the impact on his business, but it had brought pressure on yarn prices. Federation of Indian Export Organisations (FIEO) Director General Ajay Sahai proclaimed that the extent of the damage in Turkey is yet not known and thus its impact on exports is difficult to ascertain. Sharing similar views, Hand Tools Association President S C Ralhan asserted that India's exports to Turkey will be impacted but only in the short run.

The market is reacting within the same range as it was seen pre-earthquake period. Even some stock prices shot up during the period since investors anticipated the loss to be short term and thus share obtainment took place at a lower price thus guaranteeing profits. Thus, it could be seen that apart from the investor's rationale towards the trade of stocks, the prices are regulated by various other forces. This could be arrayed as one of the main reasons for justifying the price fluctuation deviating from the normal trends.

CONCLUSION

The world is a global community, accelerated by the onset of the developing concept of globalization and one world one family. While India is making tremendous progress in its trade mechanisms and facilitation of the Make in India and Aatmanirbhar Bharat campaigns, it is only possible to be a part of the global gamut of interdependency with a sound EXIM relation with various countries. Hence, in the process, the Indian economy is affected by global fluctuations. From various natural disasters to wars to economic policy changes, it has a ripple effect on the Indian economy as well.

The same goes for the Kahramanmaras earthquake in Syria and Turkey. Study shows that the earthquake has impacted the Indian stock market and the textile industry. While the deviation is short-term in nature and will not be a problem for the companies in the longer time durations, it is still relevant to boost the theory of market sentiments and works in waves according to Elliot Wave Theory.

While the earthquake has affected more than 11 lakh people in the region, the Indian textile sector was not affected significantly. This shows that apart from Turkey, the Indian Textile Market is exporting and conducting business with other partner countries at a normal volume. This is one of the most beneficial roles played by the globalization efforts. No one country could have a life-threatening impact on any other dependent country's economy, with an exception of a few cases of monopoly in rare minerals and patented technology.

The impact of the earthquake on the Indian economy as a whole and the textile sector, in particular, can be hence, termed as a short-term pressure point wherein the ripples of the incident faded away rather quickly before getting affected by the Adani Group crisis which soon followed the earthquake incident.

It is essential to know that people/ investors' sentiments are the primary driving force behind stock volatility. The stock market runs partially on analytical data and an accurate mathematical perspective.

This resulted in mixed sectoral performance over the time window taken. While some companies' shares plunged low due to the earthquake's impact, others plummeted as a buy-option for investors, leading to the rise of the prices very soon after the earthquake.

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