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**THE IMPACT OF NEGATIVE SOCIAL / ENVIRONMENTAL EVENTS ON THE  
MARKET VALUE OF SUPPLY CHAIN PARTNERS**

SÃO PAULO

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Dissertação de mestrado apresentada à Escola de Administração de Empresas de São Paulo da Fundação Getúlio Vargas como requisito para obtenção do título de Mestre em Administração de Empresas

Campo de conhecimento:  
Gestão de Operações e Competitividade

Orientador: Prof. Dr. Luiz Artur Ledur Brito

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*A Deus.*

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## **ABSTRACT**

The present work analyzes the impact of negative social / environmental events on the market value of supply chain partners. The study offers a contextualized discussion around important concepts which are largely employed on the Operations Management and Management literature in general. Among them, the developments of the literature around supply chains, supply chain management, corporate social responsibility, sustainable development and sustainable supply chain management are particularly addressed, beyond the links they share with competitive advantage. As for the theoretical bases, the study rests on the Stakeholder Theory, on the discussion of the efficient-market hypothesis and on the discussion of the adjustment of stock prices to new information. In face of such literature review negative social / environmental events are then hypothesized as causing negative impact in the market value of supply chain partners. Through the documental analysis of publicly available information around 15 different cases (i.e. 15 events), 82 supply chain partners were identified. Event studies for seven different event windows were conducted on the variation of the stock price of each supply chain partner, valuing the market reaction to the stock price of a firm due to triggering events occurred in another. The results show that, in general, the market value of supply chain partners was not penalized in response to such announcements. In that sense, the hypothesis derived from the literature review is not confirmed. Beyond that, the study also provides a critical description of the 15 cases, identifying the companies that have originated such events and their supply chain partners involved.

**Key Words:** Negative Social Events, Negative Environmental Events, Corporate Social Responsibility, Supply Chains, Sustainable Supply Chain Management, Sustainable Operations, Sustainability in Supply Chains, Market Value, Event Study.



## RESUMO

O presente estudo analisa o impacto de eventos sociais / ambientais negativos no valor de mercado de parceiros da cadeia de suprimentos. O estudo traz uma discussão contextualizada de conceitos importantes e largamente utilizados dentro da área de gestão de operações e administração de empresas de forma geral. Dentre eles, são abordados em maiores detalhes os desenvolvimentos da literatura acerca de cadeia de suprimentos, de gestão de cadeia de suprimentos, de responsabilidade social corporativa, de desenvolvimento sustentável, de gerenciamento sustentável da cadeia de suprimentos, além das ligações destes com a geração de vantagem competitiva para as empresas. Como bases teóricas, o estudo se apoia na Teoria dos Stakeholders e na discussão da hipótese de mercados eficientes e do ajuste do preço de mercado a novas informações. Em face desta revisão de literatura, eventos sociais e ambientais negativos são hipotetizados como potencialmente nocivos ao valor de mercado de parceiros da cadeia de suprimentos. Por meio da análise documental de informações públicas disponíveis sobre 15 diferentes casos (i.e. 15 eventos), 82 parceiros da cadeia de suprimentos foram identificados. Estudos de eventos foram conduzidos em 7 diferentes janelas de eventos para cada uma das empresas, avaliando a reação do mercado acionário ao preço das ações de uma empresa devido a eventos ocorridos em outra. Os resultados mostram que em geral o valor de mercado de parceiros da cadeia de suprimentos não foi penalizado em decorrência de tais anúncios. Dessa forma, a hipótese decorrente da revisão da literatura não é suportada. Além disso, o estudo ainda provê uma descrição crítica dos 15 casos, identificando as empresas que originaram os eventos e os parceiros da cadeia de suprimentos envolvidos.

**Palavras-chave:** Eventos Sociais Negativos, Eventos Ambientais Negativos, Responsabilidade Social Corporativa; Cadeias de Suprimentos; Gerenciamento Sustentável da Cadeia de Suprimentos; Operações Sustentáveis, Sustentabilidade em Cadeias de Suprimentos, Valor de Mercado, Estudo de Eventos.

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# 1 Introduction

Corporate social responsibility (CSR) comprehends the belief that firms hold commitments to society beyond the creation of wealth to investors. Within this concept, along with environmental protection, the interests of a larger group of stakeholders such as employees, governments, consumers and the general community must be taken into account in the development of businesses (CARROLL, 1999). In that sense, more than a profit oriented range of practices, sustainable management has become a serious demand of society, as the ways through which organizations operate seem to be relevant to a wide range of publics. The materiality of the issue may be also perceived by the level of attention it receives. In order to certify that they operate under sustainable practices, firms have increasingly searched to be well ranked on their performance on CSR policies, as “governments, activists and the media have become adept at holding companies to account for the social consequences of their activities” (PORTER; KRAMER, 2006:1).

The responsibility attributed to firms is not limited to their own operations though. With the development of complex arrangements of trade and exchange among upstream / downstream players, supply chains have been brought to the spotlight of the discussion. The output of firms is no longer perceived as the result of their isolated operations, but as the combined attainment of the operations of all their chain partners instead. Within the Management literature this issue is addressed by the principle of the extended producer responsibility (BOWEN; COUSINS; LAMMING; FARUK, 2001). Accordingly, from the stakeholders’ perspective, firms hold responsibility not only for their own operations but for the operations of all their supply chain partners as well.

Inner to this view, it is possible that an event occurred in a firm influences the perceptions and actions of consumers, employees, investors and other stakeholders around one (or more than one) of its supply chain partners. The present study concentrates then on the analysis of the consequences to the market value of a firm due to a negative social / environmental event occurred in (or caused by) a member of its supply chain.

In that sense, despite both sustainable management and sustainable supply chain management are largely argued to be powerful strategic choices (e.g. PORTER; KRAMER, 2006; KOVÁCS,

2008; NIDUMULU; PRAHALAD; RANGASWANI, 2009; GARCÍA; BENAÛ; ZORIO, 2014; GONÇALVES; ROBINOT; MICHEL, 2015; SILTAOJA; MALIN; PYYKKONEN, 2015), empirical evidences on the link between such practices and the financial performance of firms are, nevertheless, inconclusive (WAHBA, 2007). Several studies have analyzed the stock market reaction to the announcements of sustainability certifications (e.g. KONAR; COHEN, 2001; CHEUNG, 2011; WANG; CUI; LIANG, 2015) or to the announcements of sustainable management initiatives adopted by firms (e.g. JACOBS; SINGHAL; SUBRAMANIAN, 2010). Considering the objectives of the present study, two main issues may be identified in such approaches though. First, both perspectives comprehend events that might be considered positive to firms' images around social / environmental management. Second, the analyses concentrate on the results of sustainability issues to single firm, not exploring eventual consequences to its supply chain partners.

In order to deal with these questions, the present study concentrates its investigation in a particular and focused supply chain aspect. Inherently it searches to provide empirical evidences on the reaction of investors to negative social / environmental events originated on a supply chain partner. This path allows a direct access to the issue, avoiding the controversies previously discussed. The objective of the study is then better represented by the following research question: Do investors negatively react to announcements of negative social / environmental events related to a supply chain partner?

The method of event study is indicated to conduct such test as it allows the perception and the measurement of market value creation / destruction due to any new information available around firms. Considering the semi-strong version of the efficient-market hypothesis (FAMA, 1970), the public announcement of negative social / environmental events is expected to cause a negative reaction of investors. Through the examination of 15 cases of negative events, the variance of the market value of 82 supply chain partners was analyzed.

The study intends to offer both theoretical and practical contributions. Regarding the first, it is relevant as it contributes to the Operations Management literature by addressing the link between negative social / environmental events and the impact on the market value of supply chain partners, adding to the development of a supply chain theory. As for the practical contribution, the study offers empirical evidences that might be useful in guiding and valuing



the importance of supply chain management decisions, specifically on what relates to the potential impact on the market value of the evolved firms.

Subsequent to this introduction, the study is organized as follows. The first part of the literature review concentrates on the relevant discussions on supply chains. In this sub-section, beyond the evolution of the concept of supply chains itself, the literature around supply chain management is also addressed. The second part examines the link between CSR and sustainable supply chain management, addressing the developments of the CSR literature, the comprehension of CSR as a critical business police, the relevance and applicability of CSR in supply chains, as well as the specific literature around sustainable supply chain management and its links to competitive advantage.

The theoretical bases of the study are then depth over two different but complementary perspectives. First, firms' motivations to adopt social / environmental management in response to the demands of diverse stakeholders are addressed by the Stakeholder Theory. Within this perspective the behaviors and choices of firms are discussed as being strongly influenced by external (i.e. environmental) pressure. This approach is particularly relevant for the study as it comprehends the ways through which the demands of diverse stakeholders may shape the practices and strategies employed by firms. The second perspective is intended to supply the theoretical bases over which the reaction of investors to new information lays. Based on the efficient-market hypothesis, a literature review on the adjustment of stock prices to new information is presented. The relevance of this approach rests on the understanding of stock market movements, as well as on the comprehension of the event study method as a valid tool for the assessment of investors' reaction to negative news around social / environmental events within supply chain contexts. Following the theoretical discussion, section 3 delimits the research question and objectives. Beyond that, negative social / environmental events are hypothesized as negatively impacting the market value of supply chain partners.

In the Methods and Sample section the fundamentals and procedures applied on the documentary research of the studied cases are described. The method of event study is also further assessed, with its historical origins, concepts and applicabilities being particularly examined. The procedures applied on the 82 individual events are detailed in this section as well. Including the description of each case, empirical results of the event studies conducted

are presented in the Results section. Following the Discussion of the results, theoretical and practical implications are addressed on the Conclusion section, ending in the presentation of limitations and suggestions for future research.

## 2 Literature Review

The literature review provides a contextualized discussion regarding supply chains, supply chain management and corporate social responsibility, describing the way it is translated into firms' practices through sustainable supply chain management. Next, the Stakeholder Theory subsection addresses the relevance and the motivations for firms to adopt sustainable practices. A discussion on the efficient-market hypothesis literature and on the adjustment of stock prices to new information is also provided, as they subside the comprehension of the stock market behavior and the use of the event study method as a valid tool for the present study.

### 2.1. Supply-Chain

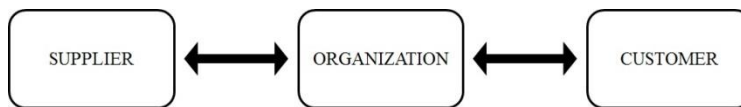
This section presents the evolution of the concepts of supply chain and supply chain management through a discussion of the literature concerning these two interrelated themes. Starting from the initial ideas of supply chains as the rational coordination of material among partners, the discussion address the main developments that led the concept to be comprehended as a network of aligned firms around diverse common interests. The ways through which supply chain management is perceived as a source of competitive advantage to firms is also assessed. Beyond that, the contributions of the discussion to the present study are presented.

#### 2.1.1. Supply-Chain: Evolution and Concepts

According to Mentzer et al. (2001), the arrangements of companies in the form of supply chains have emerged in response to the increasing focus on time and quality-based competition. The demand of customers for products to be delivered “consistently faster, exactly on time and with no damage” (MENTEZER et al., 2001:2) would have forced firms to build closer relations with their suppliers, managing more effective ways to coordinate the flow of products and services. According to Chen and Paulraj (2004), the development of the supply chain concept, however, happened in a complex and multifaceted way, receiving the direct influence of several fields, such as quality revolution (DALE et al., 1994), notions of materials management and integrated

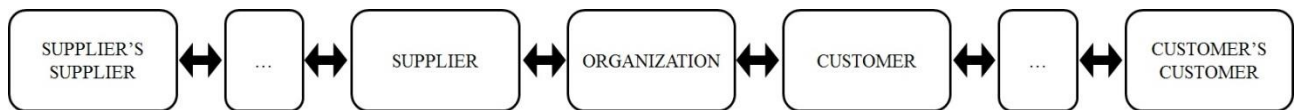
logistics (CARTER; PRICE, 1993; FORRESTER, 1961); industrial markets and networks (FORD, 1990; JARILLO, 1993); the notion of increased focus (PORTER, 1987; SNOW et al., 1992); and influential industry-specific studies (WOMACK et al., 1990; LAMMING, 1993). As a result, different and sometimes not related terminologies have been used by researchers to treat the issue. Expressions like “demand pipelines” (FARMER; VAN AMSTEL, 1991) and “value streams” (WOMACK; JONES, 1994), among others, would be common in that sense.

Through its developments, the literature around supply chains evolved in a perceivable path that seems to start on the coordination of material flow among firms, to a more developed and complex idea that sources of competitive advantage may reside exactly in the relationship among them (DYER; SINGH, 1998). For La Londe and Masters (1994), for instance, supply chains are defined as a set of companies through which material flows. That would typically include several partners, such as raw-material and component producers, product assemblers, wholesalers, retail merchants and transportation companies. Lambert, Stock and Ellram (1998), in turn, define supply chains as a set of firms aligned to bring products and services to market. Christopher (1992) states that supply chains represent a network formed by organizations that, through downstream and upstream linkages, are involved in different processes and activities that may produce services and products, adding value to firms. Mentzer et al. (2001) analyze such definitions summing up that they generally conceive supply chains as consisting of three main parts (i.e. upstream firms, or suppliers; downstream, or distribution; and ultimate consumers). Based on that, the authors state that “supply chain is defined as a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer.” (MENTZER et al, 2001:4). Further, they also define three degrees of supply chain complexity: (1) direct supply chains, formed by a firm, a supplier and a customer, all involved in the upstream and/or on the downstream flow of products, services, finances and/or information; (2) extended supply chains, including suppliers of immediate suppliers, and customers of immediate customers, with all being involved in upstream and/or on the downstream flow of products, services, finances and/or information; and (3) ultimate supply chains, which include all firms involved in the upstream and downstream flows of products, services, finances and information, comprehending from the ultimate supplier until the ultimate customer. Figures 1, 2 and 3 bellow illustrate the concepts:



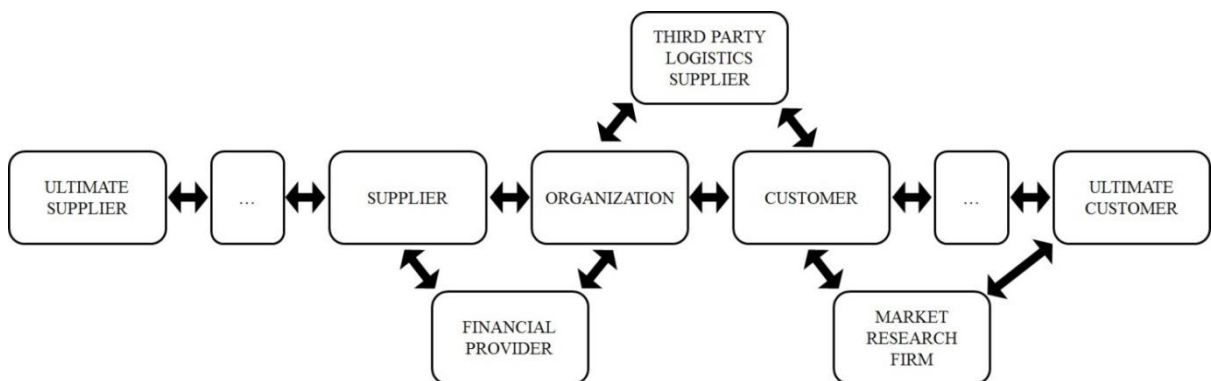
**Figure 1: Direct Supply Chains**

Source: Adapted from Mentzer et al. (2001)



**Figure 2: Extended Supply Chains**

Source: Adapted from Mentzer et al. (2001)



**Figure 3: Ultimate Supply Chains**

Source: Adapted from Mentzer et al. (2001)

Arroyo-Lopez and Bitram (2007) also draw attention to the increasing complexity of supply chains. According to the authors, that would be the combined result of the current dynamics of business environments, the new approaches of management and manufacturing philosophies, the adoption of strategies driven to organizational downsizing and the increasing trend towards outsourcing. In that sense, when compared to solid supply chains, the vertical integration restricted to the borders of companies might no longer configure the best alternative to some firms. Lee (2000) confirms the view. The author argues that competition does not happen between individual companies any longer, but between chains instead. The same view is shared by Spina, Di Serio, Brito and Duarte (2014), in their statement that “currently, competition in global markets is much greater between supply chains than between enterprises. For this reason, supply chain management has become a critical factor of success for companies.” (SPINA; DI

SERIO; BRITO; DUARTE, 2014:2). In that sense, Lee (2000) points that, vertically integrated companies must reorient their strategies according to the following dimensions: (1) informational integration - comprehending the sharing of information and knowledge between the links of the chain; (2) coordination - comprehending the restructuring of decisions and resources to synchronize the complementary activities through effective relationships with multiple suppliers, customers and related parties; and (3) organizational links - including communications, implementation of the chain performance metrics and alignment of goals between members. In order to delimit the concept, Chen and Paulraj (2004), define supply chain as “a network of materials, information and services processing links with the characteristics of supply, transformation, and demand” (CHEN; PAULRAJ, 2004:119).

Despite the positive outcomes of firms' arrangements in the form of supply chains have been largely addressed in the Operations Management literature, the study of the possible negative consequences and risks of composing one may offer different and / or complementary perspectives. In that sense, the comprehension of supply chains as networks may suggest that the actions, behavior and fails of firms pertaining to this arrangement may possibly affect each other. The idea of interconnectivity among partners also offers support to the questioning if negative social / environmental events originated in one company affect the market value of supply chain partners, as within this concept firms may be perceived as belonging to systems of enterprises. Through the assessment proposed, the present study aims to contribute to the comprehension of possible negative consequences of such arrangements, analyzing the flow of negative events within a supply chain.

### **2.1.2. Supply-Chain Management**

As discussed by Burgess, Singh and Koroglu (2006), the area of supply chain management has received increasing attention from the practitioner and academic communities. Through a large number of publications, conferences, professional programs and university courses in the area, supply chain management has been in the limelight of management discussion, bringing together the most diverse aspects of business practices (ROSS, 1998). Despite the immense interest on the issue, Kathawala and Abdou (2003) point to the high degree of variability in the

comprehension around what supply chain management really is. Mentzer et al. (2001) also stress the lack of definitional convergence. According to the authors, supply chain management is often conceptualized in operational terms, encompassing basically the flow of materials and products. Another common group of definitions consider that supply chain management is a “management philosophy”, or a “management process” (TYNDALL et al.; 1998), as well as a form of integrated systems between vertical integration and separate identities (COOPER; ELLRAM, 1993).

Chen and Paulraj (2004) also analyze the use of the term in different ways. In that sense, it has been used to address strategic organizational issues (HARLAND et al., 1999), alternatives to vertical integration (THORELLI, 1986; HAKANSSON; SNEHOTA, 1995), the identification and description of firms’ relationships with suppliers (e.g. HELPER, 1991; HINES, 1994; NARUS; ANDERSON, 1995), as well as the discussion of purchasing and suppliers’ perspectives (e.g. MORGAN; MONCZKA, 1996; FARMER, 1997). The development of such different ideas would be partially explained by the fact that much of the knowledge produced in supply chain management resides in what Burgess, Singh and Koroglu (2006) call “narrow functional silos” (BURGESS; SINGH; KOROGLU, 2006:703) such as purchasing, logistics, information technology and marketing, resulting in little consensus on the conceptual and methodological bases of the field.

In that regard, almost two decades ago, Cooper, Lambert and Pagh (1997) already alerted to the confusion around the term supply chain management, which was constantly treated as “an extension of logistics, the same as logistics or as an encompassing approach to business integration” (COOPER; LAMBERT; PAGH, 1997:1). According to the authors, the idea would be present since the first appearance of the term in the literature, back in 1982. The publication of “Supply chain management: logistics catches up with strategy” (KEITH; WEBBER, 1982) seems to have shaped the discussions that followed it, emphasizing the importance of reductions in inventories, both within and across supply chain partners. Other earlier contributions also represent the same understanding. For Jones and Riley (1985), supply chain management mainly concerned the flow of materials from suppliers through end users while for Stevens (1989), the objective of supply chain management would be to synchronize the flow of materials to customers’ demands, harmonizing lower levels of inventories with high customer

service. Yet in the 1980's, however, different perspectives started to emerge. To Bresser and Harl (1986), for instance, supply chain management seeks to offer firms the control of the environments they are inserted in, through the pursuit of stability and predictability.

For Mentzer et al. (2001) the origins of what is currently known as supply chain management would lead back to the work of Forrester (1958), on which the author introduces “a theory of distribution management that recognized the integrated nature of organizational relationships.” (MENTZER et al., 2001:1). Cooper, Lambert and Pagh (1997) highlighted the importance of supply chain management for different organizational goals other than logistic excellence, on which all aspects of business, including those of chain partners, would be ideally involved. The development of new products illustrates the case. According to the authors, beyond firms' internal functions like marketing, research and development (R&D), manufacturing and finance, the integration with external organizations would be particularly important in aspects such as the reduction of the time-to-market of new products. By this optic, supply chain management would be comprehended as “the planning and control of materials and information flows, as well as the logistics activities not only internally within a company but also externally between companies” (CHEN; PAULRAJ, 2004:120).

Several authors have offered broader and interdisciplinary definitions, disconnecting supply chain management from the pure logistic management approach. As discussed by Cooper, Lambert and Pagh (1997), the definition provided by the International Center of Competitive Excellence in 1994 already seemed to reflect such perspective. By the time, the institution asserted that “supply chain management is the integration of business processes from end users through original suppliers that provide products, services and information that add value for customers”. (COOPER; LAMBERT; PAGH, 1997:8). Coherently with this view, the authors propose a definition to supply chain management as being “an integrative philosophy to manage the total flow of a distribution channel from supplier to the ultimate user” (COOPER, LAMBERT; PAGH, 1997:8). Still in the 1990's, other authors seemed to be evolving the concept. La Londe and Masters (1994) introduced the idea that the coordinated trade among firms represented a long-term agreement for which trust and commitment should be developed, including the sharing of demand and sales data, as well as eventual changes and revaluations of the control over shared processes.



Dubois, Hulthen and Pedersen (2004), in turn, teach that the concept of supply chain management is based on the idea that there is a sequential independence between various activities, and that this independence requires a form of coordination for the success of the process. In that regard Mentzer et al. (2001) state that:

“Supply chain management is defined as the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole.” (MENTZER et al., 2001:18)

Through these more embracing perspectives, effective supply chain management is seen as a broad source of competitive advantage to firms. As discussed by Spina, Di Serio, Brito and Duarte (2014), the impact it brings to firms’ performance has been addressed by several authors (e.g. LEE; BILLINGTON, 1992; HARRISON; NEW, 2002; GUNASEKARAN, 2004; LOCKAMY; McCORMACK, 2004; Li et al, 2005; JONSSON; MATTSONZ, 2008; ALAM et al, 2012; CHOUDHARY; TRIPATHI, 2012; RAMANATHAN, 2012). According to Hendricks and Singhal (2003) the perception could also be justified by the large number of references around the link between supply chain management, profitability and stakeholder value in both, practitioner and academic literature. Chen, Paulraj e Lado (2004) advance the idea stating that unique opportunities for the creation of competitive advantage may arise from the integration of different chain players, discussing how strategic purchasing and supply management lead to the development of dynamic capabilities and ultimately, to firm performance. However, due to the large amount of investigated supply chain management practices, managers may find it difficult to decide which ones to adopt (SPINA; DI SERIO; BRITO; DUARTE, 2014). This illustrates the idea developed by Brito and Pignanelli (2012), on which the authors argue that supply chain management is still an emergent discipline under consolidation.

Despite some of the analyzed negative social / environmental events may be argued to represent punctual and exceptional issues (i.e. disconnected from the policies normally employed by firms), they have been labeled as supply chain management failures. In that sense, as better detailed on section 5.1, in some of the cases firms have been classified by the media as guilty or negligent in the management of practices employed by supply chain partners. From this perspective the present study analyzes how supply chain management issues (perceived as

failures on social / environmental controls) may affect the market value of firms. Moreover, the assessment of such cases may contribute to the discussion of supply chain management practices that add or destroy value to firms.

## **2.2. Corporate Social Responsibility and Sustainable Supply Chain Management**

This section approaches the concept of corporate social responsibility, discussing how the literature around it has evolved to its current comprehension of a critical business policy. Beyond that, the link between corporate social responsibility and competitive (dis) advantage is addressed, discussing the ways through which it may create or destroy value to firms. Finally, CSR is discussed on supply chain contexts, through the principle of extended corporate responsibility. In that sense, sustainable supply chain management is approached as the way through which firms implement CSR policies in supply chains.

