Measuring the Impact of Socially Responsible Supply Chains on Firm Performance

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Abstract

Most supply chain managers in the world optimize supply chains by helping different stakeholders in supply chains. Traditionally, business firms optimize the performance and compromise their pay-offs in order to increase profits (by lowering cost) of the entire supply chain. However, recent literature has hinted at another dimension to improving performance for companies by having socially responsible supply chains that take into consideration the triple bottom line approach. Literature has discussed the conceptual frameworks and empirical studies on supply chain sustainability, but there is a lack of studies on the effect of socially responsible supply chain practices on business performance. This research paper aimed at understanding the impact of having supply chains that are socially responsible and used the event study methodology to understand the impact of socially responsible supply chains on companies' performance.

Keywords: **event study methodology, firm performance, socially responsible, supply chains, triple bottom approach**

JEL Classification: I2, M10, M14

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Today's corporate world has become a field of competition. With most countries adopting free trade as a market standard and the dwindling popularity of communist and mass socialist ideologies, it is safe to assume that most businesses in today's world aim at maximizing earnings or profits. With the boom of globalization, this competition has shifted from domestic markets to international markets and corporate strategies currently not only encompass production lines and service quarters in domestic backgrounds, but also on international scales. Many companies today, especially most of the Fortune 500 companies are what could be called multi-national corporations. To survive in such a competitive scenario, it has become imperative for these companies to devise strategies to maximize revenues while reducing costs. While maximizing revenues have depended on better marketing, research and development, market capitalization, and well-designed pricing strategies ; most of the reductions in cost, especially in firms with appreciable levels of manufacturing processes involved have depended on improving supply chain processes.

Since the 1970s, the world has noticed huge changes in attitude towards the environment. Increased awareness about climate change, the full extent of limitation of resources, and increased importance towards recycling has led to various policies by various governments that relate to the environment. The policies named green policies

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have traditionally been looked at by corporate firms as constraints in the profitability equation. However, with a newer generation of workforce in place, the mindset of these firms is changing. They are now realizing to a fuller extent their impact on the environment and thus, environment - friendly measures are not being looked at as mere government-enforced measures, but also morally correct decisions.

Furthermore, as supply chains are becoming more advanced, every member in the supply chain is getting a better chance to voice its opinion. This is true for all businesses in general. Thus, exploitation of labor has become harder for firms to carry out and the concept of social awareness of firms has arisen. The rise of popularity of corporate social responsibility as a measure to judge a firm has increased and thus, the social dimension of firms has also come to the forefront. In 1994, John Elkington coined the term triple bottom approach, an approach that considered not only profits but also social and environmental concerns. The triple bottom approach is also called the 3P approach representing people, planet, and profits. According to Elkington, for a firm to be sustainable, it must be sustainable in all the three major dimensions: economic, social, and environmental. A fourth bottom line also exists, also called the spiritual bottom line, but as the triple bottom line approach of sustainability is more widely accepted than the quadruple bottom line approach, this report identifies that a firm must be individually economically, environmentally, and socially sustainable to be generally sustainable as a firm.

Recently, socially responsible supply chain has become a vital interest area among researchers and academicians (Ehrgott, Reimann, Kaufmann, & Carter, 2011; Klassen & Vereecke, 2012; Sancha, Gimenez, & Sierra, 2016; Yawar & Seuring, 2017). Still, a very limited understanding has been developed towards the elements of socially responsible supply chains (Ehrgott, Reimann, Kaufmann, & Carter, 2011). From the previous literature, noteworthy studies are available, but all focused on developed economies (Yawar & Seuring, 2017). Therefore, there is a dearth of similar kinds of studies in developing economies (Mani, Gunasekaran, Papadopoulos, Hazen, & Dubey, 2016; Yawar & Seuring, 2017). However, if we see all around the globe, supply chain issues differ from developing countries to developed countries as they evolve based on the society. Previous studies applied the case study approach to issues about social sustainability problems or issues in emerging economies and some of them were very expressive regarding social management competences of businesses.

Since extensive research has already been carried out on economic sustainability of supply chains, and many reports and government policies also deal with the environment facet of sustainability, this research aims to highlight the impact and importance of social sustainable supply chains with respect to the social facet of sustainability and will highlight the importance of having socially responsible supply chains. Researchers have worked on the empirical investigations into economic and environmental sustainability, but the social aspects of supply chains have been ignored by the research community. In this research, we selected four particular and most popular incidents (social supply chain disruptions) and then analyzed their effects on the focal companies' performance. For this study, we considered the time period from 1990 to 2014, the time period in which these four incidents happened.

Literature Review

Sustainable supply chain management (SSCM) can be defined as managing supply chain processes, activities, and assets with the objective of optimizing supply chain surplus keeping in view the triple bottom line (Hassini, Surti, & Searcy, 2012; Shen, Govindan, & Shankar, 2015).

According to Chardine-Baumann and Botta-Genoulaz (2014), SSCM improves the efficiency of the organization. In SSCM literature, it is evident that SSCM initiatives create effective coordination among various stakeholders by improving all three goals of sustainability (Linton, Klassen, & Jayaraman, 2007). Several literature reviews on SSCM have been published in recent years (Ahi & Searcy, 2013; Carter & Easton, 2011; Carter & Rogers, 2008; Köksal, Strähle, Müller, & Freise, 2017). Carter and Rogers (2008) defined SSCM as "the

strategic, transparent integration and achievement of an organization's social, environmental, and economic goals in the systemic coordination of key inter-organizational business processes for improving the long-term economic performance of the individual organization and its supply chains" (p. 368). Seuring and Muller (2008) divided the SSCM study into two strategies covering supplier management for risks and performance and supply chain management for sustainable products. They argued that research in sustainability is still dominated by green/environmental issues. Social aspects and also the integration of the three dimensions of sustainability are still rare. Gold, Seuring, and Beske (2010) explored the role of sustainable supply chain management as a catalyst of generating valuable inter-organizational resources and thus, possible sustained inter-firm competitive advantage through collaboration on environmental and social issues. They emphasized on strategic collaboration as a crucial source of competitive advantage where competition shifts from an inter-firm to an inter-supply-chain level.

Young (2018) observed that for SSCM, negotiation free purchasing reveals how legal and compliance policies can provide a platform to address social issues in developing countries. Sancha et al. (2016) found that suppliers contributed to improving the buying firm's social performance, and collaborating with them enhanced the suppliers' social performance. Furthermore, they provided some additional insights on how to measure social performance.

Grekova, Calantone, Bremmers, Trienekens, and Omta (2016) argued that environmental collaboration with society induced performance indirectly by stimulating industry processors to implement sustainable process improvements that subsequently bring about cost savings and market gains. Yawar and Seuring (2017) contributed to the understanding of managing social issues in supply chains by linking social issues, responsible supply chain actions, and performance outcomes. They identified social and economic as well as buyer and supplier performance as the key outcomes for an overarching conceptual framework.

Genovese, Acquaye, Figueroa, and Koh (2017) argued that an incorporation of circular economy principles within SSCM can be beneficial from an environmental perspective. Evolving SCM challenges and market dynamics are also relevant. Feng, Zhu, and Lai (2017) developed a systematic study quantitatively depicting the knowledge structure and the intellectual progress of corporate social responsibility for supply chain management. They adopted bibliometric analysis in conjunction with network analysis to systematically evaluate CSR-related publications for SCM.

Mohanty and Prakash (2013) studied green supply chain management (GSCM) practices in the micro, small, and medium enterprises (MSMEs) in India. They validated that Indian MSMEs face significant pressures from external stakeholders to adopt GSCM practices. Among internal pressures, on-the-job training forces MSMEs in India to adopt GSCM practices. It has been also established that external pressures and adoption of GSCM are fully mediated by internal pressures. Mitra (2015) reviewed the impact of SSCM/GSCM on firm performance with a view to identifying the most commonly used practices and proposing new constructs, variables, and construct relationships by drawing from the literature on SSCM/GSCM, reverse logistics, closed-loop supply chains, and strategic management. He argued that SSCM implementation affected the performance of a company. Luthra, Garg, and Haleem (2014) argued that sustainable competitive advantage was a significant factor for achieving GSCM in the Indian automobile industry. Dubey, Gunasekaran, Papadopoulos, Childe, Shibin, and Wamba (2017) provided total interpretive structural modeling (TISM) to study SSCM. Thus, there is limited literature on antecedents and drivers of SSCM. As a result, there is lack of research on research methodologies to address the issues of SSCM.

SSCM implementation requires a holistic approach, including development of business processes, deciding sourcing criteria related to triple bottom line, and managing supply chain relations and coordination (Sancha et al., 2016). Some studies identified factors and selection criteria but failed to combine them into the framework. The Table 1 sums up different social criterias which are used by different practitioners in their studies for developing a suitable framework.

Table 1. Social Criteria for Developing a Sustainable Framework

Social Criteria	Citation
• Total population	Labuschagne, Brent, & Erck (2005)
• Internal human capital	
• External-social performance	
• Internal social criteria - Human health and safety.	
• External social criteria - Influence of local communities, contractual stake- holders, and other stakeholders.	Bai & Sarkis (2010) ; Bhalla (2013)
• Influence of local surrounding.	Kumar (2012) ; Govindan, Khodaverdi, & Jafarian (2013)
• Workplace occupational health and safety measures.	
• Employment practices	
• Contractual pressure	
• Training education	Azadnia, Saman, & Wong (2015)
• Community development	
• Influence of contractual stakeholders	Ahmadi, Kusi-Sarpong, & Rezaei (2017)

Rajak and Vinodh (2015) argued that current standards for measuring total sustainability do not address all the sustainability issues at the ground level. Global and universal social sustainability measures and dimensions are hard to determine as there is no clarity of sustainability issues in the manufacturing industry in emerging economies. Hence, SCM managers have limited knowledge and no measurement systems are available to solve sustainable problems (Gopal & Thakkar, 2016).

Thus, the social dimension of sustainable development and its impact on supply chains have so far received less attention than the environmental dimension. Theoretical and conceptual research significantly dominate this field. The topics of sustainable development and economic and social effects are more frequently discussed among scholars. However, there is a lack of practical and normative modeling research, particularly from supplier perspectives in emerging economies.