### **2.2.1. Corporate Social Responsibility: Evolution, Dimensions and Concepts**

As discussed by Dahlsud (2006) the concept of CSR is still uncertain in both academic and corporate world. Accordingly however, the lack of a common and more accepted conceptualization would be the result of the profusion of definitions, generally biased around specific interests. That would be the main factor preventing the convergence towards the concept (VAN MARREWIJK, 2003). On that regard, Dahlsud (2006) introduces the idea of CSR as a social construction, and therefore impossible to be defined out of biased positions (BERGER; LUCKMANN, 1966). Bakker et al. (2005) complement the idea. According to the authors, three main causes have been particularly important for the lack of definition around CSR: (1) the conceptual vagueness over which the concerning literature has developed; (2) the inherently normative character of the literature and; (3) the continuous introduction of new constructs. Despite that, CSR literature has evolved around structural ideas which guard a relatively high level of conformity among them. The historical development around the concept discussed by Rahman (2011) embases the discussion of the CSR literature in the present study.

In that sense, the decade of 1950 is now comprehended as the “beginning of Modern era of CSR” (RAHMAN, 2011:167), as managers and board directors seemed to start developing conscience around the existence of firms within a societal environment. According to Carroll (1999) the first formal definition of CSR dates back to the work of Bowen (1953). By the time, the author introduced the issue through the following question: “what responsibilities to society may businessmen reasonably be expected to assume?” (BOWEN, 1953:11). The question is followed by his initial definition of CSR: “it refers to the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society” (BOWEN, 1953:6). Other authors also presented their contributions in the decade. For Heald (1957) for instance, CSR comprehends the recognition on the part of management of an obligation to the societies they serve, not only for maximum economic performance but for humane and constructive social policies as well.

Through the decade of 1960 the CSR literature experienced a considerable growth, along with new definitions for the concept (RAHMAN, 2011). Authors of this period, such as Davis (1960), kept on adding new ideas to the discussion. Accordingly, CSR would refer to actions and decisions taken by businessmen for reasons that would be at least partially beyond the technical interests or the direct economy of firms. Frederick (1960), in turn, pragmatically describes CSR as the need of businessmen to develop economic systems that could fulfil the expectations of society. Moreover, according to the author, under CSR principles the economy’s means of production should be managed to enhance total socio-economy welfare.

In the early 70’s the Nobel Prize winner, Milton Friedman, also offered his view on the issue. According to the author, the only social responsibility which business would be necessarily attached to is the search for profit, but in a way operations would respect the rules of society. In that sense, the author specifically highlighted that companies should work on free and open competition, as long as it would be done without fraud or deception (FRIEDMAN, 1970). Still in the 70’s, Carroll (1979) stated that “the social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time” (CARROLL, 1979:500).

The evolution of the CSR discussion continued on the decade of 1980. By the time, Freeman (1984) introduced the Stakeholder Theory, considering customers, competitors, trade

associations, media, environmentalists, suppliers, government, consumer advocates, local communities and business community as stakeholders of firms, who would be necessarily active in firms' operations for successful CSR implementation (RAHMAN, 2011). The definitions presented on the period also helped building the relation between CSR policies and the profitability of firms, mainly through the work of Cochran and Wood (1984). Accordingly, CSR activities would be directly linked to the corporate reputation of firms. Such relation would be due to the increased confidence of consumers in products and services of companies, resulting in increased profitability.

In the 90's the literature on CSR kept on spreading with new definitions emerging. As discussed by Rahman (2011), Hopkins (1998) concentrated his definition around the ethical and responsible treatment that enterprises should delegate to both, internal and external stakeholders. Woodward-Clyde (1999), in turn, stated that CSR represents a contract between business and society, on which communities would grant companies licences to operate, expecting them to meet certain obligations and behaviors in return. The "triple bottom line" is introduced by Elkington (1997) on which the author relates corporate responsibility to (1) social responsibility, comprehended as the care to people; (2) environmental responsibility, related to the care to planet and; (3) economic responsibility, concerning the need for profit creation. Socially responsible companies would then be those holding economic prosperity combined with social equity and environmental protection. This conceptualization of CSR has been largely accepted by the corporate world and is gaining solid foundation as it states that "what is good for the environment and what is good for the society is also good for the financial performance of the business" (RAHMAN, 2011:171).

On the early 2000's three sorts of CSR are proposed by Lantos (2001, 2002): (1) Ethical CSR: addressing the demands for firms to be morally responsible, acting in the prevention of any harm that could be originated by their activities (LANTOS, 2001); (2) Altruistic CSR: concerning true voluntary care hold by firms, particularly those at the cost of corporate sacrifice (LANTOS, 2001); and (3) Strategic CSR: relating to activities of caring corporate community services that at the same time collaborate to the accomplishment of strategic business objectives (LANTOS, 2002).

According to Rahman (2011) ten main dimensions currently emerge from the CSR literature: (1) obligation to the society; (2) stakeholders' involvement; (3) improving the quality of life; (4) economic development; (5) ethical business practice; (6) law abiding; (7) voluntariness; (8) human rights; (9) protection of environment; (10) transparency & accountability. The author summarizes the evolution of the CSR concept through the dimensions on which definitions were based as displayed in Table 1 below:

**Table 1: The CSR Concept Evolution**

<b>Period</b>	<b>Dimension</b>
50's	Obligation to the society
60's	Relationship between corporation and society
70's	Stakeholders' involvement, well beings of citizens, a philosophy that looks at the social interest, help solve neighborhood problems; improve the quality of life; economic responsibility, legal responsibility, ethical responsibility, and discretionary responsibility
80's	Voluntariness; economically profitable, law abiding, ethical and socially supportive; economic, legal, ethical and voluntary or philanthropic
90's	Stakeholders' involvement; obligation to society; environmental stewardship; people, planet, profit;
21st Century	Integration of social / environmental concern; voluntariness; ethical behavior; economic development; improving the quality of life of the citizens; human rights; labor rights; protection of environment; fight against corruption; transparency and accountability

Source: Adapted from Rahman (2011)

The discussion on the developments of the CSR literature presented above contextualizes the relevance of negative social / environmental events. On what regards the present study, the approach is also relevant as it adds to the comprehension of sustainability at business level as a demand of society that may be carefully observed by academics. The following sections extend the view encompassing the importance of CSR from a perspective closer to that of practitioners, linking the academic developments on the issue to the currently discussed sustainable management and sustainable supply chain management agendas.

### 2.2.2. Corporate Social Responsibility as a Critical Business Policy

From a business perspective Porter and Kramer (2006) highlight that firms' attention to CSR did not develop in a voluntarily way. Instead, many companies would have just awakened to its relevance "after being surprised by public responses to issues they had not previously thought were part of their business" (PORTER; KRAMER 2006:2). The authors illustrate the argument through the discussion of several related cases. Shell Oil's decision to sink an obsolete oil rig in the North Sea for instance, would have lead the company to face hard consequences to its image. Accordingly, the action triggered severe protests organized by environmentalist groups (e. g. Greenpeace), as well as extensive negative publicity in the media. Other examples rely on the responsibility attributed to fast food and package companies to obesity and poor nutrition, as well as on the pression played by public opinion on the pharmaceutical industry to respond to the AIDS pandemy in Africa. The reasons why different stakeholders recognize firms as being responsible for supervising or taking care of social questions is discussed by Carroll (1999). The author states that society puts pressure in firms to be socially responsible because they perceive them as powerful entities. As discussed by him, along with the perception of a great power, the idea of firms holding great responsibilities to society emerges (CARROLL, 1999).

Beyond the need to answer to societies' pressure, the adoption of CSR policies has been also discussed through an "inside-out" firm perspective. Within this reasoning, if "corporations were to analyze their prospects for social responsibility using the same frameworks that guide their core business choices, they would discover that CSR can be much more than a cost, a constraint, or a charitable deed – it can be a source of opportunity, innovation and competitive advantage" (PORTER; KRAMER, 2006:2). The endorsement of CSR has then been defended by its proponents through four main arguments (PORTER; KRAMER, 2006): moral obligation, sustainability, license to operate and reputation. The moral appeal would be related to the duty of companies to be "good citizens" and "do the right thing". Sustainability, in turn, would concern environmental and community stewardship, while the concept of license to operate comes from the fact that every company needs explicit or tacit permissions from communities, governments and from its numerous stakeholders to engage into doing business. Reputation

regards the idea that CSR initiatives are capable to “improve a company’s image, strengthen its brand, enliven morale and even raise the value of its stock.” (PORTER; KRAMER, 2006:3).

In that sense, sustainable supply chain management may be used by firms as a strategic tool in the building of “green” or “social responsible” images, either through their own statements (e.g. annual reports) or through the grading of sustainability indexes. The relevance attributed to CSR performance is discussed by Porter and Kramer (2006) through the approach of the activities of rating firms, or what they call “myriad organizations” (PORTER; KRAMER, 2006: 1). According to the authors, companies have been increasingly rated on their CSR policies, as stakeholders are believed to give great importance to the issue. The implementation of CSR policies, however, demands real actions from companies rather than empty speeches or possibly inaccurate or vested-interested certifications. The indiscriminate claim for a sustainable reputation may be perceived in the gap between sheer strategic positioning and real sustainable supply chain management implementation. Within this reasoning De Brito, Carbone and Blanquart (2008) have discussed the employment of short-term image building initiatives that do not necessarily reflect improved sustainable practices of firms.

Porter and Kramer (2006) also discuss the reasons why some companies which have improved the social / environmental performance have not profited from such actions as much as they could. According to the authors, the returns on CSR investments, or sustainable management, are often not satisfactory because companies usually “pit business against society, when clearly the two are interdependent” (PORTER; KRAMER, 2006:1). Moreover, the authors state that the efforts to improve the social and the environmental consequences of business activities pressure companies to address CSR generically, instead of treating it in the most suitable way to each firms’ strategy. Beyond the enhancement of firms’ performance, the strategic view of CSR policies may be a tremendous source of social progress, as activities that benefit society may benefit from the appliance of businesses’ considerable resources, expertise and insights (PORTER; KRAMER 2006).

The following section introduces the principle of extended producer responsibility, an important factor for the understanding of how societies’ demand for CSR affects supply chains and supply chain management.

### 2.2.3. Extended Producer Responsibility: CSR and Supply Chains

From a supply chain perspective, CSR issues have been particularly critical, mainly for firms inserted on global supply chains. In that sense, the need to fulfill the demands of society for a sustainable development of business has shaped a considerable portion of the current debate on supply chain management. With the emergency of several cases of negative social / environmental events in supply chains comprehending from accusations of environmental damage until forms of modern slavery, CSR policies managed in buyer-supplier relationships have been openly discussed, both on traditional media and social networks. Additionally, companies have increasingly been held responsible for sustainable development through the supply chains they are inserted in, comprehending what Bowen et al., (2001) call the principle of extended producer responsibility (CARBONE; MOATTI; VINZI, 2012). Within this notion, as a manner to guarantee that companies implement and monitor CSR policies not only on their own operations, but through the operations of all their chain partners as well, firms have been closely followed by non-governmental organizations, consumers and through legislation enforcements (e.g. European legislation: REACH, WEEE) (DE BRITO; CARBONE; BLANQUART, 2008).

As observed by Nidumulu, Prahalad and Rangaswani (2009), “not surprisingly, the fight to save the planet has turned into a pitched battle between governments and companies, between companies and consumer activists, and sometimes between consumer activists and governments.” (NIDUMOLU, PRAHALAD; RANGASWANI, 2009:2). Within this logic, the discussions around CSR would comprehend a much broader and more complex debate than that confined around the single firm, as all the chain partners may potentially affect each other on that regard. Porter and Kramer (2006) illustrate the issue. The authors cite as examples the extensive costumers’ boycott suffered by Nike after abusive labor practices at some of its supply chain partners in Indonesia were reported by the New York Times in the early 1990’s.

The link between CSR and supply chains may appear in apparently much more discreet ways though. As specific industries (e.g. fashion business) have largely relocated their production from economically developed areas to low-labor-cost zones, important “unsustainability symptoms” may arise in both sides. Beyond causing sudden unemployment among the unskilled workers of the deprecated areas, the transfer usually relegate the newly employed personnel to



precarious conditions of work (DE BRITO; CARBONE; BLANQUART, 2008). Tragedies such as the Rana Plaza Collapse, as well as fires in Bangladesh factories, on which thousands of workers died, are contained in this category. The possible negligence of large corporations in relation to the extremely fragile working conditions provided by local suppliers to their employees (e.g. overcrowding of workers, lack of building maintenance, storage of flammable material) is perceived as CSR failures by stakeholders, as leading firms presumably did not succeeded (or minded) to implement rigid enough controls.

The following section concentrates on the literature developments of sustainable management and sustainable supply chain management. The discussion offers the basis for the comprehension of how such business practices may create value to firms. Moreover, on what regards specifically the present study the discussions may also be useful in the understanding of the impact of negative social / environmental events in the market value of supply chain partners, as they may be perceived as failures in that sense (even punctual).

#### **2.2.4. Sustainable Management and Sustainable Supply Chain Management**

Sustainable supply chain management may be comprehended as the ways through which firms implement CSR policies over both, their own operations and the operations of all its supply chain partners. Following this reasoning, Seuring and Miller (2008) show that sustainable supply chain management is perceived as a win-win practice, where social, environmental and economic objectives may all be reached. Sustainable supply chain management would then be defined as:

“the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements. In sustainable supply chains, environmental and social criteria need to be fulfilled by the members to remain within the supply chain, while it is expected that competitiveness would be maintained through meeting customer needs and related economic criteria” (SEURING; MILLER, 2008:1700)

Carter and Rogers (2008), in turn, state that sustainable supply chain management is:

“the strategic, transparent integration and achievement of an organization’s social, environmental, and economic goals in the systemic coordination of key interorganizational business processes for improving the long-term economic performance of the individual company and its supply chains” (CARTER; ROGERS, 2008:368)

The links between sustainable supply chain management and business performance, however, has been discussed through controversy and sometimes misunderstood conceptions. One of the most famous statements in that regard is that provided by Milton Friedman, previously discussed. In the yearly 70’s the author published a polemic article in the New York Times, which he directly entitled “The social responsibility of business is to increase profits.” (FRIEDMAN, 1970). At first glance this statement could be confused with the “profit-sacrifice” vision of sustainable management developed by authors such as Reinhardt et al. (2008). Accordingly, the trade-off between social interest and profit maximization would be inevitably imposed to firms as they shape their strategies. Clyde and Karnani (2015) discuss alternative views on which companies are encouraged to engage in sustainable management without compromising performance. Prahalad and Hammond (2002) for instance highlighted the possibility firms have to make significant profits by selling to the poor (and helping eradicate poverty), on what came to be known as the “bottom of the pyramid proposition”. Similar views would be presented in what the authors call the “doing well by doing good” (MACKEY; SISODIA, 2013) and the “shared corporate value” (PORTER; KRAMER, 2011) propositions. The quote of Milton Friedman would be actually closer to these last views as in his argumentation the author states that by maximizing profits, companies could offer society the benefits of a plane capitalist economy.

Sustainable supply chain management is then argued to impact firms’ performance in several dimensions. From a negative view, a relatively common belief among managers is that the adoption of environmentally responsible actions and processes might erode firms’ competitiveness (NIDUMULU; PRAHALAD; RANGASWANI, 2009). As discussed by the authors, managers’ main worries reside in the necessity of additional investments and on possible production cost disadvantages in comparison to competitors of undeveloped countries who, presumably, would not be pressured to adopt such practices. Other common perspective is that supply chain partners would be perceived as incapable of providing green inputs, as well as the necessary transparency, while consumers are believed to not properly value green products, especially in the emergence of a hypothetical recessive economic period. “That’s why

most executives treat the need to become sustainable as a corporate responsibility, divorced from business objectives” (NIDUMULU, PRAHALAD; RANGASWANI, 2009:2).

The awareness around the potential benefits of an effective sustainable supply chain management to firms, however, seems to be increasing among executives and practitioners in general. According to the International Survey of Corporate Responsibility Report (KPMG, 2011) ran with 350 Chief Financial Officers (CFO's) of companies of diverse nationalities, sustainable practices are comprehended as important factors for firms' innovation capacity, competence and corporate reputation (GARCÍA; BENAÚ; ZORIO, 2014). Jabbour et al. (2014) complement the idea addressing the current relevance of sustainability at business level. The authors discuss a recent survey on which nearly 70% of business leaders claim that sustainability is permanently present on their business agenda, representing however a process that demands collaboration between supply chain partners to be successfully implemented (KIRON et al., 2012).

In turn, effective sustainable management is claimed to offer firms the opportunity of using less direct production inputs and energy (PORTER; LINDE, 1995; SHRIVASTAVA, 1995; HART, 1997), at the same time it allows the construction of a favorable reasoning for consumption among “green customers” (ELKINGTON, 1994). Azorin et al. (2009) interprets this double property of sustainability in business pointing it as a powerful strategic option for firms aiming to reach competitive advantage either through cost or differentiation (PORTER, 1980). Cost efficiency is expected to enhance as more complex operational processes are adopted by firms (e.g. reverse logistics and recycling) (AZORIN et al., 2009).

In addition to the rationalized use of resources, pollution prevention policies may offer additional saving to firms. Despite demanding investment in innovation and training, they are also associated with the avoidance of pollution control costs (PORTER; LINDE, 1995), summarizing what came to be known as the “Porter Hypothesis” - the benefits of a green strategy more than offsetting the costs of implementing it, and hence, translated into sources of competitive advantage and performance (AZORÍN et al., 2009). As previously discussed, in addition to cost reductions, firms' rational positioning around sustainability may also work as an efficient way to translate sustainable supply chain management into competitive advantage. The constant answer to stakeholders' demands for responsible operations may lead firms to

build environmental reputations (MILES; COVIN, 2000). In that sense, reputations built around corporate responsibility (environmental and social) also represent potential contributions to business performance, once, among other entailments, positive corporate reputations are directed related to higher prices and profitability (BENJAMIN; PODOLNY, 1999). The results of strong corporate reputations have also been discussed by authors such as Dowling (1986), which states the constant evaluation of corporate reputations by stakeholders, Capehart, Aaron and Cline (2010) and Pfarrer, Pollock and Rindova, who argue for the link between investors' reaction and reputational matters, and Roberts and Dowling (2002) that empirically demonstrated the relation between performance, the creation of value and positive corporate reputations. Jensen and Roy (2008), in turn, highlight the relevance of corporate reputation in the hiring process of partner firms, what may be useful from a supply chain management perspective.

The adoption of sustainable supply chain management through an economic prism has also been discussed by other authors. Bowen et al. (2001), for instance, claim that organizations shall adopt green supply chain management practices only in case they are capable to identify that such measures will result in specific financial or operational benefits. Aligned with that view, Carter and Rogers (2008) conceptualize what they called a "true sustainability" in business level. Accordingly, any consideration around environmental or social questions should not be taken into account by firms unless they are coupled with their economic objectives. In that sense, Chkanikova (2012) analyzes the presence of three different forms of demands for sustainable supply chain management. According to the author, this perception of sustainable supply chain management would be coherent with the triple bottom line perspective, which, as previously discussed, states that sustainability concerns the gathered development of social, environmental and economic agenda. The successful alignment of these three axes would favor the adoption of sustainable supply chain management by firms (CARTER; ROGERS, 2008).

In that sense, negative social / environmental events may be comprehended as contradicting CSR principles and sustainable supply chain management, even if this perception is built on a punctual situation. The exposure of firms to slavery issues, for instance, questions their responsibilities to social development and ultimately argues for a disrespect of human rights, as in those cases the development of businesses would be held at the cost of employees' dignity.

That also applies to those cases on which, beyond facing poor working conditions such as lower payments, extended shifts, among other, workers were exposed to death or health risks due to serious safety issues on their working place. The search for profit maximization may be argued to have prevailed, disturbing the harmony of the triple bottom line of sustainable development. On what regards practices that contribute to the deforestation, in turn, the operations of firms may be argued to be held at the cost of animal and vegetal species, compromising the needs of current and future generations. Once more, it is possible that in society's perspective, the economic axes of the triple bottom line would have been more strongly pursued by firms, disrupting the demands of society for a harmonious development between profits, social and environmental businesses. The relevance of negative social / environmental events for the present study relies then in the assessment of the market value impact they produce through the supply chain, valuing if events of that nature are capable to affect supply chain partners.

## **2.3. Stakeholders and Markets**

Alternatively to the profit and shareholder value maximization objectives offered by Economics and Strategic Management Theories, Organizational Behavior approaches present different and arguably complementary positions. The broadening of firms' objectives through the addressing of multiple stakeholders' interests may be useful in the further comprehension of organizational behavior and particularly relevant to the present work. The present session addresses how the demands of stakeholders may be argued to influence firms' strategic choices. Beyond that, the literature review on the adjustment of stock prices to new information complements the comprehension of investors' reaction to negative social / environmental events and the use of the event study method as the appropriate approach for the present study.

### **2.3.1. Stakeholder Theory**

Although Stakeholder Theory (FREEMAN, 1984) still faces hard critics, especially from mainstream Strategy and Finance scholars (e.g. SUNDARAM; INKPEN, 2004), it has

decisively broadened the discussion on important issues related to organizations and their impact in the society as a whole, beyond the profit maximization concern. Through the re-thinking of corporate objectives, the Institutional Theory together with Corporate Governance concepts seem to have played a major influence on the evolution of the Stakeholder Theory, despite the relatively long period of time between the main works of each field.

Within the organizational phenomena comprehensions, the discussion over social actions has traditionally laid on a basic conflictual theoretical framework between contingency and rationalists explanations. In that sense, as discussed by Selznick (1957, 1966) and Simon (1947) on what concerns human behavior, the Theory of Organizations would present a counter position to that offered by Economics Science, while Institutional Theory would represent a promising alternative to the dichotomy (CRUBELLATE, 2007). Despite the lack of consensus over the definitions of its key concepts, measure and methods, distinct issues have been addressed through the Institutional Theory since the publication of Meyer and Rowan's (1977) seminal article, such as the redefinition of organizations forms and missions (DiMAGGIO; POWELL, 1991; FLINGSTEIN, 1985), the development of governmental national and external policies (STRANG, 1990; ZHOU, 1993) and the spread of personnel policies (TOLBERT; ZUCKER, 1983; BARON et al., 1986; EDELMAN, 1992, TOLBERT; ZUCKER, 1996). As discussed by Cubrellate (2007), however, even the Institutional Perspective would result from the opposition to the premises assigned by the rationalist / individual economic behavior view (SCOTT, 2001) emerged from the work of Merton (1948). In that sense the author is comprehended as the pioneer in the approach of organizations as socially distinct phenomena, despite the recognition of relevant organizational related studies such as Weber's (1946) approach to formal organizations and Michels' (1962) analyses of industrial orders and the developments of pre-functionalist sociology (e.g. PARK, 1922; THOMAS; ZNANIECKY, 1927, TOLBERT; ZUCKER, 1996). Accordingly, Merton's (1948) functionalist approach played a major influence on latter quantitative thinking on the issue, as within a rational paradigm, formal structures were comprehended as the result of decision makers' rational search of organizational maximum efficiency.

Between the late 1970's and early 1980's, however, the functionalist perspective happened to be hardly questioned. Through the reassessment of the works of Barnard (1938), Simon (1947)

and March and Simon (1957) over the limited or bounded rationality of organizational decisions makers', environmental forces were then comprehended as important influences on organizational structures (TOLBERT; ZUCKER, 1996), influencing the proposition of what came to be known as the "new institutionalism" (DiMAGGIO; POWELL, 1983; MEYER; ROWAN, 1977; ZUCKER, 1977) and its comprehension of social actions resulting from cognitivist explanations (CRUBELLATE, 2007). In that sense, Meyer and Rowan (1977) conceptualized organizations as holders of socially shared meanings through the argument of formal structures presenting action-generating and symbolic properties, what would ultimately enabled them to work as vectors to both internal and external communication (KAMENS, 1977). The use of formal structures as symbols ultimately argued for the limitations of previous rational framework, contradicting market and performance-oriented functions of formal structures. On that regard, the ideas mainly objected the assigned role of competition, according to which inefficient organizations would be expected to parish as a natural result of interorganizational competitive processes. Moreover, the so-called "permanently failing organizations" (MEYER; ZUCKER, 1989) would possibly survive regardless their performance or success in matching the demands of their productive environment (TOLBERT; ZUCKER, 1996).

The distinction of such approach to that based on Merton's (1948) perspective would illustrate the conflict between the notion of environmental determination defended by the functionalist perspective and the interpretativist view, which despite not fully denying the relevance of social conditioners to organizational structures also considered the autonomy of the meaning building process a necessary element for all social actions (CRUBELLATE, 2007). On what concerns the present work, the main relevance of the institutional perspective relies on the comprehension of organizations as social phenomena embedded in environments formed by values, beliefs and rules that are built over social interaction, and whose survival would depend on their capacity to adapt in face of collective accepted guidelines (MACHADO DA SILVA; FONSECA, 1999). As discussed by Crubellate (2007), the comprehension composes the core beliefs of the Institutional Theory under the concept of institutional environment as determinant to organizational behavior (DiMAGGIO; POWELL, 1983; MEYER; ROWAN, 1977; SCOTT; MEYER, 1994; TOLBERT, 1985).