Research Methodology

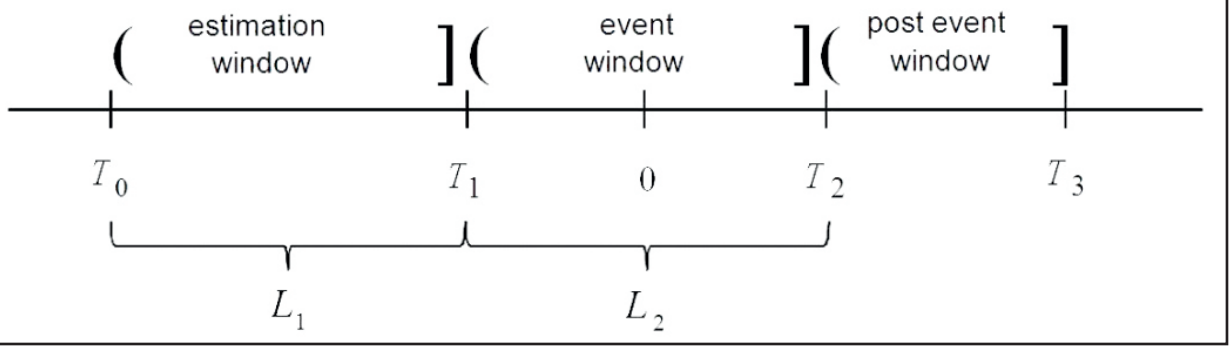
Event study methodology is a statistical tool that evaluates the impact of an event on the value of a firm. For example, the announcement of inventory write-offs of business entities can be analyzed to see whether investors believe the that they will create or destroy value. The basic idea is to find the abnormal return attributable to the event being studied by adjusting for the return that stems from the price fluctuation of the market as a whole.

As the event methodology can be used to elicit the effects of any type of event on the direction and magnitude of stock price changes, it is very flexible. Event studies are thus common to various research areas, such as accounting and finance, management, economics, marketing, information technology, law, and political science.

A modified version of the event study methodology has been used to fully understand the impact of social supply chain disruptions. Furthermore, inspiration has been drawn majorly from the works of Kleindorfer and Saad (2005) and Hendricks and Singhal (2005) regarding supply chain disruptions. The event study methodology is a scientific method to understand the impact of an event on parameters selected by us. It is a statistical method wherein the metric and parameters are characterized on a time line and are divided into three different parts :

(i) The Estimation Period : The period before the event wherein estimations for normal behavior may be made.

Figure 1. Three Time Periods Used in Event Study Methodology



(ii) The Event Period or the Dormancy Period : The actual period in time over which the event/ events under study have taken place and the effects of the event have not yet begun.

(iii) The Post Period or the Effect Period: The period right after the event and before normalization wherein the effects of the event are felt. Three-time periods used in event study methodology are shown in Figure 1.

The event study methodology uses the hypothesis that right after the onset of events, there must be some change in the metrics under study and using regression analysis, it finds the measure of this change (Boehmer, Masumeci, & Poulsen,1991). If this change is very drastic compared to the estimated trend, then there is a high statistical likelihood of this change resulting due to the events. The degree of change is measured as follows:

(i) Normal (Estimated Metrics) : The estimated metrics for the post window are found out by using a regression line analysis over the estimation window and extending the estimation/ statistical forecast to the post window.

(ii) Abnormal Metrics (Metrics Resulting from the Event) : In the post window, the actual metrics are measured and compared with the estimated metrics.

However, there are certain changes to the event study methodology that must be incorporated for the purpose of the case studies in this project. These changes must be incorporated due the hypotheses on supply chain disruptions made by scholars on the topic. The hypothesis is that in supply chains, the effects of disruption are not felt immediately, but after some period of time delay (Hendricks & Singhal, 2005). A sensitivity ratio analysis was done on the chosen metrics to measure the exact time of maximum disruption and if the time delay is measured to be within permissible limits. The event window was modified accordingly.

Data Analysis and Results

For this research, we selected four companies for which social disruption in supply chain news was available. These companies appeared in media for several reasons, but our objective in this research was to find any news related to social disruptions. We scrapped the news from the online database of the Economic Times (ET). Different economic parameters such as revenues, sales, share prices, etc. were considered as parameters to judge the impact of the disruption and the best fits were selected (Binder, 1998). It is important to note that the event study methodology has been used on share prices for Case Studies 2 and 3. However, for Case Study 1, we did not conduct any primary research as daily share prices were not available for the particular case due to the fact that the

case was more than a decade old. Instead, press releases and discrete financial statements and forecasts made by industry experts were used as forecast methods. It can be said that the first case study is a more qualitative study ; whereas, the second and third case studies are quantitative studies.

Case Study 1: Nike Inc. (1990s)

This case study is mainly based on articles by Michelle Rafter, Nike Inc.'s annual reports, balance sheets, and data from the NYE Stock Exchange.

In the 1970s, Nike Inc. set up sweatshops in Asia, especially in South Korea, People's Republic of China, and Taiwan. A sweatshop is defined by the labour department as "factories that violate at least two labour laws or more." These countries have high population densities and large levels of unemployment and thus, people are ready to work in these factories for below minimum wages. The safety conditions of these factories were very well subpar and there were numerous health hazards. Nike Inc. turned huge profits due to the low costs of this labor which dominated the manufacturing part of its supply chain.

In the 1990s, Nike started facing problems due to its policies. The following is a detailed account of the events that followed based on a Business Insider Report (Ciulla, Martin, & Solomon, 2011).

1991: Jeff Ballinger published a report documenting low wages and poor working conditions in Indonesia.