Regarding the influences of Corporate Governance literature, it is particularly relevant the fact that, as previously discussed, microeconomics and part of management literature assume profits and shareholder value maximization as firm's prior objectives (CONNER, 1991; SUNDARAM; INKPEN, 2004; HENDERSON, 1979). Despite the difference between concepts and the relative importance attributed to the behavior and idiosyncrasies of the individual firm, these literatures represent important management segmentations (e.g. Finance, Strategy) and influences (e.g. Neoclassical Economics) that comprehend firms as serving the interests of a specific group of stakeholders. Through that perspective, firms' shareholders are comprehended as owning the highest level of power around corporations. Along business history, however, changes in power distribution within firms triggered the reflection around new contexts. Coupled with the rise of large corporations, professional managers emerged as a powerful class, whose interests would possibly diverge from those of firms' proprietaries (MIZRUCHI, 2004). The negative consequences of the concentration of power around managers were firstly addressed by the work of Berle and Means (1932). Accordingly, due to a particular pulverization of large firms' shareholders on the first decades of the 20th century in the United States, managers of large corporations were able to appropriate the power previously restricted to the figure of the owners, originating possible conflicts of interest. The observation of such situation in a large number of firms drove the authors to express their concerns not only regarding managers' possible lack of accountability to shareholders, but to society in general. Latter works on the issue (e.g. DAHRENDORFF, 1959; BELL, 1960), however, usually interpreted Berle and Means' (1932) discussion through a positive perspective, associating the segregation of property and control to a higher level of democratic distribution of interests, liberating managers and firms from the profit maximization obligation.

Beyond founding CG studies, the developments on the segregation of ownership and control drove management literature to also focus on the analysis of other stakeholder interests rather than solely on firm's investors, offering new comprehension to corporate objectives. CG approach however is currently mostly restricted to studies of corporate finance (MIZRUCHI, 2004), suggesting that its application might have developed around agency problems (ALCHIAN; DEMSETZ, 1972; JENSEN; MECKLING, 1976; EISENHARDT, 1985, 1989), rather than on firms' competitive advantage or sustainable development, potentially better addressed by organizational studies and Strategic and Operations Management.



This extended comprehension allowed the development of alternative and arguably more realist views through companies. As discussed by McCloskey (1998), the belief on the shareholder value maximization as businesses' prior objective, despite not adherent to firms' reality, has been adopted by Management researchers mainly seeking for scientific credibility. Accordingly, the premise rooted in the Neoclassical Theory would be properly modeled and tested within Economics, and thus, creditworthy to some authors. This "imported" background would then be the main responsible for the adoption of a separation thesis between Ethics and Economics (FREEMAN, 1994; FREEMAN; WICKS; PARMAR, 2004). The conception of corporate governance, corporate responsibility and the Stakeholder Theory would be important in readdressing the issue.

The contrast between the Theories of the Firm - which greatly influenced most of the mainstream Strategy literature - and Stakeholder Theory seems to be present since their definitional and fundamental concepts. The general role of a Theory of the Firm is discussed by Holmstrom and Tirole (1989). According to the authors, it must basically address the reasons for the existence of firms, as well as the main determinants of their scope and scale. Within this logic, the maximization of profits has been assumed by these theories as firms' primary objective, in a way that the differences between them would rely in the discussions around the ways enterprises must seek this goal (CONNER, 1991). As discussed by Donaldson and Preston (1995), the Stakeholder Theory offers an alternative comprehension. Accordingly, whatever the objectives pursued by firms, the impact of their activities to all their stakeholders must be taken into account by managers and shareholders. Inner to this perspective, the logic behind the profit maximization shall be seen as ideologically constructed, once it considers the rights of shareholders hierarchically superior to the ones of all other stakeholders (FREEMAN; WICKS; PARMAR, 2004). Differently from a Theory of the Firm, the role of firms under the Stakeholder Theory is then analyzed through the questioning of the purpose of firms and the responsibilities managers have to all stakeholders (FREEMAN, 1994).

Ramsay (2001) complements the idea. According to the author, Theories of the Firm do not focus on the behaviors and process of firms. As argued by Freeman, Wicks and Parmar (2004) this task would be better addressed by the Stakeholder Theory as it concerns the ways management is implemented in the search of firms' objectives, mainly on what regard the

relations developed with all stakeholders. The authors also state that another major point of differentiation between the two perspectives is that the Stakeholder Theory does not claim for a separation between ethics and economics, arguably defended by the followers of Theories of the Firm. That would be clear as the former recognizes the search for value as a fundamental and legitimate business goal that must, however, be repositioned as a consequence of firms' activities, instead of the main element in the formulation of strategies. In that sense, corporate responsibility must be understood as an antecedent to performance, in harmony with all stakeholders demands (VENKATAMARAN, 2002). In consequence of the voluntary engagement of people in improving general conditions, economic value would be created. People would be inspired by the actions and relationships built by managers, resulting in organizations on which all stakeholders are committed to offer their best efforts in meeting the creation of value demanded by shareholders (FREEMAN, WIKS; PARMAR, 2004)

Along with the literature review previously discussed, the perspectives offered by the Stakeholder Theory seem to be useful for the study of firms' motivations to engage in sustainable supply chain management. Beyond that, it may also be useful in the analysis of investors' reactions to the disclosure of news related to CSR, once within its logic, shareholders themselves shall be understood as holding the same status as all other stakeholders (i.e. observable through the same perspectives in this sense). The following section presents the main concepts on which the reaction of shareholders to new information lies, presenting the theoretical bases that link negative social / environmental events and potential negative reactions to the market value of supply chain partners.

### **2.3.2. Efficient Markets Hypothesis: The Adjustment of Stock Prices to New Information**

As discussed by Fama, Fisher, Jensen and Roll (1969), successive price changes in individual common stocks had been indicated as "nearly independent" by many empirical studies conducted by the time, which would be consistent with the idea of an efficient market (i.e. a market that rapidly adjusts to new information). According to the authors, however, despite works such as Mandelbrot (1966) and Samuelson (1965) were extremely successful in

demonstrating such consistency, market efficiency could only be inferred, as very little testing had been conducted on the “speed of adjustment of prices to specific kinds of new information” (FAMA; FISHER; JENSEN; ROLL, 1969:1). Through the examination of the process by which common stock prices adjust to information, the authors concluded that announcements of stock splits lead the market to positively react as increased dividends were associated with events of this kind. This implicit information drove investors to re-evaluate the stream of expected income from the shares, adjusting prices almost immediately after the announcements. The results of the study considerably supported the idea of an efficient market on which stock prices adjust very rapidly to new information.

Efficient markets are then defined as those on which the prices of securities in any time fully reflect all available information (FAMA, 1970). The idea is developed by the author with the proposition of three versions for the Efficient Market Hypothesis: weak, semi-strong and strong. Through the weak version the price of assets are considered to fully reflect all past publicly available information. Excess returns could not be earned in the long run, as the prediction of future prices based on historical data would not be possible. Once prices are considered independent, future prices would be entirely determined by information not contained in price series, following a “random walk” as new information appear. According to Malkiel (2003), “random walks” characterize price series on which all subsequent price changes randomly departure from previous prices. Based on the assumptions that information flows are unimpeded and that information is immediately reflected on stock prices, a price change in a given day would refer only to the new information of that day, independently of new information of any other day. As news are by definition unpredictable, price changes must be unpredictable and random.

Under the semi-strong form prices are expected not only to reflect all publicly available information but to instantly change in reflex to any new public information (in a way that no abnormal return can be earned through tradings based on such information). The strong form of the EMH, in turn, claims that even private or insider information may be reflected on the price of securities (what could possibly generate abnormal returns). The semi-strong form of the EMH is particularly relevant for the present study, as it analyzes the impact of new public information on the market value of supply chain partners.

### 3 Research Question, Research Objectives and Hypothesis Development

Within this section previous discussions are integrated in the formulation of the research question that guided the study. The specific objectives pursued are also delimited as they allow the answering of the research question proposed. Beyond that, based on the main theoretical arguments addressed, the hypothesis tested is developed and formulated.

#### 3.1. Research Question and Research Objectives

The discussions of the study led to the formulation of the following research question: Do investors negatively react to announcements of negative social / environmental events related to a supply chain partner?

By addressing the consequences of events within supply chains – a theme not fully explored – the research question offers a relevant and not yet answered perspective in the Operations Management literature. It may be considered relevant as it addresses the potential negative consequences that actions, behaviors or failures related to upstream / downstream supply chain partners may have in the market value of firms, possibly extending the comprehensions around the link between supply chains and the wealth creation / destruction.

In order to answer the research question proposed, the present study seeks to present empirical evidences on the consequences suffered by a firm in face of announcements of negative events originated in a supply chain partner. More specifically, beyond the identification and description of such events, the study aims to test if the market value of a firm is negatively affected by the announcement of a negative social / environmental event occurred in / or caused by a member of its supply chain. The research objectives may then be delimited as follows:

- (i) Identification and description of relevant negative social / environmental events that could possibly have impacted the market value of supply chain partners in the period between January 2005 and September 2015.

- (ii) Identification of the supply chains related to such events and of the supply chain partners possibly affected.
- (iii) Measurement of eventual abnormal returns for all the supply chain partners identified, considering different time periods around the date of the identified events.

### 3.2. Hypothesis Development

The development of the hypothesis to be tested is based on the theoretical issues discussed on the literature review. These points and the perspectives they offer to the present study are detailed as follows:

As discussed, supply chains are perceived as networks of companies (FORD, 1990; CHRISTOPHER, 1992; JARILLO, 1993; CHEN; PAULRAJ, 2004). The perception subsidizes the idea that the actions, behaviors and failures of a firm may possibly impact its partners. The notion is also supported by the principle of extended producer responsibility (BOWEN et al, 2001) which argues for a shared responsibility of all supply chain partners around the consequences of businesses to society. Effective supply chain management is argued to be a source of competitive advantage to firms (CHEN; PAULRAJ; LADO, 2004; PORTER; KRAMER, 2006). Therefore, negative events may be perceived as supply chain management failures, possibly suggesting to stakeholders that firms are not efficient on their supply chain management practices.

Corporate social responsibility and sustainable supply chain management are perceived as a demand of society (CARROLL, 1999, RAHMAN, 2011), and then, valuable to diverse stakeholders (FREEMAN, 1984). In that sense, negative social / environmental events may be understood as contradicting the expectations of clients, employees, investors and other stakeholder, what might affect their perceptions around a company's reputation or operational forecasts (that should be translated to market value adjustments). Positive corporate reputations,

in turn, are argued to be linked to firms' performance and market value (BENJAMIN; PODOLNY, 1999). As negative social / environmental events could possibly affect the image and identity of companies, they may negatively affect these variables.

Under the semi-strong form of the efficient market hypothesis, the market value of firms is expected to immediately reflect any news that may cause a revaluation on the expectations around a company (FAMA, 1970). In case investors perceive the announcement of negative social / environmental events as harming to firms, such events are expected to trigger a negative reaction from them, penalizing the market value of supply chain partners.

Based on the above discussion, negative social / environmental events may be hypothesized as negatively impacting the market value of supply chain partners. Within this reasoning, the hypothesis to be tested in the study is:

H1: Investors negatively react to announcements of negative social / environmental events related to a supply chain partner.

## 4 Methods and Sample

The empirical research is divided in two major blocks. Within a qualitative approach, the first one comprehends a documentary research around 15 cases of negative social / environmental events in supply chains. The second block presents a quantitative perspective through the application of 82 individual event studies, derived from the cases studied. The discussion of the particular objectives and the specific methods of each block are presented next.

### 4.1. Documentary Research

The qualitative part of the present study is conducted within a documentary analysis of publicly available information around the 15 selected cases. As previously discussed on section 3.1, the specific objective of the analysis is to provide a description of each case and a more detailed comprehension of the events studied. Moreover, the assessment of all the documents gathered in the process aims to allow the identification of supply chain partners involved in the announcements. Beyond contributing to the understanding of the events, such identification is particularly relevant, as it allows the construction of the sample tested on the quantitative section.

As discussed by Ludke and André (1986) the documentary analysis represents an extremely important tool for the qualitative research, as it either complements the information sourced through other means or supplies new and relevant aspects of a studied problem. Santos (2000) advances the idea. According to the author, this sort of research is normally conducted on the analysis of a series of potential informational sources, such as statistic tables, letters, photographs, maps, oral or written documents, among others.

Several authors have also stated the utility of documentary research. Sá-Silva, Almeida and Guindani (2009), for instance, claim that the method must be appreciated and valued especially by social researchers, as it allows the rescue of potentially rich information that could easily be neglected by other forms of research. That would be reflected by the idea that documentary research may drive academics to deepen their comprehensions over objects which demand a

historical and socio-cultural contextualization to be properly studied. Cellard (2008) adds that, not rarely, written documents remain as the only “witnesses” of particular events or activities, even of those situated in a recent past. Beyond that, the use of documents in research is also argued to allow for the addition of a time dimension to social comprehension (SÁ-SILVA; ALMEIDA; GUINDANI, 2009).

The etymology of the word “document” may be also useful to state the relevance of the method. In that regard Silva et al. (2009) clarifies that *Documentum* is a Latin term derived from *docere*, which means teach. The origins of the word would come from the notion that, through the assessment of documents, it may be possible to gain comprehension over specific objects, building knowledge by learning. Despite its argued usefulness as a fundamental research tool, the documentary research is yet shortly explored on empirical studies of social sciences (LUDKE; ANDRÉ, 1986). The reasons for that may be rooted in the fact that it is not considered as well categorized and recognized as other more commonly applied research methods, such as surveys or action research (MAY, 2004).

A differentiation between documentary and bibliographic research is then necessary, as these terms are frequently incorrectly employed as synonyms. This relays on the assumption that they both consider documents as research objects (SÁ-SILVA; ALMEIDA; GUINDANI, 2009). As clarified by the authors, however, the concept of document may be understood as not restricted or limited to written or printed material. Instead, for research purposes, documents may be more appropriately conceptualized through several other forms of communication used as sources of information, indication and clarifications of objects, such as films, videos and slides. The differentiation between bibliographic and documentary research would then be clear, as the second lies on this broader dimension while the former concentrates basically on written pieces. Oliveira (2007), in turn, states that bibliographic research is actually a form of study and analysis of documents that rests within scientific domains, such as books, academic articles, critical essays, dictionaries and encyclopedias, and in opposition to documentary research, with no direct consultation to the facts or phenomena of empirical reality. In that sense, documentary research would be comprehended as a primary source of data, once the documents presumably have not been scientifically treated or interpreted before (OLIVEIRA, 2007).



The utilization of documents as valid sources of information and knowledge may be analyzed through different and opposing epistemological perspectives. Le Goff (1988) for instance states that under a positivist conception, documents are comprehended as an objective and neutral evidence, supplying valid proofs of the reality. On the other hand, from a constructivist perspective, the construction of knowledge from documentary analysis would demand a complex and careful interpretation of the findings. This last view is mainly derived from the idea that, as products of a society, documents may also be used as sources of power dissemination, comprehending the interests of those who control its diffusion. Within this reasoning, documents would translate the interpretations of specific groups in specific historical moments, possibly embedded in hidden interests (SILVA et al., 2009). On what regard the present study, an interpretativist perspective was adopted. Inner to this view, more than the reading of the documents, the watching of videos and the listening of related material, the comprehension and the description of the cases demand a critic analysis of the texts.

As discussed by Sá-Silva, Almeida and Guindani (2009), the first step on the conduction of a documental research is to find the relevant material to the object of interest. Secondly, the representativeness and the credibility of such documents must be assessed. Thirdly, the meanings of the messages must then be properly understood, even if this has to be obligatorily made through the analysis of fragmental parts of documents. On that regard, the authors also highlight the fact that documents are not objects of modifications, meaning that, eventually, the interpretation of uncommon or unknown material produced by third parties may be the only way researchers might produce quality studies.

This documentary analysis concentrated then on eight main sources of publically available data:

1 - News published around the cases by three major international journals: The New York Times; The Guardian; and Le Monde. The reasons for the choice of these three journals are better described on section 4.2.1.2.2;

2 – News published by other newspapers and magazines such as, Corriere della Sera; El Pais; Daily Mail; Le Figaro; L'Opinion; O Estado de São Paulo; Folha de São Paulo; Time; The Economist; Veja, among others;

- 3 – The websites of the identified companies;
- 4 – Any internally produced material supplied by the identified companies, such as annual reports, sustainability reports, press releases, financial statements, among others;
- 5 – Reports produced by environmentalist groups and non-governmental organizations;
- 6 – Live and recorded broadcast transmissions available in video hosting internet sites;
- 7 – Academic and practitioner publications;
- 8 – Complementary sources on financial information and market data such as Bloomberg, Reuters, among others.

## **4.2. Event Studies**

The empirical research is comprehended within the analysis of 82 individual event-studies. As discussed in section 3.1, the specific objective of the analysis is to test the effects of the announcements of negative social / environmental events inside a supply chain, valuing the market value variation of a company due to triggering events occurred in another.

### **4.2.1. The Event Study Methodology**

#### **4.2.1.1. Event Study**

As discussed by Dwyer (2001), events are characterized by changes, developments or announcements capable to produce a relatively large change in the price of assets over some period. Broadly speaking, event studies concern the examination of the effect of a specific event (or a set of events) on the value of assets. The idea is developed by MacKinlay (1997). According to the author, through the use of financial market data, event studies represent a powerful tool that allows analysts to measure the variances in the market value of firms due to

new information. In that sense, Brown and Warner (1980) state that event studies comprehend a direct test of market efficiency (FAMA, 1970), as persisting nonzero abnormal returns observable after any given event would be inconsistent with the hypothesis that the price of securities are quickly adjusted, fully incorporating new information. Yet according to the authors, as events are possibly not anticipated, the extension of abnormal returns may represent a measure of its impact on the wealth of firms' shareholders. That would be consistent with market efficiency premises, as abnormal returns could only be attained by investors if the respective event could be certainly predicted.

The methodology of event studies was originally developed as a statistical tool for empirical studies of finance and accounting (CORRADO, 2010). The progress of the literature has been discussed by Mackinley (1997) and Corrado (2010) with two different views being presented. While the first considers the work of Dolley (1933) on the reaction of investors to stock splits to be the first event study beyond several other event studies conducted on the 40's, 50's and 60's (e.g. MYERS; BAKAY, 1948; BAKER, 1956, 1957, 1958; ASHLEY, 1962), the former points to the works of Ball and Brown (1968) and Fama, Fisher, Jensen and Roll (1969) as the two initial and still most relevant references on the issue. Beyond other reasons, four factors are pointed by the author as crucial for the success of these papers: (1) the use of the "market-model", patterned short after the development of the capital asset pricing model – CAPM (SHARPE, 1964); (2) the use of data from the then newly created Center for Research in Security Prices (CRSR) at the University of Chicago (that soon became the standard data source for research in capital markets); (3) the rapid expansion of the access to statistical softwares; and (4) the "paradigm-shifting" revolution in corporate finance offered by Modigliani and Miller (1958) and Milller and Modigliani (1961, 1963) on capital structure, with event studies being a key tool in that sense.

The "success" of the methodology may be also perceived through its large applicability. According to Kothari and Warner (2005), 565 event studies have been published on the five major journals of Finance between 1974 and 2000, what would still represent a conservative estimation, as many other event studies have been published in less relevant journals or in areas other than Finance. Event studies are indeed also increasingly applied in the Operations Management (OM) literature, addressing analyses of the effect of operational events in the stock

price of firms. In that sense, Hendricks and Singhal (2003, 2005a, 2005b) represent three of the most prominent examples of the application of event studies methodology in what Schmidt and Raman (2012) call the supply-chain risk management literature. Through these studies the authors “analyze the stock price and profitability effects of production and shipment delays” (SINGHAL, 2005:2). Schmidt and Raman (2012) also address the question, concentrating on the effect of supply chain disruptions on the market value of firms. Other examples within OM literature are Singhal (2005) on which the author analyses the effect of excess inventory on the long-run stock price; Tuck (2005) who studies the effect of quality awards on the shareholder value, as well as Nicolau and Sellers (2002), who approached the stock market reaction to the announcement of quality certifications. Papadakis (2002), in turn, examines the variation of the stock price of computer manufactures in consequence of earthquakes in Taiwan, due to the increased price of supply components. McKenzie and Thomsen (2001) examine the effect of recalls for bacteria contamination in beef price, while Thomsen and McKenzie (2001) conduct an event study on the market reaction on the announcement of meat and poultry recalls. Gong (2009) explores the applications of event studies on the transport industry.

Other studies represent the applicability of events studies for the most diverse areas: Chatterjee, Pacini, and Sambamurthy (2002) for instance conducted a study exploring the effects of investments on information technology (IT) infrastructure on shareholder value and on trading volume. Drakos (2004) analyses the effect of the September 11 terrorist attacks to the World Trade Center on the market value of airline companies, while Fornell, Mithas, Margeson and Krishnan (2006) study the impact of investments in costumers’ satisfaction on the stock price of companies. Misra and Rao (2009) studies the market reaction on the launching of transactional websites and Nicolau (2002) assesses the market reactions on the stocks of a hotel chain to the announcement of the opening of new branches.

#### **4.2.1.2. Outline of the Event Study: First Steps**

According to Campbell, Lo and MacKinlay (1997) the structure of an event study is generally composed of seven basic steps: event definition; selection criteria; normal and abnormal returns; estimation procedure; testing procedure; empirical results; and interpretation and

conclusion. The present study follows this recommended outline, discussing the first five steps in this section and the two latter in the next.

#### 4.2.1.2.1. Step 1 - Event Definition

The event definition represents the initial task in the conduction of an event study and is divided into two main parts: the definition of the event of interest and the identification of the event window, defined as “the period over which the security prices of the firms involved in this event will be examined” (CAMPBELL; LO; MACKINLAY, 1997:151). In this study, this initial task is defined as follows:

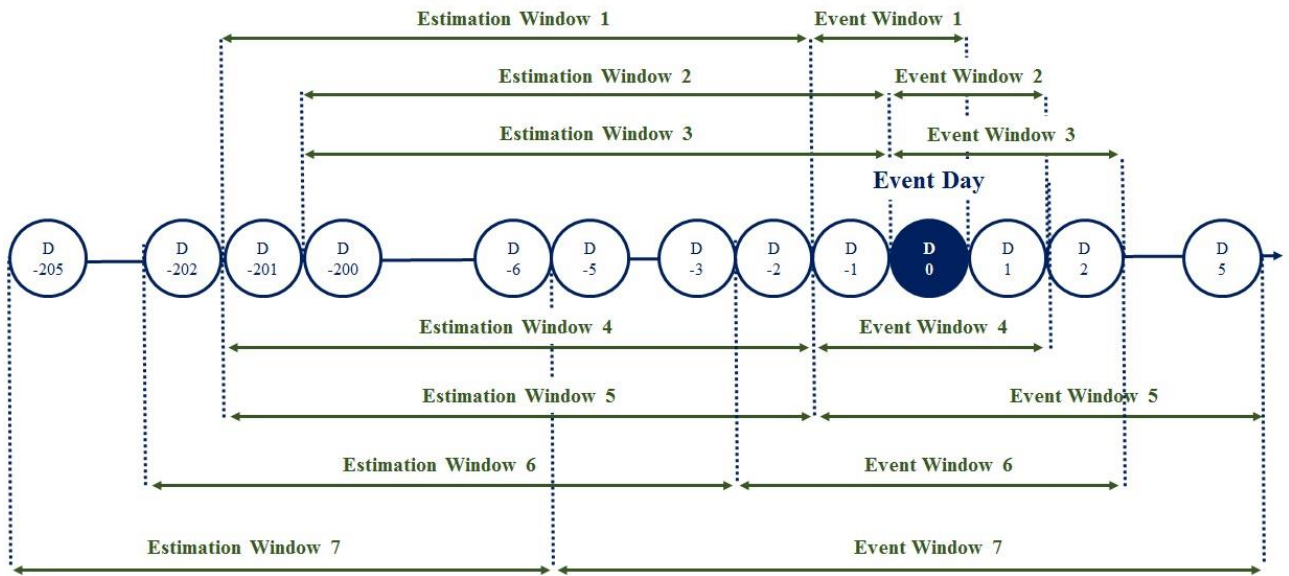
Event Definition – The disclosure CSR fails inside supply chains contexts on at least one of the following international newspapers: The New York Times, The Guardian or Le Monde. The criteria used for the choice of such newspapers are addressed on step 2 ahead;

Event Window – For control proposes, seven different event windows are considered, as news around the events were commonly presented not only in the event day itself (D0) but often on the following days (e.g. D1, D2, D3, D4 and D5). This may allow the CAR analysis to capture eventual reactions of investors due to new information provided about the same case within a relatively short period of time. Days prior to the event window (e.g. D-1, D-2, D-3, D-4 and D-5) were also considered in different event windows in order to account for possible earlier disclosures or anticipations. The seven event windows are represented in Table 2 below. Graphic representation is also provided in Figure 4.

**Table 2: Seven Event Windows for the Study**

	<b>Event Window</b>			<b>Estimation Period</b>		
	<b>Number of Days</b>	<b>Initial Day</b>	<b>Final Day</b>	<b>Number of Days</b>	<b>Initial Day</b>	<b>Final Day</b>
Event Window 1	2	D-1	D0	200	D-201	D-2
Event Window 2	2	D0	D1	200	D-200	D-1
Event Window 3	3	D0	D2	200	D-200	D-1
Event Window 4	3	D-1	D1	200	D-201	D-2
Event Window 5	7	D-1	D5	200	D-201	D-2
Event Window 6	5	D-2	D2	200	D-3	D-202
Event Window 7	11	D-5	D5	200	D-205	D-6

Source: Elaborated by the author



**Figure 4: Seven Event Windows for the Study**

Source: Elaborated by the author

#### 4.2.1.2.2. Step 2 – Selection Criteria and Sampling

Once the event of interest is defined, the selection criteria for the inclusion of a firm in the study must be chosen. This procedure may involve restrictions regarding data availability, such as listing on specific exchanges or firms' membership in specific industries. The summarization of characteristics of the data sample may be useful, as well as the notation of potential selection bias (CAMPBELL; LO; MACKINLAY, 1997).

In that sense, the present study turns to informational sources on the events considering that news which reflect market losses of companies are presumably more likely to be reported by journals with economic and financial focus. In this matter, more “generalist” newspapers seems to be a way to avoid or, at least, to soften this eventual bias. The electronic databases of three international journals were chosen as the object of the sampling procedure: The New York Times ([www.nytimes.com](http://www.nytimes.com)), The Guardian ([www.theguardian.com](http://www.theguardian.com)) and Le Monde ([www.lemonde.fr](http://www.lemonde.fr)). The choice of three different newspapers may also allow for the reach of a broader perspective, enhancing the assessment of cases independently of the economic or political editorial positioning of a single publication.

Regarding the search procedure, words and combinations of words used were: “supply chain and disaster”, “supply chain and scandal”, “supply chain and environment”, “supply chain and workforce conditions”, “supply chain and slavery”, “supply chain and contamination”, “supply chain and environmental responsibility”, “supply chain and social responsibility” and “supply chain and fraud”. The time period considered goes from January 2005 to September 2015. As for restrictions, the following elimination criteria were adopted (adapted from HENDRICKS; SINGHAL, 2003):

- a) Cases that do not actually address the discussed theme;
- b) Cases on which supply chain partners were not clearly defined;
- c) Cases on which supply chain partners were privately held companies (not publicly traded);
- d) Cases on which supply chain partners counted on insufficient daily stock price information on Yahoo-Finance public database, excluding firms not publicly traded on Nasdaq (U.S.A.), New York Stock Exchange (U.S.A.), American Stock Exchange (U.S.A.), London Stock Exchange (United Kingdom), Euronext Paris (France), Xetra Exchange (Germany), Madrid Stock Exchange (Spain), BMF Bovespa (Brazil), Korean Stock Exchange (South Korea), Bombay Stock Exchange or Singapore Exchange (Singapore).

The final sample resulted in 82 companies, comprehended within 15 cases (i.e. 15 different events), presented in Table 3 below, along with a brief summary of the cases. Appendix A reveals more detailed descriptions of each one.

**Table 3: Cases, Nature of the Events, Brief Description and Contaminated Companies**

Case No.	Case (Event)	Nature of the Event	Source Companies	Description	Location / Country	Related Supply Chain Partners
1	Palm Oil - Unilever	Environmental Practices	Multiple palm oil suppliers	Greenpeace complained about the use of raw materials sourced from illegal logging of forests in Indonesia	Indonesia	Unilever; Wilmar
2	Palm Oil - Nestlé	Environmental Practices	Multiple palm oil suppliers	Greenpeace complained about the use of raw materials sourced from illegal logging of forests in Indonesia	Indonesia	Nestlé; Wilmar
3	BP Oil Spill	Environmental Practices	British Petroleum	One of the greatest oil spill of all times occurred in 2010 in the Gulf of Mexico	U.S.A.	Andarko; Transocean; Halliburton; National Oilwell Varco; Cameron International; Weatherford
4	Zara Brasil	Practices related to the use of Workforce	Small manufacturers	Charges from the Brazilian Government for slavery work conditions found in factory	Brazil	Inditex-Zara
5	Foxconn	Practices related to the use of Workforce	Foxconn	Reports of riots and deaths due to extreme conditions offered to workers	China	Apple; Cisco; Amazon; Acer; Sony; Nokia; HP; Motorola; Toshiba; Nintendo; Microsoft; Google
6	Junking the Jungle	Environmental Practices	Asia Pulp Paper	Greenpeace relatory pointed to the use of raw material (paper) sourced from supplier that destroyed tropical	Indonesia	KFC
7	Bangladesh Fire	Practices related to the use of Workforce	Small manufacturers	Fire in factories due to lack of maintenance, killing hundreds of people forced to work in precarious conditions	Bangladesh	Zara; Wal Mart; Disney; GAP; PVH; Sears
8	Child Labor	Practices related to the use of Workforce	Multiple Chinese suppliers	Child labor detected in several plants by internal auditing	China	Apple
9	Zara Argentina	Practices related to the use of Workforce	Small manufacturers	Charges from the Argentinian NGO's for slavery work conditions found in factory	Argentina	Inditex-Zara
10	Rana Plaza Collapse	Practices related to the use of Workforce	Small manufacturers	Collapse of the Rana Plaza building due to lack of maintenance, killing thousands of people forced to work in precarious conditions	Bangladesh	GAP; Primark; Next; A&F; Carrefour; Esprit; H&M; Cato; TJX; PVH; Target; Wal Mart; JC Penney; Marks & Spencer; Joe Fresh; Kohl's
11	Pegatron	Practices related to the use of Workforce	Pegatron	Over 70,000 employees in poor working conditions	China	Apple; Cisco; Amazon; Acer; Sony; Nokia; HP; Motorola; Toshiba; Nintendo; Microsoft; Google
12	Licence to Kill	Environmental Practices	Multiple palm oil suppliers	Greenpeace pointed to the use of raw materials sourced from illegal logging of forests in Sumatra, destroying tigers	Indonesia	Golden Agri Resources; Wilmar; Unilever
13	Palm Oil - P&G	Environmental Practices	Multiple palm oil suppliers	Destruction of rain forests and green-washing accusations by Greenpeace	Indonesia	Procter&Gamble; Wilmar; Pepsi Co; Johnson&Johnson; Colgate-Palmolive
14	CP Foods	Practices related to the use of Workforce	Charoen Pokphand Foods	One of the most severe cases of modern slavery in shrimp production revealed by English newspaper The Guardian	Thailand	Wal Mart; Tesco; Cotsco; Morisson; Carrefour
15	Volkswagen Fraud	Environmental Practices	Volkswagen	Volkswagen admits to have used illegal software to cheat environmental tests in the U.S.A.	U.S.A.	Motorola; IBM; Nokia; Magma; Visteon; Tupy; BorgWarner; Honeywell; Infineon; Siemens; Continental; SAP; Basf; Microsoft; Ballard; Dassault; Plastic Omnium; Kumho; LG; Maruti

Source: Elaborated by the author



#### 4.2.1.2.3. Step 3 - Normal and Abnormal Returns

This step conceptualizes normal (*ex ante*), actual (*ex post*) and abnormal returns, beyond illustrating how abnormal returns are calculated from the difference between *ex post* and *ex ante* ones. Figure 5 below illustrates the concepts on a hypothetical case. The procedures for the calculation of each are detailed further on the text.

- Normal Returns (*ex ante*) are defined as those that would be expected in the hypothetical absence of the event (CAMPBELL; LO; MACKINLAY, 1997);
- Actual returns (*ex post*) are those indeed observed for each stock during the event window;
- Abnormal Returns for any time period *t* within the event window are represented by the difference between a given security actual return (*ex post*) and the one predicted (*ex ante*) (CAMPBELL; LO; MACKINLEY, 1997; MACKINLAY, 1997; BROWN; WARNER, 1980).



**Figure 5: Concepts of Normal and Abnormal Returns**

Source: Elaborated by the author

#### 4.2.1.3. Market Model

A measure of abnormal returns is required for the appraisal of the impact of the event. In that sense, the most often used method for the estimation of normal returns (*ex ante*) in event studies is the Market Model proposed by Fama (1970) (AGRAWAL; KAMAKURA, 1995). The model rests on the assumption of a constant and linear relation between the returns of individual assets and that of the market index. The return of a given stock  $i$  on a given moment  $t$  would then be expressed as:

$$r_{it} = \alpha_i + \beta_i r_{mt} + \varepsilon_{it}$$

Where:

$r_{it}$  = normal return of stock  $i$  on Day  $t$

$r_{mt}$  = the market return on Day  $t$

$\alpha_i$  = the intercept of the relationship for stock  $i$

$\beta_i$  = the slope of the relationship for the returns of stock  $i$  with the market return

$\varepsilon_{it}$  = error term for stock  $i$  on Day  $t$ , with  $E(\varepsilon_{it}) = 0$  and  $\text{var}(\varepsilon_{it}) = \sigma^2_{\varepsilon_{it}}$

$\alpha_i$  is an estimate of the constant daily returns for stock  $i$ , while  $\beta_i r_{mt}$  is the portion of the return due to market-wide movements.  $\varepsilon_{it}$ , in turn, represents the portion of the return of stock  $i$  not explained by market movements, capturing the effect of firm-specific information.

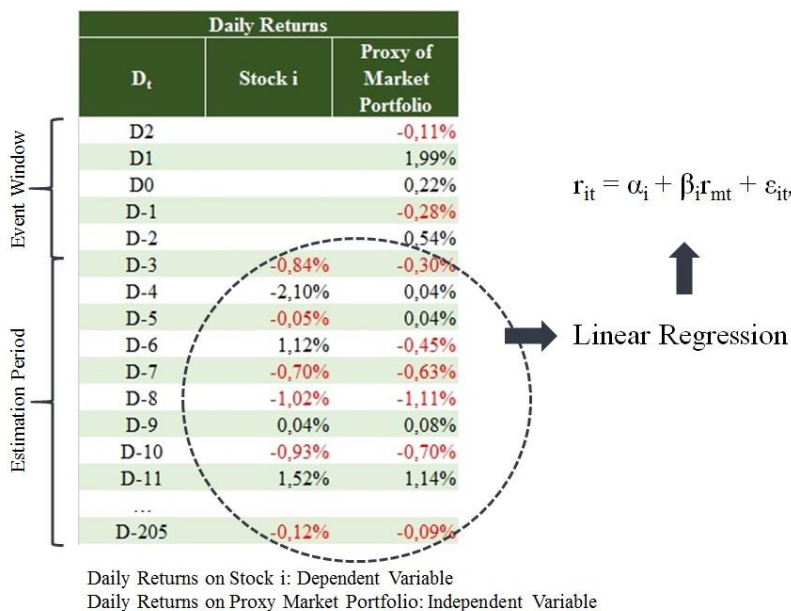
##### 4.2.1.3.1. Step 4 - Estimation Procedure

The next step of the event study structure comprehends the estimation of the parameters of the model arose from the data within the estimation window (CAMPBELL; LO; MACKINLAY, 1997). As previously discussed, seven different event windows are considered on the present study. Daily close prices adjusted for dividends and splits were collected from the website

Yahoo Finance<sup>1</sup> for each window. The return of any given stock  $i$  on any day  $t$  is calculated through the following formula:

$$r_{it} = \left( \frac{\text{Stock Price Adjusted for Dividends and Splits on Day } t}{\text{Stock Price Adjusted for Dividends and Splits on Day } t_{-1}} \right) - 1$$

Based on the observations of the returns within the estimation window, parameters  $\alpha_i$ ,  $\beta_i$  and  $\sigma^2_{\varepsilon_{it}}$  (variance of error term  $\varepsilon_{it}$ ) are calculated through ordinary least square regression for each firm of the sample. Figure 6 below represents the process for the calculation of the parameters of the Market Model in a five-day event window (i.e. hypothetical case):



**Figure 6: Representation of the Market Model parameters calculation in a five-day Event Window Study**

Source: Elaborated by the author

The proxies of the market portfolio considered for the study are listed below, and the calculated parameters for each assessed company are presented in Appendix B.

- Standard and Poor's 500 for companies listed on the New York Stock Exchange-NYSE (U.S.A);

<sup>1</sup> See <http://finance.yahoo.com/>

- Nasdaq Composite for companies listed on Nasdaq (U.S.A);
- FTSE 100 for companies listed on London Stock Exchange (United Kingdom);
- Xetra Index for companies listed on Xetra Exchange (Germany);
- CAC-40 for companies listed on Euronext Paris (France);
- IBEX-35 for companies listed on the Madrid Stock Exchange (Spain);
- iBovespa for companies listed on BM&FBovespa (Brazil);
- S&P Sensex for companies listed on Bombay Stock Exchange (India);
- KOSPI Composite for companies listed on Korean Stock Exchange (South Korea);
- STI Index for companies listed on Singapore Exchange (Singapore);
- Jakarta Islamic Index for companies listed on Jakarta Stock Exchange (Indonesia).

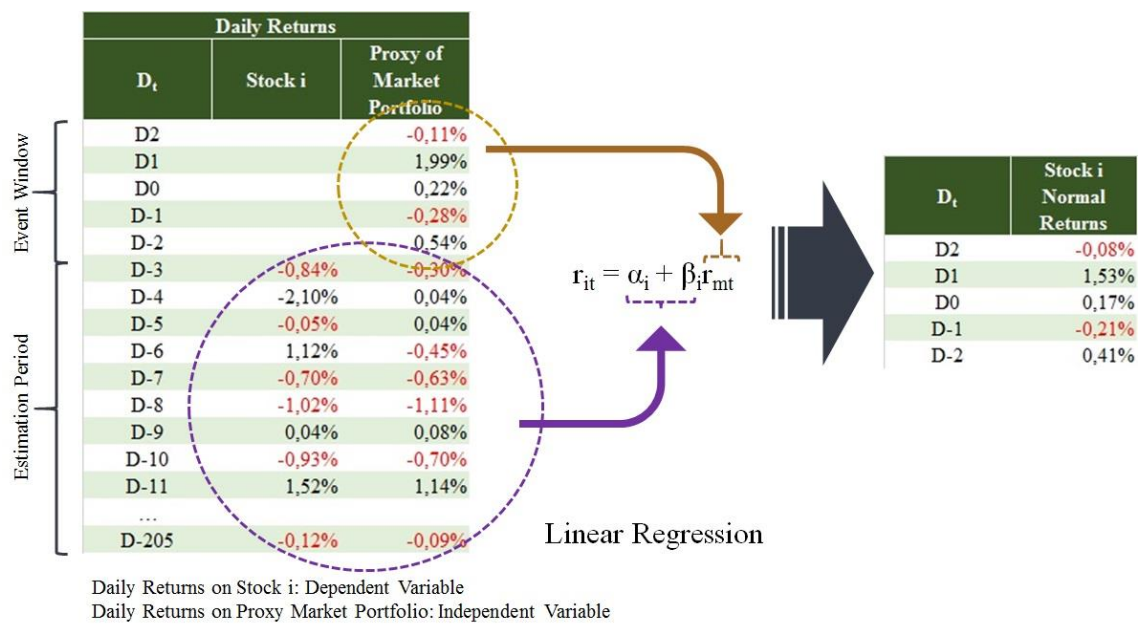
#### 4.2.1.3.2. Step 5 - Testing Procedure

##### 4.2.1.3.2.1. Calculation of Normal Returns (*ex ante*) – Market Model

Based on the premise of efficient markets, the expected value of the error term is zero, as under such premise no pattern should be expected around its distribution (the error term is expected to be randomly distributed). The calculation of the normal return of a stock  $i$  on any day  $t$  is then based only on the estimation of parameters  $\alpha_i$ ,  $\beta_i$  and on the return of the market, being expressed as follows:

$$r_{it} = \alpha_i + \beta_i r_{mt}$$

Normal returns (*ex ante*) are calculated for each day within the event window. Figure 7 below illustrates the process on a hypothetical case:



**Figure 7: Calculation of Normal Returns for Stock i**

Source: Elaborated by the author

#### 4.2.1.3.2.2. Calculation of Abnormal Returns

As previously discussed, the Abnormal Return for any stock *i* on day *t* is calculated through the difference between the *ex post* return of the stock (actual return) and the *ex ante* return (normal return), calculated according to the following formula:

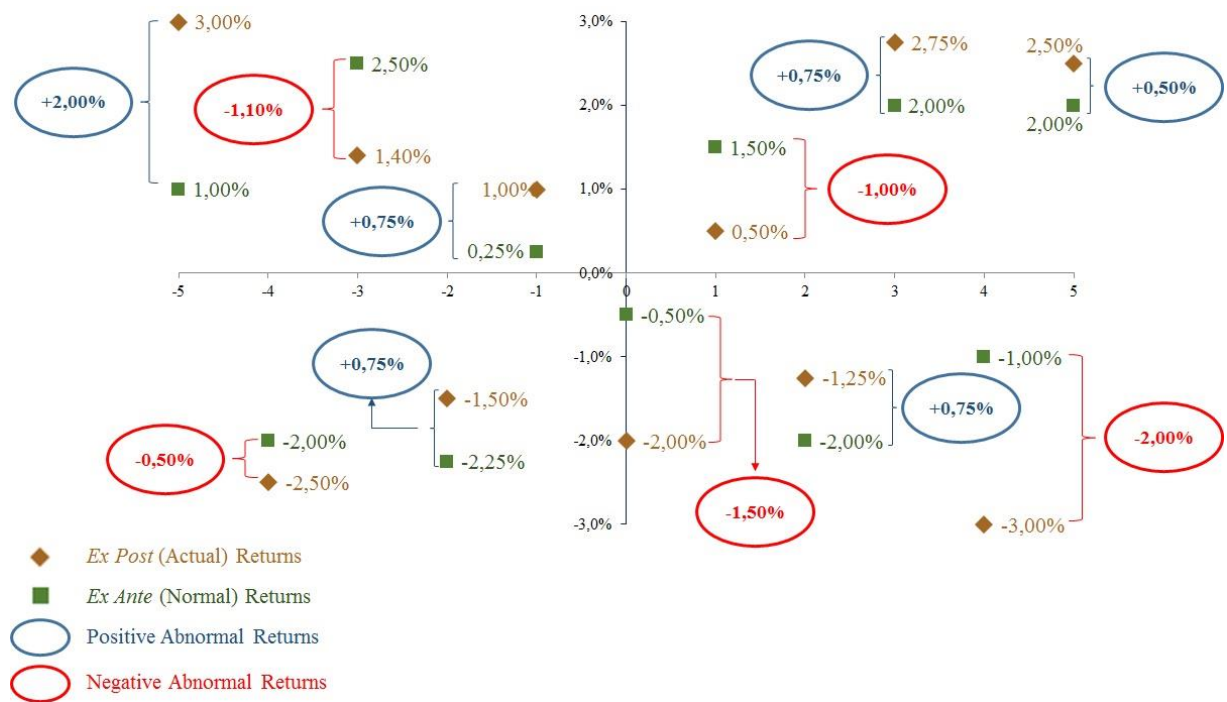
$$AR_{it} = r_{it} - E(i, t)$$

Where:

$r_{it}$  = return of stock *i* on any day *t* (*ex post* or actual return)

$E(i, t)$  = normal or *ex ante* return (expected return of stock *i* on any day *t* according to the Market Model)

Figure 8 bellow illustrates the mechanics. The abnormal returns calculated for each company are presented in Appendix C.



**Figure 8: Hypothetical Abnormal Returns**

Source: Elaborated by the author

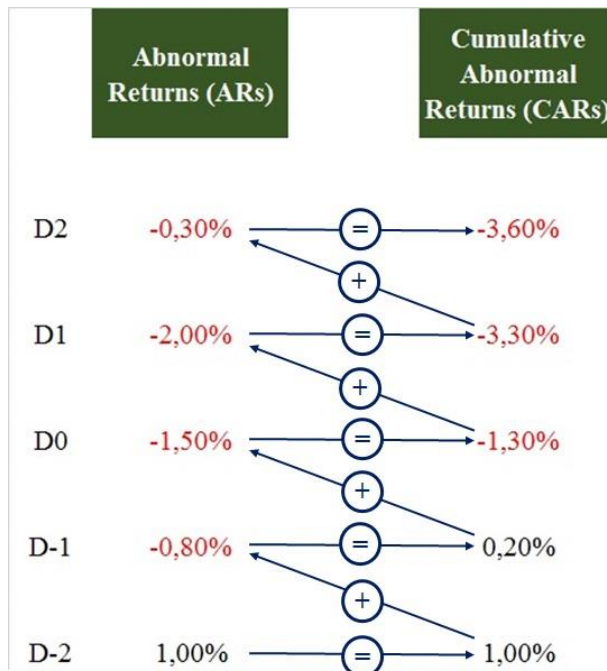
Additionally, for the consolidated analysis of the impact of negative social / environmental events, average abnormal returns (AARs) for each day were also calculated (for the seven different event windows). The AAR in a given day  $t$  is represented by the average of the daily abnormal returns of all firms in the day considered. AARs are then summed up into cumulative average abnormal returns (CAAR) for each event window as described in the next session.

#### 4.2.1.3.2.3. Calculation of Cumulative Abnormal Returns (CAR)

The testing framework for abnormal returns must then consider the determination of techniques for the aggregation of abnormal returns of individual firms (CAMPBELL; LO; MACKINLAY, 1997). Through the sum of individual abnormal returns calculated for each day within the event window, Cumulative Abnormal Returns (CAR) represents the accumulated effect of an event. For any given day  $t$ , the CAR is calculated by the following formula:

$$CAR_T = \sum_{t=1}^T AR_t$$

Where T represents any particular day within the event window. On a 5-day event window, D-2 comprehends day 1 (t=1) and D2 comprehends day 5 (t=5). The accumulated effect of the event - or the Cumulative Abnormal Return (CAR) – is then calculated through the sum of all the abnormal returns from day 1 to day 5 (all the abnormal returns within the whole event window). Similarly, on an 11-day event window, D-5 comprehends day 1 (t=1) and D5 comprehends day 11 (t=11). Figure 9 below represents the mechanics:



**Figure 9: Calculation of Cumulative Abnormal Returns (CARs)**

Source: Elaborated by the author

Cumulative average abnormal returns (CAARs) for each event window were also calculated for the consolidated analysis of negative social / environmental events. CAARs are represented by the sum of the average abnormal returns (AAR) and are presented in table 12.

#### 4.2.1.3.2.4. Statistical Inference

Statistical inferences on event studies aim to demonstrate that both daily abnormal returns (AR) and cumulative abnormal returns (CAR) calculated for each firm count on statistical significance (meaning they are significantly different from zero). Following the traditional practices of inferential statistics,  $H_0$  (the null hypothesis) stands for the inexistence of abnormal returns, while  $H_a$  (alternative hypothesis) stands for their presence.

Considering that  $E(\varepsilon_{it}) = 0$  and  $\text{var}(\varepsilon_{it}) = \sigma^2_{\varepsilon_{it}}$  within the Efficient Market premises (FAMA, 1970), abnormal returns are considered to be normally distributed. For that reason, the statistical inference may be run over a parametric t-test.

#### Statistics of Daily Abnormal Returns (AR)

The statistic of the test for daily abnormal returns (AR) is the ratio of day  $t$  abnormal return to its estimated standard deviation as follows:

$$\text{Statistic of Daily Abnormal Returns} = \frac{\text{Abnormal Return in Day } t}{\varepsilon_i \text{ Estimated Standard Deviation}}$$

Where the  $\varepsilon_i$  Estimated Standard Deviation comprehends the error term of the Market Model regression. Once the statistic is calculated, its value (t-critic) is compared to the t-student distribution. For the present study the null hypothesis has been tested for two significance levels: 99% and 95%. The test was preceded for each day of the seven different event windows considered individually for each firm. The results are presented on Appendix D.

#### Statistics of Cumulative Abnormal Returns (CAR)

The statistic of the test for cumulative abnormal returns (CAR) is the ratio between the cumulative abnormal return itself and its estimated standard deviation, as follows:

$$\text{Statistic of Cumulative Abnormal Returns} = \frac{\text{Cumulative Abnormal Return in Day } t}{\text{CAR Estimated Standard Deviation}}$$



As discussed by MacKinlay (1997), CAR Variance is calculated as displayed in the equation below:

$$\sigma_i^2(\tau_1, \tau_2) = (\tau_2 - \tau_1 + 1)\sigma_\varepsilon^2$$

The CAR Estimated Standard Deviation may then be calculated as follows:

$$\begin{aligned} & \text{CAR Estimated Standard Deviation} \\ &= (T2 - T1 + 1)^{0.5} * \varepsilon_i \text{Estimated Standard Deviation} \end{aligned}$$

Where T2 is the last day within the event window and T1 the first day within the same period.  $T2 - T1 + 1$  comprehends then the number of days in a given event window.  $\varepsilon_i$  Estimated Standard Deviation comprehends the error term of the Market Model regression. The same procedure for the t-critic is applied, using the two different significance levels (99% and 95%). Results are presented in Appendix E. Statistical Inferences were also applied for the cumulative average abnormal returns, according to the procedures presented on Campbell, Lo and Mckinley (1997). Results are presented in Table 12.