1992: Ballinger published and exposed Nike. His Harpers article highlighted an Indonesian worker who worked for a Nike subcontractor for 14 cents an hour, less than Indonesia's minimum wage, and documented other abuses.

1993: There were protests at the Barcelona Olympics against Nike.

1996: Activism against Nike Inc.'s policies became mildly popular.

1997: Nike Inc. published reports detailing its labour rights violations in South Asia.

1997: The reports were deemed to be too soft, and widespread national activism started. College students protested. Demand for Nike Inc. products fell.

We will now see Nike Inc.'s share prices for the appropriate period of time.

As can be seen, it was in 1996 when Nike Inc.'s social issues began and in August 1997, the campaign against Nike started. Nike reported a growth of 320% from 1994-1996 (Nike Inc. balance sheets). However, after the social issues started plaguing it, growth rates decreased mildly and after a time lag of 7 months (August 1997 to March 1998), the 1st quarter financial reports of Nike showed major disruptions. The results were as follows:

- Nike Inc.'s net income :

Estimated value based on historical data: $278 million.
Actual value: $163.8 million.

- Nike Inc.'s growth rate :

Estimated value based on historical data: Positive 40%.
Actual value: Negative 35%.

- Nike Inc.'s share prices fell by more than 2 dollars. The share prices were estimated to go up by 19 cents or $0.19.

- Nike Inc. was removed from the prestigious Domini 400 Social Index.

As it can be noticed here, there were major deviations from expected value and the deviations were of a negative nature.

However, this case study also aims at showing Nike Inc.'s response and the true impact of social issues in the supply chain. Until now, we have discussed how social issues disrupt supply chains. However, the true intent of this report is to show how socially conscious supply chains are worth the investment as they help improve the financial value of a firm. After the debacle of 1997, Nike Inc. revamped its operations in Asia. The major decisions taken by Nike Inc. were as follows :

- Nike Inc. created The Fair Labor Association, which was a collaborative process which took into account firms, subcontractors, workers, and labor unions to ensure social issues are identified and resolved.
- It held more than 30 audits between 1998 and 2004 which took place in more than 90% of its factories and ensured that its drafted policies were upheld.
- In 2005, Nike Inc. became the first company to publish a list of each and every factory with which it had a contract. It published a 108-page report revealing conditions and pay in its factories and acknowledging widespread issues, particularly in its South Asian factories (Flammer, 2013). In a press release, the then CEO talked about Nike Inc.'s initiatives and talked about how Nike Inc. solved its social issues. As hypothesized, there was a disruption due to this, but a positive one, that took place after a time lag of 9 months. In its 2006 financial statements, the following observations were made:
- Nike Inc.'s revenues had gone up by 9%, even though its costs had increased due to increased investments in setting up more audits to identify social issues.
- Nike Inc.'s share prices had risen by 300% of the expected value.
- By 2006, Nike Inc. was reinstated in most major socially responsible stock indexes, even the Domini 400 Social Index.

Thus, the true impact of supply chain disruptions is seen by this example of Nike Inc. These impacts can be both positive and negative.

Case Study 2 : Walmart

In December 2014, Walmart faced huge criticism due to its inability to pay minimum wages to its workers, mainly