## 5 Results

This chapter is dedicated to the presentation of the results of the empirical study. The first subsection carries the outcomes of the documentary research, comprehending the identification and description of the 15 analysed cases. Beyond that, the source firms are identified (i.e. companies on which the events took place), as well as the 82 supply chain partners that composed the sample of the event study analysis. In turn, the second subsection shows the results of the applied event study method for the 7 event windows considered in this work.

### 5.1. Cases Description

As previously discussed, the documentary analysis of the announcements of negative social / environmental events was conducted on the data base of three international newspapers, as well as on the other public sources detailed on session 4.1. Following a chronologic order, each case is detailed and described below, from the oldest to the most recent.

#### 5.1.1. Case 1 - Palm Oil - Unilever<sup>2</sup>

Unilever is an anglo-dutch multinational company present in 190 countries around the world. Its portfolio includes personal products, food, and refreshment products, making it one of the world's biggest consumer-goods enterprises. The company is also highly diversified within the several segments on which it operates. Worldwide famous brands managed by Unilever include Hellman's, Lux, Lipton, Axe, Knorr, Omo, Comfort, Rexona, Lux, Dove, among other. In many of the countries it operates, Unilever is among the leading adding companies on the most

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<sup>2</sup> Sources: [lemonde.fr](http://lemonde.fr); [theguardian.com](http://theguardian.com); [nytimes.com](http://nytimes.com); Industry Group Leader Report 2015 – DJSI 2015, Robecosam; [unilever.com](http://unilever.com); [reuters.com](http://reuters.com); [greenpeace.org](http://greenpeace.org); [youtube.com](http://youtube.com); [vimeo.com](http://vimeo.com); [dailymotion.com](http://dailymotion.com); [bbc.co.uk](http://bbc.co.uk); [rainforest-rescue.org](http://rainforest-rescue.org).

diversified medias, including television broadcasts, printed magazines and newspapers, as well as social networks.

In April 2008 the company suffered hard accusations of involvement in rainforest destruction in Indonesia. By the time, the campaign promoted by the environmentalist group Greenpeace was especially directed to the manufacturing process of the Dove soap, Persil, Knorr, Flora and the ice-cream brand Wall's. Greenpeace launched a report called "Burning Up Borneo", beyond an Internet campaign named "Dove Onslaught(er)" spread on social networks and video hosting sites (e.g. YouTube, DailyMotion, Vimeo), on which it denounced the purchase of vegetable oils from suppliers accused to promote the destruction of rain forests in the growing of palm trees.

On its document, the Greenpeace links Unilever to the biggest producer of palm oil in Indonesia, accusing the company of being the biggest corporate consumer of the product. Accordingly, Unilever annually consumed around 1.3Mt of Palm Oil, or nearly 3% of global production. Half of its suppliers would be from Indonesia, where the company was particularly active (buying 1 out of every 20t of the palm oil produced). Still according to Greenpeace, Unilever's primary palm oil suppliers were responsible for one third of the production of the country.

The group claimed to hold evidences that the operations of Unilever's suppliers were directly linked to extinction of endangered species, in Central Kalimantan (Indonesia). Beyond that, activists also promoted protests in front of two sites of the company: in Unilever's headquarters in London and in a factory of the company in Merseyside (United Kingdom). In both cases the activists were dressed as orangutans. Protesters claimed to have stopped the production of some of the company's products as a result of their protest.

The ultimate target was the complete redesign of Unilever's supply chain, moving the sourcing of palm oil to certified suppliers. Unilever said that the company addressed most of the concerns presented and that it shared the same feeling Greenpeace exposed in relation to the deforestation. At the time the company said it was under the process to certify the raw material production. Only one month after the original accusations, Unilever revealed itself a report entitled "Sustainable Palm Oil: Unilever Takes the Lead", on which the company demonstrates

its interests in engaging on the development of a Sustainable Supply Chain Management policy along with its palm oil suppliers in Indonesia.

Other episodes linking the company to unsustainable practices followed in the next years, mainly related to forest destruction issues. Among those episodes, the one protagonized by Unilever's supplier Wilmar International was one of the most prominent. In 2011 the Singapore based company conducted an invasion of a village of locals in Indonesia in order to expand its plantations. The operation was organized with the help of the "Brimob", a group specialized in especial tactic operations, what characterizes the violent nature of the event.

The declaration of Unilevers' chief procurement officer, Marc Engel to the newspaper The Guardian some years later (in 2013) seems to properly address the worries of the company and the changes of its Supply Chain policies. Accordingly, "market transformation can only happen if everyone involved takes responsibility and is held accountable for driving a sustainability agenda. Our progress has been made possible by the commitment and efforts of a number of our strategic suppliers. We will continue to engage with our suppliers, NGOs, governments, RSPO, end users and other industry stakeholders to develop collaborative solutions to halt deforestation, protect peat land, and to drive positive economic and social impact for people and local communities."

- Source Company (ies): Multiple palm oil suppliers in Indonesia
- Supply Chain Partner(s) identified: Unilever, Wilmar

### **5.1.2. Case 2 - Palm Oil - Nestlé<sup>3</sup>**

In March 2010 a campaign launched by the international environmental group Greenpeace accused Nestlé of purchasing raw material from suppliers involved in illegal logging in

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<sup>3</sup> Sources: [lemonde.fr](http://lemonde.fr); [theguardian.com](http://theguardian.com); [nytimes.com](http://nytimes.com); [greenpeace.org](http://greenpeace.org); [youtube.com](http://youtube.com); [bbc.co.uk](http://bbc.co.uk); [nestle.com](http://nestle.com); [nestleprofessional.com](http://nestleprofessional.com); [globalhand.org](http://globalhand.org)

Indonesia. The raw material in question is once more the palm oil, used by the company in the production of one of its most famous products, the chocolate Kit Kat. In the occasion the Greenpeace released a famous video on which Kit Kat was associated to the death of orangutans, beyond the report named “Caught Red-Handed: How Nestlé’s Use of Palm Oil is Having a Devastating Impact on Rainforest, The Climate and Orangutans”, in which the company is accused to be linked to palm oil suppliers responsible for deforestation, such as Sinar Mas. The slogan of the campaign asked Nestlé “to give rainforests a break” in allusion to the merchandising employed in the Kit Kat communication. Yet according to the report, Nestlé annually consumes the equivalent to 320.000 tons of palm oil, figuring as one of the most expressive corporate consumers of the raw material.

The Greenpeace claims that Nestlé was fully aware of the disrespect of environmental practices run by Sinar Mas, as Greenpeace itself had already alerted the company around them. Accordingly, Nestlé repeatedly ignored such warnings and kept sourcing the raw material from the company (Sinar Mas). Other global companies such as Unilever and Kraft had cancelled their contracts with the supplier (Unilever canceled a USD 30 million supply contract with Sinar Mas). Other companies were following into the same direction, but Nestlé’s refuse in redesigning its supply chain would have forced the Greenpeace to publicly approach such problems through its report. Several protests orchestrated by activists took place throughout Europe.

Similarly to the protests directed to Unilever in 2008, the activists were dressed like orangutans in front of some of the company’s sites in England, Netherlands and Germany, calling the attention of general media. The official Facebook page of the company gathered thousands of negative reactions and comments of consumers on the environmental practices of the company. In response to pressures from European consumers, Nestlé that by the time counted on only 18% of sustainable palm oil sources, pledged to raise this percentage to 100% by 2015. Beyond that the company spontaneously invited the NGO Forest Trust to audit the environmental practices off its supply chain, promising to cancel any contract signed with companies proved to promote forest destruction. The announcements were celebrated by the Greenpeace. The group however stated that it was going to closely follow the actions of the company in order to ensure the accomplishment of the promised measures.

In 2011 the company presents its “Responsible Sourcing Guidelines” encompassing what the company called a “Framework for Forest-Based Materials”. Accordingly, the document was intentioned to guide the procurement staff and consultants of the company around the interpretation and implementation on Nestlé’s position on deforestation and forest stewardship. The document provides both, general and specific provisions to be adopted in the procurement of palm oil and paper products. In 2012 the company released an updated version on which it adds provisions to a wider range of commodities.

In 2013, following the promises that its products would no longer be associated to deforestation, the company reinforces its commitment to Sustainable Supply Chain Management through the issuing of the “Nestlé Commitment on Deforestation and Forest Stewardship”. On the document the company numbers a series of principles over which its own operations, as well the operations of all its supply chain partner should be based. Among them the company states that all its raw materials sourced from forests areas have: 1- not led to deforestation; 2 - not led to the loss of high conservation values; 3 - been produced in compliance with The Nestlé Corporate Business Principles and The Nestlé Supplier Code; 4 - led to the creation of shared value for society and local communities. The statements are coherent with the idea of the triple bottom line of the sustainable development. Beyond the palm oil, Nestlé lists other strategic raw materials to its sustainability policy, such as meat, soya, cocoa, paper and board, cassava, timber, coffee, inter alia and dairy.

Nestlé is a Switzerland based company present in more than 194 countries around the world. The company has more than 400 producing factories, owning famous brands such as Kit Kat, Nescafé, Molico, Perrier, Ninho, Neston, Dolce Gusto, Nescau, Galak, Nesquik, Nestea, Nesfit, Alpino, Acqua Panna, Charge, among other.

- Source Company (ies): Multiple palm oil suppliers in Indonesia; Sinar Mas
- Supply Chain Partner(s) identified: Nestlé, Wilmar

### 5.1.3. Case 3 – BP Oil Spill<sup>4</sup>

In April 2010 an explosion and fire occurred in a British Petroleum oil drilling rig Deepwater Horizon in the Gulf of Mexico. Eleven people are reported missing and 17 injured. According to investigations, the explosion occurred due to a fail in the activation of blowout preventer, which was precisely intended to prevent the release of crude oil. Two days after the explosion the Deepwater Horizon rig sinks in 5,000ft of water. A five-mile-long oil slick is reported and the search and rescue operations are initiated by the US National Response Team. In the next day the search for missing workers are suspended by the US coast guard, as all the employees are presumed to be dead and the rig is found about a quarter-mile from the blowout preventer, in a upside down position.

By the time, an analysis held by the homeland security department states that the incident “poses a negligible risk to regional oil supply markets and will not cause significant national economic impacts” The White House press secretary Robert Gibbs in turn, minimizes the problem by claiming: “I doubt this is the first accident that has happened and I doubt it will be the last.” Four days after the incident, despite crude oil is found to be leaking from the well, a new report of the homeland security department states that the no near-term impact to regional / national crude oil or natural gas supplies was expected. On the following days the US coast guard reveals through remote underwater cameras that the well is leaking nearly 1,000 barrels of crude oil per day. A plan to stop the leak with the activation of a blowout preventer by remote underwater vehicles is approved.

With negative news continuing to emerge, six days after the explosion, the market value of British Petroleum drops by 2%, following investors expectation that the costs of cleanup and legal claims would severely hit the company. At the same time, in the attempt to control the environmental damages, around 15,000 gallons of dispersants, in addition to 21,000 ft. of

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<sup>4</sup> Sources: [lemonde.fr](http://lemonde.fr); [theguardian.com](http://theguardian.com); [nytimes.com](http://nytimes.com); [bp.com](http://bp.com); [dhs.gov](http://dhs.gov); [gocoastguard.com](http://gocoastguard.com); [ap.org](http://ap.org); [andarko.com](http://andarko.com); [deepwater.com](http://deepwater.com); [halliburton.com](http://halliburton.com); [nov.com](http://nov.com); [c-a-m.com](http://c-a-m.com); [weatherford.com](http://weatherford.com); [greenpeace.org](http://greenpeace.org); [economist.com](http://economist.com); [corporatesocialreality.com](http://corporatesocialreality.com); [restorethegulf.com](http://restorethegulf.com); [grist.org](http://grist.org); [bbc.co.uk](http://bbc.co.uk); [zls.org](http://zls.org); [interbrand.com](http://interbrand.com); [youtube.com](http://youtube.com); [dailymotion.com](http://dailymotion.com)

containment boom are placed in the spill site. The US coast guard also announces it will set fire to the crude oil leaking in order to slow its spread in the Gulf of Mexico.

In the next day the US department of interior and homeland security announces its plans for a joint investigation on the explosion as the revised evaluation of the homeland department reports that: "Release of crude oil, natural gas and diesel fuel poses a high risk of environmental contamination in the Gulf of Mexico." Around 5,000 barrels of oil are now estimated to be leaking in a daily basis, five times more than the initial prediction. Nine days after the explosion, the president of the United States says that British Petroleum must be responsible for the clean-up. Beyond that he reinforces that all the available resources of the country, including the military forces may be employed in the contingency of the disaster. As the oil approaches the land, Louisiana declares state of emergency. The chairman of British Petroleum declares that the company will take full responsibility for the spill, including the payment of all legitimate claims, as well as all the necessary costs for the total cleanup.

In the beginning of May 2010, the executives of British Petroleum face a closed session in the American congress, with the government endorsement to the Senate proposal to increase the limit on liability payouts from US\$ 75 million to US\$ 10 billion for the cost a spills. Two months after the explosion British Petroleum shares hit a 14 year low of 304p as the clean-up bill reaches US\$ 2.35 billion. Some days later the cost was revised to US\$ 3.0 billions

Further investigations reveal that the Deepwater Horizon alarms were switched off at the time of the explosion in order to allow workers to sleep undisturbed. In august of the same year the US government announces that most of the oil spilled had been cleaned. A US\$ 32.2 billion provision to deal with prosecution and all cleanup procedures is announced by BP. The smallest seahorse of the world is particularly affected by the oil spill. According to the Zoological Society of London, the disaster practically caused the extinction of the species. The reputational damage suffered by the company forces it to pull out of a bid to drill in the Artic. BP falls out of a 100 top brands list elaborated by a major marketing consultancy. The total cost of the cleanup for the company is calculated in US\$ 10 billion. The total cost of the spill sums US\$ 40 billion.

- Source Company (ies): British Petroleum



- Supply Chain Partner(s) identified: Andarko, Transocean, Halliburton, National Oilweel Varco, Cameron International and Weatherford

#### 5.1.4. Case 4 - Zara Brazil <sup>5</sup>

In August 2011 Inditex (Zara's parent company) was listed against 52 charges by the Brazilian government after 15 foreigner employees of a supplier were found working under modern-day slavery conditions. The group was composed by workers from South American neighbors (14 Bolivians and one Peruvian). Beyond the accusations of modern-slavery, the case was characterized by a series of other working issues such as irregular teenage work force, as one of the workers of the group was only 14 years old.

The link between the sweatshop factory and Zara was revealed after the investigation conducted by Brazilian authorities. Accordingly, the irregular supplier was sub-contracted by AHA, company responsible for 90% of Zara's production in the country. The accusations against Inditex were made as AHA was perceived as a "logistical extension of its main client, Zara Brasil", as argued by the Brazilian prosecutor in charge of the case. Moreover, the accusation recognized Inditex as responsible for the maintenance of the working conditions of the employees. As stated by the accusation "Its *raison d'être* is making clothes and it follows that it must know who is producing its garments."

The investigation showed that employees lived on the surroundings of the factory, working on shifts from 16 to 18 hours from Monday to Saturday, and sometimes, even on Sundays. They worked in exchange of monthly earnings between USD 156 and USD 290, while Brazilian minimal wage accounted for USD 344 by the time. That left some of them with no more than USD 95 at the end of each month after paying their food, house and telephone card debts. The

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<sup>5</sup> Sources: lemonde.fr; theguardian.com; nytimes.com; veja.abril.com.br; cleanclothes.org; facebook.com; inditex.com; estado.com.br; folha.uol.com.br; cartacapital.com.br; youtube.com; dailymotion.com; vimeo.com; reportebrasil.org.br

investigations also showed that, in order to pay off the people traffickers responsible for their entrance on the country (coyotes), in general employees had to work during approximately four months in a row. According to the testimony of a Bolivian worker, their earnings came basically from the “labor component” of the production, representing nearly USD 1.14 out of jeans worth USD 126 (0.90% of the selling price). Latter evidences stated that similar conditions were also found in other suppliers of the company, mainly subcontracted by Rhodex. Still according to Brazilian’s authorities the financial crisis through which Spain was going through by the time and the high exchange rate for the Brazilian currency (Real) are believed to be two of the reasons that lead many workers from countries such as Peru, Paraguay and Bolivia, who earlier worked in factories in Spain, to make the way back to South-America, accepting such poor working conditions.

By the time, in order to keep its operations in the country, the company was obliged to sign a conduct adjustment term (Termo de Ajustamento de Conduta TAC), promising to engage in control procedures to avoid the practices from that moment on. On its defense, Inditex claimed that the company could not be held responsible for “unauthorized outsourcing”, as AHA, by hiring an illegal supplier, had violated the code of conduct of the company. Despite that, Inditex agreed in compensating the 15 employees for the working abuses.

Three years after the announcement of the case, the company officially admitted the existence of slavery conditions on its Brazilian supply chain for the first. The recognition occurred in the speech of Zara’s CEO in Brazil, João Braga, for an investigation held by the Government of São Paulo (Comissão Parlamentar de Inquérito do Trabalho Escravo). When asked by the president of the commission, Carlos Bezerra Junior (PSDB), if there was slavery work on Zara’s productive chain in 2011, the executive answered “yes”. However, the company claims to have invested around R\$ 14 million on internal auditing and social projects since the signing of the TAC. Accordingly 1.300 internal audits would have already been conducted on the operations of supply chain partners. Beyond that, an “origin certification stamp” was created (a QR code that may be scanned by cell phones), on which information around the working conditions of suppliers, as well the date of the last audit conducted are offered to consumers. The stamp is expected to be present in all the products sold by the company in 2015. The solution is in current test to be adopted in other countries where the company operates.

Currently the company is facing legal prosecutions in Brazil and is fighting for not be listed in the “black list of slave work in Brazil”, managed by the Ministry of Labor of the country. In case the company gets into the list, beyond the damages for its image, Zara will be submitted to the payment of fines and to periodic visits of Brazilian authorities to its factories and shops for the period of two years.

- Source Company (ies): Small Brazilian sweatshop factory with no reputational capital; AHA (company responsible for 90% of Zara’s production in Brazil)
- Supply Chain Partner(s) identified: Inditex (Zara’s parent company)

#### 5.1.5. Case 5 – Foxconn <sup>6</sup>

The Hon Hai Precision Industry Co. Ltd, owner of the Foxconn Technology Group, is currently the world’s largest electronics outsourcing company and the biggest employer in the Chinese private sector, counting with 1.2 million workers. Headquartered in Taiwan, the company has manufacturing facilities in Asia, Europe, South and North Americas, which together account for 40% of electronic products sold worldwide. Foxconn's customers chart includes some of the largest electronics and information technology companies such as Acer, Amazon.com, Apple, Cisco, Dell, Google, Hewlett-Packard, Microsoft, Motorola, Nintendo, Nokia, Sony, Toshiba and Vizio, among others.

The company has been involved in several controversial cases of poor working conditions, including since allegations of extremely long working hours until discrimination of mainland Chinese workers by Taiwanese colleagues. Several cases of suicide among employees have been reported since 2009 and are believed to have been motivated by the severe working

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<sup>6</sup> Sources: [lemonde.fr](http://lemonde.fr); [theguardian.com](http://theguardian.com); [nytimes.com](http://nytimes.com); [bloomberg.com](http://bloomberg.com); [reuters.com](http://reuters.com); [ap.com](http://ap.com); [foxconn.com](http://foxconn.com); [circuitassembly.com](http://circuitassembly.com); [economist.com](http://economist.com); [dailymail.co.uk](http://dailymail.co.uk); [fairlabor.org](http://fairlabor.org); [clb.org.hk](http://clb.org.hk); [apple.com](http://apple.com); [cisco.com](http://cisco.com); [amazon.com](http://amazon.com); [amazon.fr](http://amazon.fr); [us.acer.com](http://us.acer.com); [sony.com](http://sony.com); [nokia.com](http://nokia.com); [motorola.com](http://motorola.com); [toshiba.com](http://toshiba.com); [nintendo.com](http://nintendo.com); [microsoft.com](http://microsoft.com); [google.com/intl/en/about/](http://google.com/intl/en/about/); [investor.google.com/corporate/message.html](http://investor.google.com/corporate/message.html); [hp.com](http://hp.com); [youtube.com](http://youtube.com); [dailymotion.com](http://dailymotion.com)

environment offered by the company. In 2012 a series of accusations regarding extremely poor workforce conditions were once more directed to the company.

In September 2012, disagreements between employees occupying dorms in the company culminated in a riot involving more than 2,000 workers, which were severely controlled by private security forces working for Foxconn. 40 of the workers were led to medical care due to the resulting injuries. The riot took place at the company's Taiyuan (Shanxi) factory, where nearly 79,000 people work. The incident is argued however, to be linked to the extreme tension between workers and guards. According to workers, safety personnel uses "gangster style" to manage, spreading threats and physical punishments to keep production flowing. This hypothesis is supported by the Hong Kong's China Labor Bulletin. As stated by the entity, that would make total sense, based on the information they had on the "heavy-handed" ways the security apparatus normally employed in the company. In response, Foxconn shortly stated that, if the accusations against the guards were true, the company would manage to take the necessary providences, despite they were not directed hired by Foxconn.

In October of that same year the company admitted to have employed a 14 years old teenager, below the minimum age required by the Government of China (which is 16). Yet in 2012 several cases of occupational accidents resulted to severe damage to the health of those involved, presumably due to the lack of authorization for the treatment of employees. Such problems were not restricted to Foxconn's factories in China. In 2010 a fire at the company's factory in the city of Juarez, Mexico would have been started, by unhappy employees, according to an internal investigation of the company itself.

At the request of Apple, the Fair Labor Association conducted an audit in Foxconn and, through 35.000 interviews run with employees of three different sites (Shenzhen, Chengdu and Taiyuan) found that, beyond the observation of very poor working conditions, among other irregularities, workers also received insufficient payment for overtime. Non-governmental organizations from Hong Kong also got to audit Foxconn, reporting even worse conditions than those previously revealed.

In the attempt to remedy the issue, Apple and Foxconn jointly announced that they were seriously engaged in improving the working conditions of the Chinese employees. Among other

measurements, the companies said that tens of thousands of workers would be hired to work in Foxconn, reducing the work load of the current employees (to 49 hours per week, including overtime and with no reduction on their wages). Beyond that, safety measures along with other benefits, such as new homes and refectories were also announced. The change of Apple into a more transparent policy of SCM is seen as a consequence of the management style of its CEO, Tim Cook, who would be more open to external critics in comparison to Apple's former CEO, Steve Jobs.

As observed by the president of FLA, Aurret van Heerden, due to the huge influence and power of the two companies, their joint efforts had the potential to indeed settle a new standard for the whole sector, proposing a relevant change in the working conditions of Chinese workers. The actions however, are expected to considerably elevate the costs for all the other western clients of Foxconn, such as Dell, HP, Amazon, Motorola, Nokia, Sony, among others, possibly impacting the price for final clients. Nevertheless, according to analysts of the sector, the impact should be somehow limited, as the work portion of electronic manufacturing is relatively small if compared to other costs such as material and transportation.

- Source Company (ies): Foxconn
- Supply Chain Partner(s) identified: Apple; Cisco; Amazon; Acer; Sony; Nokia; Motorola; Toshiba; Nintendo; Microsoft; Google; Hewlett-Packard (HP)

#### 5.1.6. Case 6 – Junking the Jungle<sup>7</sup>

In May 2012 Yum! Brands (KFC's parent company) was accused by the environmentalist group Greenpeace of sourcing its packaging from the controversial paper company Asia Pulp & Paper, an Indonesia-based company known in the paper industry as APP (Solaris in Australia). APP is considered one of the largest pulp and paper companies in the world, counting on 14 major companies in Indonesia and China. The combined annual capacity of the company sums more

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<sup>7</sup> Sources: [lemonde.fr](http://lemonde.fr); [theguardian.com](http://theguardian.com); [nytimes.com](http://nytimes.com); [greenpeace.org](http://greenpeace.org); [yum.com](http://yum.com); [asiapulppaper.com](http://asiapulppaper.com); [facebook.com](http://facebook.com); [twitter.com](http://twitter.com); [us.fsc.org](http://us.fsc.org); [sgs.com](http://sgs.com); [peta.org](http://peta.org); [youtube.com](http://youtube.com); [dailymotion.com](http://dailymotion.com)

than 18 million tons per year, comprehending pulp, paper and packaging-grade. APP commercializes its products in more than 120 countries around the world.

According to report issued by the group – “Junking the Jungle” - Asia Pulp & Paper consistently uses timber from Indonesian rain forest. That would be threatening endangered species such as the Sumatran tiger and orangutans with extinction. The document released by the Greenpeace ultimately seeks to urge consumers to put pressure on KFC to reconfigure its supply chain with environmentally responsible suppliers.

As part of the campaign, a web site was created on which, beyond having full access to the report on KFC and deforestation, consumers were invited to choose a KFC character to represent a revolt against the fast food brand. The character could then be shared on Facebook and Twitter, potentially enhancing the reach and the power of the movement. In order to incentivate consumers to share the idea on the social networks, a “top revolts” list was created by the Greenpeace. Accordingly, the more “revolt” was shared, the higher it would be classified in the list. In case a consumer got to the “top 10 revolts” ranking he/she would be awarded with a t-shirt of the group.

In response to the several pressures, still on 2012 APP presented its Sustainability Roadmap Vision 2020 plan, on which the company claimed to be fully reliant on raw materials from plantations and that, following independent audits, all its suppliers should operate by High Conservation Value Forest (HCVF) standards by 2015. The company also announced that all nine of its Indonesian mills had received SVLK (Sistem Verifikasi Legalitas Kayu) timber legality certification from the Indonesian Timber Legality Assurance System. On February 2013 APP announced the adoption of a Forest Conservation Policy, including an immediate halt of natural forest clearance across its entire supply chain, beyond a partnership with the non-profit organization The Forest Trust. The partnership sought to assist the company in the identification of forested areas for protection through the assessment of High Conservation Value (HCV) and High Carbon Stock (HCS).

KFC (anachronism for Kentucky Fried Chicken) is an 85 years old fast food chain housed in Louisville, Kentucky, U.S.A. The company is currently the second biggest restaurant chain in the world (only behind Mc Donald’s) being present in more than 18 thousand locations

distributed for 118 countries around the world. The company has been historically associated with other controversial episodes and criticisms around its animal welfare record, environmental damage and links to obesity. Since 2003 KFC's operations have been closely followed by the NGO PETA (People for the Ethical Treatment of Animals), which has conducted several protests on the choices of the company around its poultry suppliers.

- Source Company (ies): Asia Pulp & Paper
- Supply Chain Partner(s) identified: Yum! Brands (KFC's parent company)

#### 5.1.7. Case 7 – Bangladesh Fire <sup>8</sup>

In November 2012 the Tazreen Fashion factory caught fire, killing 112 employees and seriously injuring more than 200. Despite the high number of fatal victims, the tragedy could have resulted in an even worse death toll, as at the time of the incident more than 1,150 employees were estimated to be inside the factory. The building was located in the outskirts of Dhaka (Ashulia district), Bangladesh. According to the investigations, the fire was caused by an electric short circuit due to lack of maintenance. The incident represents the deadliest factory fire in the history of the country.

The fire started on the ground floor of the nine-story factory, preventing workers from the upper floors to escape. As the factory illegally stored large amounts of yarn and fabric, the fire and the smoke quickly spread to the other floors. Witnesses reported that most of the workers killed were unable to escape due to the narrow exits of the building, configuring a serious lack of safety conditions for workers. As discussed by the fire department's operations manager, Mohammad Mahbub, the building was not provided with minimally adequate emergency exits. Accordingly, if this basic safety exigence had been respected, most of the lost lives could have been saved. In reason of all this conditions, the building burned for more than seventeen hours

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<sup>8</sup> Sources: [lemonde.fr](http://lemonde.fr); [theguardian.com](http://theguardian.com); [nytimes.com](http://nytimes.com); [iscvt.org](http://iscvt.org); [corporate.walmart.com](http://corporate.walmart.com); [ecouterre.com](http://ecouterre.com); [cleanclothes.org](http://cleanclothes.org); [inditex.com](http://inditex.com); [walmart.com](http://walmart.com); [disney.com](http://disney.com); [disneystore.com](http://disneystore.com); [disneystore.co.uk](http://disneystore.co.uk); [gap.com](http://gap.com); [pvh.com](http://pvh.com); [sears.com](http://sears.com); [bbc.co.uk](http://bbc.co.uk); [economist.com](http://economist.com); [youtube.com](http://youtube.com); [vimeo.com](http://vimeo.com)

before firefighters were able to extinguish it. The windows of the factory were also found to be secured with iron grilles, blocking out alternative escapes.

Latter investigations revealed that managers and security guards of the factory ordered employees to ignore the fire and keep working. The decision would have decisively contributed to the high number of deaths, as a faster reaction would have allowed workers to evacuate the building. Some workers state that they had no other option but to jump from high floors. That was the case of a 20-year-old woman who claimed to be filling an order for Wal-Mart on the day of the blaze.

Several protests of Bangladesh workers calling for better workplace safety followed the incident, especially in the place of the fire. In response, two hundred clothing factories remained closed for three days in respect to the victims, as well as in the avoidance of violence (destruction of assets and equipments).

The Tazreen Fashion factory was initially open in 2009 and employed around 1,600 local workers in the production of t-shirts, polo shirts and jackets for several international fashion brands. The factory composed the “Tuba Group”, a major exporter of garments to the U.S.A and Europe. Previous to the 2012 fire, safety issues had already caught the attention of supply chain partners. The company had been flagged in 2011 with the orange grade (low rate) by Wal-Mart ethical sourcing committee, for violations in working conditions and practices of high risk for the health and safety of employees. Despite that, the company (Wal-Mart) is accused of maintaining its commercial relations with the supplier, configuring a critical fail on its CSR controls and SSCM practices. In response to the fire, the company ended its relations to the Tuba Group and, as a partial compensation donated around US\$ 1,600,000 to the Institute for Sustainable Communities. According to the institute, the amount would be invested in the creation of the Environmental, Health and Safety Academy in Bangladesh. Other companies were accused of neglecting the practices of the supplier. Among them, global brands like Zara, Disney, GAP, PVH and Sears were also held responsible for the tragedy.

In May 2013 the companies whose clothings were manufactured in the burned factory organized a meeting in Geneva (Switzerland) to discuss the payment of compensations. The tragedy led the U.S. government to suspend the Generalized System of Preferences (GPS)



which awarded Bangladesh with duty free benefits in accessing the American market. More than the death and injuries of hundreds of employees, the loss of the benefit is claimed to have decisively impacted the authorities of the country to improve fiscalization.

The event led to diverse reforms in the law for workers' right and safety in Bangladesh. About one year after the fire, the magistrate in charge of the case accepted accusations against 13 people accounting for homicide and negligence. Among the suited were the owners of the building, the managers of the factory, as well as its security guards accused of preventing workers from escaping. That was the first time in the History of Bangladesh that formal accusations were placed against the owners of a garment factory where employees have died. That was perceived by the international media as a powerful symbolic act in the establishment of safer working conditions for employees in underdeveloped countries.

NGO's have also closely observed the developments of the case. The Clean Clothes Campaign (CCC) has been particularly active on that sense, specially charging providences around the compensation to the victims. Accordingly, one year after the fire, only C&A, Karl Rieker, El Corte Ingles and Li&Fung had signaled their intention to develop a compensating framework. The NGO states that among the clients of the Tazreen Fashion factory were: C&A, Delta Apparel (USA), Dickies (USA), Disney (USA), Edinburgh Woollen Mill (UK), El Corte Ingles (Spain), Enyce (USA), Karl Rieker (Germany), KiK (Germany), Li&Fung (China), Piazza Italia (Italy), Sears (USA), Teddy Smith (France), and Wal-Mart (USA). The investigations and the newspapers also linked other international brands to the supplier such as GAP, Inditex (Zara) and PVH.

- Source Company (ies): Small Bangladesian sweatshop factory with no reputational capital
- Supply Chain Partner(s) identified: Inditex (Zara's parent company), Wal-Mart, Disney, GAP, PVH and Sears

### 5.1.8. Case 8 – Child Labor <sup>9</sup>

In January, 2013 an internal audit conducted by Apple revealed several cases of child labor within its supply chain. According to the investigation conducted by the company itself and by The Fair Labor Association (hired as an independent auditor of Apple's suppliers), underage work was found in about 5% of the factories supplying to the company. 106 children had been employed in 11 different factories, including a Chinese supplier that all alone employed 74 underage workers (below the age of 16, the minimum age allowed for workers in China). This specific supplier, the Guangdong Real Faith Pingzhou Electronics, a circuit board component maker, was then axed by Apple because of its operating practices around child labor. Bonded labor in turn was found in 8% of the audited factories.

The numbers were presented in Apple's annual supplier report, which monitors around 400 suppliers of the company. Accordingly, the findings are the result of its policy towards the expansion of audits of its supply chain. As stated, in comparison to the previous year, the company carried 72% more audits in 2012. However, Apple recognized that 158 of its suppliers still do not audit their own suppliers.

The initiative follows the disclosure of serial suicides and riots in the factories of Foxconn, one of the biggest suppliers of the company, beyond lethal explosions occurred in the factories of other suppliers. Accordingly, some of the underage workers were hired through the use of falsified identities. The code of conduct of the company states that Apple shall not employ any worker under the age of 15 or under the age regulated in the country in question. Other abuses were also reported, such as the enforcement of mandatory pregnancy tests to female workers, the confiscation of workers' wages by recruitment agencies, wages blocked as punishment, beyond young workers being responsible for lifting heavy goods in the production process. Apple said that during the process of its internal auditing the company took measures to protect

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<sup>9</sup> Sources: [lemonde.fr](http://lemonde.fr); [theguardian.com](http://theguardian.com); [nytimes.com](http://nytimes.com); [economist.com](http://economist.com); [dailymail.co.uk](http://dailymail.co.uk); [veja.abril.com.br](http://veja.abril.com.br); [estadão.com.br](http://estadão.com.br); [apple.com](http://apple.com); [fairlabor.org](http://fairlabor.org); [gd-realfait.com](http://gd-realfait.com); [dailymotion.com](http://dailymotion.com); [youtube.com](http://youtube.com)

whistleblowers, making more than 8,000 personal calls to interviewed employees to check if they had suffered any intimidation from superiors during the process.

Further investigations concluded that a total of 90 facilities that supplied components to Apple commonly deducted wages to punish employees for eventual production failures of undesired behaviors. Mandatory pregnancy tests were conducted in 34 working sites, while illegal or irregular health tests for diseases (e.g. hepatitis B) were routinely conducted in 25 facilities. Moreover, in 4 suppliers the investigations found proofs that payroll records had been falsified in order to hide information from auditors. Other infractions practice discovered relates to the intentional dump of waste oil into restrooms receptacle, the incorrect storing or handling of chemicals, fails in the labeling of hazardous waste or materials.

Apple's annual supplier report also stated that most of the children found to be working on the company's suppliers were recruited by the Shenzhen Quanshun Human Resources, one of the largest labor agencies in China. According to the company, the agency acted together with the families of the children falsifying their identity documents. One year before the disclosure of the report, Apple's chief executive, Tim Cook, previously responsible for managing Apple's suppliers, stated that the use of child labor was "abhorrent" and extremely rare in Apple's supply chains.

In response to the disclosure, Apple's senior vice president of operations recognized that potential harm the episode could cause to the company's image. Accordingly "underage labor is a subject no company wants to be associated with". The executive also expressed his opinion around the reasons why the problem is not properly treated. In that sense he states that "I don't believe it gets the attention it deserves, and as a result it doesn't get fixed like it should". The annual report of the company also stated its concern around child work. The document stated that "our approach to underage labor is clear: we don't tolerate it and we're working to eradicate it from our industry... when we discover suppliers with underage labor or find out about historical cases... we demand immediate corrective action."

In the attempt to partially compensate employees, Apple ordered its suppliers to fully reimburse eventual excessive recruitment fees charged from employees (anything higher than one month's wage). According to the company that action resulted in US\$ 6.4 million handed back to

contracted workers in 2012. Suppliers found to be employing children were also required to immediately redirect them towards schools, fully financing their educations, beyond keep their current payments without demanding them to work.

- Source Company (ies): Multiple Chinese Suppliers
- Supply Chain Partner(s) identified: Apple

#### 5.1.9. Case 9 – Zara Argentina <sup>10</sup>

In March 2013 the Argentinian NGO (non-governmental organization) “La Alameda” and the Human Rights Secretariat of the Confederation General del Trabajo (Argentina’s largest trade union) placed several accusations of slavery against the Spanish brand Zara. Accordingly, the company supplied significant part of the clothes it sold in the country from sweatshop factories claimed to keep foreigner workers in degrading conditions. That was the second major accusation of slave work in South America, following the lawsuits faced by the company due to the similar case in Brazil, two years earlier.

As shown by the two entities, beyond the use of child labor, Zara’s suppliers forced Bolivian employees (who counted on no official documents) to work up to 16-hours a day without breaks. Moreover, the NGO also accused the clandestine factories to in jail the workers, not allowing them to freely leave the factory. These extreme (and criminal) measures would be motivated by the increasing demand of the fashion industry for fast, low cost and volumous production.

The criminal charges were based on the recordings of hidden cameras that showed employees sleeping in bunk beds by the side of the machines they operated, from 7 a.m. to 11 p.m. from Monday to Friday, and until 12 a.m. on Saturdays. The images also showed electric cables hanging precariously, creating the risk of fire. Based on this, the three sweatshops were shut

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<sup>10</sup> Sources: [lemonde.fr](http://lemonde.fr); [theguardian.com](http://theguardian.com); [nytimes.com](http://nytimes.com); [laalameda.wordpress.com](http://laalameda.wordpress.com); [ctanacional.org](http://ctanacional.org); [economist.com](http://economist.com); [equaltimes.org](http://equaltimes.org); [youtube.com](http://youtube.com); [vogue.co.uk](http://vogue.co.uk); [fashion.telegraph.co.uk](http://fashion.telegraph.co.uk); [inditex.com](http://inditex.com); [cleanclothes.org](http://cleanclothes.org); [dailymotion.com](http://dailymotion.com)

down by the local government as they were not registered and posed health and safety risk to workers.

As revealed by investigations conducted by the Argentinian government, the clandestine factories were based on the outskirts of Buenos Aires or in areas normally visited by tourists, as they naturally housed a large number of immigrants. The workers were attracted from their original countries with the promise of wages in U.S. dollars based on an eight-hour working day. The task of bringing people from Bolivia was conducted by what newspapers call “human traffickers”. This same system of trafficking and slavery has been denounced in the so-called maquilas in Mexico, in Camorra sweatshops in Italy and in the Rana Plaza collapse in Bangladesh.

According to the Argentinian law, outsourcers are responsible for the working conditions in work places producing their goods, being criminally liable. The public lawsuit against Zara is registered under the number 3161/2013 at the 7<sup>th</sup> Federal Argentinian Court, with the company holding accusations of servitude, restriction of freedom, violation of home working legislation and profiting from the work of undocumented workers.

Through several media channels, the company has argued that no violations were detected on the various internal audits conducted. The company released an official statement to the press on which it claimed: “We are surprised by the allegations being made by La Alameda. Based on the limited information we have received so far, the workshops in question do not appear to have any relationship with our approved suppliers in Argentina.” “Inditex has a zero tolerance approach to any infringement of labor regulations, and our Code of Conduct requires all suppliers to comply fully with all local laws. Our 60 suppliers in Argentina have been regularly audited, with more than 300 audits carried out by Inditex in the last two years.”

The accusations, however, have been widely discussed in social networks and traditional press. In allusion to the poor working conditions provided to workers and in addition to the accusations of similar conduct in sweatshop factories in São Paulo Brazil, the case was tagged in international media as “esclaviZara”. The conducts of the company were also largely discussed in the fashion specialized press in magazines such as Vogue. Accordingly, the three factories provided clothes to Zara Man, also sold in British Stores. As the company counts with

famous clients in the United Kingdom, (e.g. Princess Kate Middleton and her sister Pippa; Samantha Cameron - Prime Minister James Cameron's wife) the case strongly reverberated in the country.

Beyond the fast-fashion industry pressure for cheap clothes, the practices of the company in Argentina are also claimed to be motivated by the restrictions regulated by local government, which include extreme tightening economic controls. The unwelcoming environment would force companies to seek to maximize its profits through severe working enforcements, exposing employees to long and exhausting working hours. In response to the conditions several fashion brands have left the country, including Emporio Armani, Yves Saint Laurent, Polo Ralph Lauren and Louis Vuitton

Zara is currently the biggest European fashion brand counting on more than 1,500 stores in 78 countries. The company was originally founded by Rosalia Mera Goyenechea and Amâncio Ortega, one of the richest men of the world, holding an estimated fortune of 38 bi pounds. Around 50% of its production is concentrated in Europe, 34% in Asia and around 16% spread through Brazil, Argentina, Mexico and Kuwait.

- Source Company (ies): Three small Argentinian sweatshop factories with no reputational capital;
- Supply Chain Partner(s) identified: Inditex (Zara's parent company)

#### 5.1.10.Case 10 – Rana Plaza <sup>11</sup>

In April 2013, an eight-story commercial building came to ground in the city of Savar Upazila (Dhaka district), Bangladesh, due to serious structural failures. The incident that resulted in the

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<sup>11</sup> Sources: lemonde.fr; theguardian.com; nytimes.com; lopinion.fr; lefigaro.fr; corriere.it; elpais.com; estadão.com.br; time.com; veja.abril.com.br; economist.com; dailymotion.com; youtube.com; tv5monde.com; cnn.com; bbc.com ; inditex.com; cleanclothes.org; gap.com; primark.com; next.co.uk; abercrombie.com; eu.abercrombie.com; carrefour.fr; esprit.com; hm.com; catofashions.com; tjx.com; pvh.com; target.com; walmart.com; marksandspencer.fr; marksandspencer.com; joefresh.com; kohls.com

death of more than 1,120 people became known as the Rana Plaza collapse and is considered the deadliest garment-factory tragedy of all times, as well as the worst accidental structural failure in modern history. Due to the severity of the damages, the difficulties of access and the consequences of the disasters to the surroundings of the Rana Plaza, the rescue activities and the search for dead lasted twenty days. By the time, around 5,000 workers were employed on several garment factories, a bank and other sorts of shops. At the moment of the incident around 3,100 employees were inside the construction. The tragedy also caused more than 2,500 workers to be seriously injured.

One day before the collapse, a television broadcast recorded footage showing large structural failures in the building. After the initial cracks were discovered, the bank and the shops situated on the lower floors immediately ended up their operations and evacuated the place. Despite the comproved weak structural situation, in the same day Sohel Rana, owner of the Rana Plaza, stated to the media that the place was safe and presented absolutely no risk to workers. In order to meet production deadlines the managers of several sweatshops that supplied clothes for international brands decided to keep the production on the building. According to latter investigations, they indiscriminately threatened to withhold a full month's pay of employees who refused to keep working. By consciously ignoring the warnings, the decision of the sweatshop factories exposed thousands of workers to the death risk.

The Rana Plaza building ended up collapsing in the next day, during the rush hours of the morning. Local authorities stated that one of the main reasons for the collapse is that the upper four floors of the building had been built without a permit. The architect responsible for the construction added that the building was projected to house shops and offices, but not factories. The structure of the building would not be strong enough to bear with the weight and the vibration of heavy machines.

Clients of the Rana Plaza sweatshops were initially identified by pieces of clothes (mainly labels) containing their brands in the site. International brands such as GAP, Primark, Next, Abercrombie and Fitch, Carrefour, Esprit, H&M, Cato, TJX, PVH (Calvin Klein and Tommy Hilfiger), Target, Wal-Mart, JC Penney, Marks & Spencer, Joe Fresh and Kohl's were claimed to have outsourced part of their production to the Rana Plaza factories. Days after the tragedy, many of these brands denied to be clients of the sweatshops, as in many cases the contracts

among buyers and suppliers were not formally settled. Instead, large firms used the services of the factories, even though they were clandestine. As the investigations revealed further evidences around the Rana Plaza supply chain, the links between buyers and suppliers were more clearly identified (beyond labels containing brands).

The incident received a massive coverage of the media. Beyond constantly providing live news from the tragedy site, broadcast companies such as CNN (U.S.A.) , BBC (United Kingdom) and TV5 Monde (France) promoted several debates on which academics, executives and authorities discussed not only the physical causes of the tragedy, but the corporate responsibility that lied on firms within the fashion business. As the death toll was updated and protests around the globe emerged, the low-cost / fast fashion model was frequently questioned for its practices, and the critics to fashion companies became increasingly harder.

From time to time companies were labeled as unethical, socially irresponsible or simply guilty for the death of the workers. Traditional written media such as newspapers (e.g. The New York Times – U.S.A. ; The Guardian – United Kingdom; Le Monde – France; L’Opinion – France; Le Figaro – France; Corriere della Sera – Italy; El Pais- Spain; O Estado de São Paulo – Brazil) and magazines (e.g. Times – U.S.A.; The Economist - United Kingdom; Veja – Brazil) also intensively covered the tragedy. Most of the critics lied on the idea that, in order to meet consumers’ demands for accessible prices, firms searched for low cost suppliers. By doing that they would have neglected the ways through which suppliers operate. The maintenance of a safe environment that could have avoided the death of workers would impact production costs.

Fast fashion and low-cost clothing companies were claimed to be also responsible for the tragedy for not auditing or controlling the working conditions provided by its suppliers to local workers. In that sense, they are considered to have failed in implementing CSR policies in the supply chains they are inserted in, not operating under a perceivable SSCM. Beyond that, the short production deadlines imposed to suppliers would be also considered partially responsible for the sweatshops decision of not interrupting the production on the building.

Beyond the damage to their corporate image, companies were pressured to financially compensate the victims. In that sense, the non-governmental organization Clean Clothes Campaign (CCC) played a major role as it closely followed the developments of judiciary trials,



as well as the creation of a fund intended to provide compensation to the victims (the Rana Plaza Donors Trust Fund). Almost two years after the incident, on June, 2015 the NGO announced that the fund had finally met its initial target of raising US\$ 30 million from evolved companies.

- Source Company (ies): Small sweatshop factories in Bangladesh with no reputational capital;
- Supply Chain Partner(s) identified: GAP, Primark, Next, Abercrombie and Fitch, Carrefour, Esprit, H&M, Cato, TJX, PVH (Calvin Klein and Tommy Hilfiger), Target, Wal-Mart, JC Penney, Marks & Spencer, Joe Fresh and Kohl's.

#### 5.1.11.Case 11 – Pegatron <sup>12</sup>

After the accusations of extremely poor working conditions held on the Foxconn factory, one of the most important suppliers of Apple by the time, part of the production of iPads and iPhones was moved away by the company, due to the hard negative publicity around the case. Despite the redesign articulated by Apple on its Chinese supply chain, the company was once more accused of supplying from a Chinese firm that kept more than 70.000 employees in conditions arguably even worse than those found on the Foxconn factory.

An investigation conducted by the broadcast channel BBC in 2014 exposed the severe working condition to which Chinese workers were exposed in a plant mostly dedicated to the production of Apple products (iPhone 6). Accordingly, employees were forced to work until eighteen days without a day off. Beyond that, workers accomplished 16 hour shifts daily and had to sleep in overcrowded dormitory rooms. Underage workers were also found in the company. Exhausted workers were filmed sleeping during work, as they had been exposed to extremely long journeys. Workers reported that they simply were not able to sleep during the night due to the

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<sup>12</sup> Sources: [lemonde.fr](http://lemonde.fr); [theguardian.com](http://theguardian.com); [nytimes.com](http://nytimes.com); [lopinion.fr](http://lopinion.fr); [lefigaro.fr](http://lefigaro.fr); [dailymail.co.uk](http://dailymail.co.uk); [time.com](http://time.com); [veja.abril.com.br](http://veja.abril.com.br); [economist.com](http://economist.com); [dailymotion.com](http://dailymotion.com); [youtube.com](http://youtube.com); [apple.com](http://apple.com); [pegatroncorp.com](http://pegatroncorp.com); [bbc.co.uk](http://bbc.co.uk); [eiccoalition.org](http://eiccoalition.org); [chinalaborwatch.org](http://chinalaborwatch.org)

noisy of the factory, the full rooms and the stress they had been exposed during the working hours.

The supplier in question is the Taiwan based company, Pegatron. Beyond the manufacturing of electronics, Pegatron also operates on the design, development and production of computer peripherals and components. Its primary products include netbooks, notebooks and desktop computers, game consoles, motherboards, video cards, LCD televisions, handheld devices, cable modems, set-top boxes, and smartphones. The company has manufacturing plants in Taiwan, mainland China, Czech Republic and Mexico and keeps costumer service centers in the United States and Japan. Pegatron employees around 100,000 workers around the world.

In response to its western clients pressure, in June 2008 the company developed what it called a Pure CSR system (“P” from Pegatron, “u” from Unihan; “re” from reduce, reuse, recycle, recovery, replace and repair) and became a member of the EICC (Electronic Industry Citizenship Coalition), a group created within the electronic industry that presumably incentives the adoption of a rigid Code of Conduct around the maintenance of positive working conditions, the respect to the dignity of employees and the development of environmentally responsible practices through their supply chains. The measures intended to meet international standards such as the ISO 14001 for environmental management system, the QC 080000 for the management of hazardous substances and the OHSAS 18001 around occupational Health and Safety Management.

The company received a great part of the relocated production of Foxconn and is accused to have broken more than 80 Chinese labor laws, among which employing under age workers, discriminating ethnic minorities, discriminating elderly workers (older than 35 years old) and even short people, beyond forcing pregnant women to work on severe conditions on 11-hours shifts, six days a week (Chinese laws do not allow companies to demand pregnant women to work more than 8 hours a day).