Figure 2. Walmart Share Prices Between 2014 - 2017

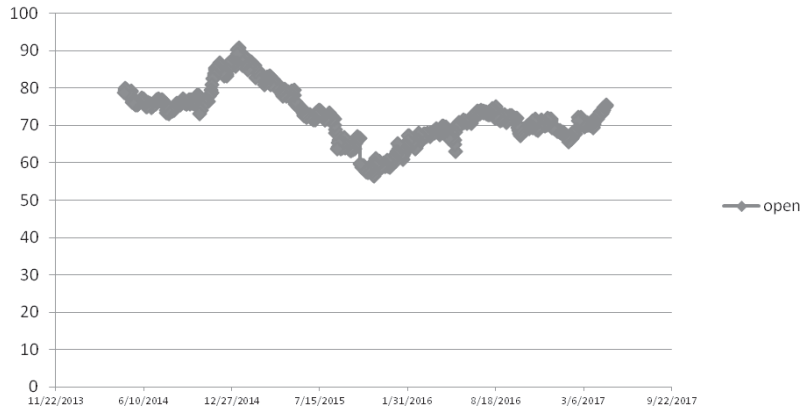


Figure 3. Walmart- Estimation Window

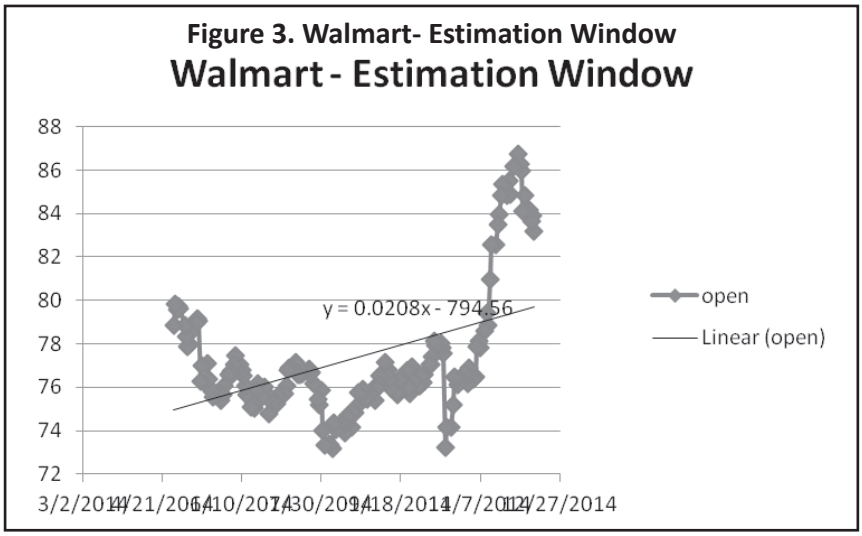


Figure 4. Walmart - Modified Event Window

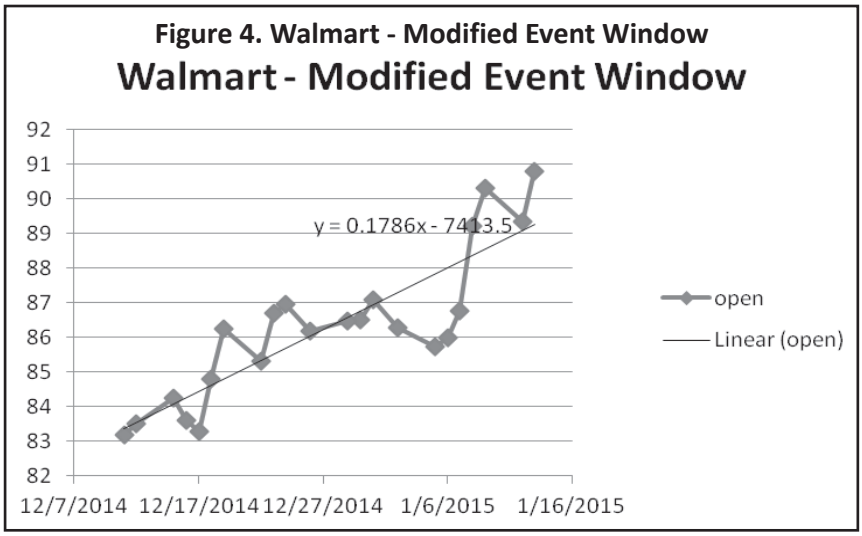
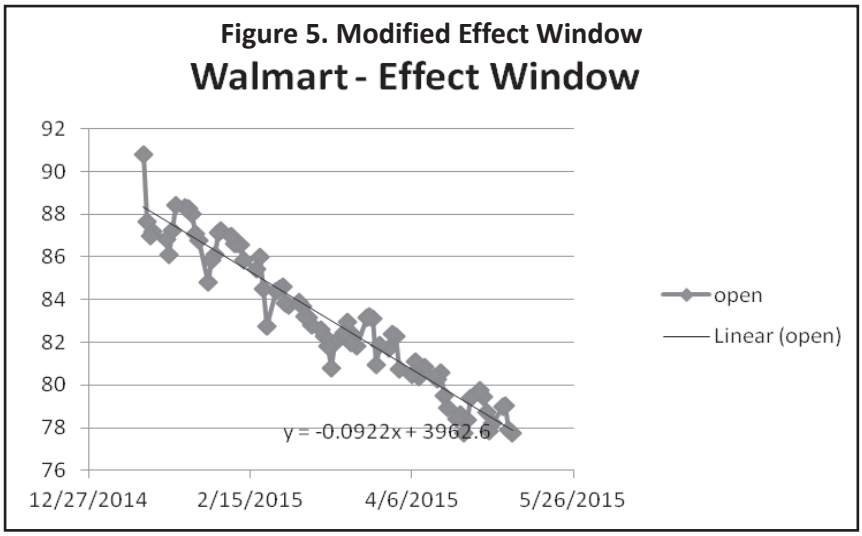


Figure 5. Modified Effect Window



in China, but also in its home economy, America. The Figure 2 is the share price history of Walmart from 2014 to 2017.

The event study analysis was then used. The event period started on December 11, 2014. The maximization of disruption sensitivity analysis measured the date of start of effect as January 13, 2015. The following are the observations of the analysis:

↳ Walmart - Estimation Window :
Start date: April 28, 2014
End Date: December 11, 2014
Alpha Value: -794.56
Beta Value: 0.0208
Expected permissible deviation from beta value: +/- 40%. The results are shown in Figure 3.

↳ Walmart - Modified Event Window : The results for Walmart - Modified Window are shown in Figure 4.
Start Date: December 12 , 2014
End Date: January 13 , 2015

↳ Walmart – Modified Effect Window : The results for Walmart- Modified effect window are shown in Figure 5.
Start Date: January 14, 2015
End Data: April 15, 2015
Alpha: 3962.6
Estimated Beta: 0.0208 +/- 40%
Actual Beta: -0.0922

As can be seen, after a time delay of 1 month, in January 2015, Walmart's share prices started plummeting. The management took notice of this in February and stated that they would start paying minimum wages to over 600,000 workers who were earlier not being paid minimum wages. This can be understood by the drastic change in beta. The estimated beta value was 0.0208, but the actual beta value was not even of the same sign, in fact, it was negative. The actual beta value was negative 0.0922, thus showing a drastic change in the slope of the curve. Thus, the magnitude of the effect can be understood. After a time lag of 5 months, stock prices started going downward at an even higher rate as people thought that Walmart would not be able to manage its operations with increased costs. Walmart, from September to October 2015, had the lowest share price in its history. However, after operations started running smoothly and Walmart delivered on its promise of paying minimum wages to workers as it had promised, after a time lag of 2 months, Walmart's share prices again began to rise.