The accusations mainly come from China Labor Watch (CLW), an American organization for human rights. According to the organization most of the staff working in Pegatron was up to 66 to 69 weekly working hours (around 11 to 11,5 hours a day, six days a week), above Chinese

legal weekly working time limit of 49 hours a week, and above Apples corporate standards, limited to 60 hours a week.

Once Apple was faced with the accusation, it admitted the abuses occurred on its supplier (Pegatron) even though the company affirmed to audit Pegatron's factories since 2007 (15 audits in the period). Under accusations of breaking its promises to develop work force conditions in China after the Foxconn case, the company stated that it would force Pegatron to compensate workers for lost wages. The company also restated its commitment to the improvement of workforce conditions through all the supply chains on which it is involved. Apple also argued to be surprised to hear about the weekly work time abuses occurred on the factories as, according to the company, its latest survey on employees working on iPhones and iPads at Pegatron pointed to an average of 46 hours a week per worker. Pegatron however showed to held a more defensive position, denying most of the accusations while just compromising to investigate others.

- Source Company (ies): Pegatron
- Supply Chain Partner(s) identified: Apple

#### **5.1.12.Case 12 – Licence to Kill <sup>13</sup>**

Through a 25-page document entitled “A License to Kill”, in October, 2013 the environmentalist group Greenpeace accused several companies of being directly responsible for the loss of tigers and their habitats in Indonesia. Accordingly, the Singapore-based palm oil traders, Wilmar International and Golden Agri Resources continuously originated palm oil and other sub-products from clandestine local supplies. Among other environmentally-destructive practices, these small producers are accused of conducting illegal land clearances that, sharply contributing to the tiger extinction.

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<sup>13</sup> Sources: [lemonde.fr](http://lemonde.fr); [theguardian.com](http://theguardian.com); [nytimes.com](http://nytimes.com); [dailymail.co.uk](http://dailymail.co.uk); [time.com](http://time.com); [economist.com](http://economist.com); [greenpeace.org](http://greenpeace.org); [iucn.org](http://iucn.org); [worldwildlife.org](http://worldwildlife.org); [wwf.org](http://wwf.org); [rspo.org](http://rspo.org); [wilmar-international.com](http://wilmar-international.com); [dailymotion.com](http://dailymotion.com); [youtube.com](http://youtube.com)

The environmental impact would be directly related to the extension of the 400 remaining Sumatran tigers still alive. The animal is currently classified by the International Union for Conservation of Nature (IUCN) as critically endangered in its red list of threatened species. According to the World Wildlife Fund for Nature (WWF) the 400 remaining tigers occupy less than 7% of their former range. In the report Colgate-Palmolive, Procter & Gamble, Mondelez International and Unilever were identified as some of the biggest clients of the palm oil trading companies. According to the relatory produced by the Greenpeace, the expansion of the palm oil along with pulpwood plantations would be responsible for nearly two-thirds of the destruction of the natural habitat of the Sumatran tigers from 2009 to 2011.

By the time, the spokesman of Wilmar stated that the company was deeply disappointed with the publication of the report by the environmentalist group, despite the engagement and genuine efforts of the company in treating the issue. Moreover, the company partially recognized its responsibilities stating that they were currently revising their business strategies and practices with the help of supply chain experts.

In response, the head of the Indonesian Forest Campaign for Greenpeace International said the group recognized the efforts of the company, but that they were not enough though. Greenpeace demanded a strong commitment from the company that it would immediately stop buying palm oil from unsuitable third party suppliers. Still accordingly, Wilmar International would have the power to transform the industry, as it is the biggest player in the palm oil industry. The company accounts for 36% of global palm oil market share. Together with the other companies listed on the document the Wilmar International is a current member of the Roundtable for Sustainable Palm Oil (RSPO), a global industry organization dedicated to the implementation and control of an efficient and sustainable palm oil production. Hard critics have been addressed to the RSPO tough as they are claimed to hold lax rules and actions against violators.

- Source Company (ies): Multiple palm oil suppliers in Indonesia;
- Supply Chain Partner(s) identified: Golden Agri Resources, Wilmar and Unilever.

### 5.1.13.Case 13 – Palm Oil – P&G <sup>14</sup>

Despite being a member of the Roundtable on Sustainable Palm Oil (RSPO) – a certification created in 2004 to promote the production of food and personal products without compromising tropical forests - Procter & Gamble was accused in early 2014 of not actually promoting the sustainable usage of the raw material. After a one-year investigation, the Greenpeace publicly presented a report on which it accused the company of contributing to the destruction of rain forests and peatlands by sourcing the product from suppliers that do not respect the agreed standards. The company uses palm oil as part of the formula of global leader products such as Head & Shoulders shampoo and Gillette shaving gel.

The case is similar to other accusations promoted by the environmentalist groups that had previously targeted other global companies. According to the Greenpeace, thanks to “opaque supply chains” the RSPO was not being able to avoid the prejudices to the forests, as several of its members (including P&G) were still involved in forest cleaning, indicating weak enforcements and standards. Still accordingly, the RSPO would simply be a tool used to “green washing” operations, employed by companies that actually seek to expand their plantations into the forest.

The environmental group also launched a world-wide petition (signed by more than 300.000 consumers), calling the company to adequate its practices to environmental standards. Once more the strategy of the group was to focus on large firms as a way to call the attention of the media and the general public. Moreover, Greenpeace stated that by pressuring well-known companies to show leadership in the cleaning up of supply chains it ultimately expected other global companies to follow the example. On the same report, Greenpeace classified as non-forest-friendly the American Companies Pepsi Co, Johnson & Johnson and Colgate-Palmolive. In the occasion, Procter & Gamble and Johnson & Johnson both recognized the importance of sustainable supply chains and revealed plans to improve their positions regarding the issue.

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<sup>14</sup> Sources: [lemonde.fr](http://lemonde.fr); [theguardian.com](http://theguardian.com); [nytimes.com](http://nytimes.com); [usatoday.com](http://usatoday.com); [time.com](http://time.com); [dailymail.co.uk](http://dailymail.co.uk); [greenpeace.org](http://greenpeace.org); [rspo.org](http://rspo.org); [ecowatch.com](http://ecowatch.com); [sustainablebrands.com](http://sustainablebrands.com); [eco-business.com](http://eco-business.com); [cbsnews.com](http://cbsnews.com); [pg.com](http://pg.com); [pepsico.com](http://pepsico.com); [jnj.com](http://jnj.com); [colgatepalmolive.com](http://colgatepalmolive.com); [wilmar-international.com](http://wilmar-international.com); [dailymotion.com](http://dailymotion.com); [youtube.com](http://youtube.com)

Procter & Gamble is 178 years old company headquartered in Ohio (U.S.A.). The company counts on annual revenues around US\$ 83 billion, operating in the consumer-goods industry. The company concentrates its operations in five major sectors: Beauty Care; Baby, Feminine and Family Care; Fabric and Home Care; and Health and Grooming. Among its brands are Gillete, Head & Shoulders, Oral-B, Pantene, Pampers, Wella, Vicks, Ariel, Bounty paper towels, Charmin and Fusion. Procter & Gamble's operations are distributed in five Selling and Market Organizations (SMO): Asia; Europe; India, the Middle East and Africa; Latin America and North America. Beyond the environmental accusations, the company had previously faced other controversies, such as those placed by the European Commission for the establishment of a price-fixing cartel in Europe with Unilever. In the occasion both companies were fined in more than EUR 300 million all together. Pepsi Co, in turn, concentrates its operations in the manufacturing, marketing and distribution of beverages and grain based snack foods, being headquartered in Purchase, New York, U.S.A. The products of the company are sold in more than 200 countries. Among its most relevant brands are: Pepsi Cola, Lay's Potato Chips, Doritos Tortilla Chips, Quacker Foods and Snacks, Chips and Tropicana Beverages. The annual revenues of the company accounts for almost US\$ 70 billion.

The third company evolved in the case, Johnson & Johnson is a 129 years old American multinational company headquarted in New Jersey, U.S.A. The annual revenues of the company stand for more than US\$ 70 billion. The company operates in three main sectors: medical devices, consumer packaged goods and pharmaceuticals. Johnson & Johnson has plants in more than 50 different countries, with its products being sold in almost 180 countries. Among its most famous brands are: Band-Aid; Tylenol; Acuvue Contact Lenses; Clean & Clear; Neutrogena Skin and Johnson's Baby. Finally, Colgate-Palmolive is a 209 years old company headquartered in New York, U.S.A. The company counts on annual revenues of over US\$ 17 billion, concentrated on the production and distribution of three major segments of goods: household, health care and personal products. Colgate-Palmolive's portfolio includes world-wide known brands such as Protex, Palmolive, Ajax, Colgate, Dermassage, Dynamo, Elmex, Sanex among other.

The accusations are believed to have caused serious damage to the image of the evolved companies, as consumers and other stakeholders value the issue as a serious threat to rainforest,

global climates and the life of endangered animal species. On the other hand, companies such as Nestlé and Unilever, which had previously suffered similar accusations, were pointed as forest-friendly companies due to their efforts in solving the problems within their palm oil supply chains. In the same report, due to improved efforts, L’Oreal and Ferrero (producer of chocolates Ferrero Rocher and Nutella) were also considered forest-friendly companies.

- Source Company (ies): Multiple palm oil suppliers in Indonesia
- Supply Chain Partner(s) identified: Wilmar, Procter & Gamble; Pepsi Co; Johnson & Johnson; Colgate-Palmolive

#### 5.1.14. Case 14 – CP Foods <sup>15</sup>

After six months of investigation, the British newspaper The Guardian revealed the use of slavery in the production of the shrimp sold in some of the biggest retailing chains of the United States and Europe. The list included the top biggest global retailers Walmart, Carrefour, Costco and Tesco. Accordingly, the world’s biggest shrimp farmer, the Thailand based company Charoen Pokphand Foods (CP Foods), bought part of the inputs it used to feed its farmed shrimps from local suppliers that owned and/or operated boats with slaves.

According to the publication the slaved men were forced to work on the fishing boats under the threat of severe physical violence and received absolutely no payment over their work. They were also commercialized between boat owners, characterizing one of the most severe and prominent case of slavery in modern times. According to the testimony of men who escaped from such conditions, the slaved workers were up to 20-hours shifts under the enforced consumption of methamphetamines. Torture and beat were also regular. Executions in the boats were also reported to be frequent. Some of these men were kept in the sea for several years.

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<sup>15</sup> Sources: lemonde.fr; theguardian.com; nytimes.com; dailymail.co.uk; no-trafficking.org; ejfoundation.org; un-act.org; cpfworldwide.com; walmart.com; carrefour.fr; cotsco.com; tesco.com; idhsustainabletrade.com; dailymotion.com; youtube.com

The process through which some of these men were slaved was reported by fifteen workers from Cambodia and Burma. Accordingly they initially looked for brokers to find them jobs in Thailand and ended up being sold for around 250 pounds each. Thailand is considered the world's main source, destination or transition country for slavery, and believed to hold around half million people under slavery conditions.

Beyond selling its products to international supermarkets (ready-made meals, cooked and frozen shrimp), CP Foods operates also as a supplier of food manufacturers. The company operates on the supply of shrimp feed to other farmers under its own brand as well. The investigation also identified Aldi, Iceland, Co-operative and Morrison as clients of CP Foods.

In an official communication the company admitted the occurrence of slavery practices on its supply chain, pledging however not being able to have visibility of its proportion. Thailand is currently the world's biggest exporter of shrimps accounting by around 500.000 tons per year. CP foods stands for nearly 10% of the total exportations of the country with annual revenue around USD 33 billion.

The use of forced labor in the Thai shrimp industry is claimed to be mainly due to the rapid growth of the aquaculture that lead to a shortage of workers in the country. According to the non-governmental organization The Sustainable Trade Initiative, around 90% of the workforce employed on the industry is composed by migrant workers from Asian neighbors. Accordingly, they would be potentially more vulnerable to slavery than local workers, once normally they do not have the necessary documentation, a minimum amount of money that could guarantee their basic needs or even closer contacts in the country, like families or friends. Still according to the NGO, the practices of human trafficking and forced work in the shrimp industry have been known for a long time, the abuses are hard to be detected or proved, once they mostly occur in international waters, away from any monitoring or oversight. Due to all these conditions, the companies associated to the practices, as well as its supply chain partners, are very rarely identified.

The severe conditions on which workers are forced to work are believed to have caused thousands of deaths due to injuries and suicides, beyond physical and psychological traumas. The abuses would not be restricted to producers. Instead, the whole shrimp supply chain would



be connected to the practices, comprehending the activities of labor traders, trawlers, factories and retailers. The activities of such groups are developed in a context of widespread corruption and collusion among police officials, politicians, large companies, and boat owners, who in some scale, would all benefit from the trafficking of human beings.

The government of Thailand is accused of not properly addressing the issue, as it allows workers to remain unregistered. The cloudy situation between legality and illegality of workers would let them unprotected. The extreme human rights infractions in the shrimp industry are then claimed to be the result of weak labor laws, shortage of workforce and an increasing demand of western economies for cheap seafood. Several other organizations have already posed hard critics on the practices of the shrimp industry in Thailand (i.e. the UN Inter-Agency Project on Human Trafficking, The Environmental Justice Foundation). Despite that, the human rights abuses are still common in the country.

- Source Company (ies): CP Foods
- Supply Chain Partner(s) identified: Wal-Mart; Tesco; Cotsco; Morisson; Carrefour

#### **5.1.15.Case 15 – Volkswagen Fraud <sup>16</sup>**

Also known as Dieselgate, the Volkswagen environmental case emerged on September 2015 with the issuing of a notice of violation of the Clean Air Act directed to the German automaker by the United States Environmental Protection Agency (EPA). Accordingly, Volkswagen intentionally programmed its turbocharged direct injection diesel engines to cheat nitrogen oxide (NO<sub>x</sub>) tests conducted in the U.S.A., in a way that, despite (NO<sub>x</sub>) emissions during driving were up to 40 times higher than the necessary standards, due to a dishonest software

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<sup>16</sup> Sources: lemonde.fr; theguardian.com; nytimes.com; time.com; lefigaro.fr; lesechos.fr; lopinion.fr; dailymail.co.uk; bbc.co.uk; bloomberg.com; reuters.com; cnn.com; epa.gov; wvu.edu; popularmechanics.com; dailymotion.com; youtube.com; volkswagen.com; motorolasolutions.com; ibm.com; nokia.com; magma.fr; visteon.com; borgwarner.com; honeywell.com; Infineon.com; siemens.com; conti-online.com; sap.com; basf.com; microsoft.com; ballard.com; dassault.fr; plasticomnium.com; kumhotyre.co.uk; lg.com; tupy.com.br; marutisuzuki.com

programming they could only be identified through specialized emissions tests conducted in laboratories. Such procedure was classified as a defeat device prohibited by the Clean Air Act. Around 500,000 cars sold in the U.S.A. and eleven million cars commercialized worldwide are estimated to count on the cheating programming.

The investigations on the case were initiated in 2009. By the time, in order to meet the NO<sub>x</sub> emission patterns of the American government, Volkswagen initiated the production of the EA 189 engines, a class of diesel engines that did not use urea in the water mixture. The measure was argued to minimize the harming effects of the gases. The low emission levels of the engines called the attention of an independent group, the International Council on Clean Transportation (ICCT). In the attempt to comprehend the technology and show how diesel motors could be integrated in an environmentally friendly strategy, along with the West Virginia University the group initiated a series of tests. Three models were chosen for the analysis: a VW Jetta, manufactured in 2012; a VW Passat, manufactured in 2013 and a BMW X5. Through a 4.000 km of road tests between the states of California and Washington, major discrepancies between the collected data and those of the tests were observed. In 2014 the EPA and the Californian Emission Conseil (CARB) are alerted on the results.

Initially Volkswagen questioned the validity of the study, accounting the results to methodological failures. The company decided, however, to make a “white recall” (i.e. a recall based on a situation that do not present immediate risks to consumers and operationalized spontaneously). On the occasion, 500 thousand cars in the U.S.A. were revised, but the emission issue remained unsolved. Both the EPA and the CARB kept on conducting studies on the different measures. In 2015 the EPA finally discovered a software installed in the electronic central of the Volkswagen cars, cheating the test emissions. Accordingly, the software operated through an extremely complex mechanism based on the identification of the positions of the wheels, the speed of conduction, the time duration since the engine had been started, the barometric pression, among other. Based on all these measures, the software adjusted the emissions to adequate standards. The software was originally developed by BOSCH, but the company fully rejected any participation on the cheating use of the program. As discussed by sources of the company, the responsibility around the applications of the product relayed on Volkswagen, as it was not originally projected with the intention to fraud emission tests. Some

days later the company admitted that 11 million cars sold around the world were affected by the fraud. The companies announce a major recall of 8.5 million units to be conducted in Europe.

In face of the results of different studies, the government of the U.S.A. criminally sues Volkswagen for environmental fraud. The accusations initially state that five models – VW Jetta, VW Beetle, VW Golf, VW Passat and Audi A3 manufactured between 2009 and 2015 and comprehending 482 thousand vehicles sold in the country were illegally altered. As a result of, the environmental practices of Volkswagen were investigated in multiple countries. The pressure over the company drove its CEO Martin Winterkorn to resign, beyond the suspension of several other top executives of the company (e.g. Heinz-Jakob Neusser, head of brand development; Ulrich Hackenberg, head of Audi research and development; Wolfgang Hatz, head of Porsche research and development). As part of a recall campaign, the company announced its plans to spend US\$ 7.3 billion on rectifying the emission issues refitting the affected vehicles, beyond several other provisions to prosecutions in march on the U.S.A. and Europe.

The Volkswagen episode received a widespread negative media exposure. Reuters for instance, stated that more than an isolated firm or industry crisis, the case represented a bigger threat to the German economy. Deutsche Welle, one of the most respected German public broadcasters, claimed that a “lawsuit tsunami” was in the way of the company, and that the case would probably have severe consequences to the country’s psyche and to the “Made in Germany” brand. Popular Mechanics, a specialized publication, stated that the case was much worse than any other recall previously experienced by the automobile industry, as Volkswagen had engaged in a clear pattern of cynical deceit.

The Volkswagen case triggered a hard reaction from investors, with the company losing almost a third of its market value in the subsequent days to the announcement. Despite the claims of major car manufactures reaffirming that their vehicles compliance with the regulations of all the markets in which they operate (e.g. Toyota, GM, PSA Peugeot Citroen, Renault, Daimler - Mercedes Benz - and Honda), the consequences were also felt by the whole car industry, especially those that hold diesel engines as major products on their portfolios. The reactions to the case were not limited to the car industry tough. German Chancellor, Angela Merkel declared

she demanded complete transparency on the issue as it should be clarified and solved as soon as possible.

- Source Company (ies): Volkswagen
- Supply Chain Partner(s) identified: Motorola Solutions, IBM, Nokia, Magma, Visteon, BorgWarner, Honeywell, Infineon, Siemens, Continental, SAP, BASF, Microsoft, Ballard, Dassault, Plastic Omnium, Kumho Tyres, LG Electronics, Tupy, S.A. and Maruti

## 5.2. Results of the Event Study

As previously discussed, the 15 cases described above generated 82 supply chain partners that were assessed by individual event studies in this research, for 7 different event windows each. The results suggest that, in general, investors do not react to negative social / environmental events in supply chains, as significant negative CARs were not detected in 74 companies. In other words, the market value of supply chain partners was not penalized by the announcement of negative events of social / environmental practices held either by upstream or downstream chain partners.

This chapter is dedicated to present the main results for the performed event studies. Tables 4 to 10 bring the CAR results for each of the seven delimited event windows followed by a summary of such findings in Table 11.

The first analyzed event window (D-1, D0), displayed in Table 4, shows that, among the 82 firms studied, 80 did not demonstrate significant negative returns at 99% or 95% significance levels. Considering that at the significance levels adopted the statistic test is expected to present 1% and 5% probability of type I error – “Rejecting the null hypothesis of no abnormal performance when it is true” (BROWN; WARNER 1980, pp. 206), in the overall analysis of the whole sample the fact that Siemens in Case 15 – Volkswagen Fraud and Apple in Case 8 – Child Labor presented significantly negative returns does not allow the conclusion that negative reactions from investors had been detected in event window 1.

**Table 4: CAR Results for Event Window 1 (-1 to 0)**

<b>Case No.</b>	<b>Case</b>	<b>Company</b>	<b>CAR</b>	<b>t-stat</b>	
Case 1	Palm Oil – Unilever	Wilmar	0,19%	0,05	
Case 1	Palm Oil – Unilever	Unilever	0,09%	0,05	
Case 2	Palm Oil – Nestlé	Wilmar	-1,71%	-0,81	
Case 2	Palm Oil – Nestlé	Nestlé	0,47%	0,28	
Case 3	BP Oilspill	Andarko	-1,43%	-0,68	
Case 3	BP Oilspill	Transocean	4,23%	2,12	
Case 3	BP Oilspill	Halliburton	3,17%	1,51	
Case 3	BP Oilspill	National Oilwell Varco	1,63%	0,80	
Case 3	BP Oilspill	Cameron International	0,65%	0,34	
Case 3	BP Oilspill	Weatherford	2,77%	1,03	
Case 4	Zara Brazil	Inditex-Zara	1,27%	0,67	
Case 5	Foxconn	Apple	-0,99%	-0,65	
Case 5	Foxconn	Cisco	-0,84%	-0,40	
Case 5	Foxconn	Amazon	-1,20%	-0,44	
Case 5	Foxconn	Acer	-3,86%	-1,06	
Case 5	Foxconn	Sony	0,95%	0,40	
Case 5	Foxconn	Nokia	0,67%	0,18	
Case 5	Foxconn	Motorola	-1,03%	-0,66	
Case 5	Foxconn	Toshiba	0,48%	0,16	
Case 5	Foxconn	Nintendo	-1,32%	-0,38	
Case 5	Foxconn	Microsoft	-1,17%	-0,97	
Case 5	Foxconn	Google	-0,60%	-0,29	
Case 5	Foxconn	HP	0,11%	0,04	
Case 6	Junking the Jungle	KFC	-1,33%	-0,81	
Case 7	Bangladesh Fire	Zara	-0,58%	-0,25	
Case 7	Bangladesh Fire	Wal-Mart	0,94%	0,66	
Case 7	Bangladesh Fire	Disney	-0,44%	-0,35	
Case 7	Bangladesh Fire	GAP	-0,28%	-0,12	
Case 7	Bangladesh Fire	PVH	-0,88%	-0,30	
Case 7	Bangladesh Fire	Sears	-4,40%	-0,89	
Case 8	Child Labor	Apple	-14,37%	-7,09	*
Case 9	Zara Argentina	Inditex-Zara	1,24%	0,55	
Case 10	Rana Plaza	GAP	-2,12%	-0,85	
Case 10	Rana Plaza	Primark	6,65%	5,59	
Case 10	Rana Plaza	Next	0,37%	0,25	
Case 10	Rana Plaza	Abercrombie & Fitch	-3,35%	-0,71	
Case 10	Rana Plaza	Carrefour	-0,09%	-0,04	
Case 10	Rana Plaza	Esprit	-0,16%	-0,03	
Case 10	Rana Plaza	H&M	0,78%	0,67	
Case 10	Rana Plaza	Cato	-1,87%	-0,80	
Case 10	Rana Plaza	TJX	-0,71%	-0,50	
Case 10	Rana Plaza	PVH	1,09%	0,37	

Case 10	Rana Plaza	Target	0,12%	0,09	
Case 10	Rana Plaza	Wal-Mart	0,25%	0,21	
Case 10	Rana Plaza	JC Peney	0,09%	0,02	
Case 10	Rana Plaza	Marks & Spencer	1,31%	0,80	
Case 10	Rana Plaza	Joe Fresh	0,19%	0,10	
Case 10	Rana Plaza	Kohl's	-0,29%	-0,14	
Case 11	Pegatron	Apple	2,90%	1,19	
Case 12	Licence to Kill	Golden Agri Resources	3,86%	1,77	
Case 12	Licence to Kill	Wilmar	1,25%	0,78	
Case 12	Licence to Kill	Unilever	-0,37%	-0,34	
Case 13	Palm Oil - P&G	Wilmar	3,31%	2,42	
Case 13	Palm Oil - P&G	Procter & Gamble	0,16%	0,14	
Case 13	Palm Oil - P&G	Pepsi Co	-0,07%	-0,07	
Case 13	Palm Oil - P&G	Johnson & Johnson	0,13%	0,15	
Case 13	Palm Oil - P&G	Colgate-Palmolive	0,20%	0,20	
Case 14	CP Foods	Wal Mart	-0,78%	-0,89	
Case 14	CP Foods	Tesco	1,73%	1,17	
Case 14	CP Foods	Cotsco	-1,11%	-0,90	
Case 14	CP Foods	Morisson	1,00%	0,44	
Case 14	CP Foods	Carrefour	0,45%	0,31	
Case 15	Volkswagen Fraud	Motorola Solutions	0,94%	0,62	
Case 15	Volkswagen Fraud	IBM	-0,67%	-0,56	
Case 15	Volkswagen Fraud	Nokia	0,34%	0,15	
Case 15	Volkswagen Fraud	Magma	0,37%	0,20	
Case 15	Volkswagen Fraud	Visteon	0,32%	0,23	
Case 15	Volkswagen Fraud	BorgWarner	-1,52%	-0,91	
Case 15	Volkswagen Fraud	Honeywell	-0,97%	-1,15	
Case 15	Volkswagen Fraud	Infineon	-1,72%	-0,93	
Case 15	Volkswagen Fraud	Siemens	-2,05%	-2,18	**
Case 15	Volkswagen Fraud	Continental	1,46%	0,95	
Case 15	Volkswagen Fraud	SAP	-0,11%	-0,10	
Case 15	Volkswagen Fraud	BASF	-1,34%	-1,47	
Case 15	Volkswagen Fraud	Microsoft	-0,25%	-0,14	
Case 15	Volkswagen Fraud	Ballard	-1,46%	-0,18	
Case 15	Volkswagen Fraud	Dassault	1,71%	0,99	
Case 15	Volkswagen Fraud	Plastic Omnium	0,28%	0,12	
Case 15	Volkswagen Fraud	Kumho Tyres	-0,70%	-0,27	
Case 15	Volkswagen Fraud	LG Eletronics	0,06%	0,02	
Case 15	Volkswagen Fraud	Tupy S.A.	1,01%	0,36	
Case 15	Volkswagen Fraud	Maruti	-0,17%	-0,11	

Notes:

\*  $p < 0.01$

\*\*  $p < 0.05$

In the second event window (D0, D1), none of the 82 firms yield negative returns at a 99% significance level, and 81 also did not find confirmation for negative abnormal returns at a 95%

significance level (Table 5). Similarly to the findings of event window 1, the results do not allow for the conclusion of negative reactions.