This example, just as the Nike Inc. example, uses a different metric (share prices rather than revenues) to show a similar impact of social issues which may cause disruptions in the supply chain.

Case Study 3 : Foxconn Technology Co. Ltd.

The aim of this particular case study and the reason why it is different from the previous two case studies is that this is a case wherein the company that faced the social issues was a part of the supply chain of another company which had a global repute. Foxconn Technology Co. Ltd. (share prices shown in Figure 6) is one of the world's largest electronics manufacturers and its China factory manufactured electronic parts for Apple Inc. Co. Ltd.'s China factory in 2010 and 2011.

The factory workers committed suicide in protest of their inhuman working conditions. As this news gained

Figure 6. Share Price of Foxconn Technology

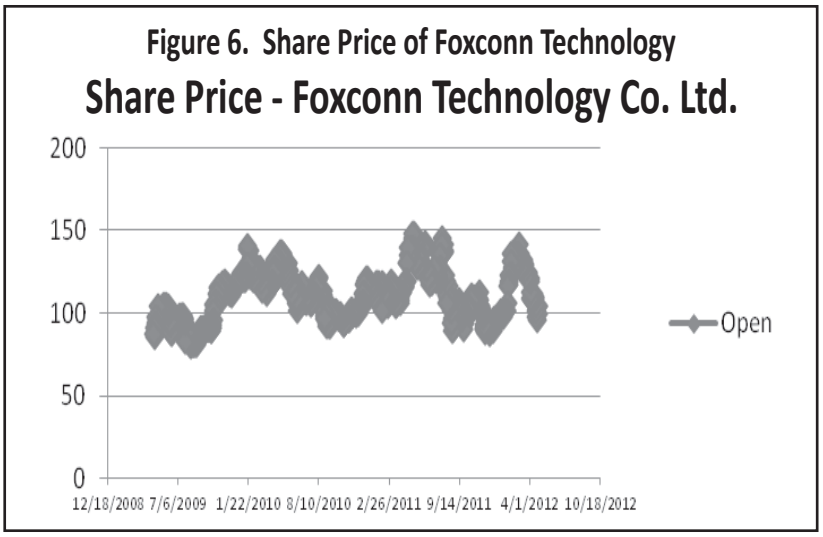


Figure 7(a). Foxconn Technology Co. Ltd.- Estimation Window

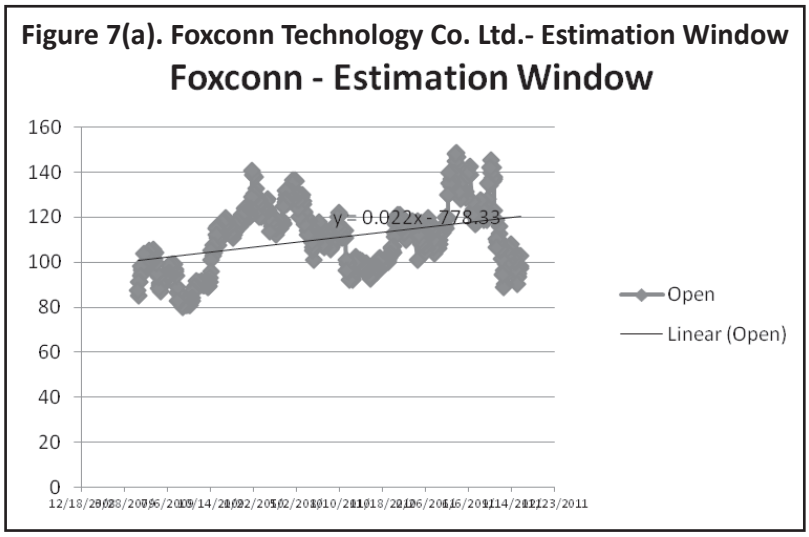
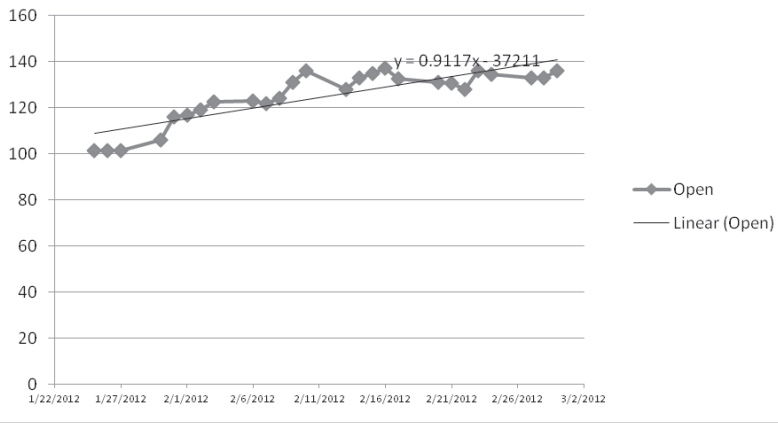
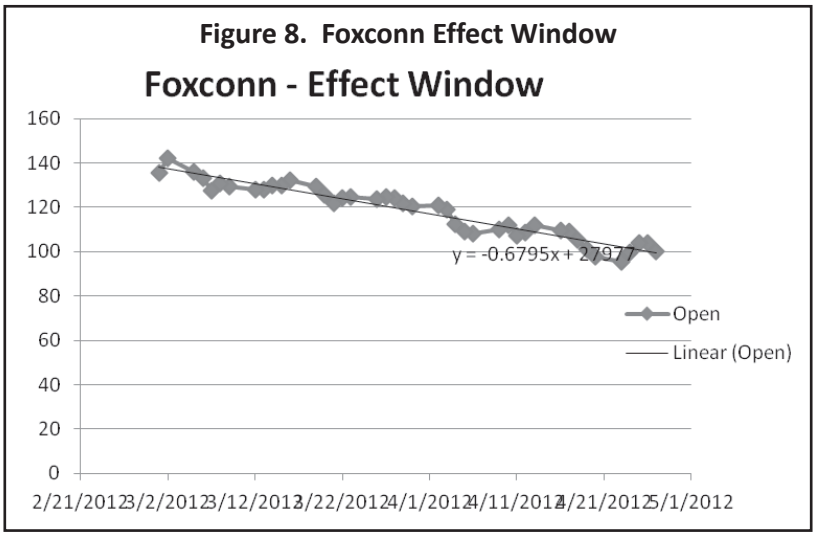


Figure 7(b). Foxconn Modified Event Window





traction, the fact that this company supplied to Apple Inc. was highlighted and investors started demanding action from Foxconn technology.

↳ Foxconn Estimation Window (shown in Figure 7(a)) :
Start Date: April 28, 2009
End Date: October 5, 2011
Alpha: -778.33
Beta: 0.022
Expected Permissible Deviation from Beta Value: +/- 25%.

↳ Foxconn Modified Event Window (Figure 7(b)) :
Start Date: October 6, 2011
End Date: February 29, 2012

↳ Foxconn Effect Window (refer Figure 8) :
Start Date : March 1, 2015
End Data : April 23, 2012
Alpha: 27977
Estimated Beta : 0.022 +/- 25%
Actual Beta: -0.06795

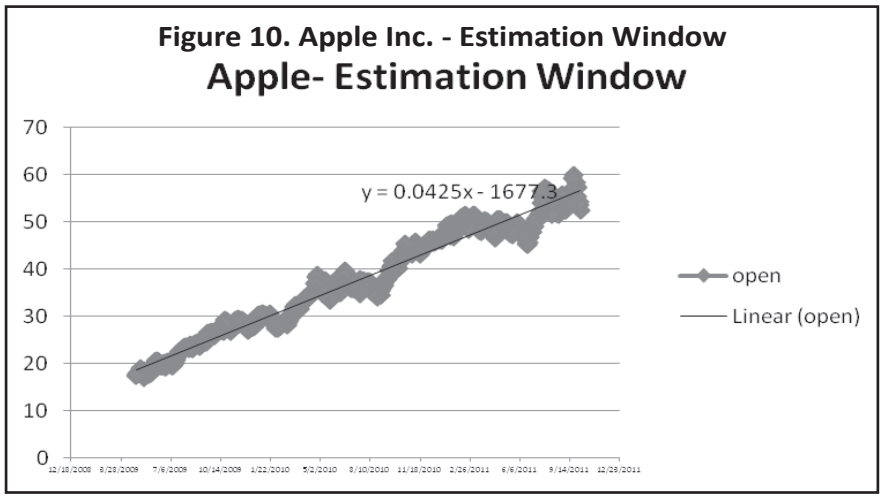
Case Study 4 : Apple Inc.

The events started being reported in a widespread manner in October 2011 (Figure 9). Hence, the modified event window started from October 5, 2011. The maximization of disruption sensitivity analysis gives the start of effect window as on February 29, 2012. The following are the observations of the analysis :

↳ Apple Estimation Value (refer Figure 10) :
Start Date: April 28, 2009 ; End Date: October 5, 2011
Alpha: -1677.3
Beta: 0.0425

Figure 9. Apple Inc. - Share Prices

Figure 10. Apple Inc. - Estimation Window



Expected Permissible Deviation from Beta: +/- 10%.

↳ Apple Modified Event Window (refer Figure 11) :
Start Date: October 6, 2011
End Date: February 29, 2012

↳ Apple Effect Window (refer Figure 12) :
Start Date: March 1, 2015
End Data: July 23, 2015
Alpha: -320.25
Estimated Beta: 0.0425 +/- 10%
Actual Beta: 0.0098

It is not difficult to note that after a time lag of a few months, in February 2012, the share prices of both companies dropped drastically. This deviation from behavior can be understood mathematically from the huge differences in beta for the firms from estimated beta values. For Foxconn, the beta value changed sign which is a huge deviation from estimation. For Apple, the beta value was more than double the deviation from permissible behavior.

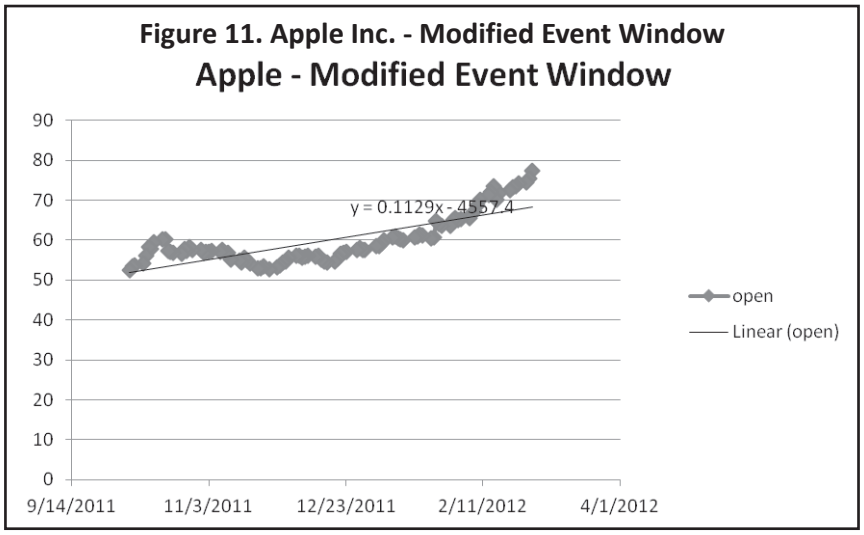


Figure 11. Apple Inc. - Modified Event Window

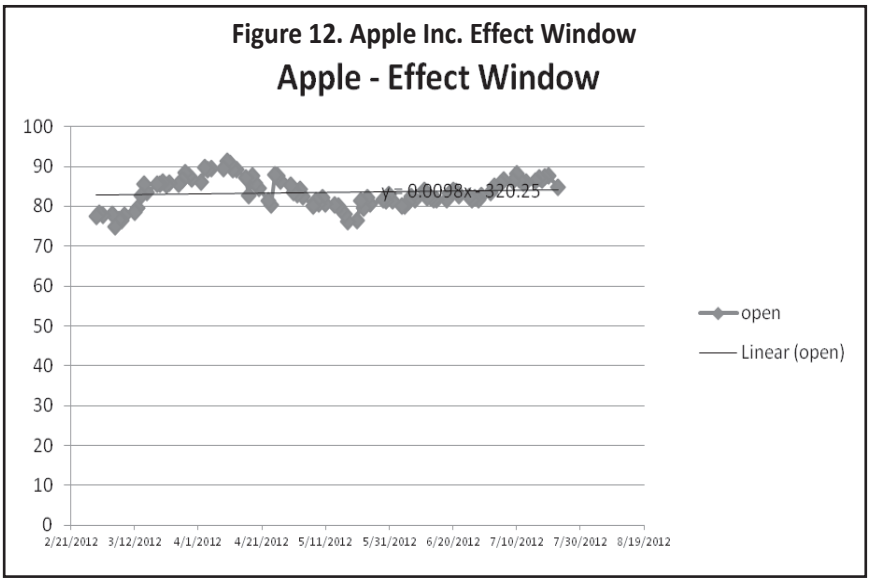


Figure 12. Apple Inc. Effect Window

Even though the drop in share prices was more drastic for Foxconn Technology Co. Ltd., it is very important to note the drop for Apple Inc. because Apple Inc. is a company whose shares have otherwise not fluctuated and instead grown at a steady rate. Another important point to note is that when the statistical tests were run for measuring the end date for the effects period, different values were found for both firms. Foxconn being a smaller company took longer to stabilize, whereas Apple Inc. managed to stabilize in just over two months. Hence, a hypothesis is made by us of this report that a firm with a larger market power takes lesser time to stabilize after a supply chain disruption than a firm with a lesser market power *ceteris paribus*.

What this case study thus shows is that even though a company may not have an issue in its own supply chain, but if any member within its supply chain faces social issues, then the repercussions and the respective supply chain disruptions are felt by the entire supply chain, especially by the companies in the supply chain who have the highest global recognition. Currently, this is just a hypothesis and only the case studies in this report have been used to support this hypothesis, but there is scope for research on this phenomenon in the future.

Managerial Implications

The impact of social issues on the supply chain is investigated in this research. Four different cases were studied in order to understand the impact. The impact was studied using the hypothesis of supply chain disruptions, and the event study methodology was used. Supply chain disruptions arise due to issues in the supply chain, and these supply chain disruptions have an effect on focal company performance. The supply chain disruptions disrupt not only different inherent dimensions such as operations, coordination, etc., but also external dimensions such as the financial performance of the company. The financial performance of a company may be affected even if the social issue causing a disruption in its supply chain stems from issues in another firm operating in the supply chain. Social disruptions have a greater effect on a firm if it has a global reputation. Supply chain disruptions may also be positive in a case wherein a firm has good corporate social responsibility and has low risk of social issues arising in its supply chain. These risks may be mitigated further by using monitoring and collaborative processes. This research has vital implication for managers that social issues not only in their own firm, but in their supply chain partners also has important implications. So, these issues need to be taken care of in a proactive manner.

Conclusion, Limitations of this Study, and the Way Forward

This research deals with outlining the triple bottom approach of corporate sustainability and extends the concept to supply chains. Since literature on economic and environmental sustainability is readily available, the focus was given to the social aspect of sustainability.

Four major questions were asked regarding social issues:

- Whose issues must be regarded ?
- What issues must be regarded ?
- How must these issues be regarded ?
- Why must these issues be regarded ?

The first two questions dealing with whom and what were answered using the stakeholder analysis and literature review. A case to case scenario based on seven detailed points was suggested for the question dealing with how to address such issues. This research is built upon the selected four companies, so the external validity of the research findings is limited. This is a vital research area where detailed empirical investigation can be carried out in the future. Such studies are also limited in developing economies, so such studies can be carried out in emerging countries.

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