**Table 5: CAR Results for Event Window 2 (0 to 1)**

Case No.	Case	Company	CAR	t-stat	
Case 1	Palm Oil - Unilever	Wilmar	0,52%	0,13	
Case 1	Palm Oil - Unilever	Unilever	-0,39%	-0,20	
Case 2	Palm Oil - Nestlé	Wilmar	-1,20%	-0,58	
Case 2	Palm Oil - Nestlé	Nestlé	-1,15%	-0,67	
Case 3	BP Oilspill	Andarko	-2,18%	-1,04	
Case 3	BP Oilspill	Transocean	1,64%	0,82	
Case 3	BP Oilspill	Halliburton	4,28%	2,03	
Case 3	BP Oilspill	National Oilwell Varco	3,39%	1,66	
Case 3	BP Oilspill	Cameron International	0,23%	0,12	
Case 3	BP Oilspill	Weatherford	1,76%	0,65	
Case 4	Zara Brazil	Inditex-Zara	-0,19%	-0,10	
Case 5	Foxconn	Apple	-1,27%	-0,83	
Case 5	Foxconn	Cisco	0,76%	0,37	
Case 5	Foxconn	Amazon	-2,82%	-1,04	
Case 5	Foxconn	Acer	-1,54%	-0,42	
Case 5	Foxconn	Sony	-2,18%	-0,93	
Case 5	Foxconn	Nokia	-1,61%	-0,44	
Case 5	Foxconn	Motorola	-0,55%	-0,36	
Case 5	Foxconn	Toshiba	0,57%	0,19	
Case 5	Foxconn	Nintendo	-0,19%	-0,06	
Case 5	Foxconn	Microsoft	-0,16%	-0,13	
Case 5	Foxconn	Google	0,27%	0,13	
Case 5	Foxconn	HP	1,08%	0,38	
Case 6	Junking the Jungle	KFC	-1,71%	-1,03	
Case 7	Bangladesh Fire	Zara	-0,19%	-0,08	
Case 7	Bangladesh Fire	Wal-Mart	-0,84%	-0,59	
Case 7	Bangladesh Fire	Disney	-0,85%	-0,68	
Case 7	Bangladesh Fire	GAP	-0,72%	-0,32	
Case 7	Bangladesh Fire	PVH	-0,80%	-0,28	
Case 7	Bangladesh Fire	Sears	-3,33%	-0,67	
Case 8	Child Labor	Apple	-0,84%	-0,36	
Case 9	Zara Argentina	Inditex-Zara	3,11%	1,37	
Case 10	Rana Plaza	GAP	-0,45%	-0,18	
Case 10	Rana Plaza	Primark	3,70%	3,14	
Case 10	Rana Plaza	Next	0,73%	0,50	
Case 10	Rana Plaza	Abercrombie & Fitch	-0,33%	-0,07	
Case 10	Rana Plaza	Carrefour	1,38%	0,63	
Case 10	Rana Plaza	Esprit	-1,18%	-0,24	

Case 10	Rana Plaza	H&M	0,29%	0,25	
Case 10	Rana Plaza	Cato	1,65%	0,71	
Case 10	Rana Plaza	TJX	-0,10%	-0,07	
Case 10	Rana Plaza	PVH	1,41%	0,49	
Case 10	Rana Plaza	Target	0,28%	0,21	
Case 10	Rana Plaza	Wal-Mart	-0,43%	-0,36	
Case 10	Rana Plaza	JC Penney	-2,92%	-0,61	
Case 10	Rana Plaza	Marks & Spencer	0,25%	0,15	
Case 10	Rana Plaza	Joe Fresh	-0,69%	-0,37	
Case 10	Rana Plaza	Kohl's	-0,23%	-0,11	
Case 11	Pegatron	Apple	3,20%	1,31	
Case 12	Licence to Kill	Golden Agri Resources	1,62%	0,74	
Case 12	Licence to Kill	Wilmar	3,41%	2,11	
Case 12	Licence to Kill	Unilever	0,67%	0,62	
Case 13	Palm Oil - P&G	Wilmar	-0,51%	-0,36	
Case 13	Palm Oil - P&G	Procter & Gamble	-0,21%	-0,18	
Case 13	Palm Oil - P&G	Pepsi Co	-0,45%	-0,47	
Case 13	Palm Oil - P&G	Johnson & Johnson	-0,15%	-0,17	
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,33%	-0,33	
Case 14	CP Foods	Wal Mart	-0,87%	-1,00	
Case 14	CP Foods	Tesco	0,89%	0,60	
Case 14	CP Foods	Cotsco	-1,25%	-1,02	
Case 14	CP Foods	Morisson	1,16%	0,51	
Case 14	CP Foods	Carrefour	0,43%	0,30	
Case 15	Volkswagen Fraud	Motorola Solutions	0,96%	0,63	
Case 15	Volkswagen Fraud	IBM	0,14%	0,12	
Case 15	Volkswagen Fraud	Nokia	-0,42%	-0,18	
Case 15	Volkswagen Fraud	Magma	-1,30%	-0,70	
Case 15	Volkswagen Fraud	Visteon	0,28%	0,20	
Case 15	Volkswagen Fraud	BorgWarner	-2,59%	-1,55	
Case 15	Volkswagen Fraud	Honeywell	-1,61%	-1,91	
Case 15	Volkswagen Fraud	Infineon	-0,50%	-0,27	
Case 15	Volkswagen Fraud	Siemens	-0,29%	-0,31	
Case 15	Volkswagen Fraud	Continental	-2,77%	-1,81	
Case 15	Volkswagen Fraud	SAP	0,73%	0,66	
Case 15	Volkswagen Fraud	BASF	1,02%	1,13	
Case 15	Volkswagen Fraud	Microsoft	1,36%	0,76	
Case 15	Volkswagen Fraud	Ballard	1,67%	0,21	
Case 15	Volkswagen Fraud	Dassault	1,77%	1,05	
Case 15	Volkswagen Fraud	Plastic Omnium	-4,50%	-1,98	**
Case 15	Volkswagen Fraud	Kumho Tyres	-0,79%	-0,30	
Case 15	Volkswagen Fraud	LG Eletronics	-0,43%	-0,16	
Case 15	Volkswagen Fraud	Tupy S.A.	1,88%	0,68	
Case 15	Volkswagen Fraud	Maruti	2,00%	1,33	

Notes:

\* p &lt; 0.01



\*\*  $p < 0.05$

Table 6, in turn, for the third event window (D0, D2), displays 78 non-affected companies at the 95% significance level. Once more, this does not allow for the conclusion that investors penalized the market value of firms due to negative social / environmental events in supply chain partners. However, the analysis of the 99% significance level, with two companies (Borg Warner and Plastic Omnium, both in Case 15 – Volkswagen Fraud) could possibly indicate negative reactions.

**Table 6: CAR Results for Event Window 3 (0 to 2)**

Case No.	Case	Company	CAR	t-stat	
Case 1	Palm Oil - Unilever	Wilmar	0,71%	0,14	
Case 1	Palm Oil - Unilever	Unilever	-2,81%	-1,19	
Case 2	Palm Oil - Nestlé	Wilmar	-1,51%	-0,59	
Case 2	Palm Oil - Nestlé	Nestlé	-2,57%	-1,22	
Case 3	BP Oilspill	Andarko	-1,52%	-0,59	
Case 3	BP Oilspill	Transocean	1,29%	0,53	
Case 3	BP Oilspill	Halliburton	5,19%	2,01	
Case 3	BP Oilspill	National Oilwell Varco	3,36%	1,34	
Case 3	BP Oilspill	Cameron International	0,53%	0,23	
Case 3	BP Oilspill	Weatherford	2,21%	0,67	
Case 4	Zara Brazil	Inditex-Zara	-2,82%	-1,23	
Case 5	Foxconn	Apple	-1,35%	-0,72	
Case 5	Foxconn	Cisco	0,72%	0,28	
Case 5	Foxconn	Amazon	-0,94%	-0,28	
Case 5	Foxconn	Acer	-3,20%	-0,71	
Case 5	Foxconn	Sony	-2,19%	-0,76	
Case 5	Foxconn	Nokia	-2,62%	-0,58	
Case 5	Foxconn	Motorola	0,48%	0,25	
Case 5	Foxconn	Toshiba	0,76%	0,21	
Case 5	Foxconn	Nintendo	-2,03%	-0,48	
Case 5	Foxconn	Microsoft	1,06%	0,72	
Case 5	Foxconn	Google	-0,10%	-0,04	
Case 5	Foxconn	HP	0,11%	0,03	
Case 6	Junking the Jungle	KFC	-1,00%	-0,49	
Case 7	Bangladesh Fire	Zara	1,15%	0,41	
Case 7	Bangladesh Fire	Wal-Mart	0,29%	0,17	
Case 7	Bangladesh Fire	Disney	-0,39%	-0,25	
Case 7	Bangladesh Fire	GAP	0,14%	0,05	
Case 7	Bangladesh Fire	PVH	4,48%	1,26	
Case 7	Bangladesh Fire	Sears	-8,13%	-1,34	

Case 8	Child Labor	Apple	1,24%	0,44	
Case 9	Zara Argentina	Inditex-Zara	3,29%	1,18	
Case 10	Rana Plaza	GAP	0,66%	0,22	
Case 10	Rana Plaza	Primark	1,56%	1,09	
Case 10	Rana Plaza	Next	0,04%	0,02	
Case 10	Rana Plaza	Abercrombie & Fitch	1,97%	0,34	
Case 10	Rana Plaza	Carrefour	1,24%	0,47	
Case 10	Rana Plaza	Esprit	-2,41%	-0,41	
Case 10	Rana Plaza	H&M	0,64%	0,44	
Case 10	Rana Plaza	Cato	4,02%	1,42	
Case 10	Rana Plaza	TJX	1,47%	0,84	
Case 10	Rana Plaza	PVH	2,58%	0,72	
Case 10	Rana Plaza	Target	1,40%	0,85	
Case 10	Rana Plaza	Wal-Mart	0,14%	0,09	
Case 10	Rana Plaza	JC Penney	-2,84%	-0,48	
Case 10	Rana Plaza	Marks & Spencer	1,13%	0,56	
Case 10	Rana Plaza	Joe Fresh	-0,62%	-0,27	
Case 10	Rana Plaza	Kohl's	0,61%	0,23	
Case 11	Pegatron	Apple	2,90%	0,97	
Case 12	Licence to Kill	Golden Agri Resources	3,59%	1,33	
Case 12	Licence to Kill	Wilmar	2,98%	1,50	
Case 12	Licence to Kill	Unilever	1,05%	0,80	
Case 13	Palm Oil - P&G	Wilmar	-1,51%	-0,88	
Case 13	Palm Oil - P&G	Procter & Gamble	0,23%	0,16	
Case 13	Palm Oil - P&G	Pepsi Co	0,66%	0,56	
Case 13	Palm Oil - P&G	Johnson & Johnson	0,45%	0,41	
Case 13	Palm Oil - P&G	Colgate-Palmolive	0,58%	0,48	
Case 14	CP Foods	Wal Mart	-0,99%	-0,93	
Case 14	CP Foods	Tesco	-0,01%	-0,01	
Case 14	CP Foods	Cotsco	-1,60%	-1,06	
Case 14	CP Foods	Morisson	0,17%	0,06	
Case 14	CP Foods	Carrefour	-0,31%	-0,17	
Case 15	Volkswagen Fraud	Motorola Solutions	1,28%	0,69	
Case 15	Volkswagen Fraud	IBM	0,04%	0,03	
Case 15	Volkswagen Fraud	Nokia	-0,52%	-0,19	
Case 15	Volkswagen Fraud	Magma	-4,90%	-2,15	**
Case 15	Volkswagen Fraud	Visteon	-0,25%	-0,14	
Case 15	Volkswagen Fraud	BorgWarner	-8,73%	-4,27	*
Case 15	Volkswagen Fraud	Honeywell	-2,09%	-2,03	**
Case 15	Volkswagen Fraud	Infineon	-0,29%	-0,13	
Case 15	Volkswagen Fraud	Siemens	0,29%	0,25	
Case 15	Volkswagen Fraud	Continental	-1,89%	-1,00	
Case 15	Volkswagen Fraud	SAP	1,28%	0,94	
Case 15	Volkswagen Fraud	BASF	2,53%	2,33	
Case 15	Volkswagen Fraud	Microsoft	2,81%	1,31	
Case 15	Volkswagen Fraud	Ballard	0,77%	0,08	

Case 15	Volkswagen Fraud	Dassault	3,60%	1,75	
Case 15	Volkswagen Fraud	Plastic Omnium	-8,44%	-3,03	*
Case 15	Volkswagen Fraud	Kumho Tyres	-1,65%	-0,51	
Case 15	Volkswagen Fraud	LG Eletronics	-1,60%	-0,50	
Case 15	Volkswagen Fraud	Tupy S.A.	2,78%	0,81	
Case 15	Volkswagen Fraud	Maruti	2,40%	1,30	

Notes:

\*  $p < 0.01$

\*\*  $p < 0.05$

For the fourth event window (D-1, D1), in Table 7 below, again no negative effects could be implied, since 81 companies did not present negative abnormal returns at the 99% significance level.

**Table 7: CAR Results for Event Window 4 (-1 to 1)**

Case No.	Case	Company	CAR	t-stat	
Case 1	Palm Oil - Unilever	Wilmar	2,80%	0,57	
Case 1	Palm Oil - Unilever	Unilever	-0,01%	-0,00	
Case 2	Palm Oil - Nestlé	Wilmar	-1,93%	-0,75	
Case 2	Palm Oil - Nestlé	Nestlé	-0,03%	-0,02	
Case 3	BP Oilspill	Andarko	-3,18%	-1,24	
Case 3	BP Oilspill	Transocean	2,66%	1,09	
Case 3	BP Oilspill	Halliburton	3,26%	1,27	
Case 3	BP Oilspill	National Oilwell Varco	2,81%	1,12	
Case 3	BP Oilspill	Cameron International	-0,40%	-0,17	
Case 3	BP Oilspill	Weatherford	-0,19%	-0,06	
Case 4	Zara Brazil	Inditex-Zara	-0,44%	-0,19	
Case 5	Foxconn	Apple	-1,77%	-0,94	
Case 5	Foxconn	Cisco	-0,98%	-0,39	
Case 5	Foxconn	Amazon	-3,43%	-1,04	
Case 5	Foxconn	Acer	-4,50%	-1,01	
Case 5	Foxconn	Sony	-1,42%	-0,49	
Case 5	Foxconn	Nokia	0,27%	0,06	
Case 5	Foxconn	Motorola	-1,11%	-0,59	
Case 5	Foxconn	Toshiba	0,44%	0,12	
Case 5	Foxconn	Nintendo	-1,42%	-0,34	
Case 5	Foxconn	Microsoft	-0,61%	-0,42	
Case 5	Foxconn	Google	-0,48%	-0,19	
Case 5	Foxconn	HP	1,21%	0,34	
Case 6	Junking the Jungle	KFC	-1,11%	-0,55	
Case 7	Bangladesh Fire	Zara	-1,31%	-0,46	
Case 7	Bangladesh Fire	Wal-Mart	0,50%	0,29	
Case 7	Bangladesh Fire	Disney	-0,93%	-0,61	

Case 7	Bangladesh Fire	GAP	-1,30%	-0,47	
Case 7	Bangladesh Fire	PVH	-1,60%	-0,45	
Case 7	Bangladesh Fire	Sears	-5,80%	-0,95	
Case 8	Child Labor	Apple	-12,21%	-4,92	*
Case 9	Zara Argentina	Inditex-Zara	3,08%	1,11	
Case 10	Rana Plaza	GAP	-1,97%	-0,64	
Case 10	Rana Plaza	Primark	3,78%	2,59	
Case 10	Rana Plaza	Next	0,17%	0,10	
Case 10	Rana Plaza	Abercrombie & Fitch	-2,35%	-0,40	
Case 10	Rana Plaza	Carrefour	-0,03%	-0,01	
Case 10	Rana Plaza	Esprit	-0,95%	-0,16	
Case 10	Rana Plaza	H&M	1,62%	1,13	
Case 10	Rana Plaza	Cato	-0,02%	-0,01	
Case 10	Rana Plaza	TJX	-0,18%	-0,10	
Case 10	Rana Plaza	PVH	1,08%	0,30	
Case 10	Rana Plaza	Target	0,08%	0,05	
Case 10	Rana Plaza	Wal-Mart	-1,13%	-0,76	
Case 10	Rana Plaza	JC Penney	-1,38%	-0,23	
Case 10	Rana Plaza	Marks & Spencer	0,71%	0,35	
Case 10	Rana Plaza	Joe Fresh	-1,78%	-0,78	
Case 10	Rana Plaza	Kohl's	-0,74%	-0,28	
Case 11	Pegatron	Apple	3,76%	1,26	
Case 12	Licence to Kill	Golden Agri Resources	3,54%	1,32	
Case 12	Licence to Kill	Wilmar	3,84%	1,94	
Case 12	Licence to Kill	Unilever	0,79%	0,60	
Case 13	Palm Oil - P&G	Wilmar	2,47%	1,48	
Case 13	Palm Oil - P&G	Procter & Gamble	0,26%	0,18	
Case 13	Palm Oil - P&G	Pepsi Co	0,17%	0,14	
Case 13	Palm Oil - P&G	Johnson & Johnson	-0,02%	-0,02	
Case 13	Palm Oil - P&G	Colgate-Palmolive	0,03%	0,03	
Case 14	CP Foods	Wal Mart	-1,16%	-1,09	
Case 14	CP Foods	Tesco	2,06%	1,14	
Case 14	CP Foods	Cotsco	-1,78%	-1,18	
Case 14	CP Foods	Morisson	2,02%	0,73	
Case 14	CP Foods	Carrefour	0,44%	0,25	
Case 15	Volkswagen Fraud	Motorola Solutions	0,46%	0,24	
Case 15	Volkswagen Fraud	IBM	0,23%	0,15	
Case 15	Volkswagen Fraud	Nokia	0,20%	0,07	
Case 15	Volkswagen Fraud	Magma	-0,95%	-0,41	
Case 15	Volkswagen Fraud	Visteon	0,63%	0,36	
Case 15	Volkswagen Fraud	BorgWarner	-2,73%	-1,33	
Case 15	Volkswagen Fraud	Honeywell	-1,80%	-1,75	
Case 15	Volkswagen Fraud	Infineon	-2,20%	-0,97	
Case 15	Volkswagen Fraud	Siemens	-0,80%	-0,69	
Case 15	Volkswagen Fraud	Continental	-2,33%	-1,24	
Case 15	Volkswagen Fraud	SAP	0,58%	0,43	

Case 15	Volkswagen Fraud	BASF	-0,21%	-0,19	
Case 15	Volkswagen Fraud	Microsoft	1,18%	0,54	
Case 15	Volkswagen Fraud	Ballard	-1,33%	-0,13	
Case 15	Volkswagen Fraud	Dassault	2,23%	1,05	
Case 15	Volkswagen Fraud	Plastic Omnium	-3,78%	-1,35	
Case 15	Volkswagen Fraud	Kumho Tyres	0,47%	0,15	
Case 15	Volkswagen Fraud	LG Eletronics	-0,53%	-0,16	
Case 15	Volkswagen Fraud	Tupy S.A.	2,91%	0,85	
Case 15	Volkswagen Fraud	Maruti	1,54%	0,83	

Notes:

\*  $p < 0.01$

\*\*  $p < 0.05$

The fifth event window (D-1, D5) in Table 8 below, similarly to the results found on event window 3, shows that 79 companies did not present negative reactions. At the 99% significance level, the fact that two firms (Apple in Case 8 – Child Labor and Honeywell in Case 15 – Volkswagen Fraud) yielded negative abnormal returns might suggest that negative reactions were detected for such companies.

**Table 8: CAR Results for Event Window 5 (-1 to 5)**

Case No.	Case	Company	CAR	t-stat	
Case 1	Palm Oil - Unilever	Wilmar	3,55%	0,48	
Case 1	Palm Oil - Unilever	Unilever	-2,67%	-0,74	
Case 2	Palm Oil - Nestlé	Wilmar	-3,16%	-0,81	
Case 2	Palm Oil - Nestlé	Nestlé	-2,79%	-0,87	
Case 3	BP Oilspill	Andarko	-3,99%	-1,01	
Case 3	BP Oilspill	Transocean	-1,12%	-0,30	
Case 3	BP Oilspill	Halliburton	5,00%	1,27	
Case 3	BP Oilspill	National Oilwell Varco	4,09%	1,06	
Case 3	BP Oilspill	Cameron International	-1,20%	-0,33	
Case 3	BP Oilspill	Weatherford	11,58%	2,29	
Case 4	Zara Brazil	Inditex-Zara	-4,03%	-1,15	
Case 5	Foxconn	Apple	-2,45%	-0,85	
Case 5	Foxconn	Cisco	-0,32%	-0,08	
Case 5	Foxconn	Amazon	4,27%	0,84	
Case 5	Foxconn	Acer	-5,02%	-0,73	
Case 5	Foxconn	Sony	-1,70%	-0,38	
Case 5	Foxconn	Nokia	7,13%	1,03	
Case 5	Foxconn	Motorola	1,57%	0,55	
Case 5	Foxconn	Toshiba	0,87%	0,16	
Case 5	Foxconn	Nintendo	-3,72%	-0,58	
Case 5	Foxconn	Microsoft	-2,21%	-0,98	

Case 5	Foxconn	Google	-1,06%	-0,28	
Case 5	Foxconn	HP	1,17%	0,22	
Case 6	Junking the Jungle	KFC	-1,71%	-0,55	
Case 7	Bangladesh Fire	Zara	-1,49%	-0,34	
Case 7	Bangladesh Fire	Wal-Mart	2,60%	0,97	
Case 7	Bangladesh Fire	Disney	-0,49%	-0,21	
Case 7	Bangladesh Fire	GAP	-4,79%	-1,14	
Case 7	Bangladesh Fire	PVH	2,04%	0,37	
Case 7	Bangladesh Fire	Sears	-16,99%	-1,83	
Case 8	Child Labor	Apple	-12,00%	-3,16	*
Case 9	Zara Argentina	Inditex-Zara	6,25%	1,47	
Case 10	Rana Plaza	GAP	-0,24%	-0,05	
Case 10	Rana Plaza	Primark	2,36%	1,07	
Case 10	Rana Plaza	Next	-1,31%	-0,48	
Case 10	Rana Plaza	Abercrombie & Fitch	1,76%	0,20	
Case 10	Rana Plaza	Carrefour	-0,64%	-0,16	
Case 10	Rana Plaza	Esprit	4,78%	0,53	
Case 10	Rana Plaza	H&M	1,80%	0,82	
Case 10	Rana Plaza	Cato	3,56%	0,82	
Case 10	Rana Plaza	TJX	1,90%	0,71	
Case 10	Rana Plaza	PVH	4,63%	0,85	
Case 10	Rana Plaza	Target	0,49%	0,20	
Case 10	Rana Plaza	Wal-Mart	-2,16%	-0,95	
Case 10	Rana Plaza	JC Penney	6,85%	0,76	
Case 10	Rana Plaza	Marks & Spencer	0,08%	0,02	
Case 10	Rana Plaza	Joe Fresh	0,91%	0,26	
Case 10	Rana Plaza	Kohl's	-2,28%	-0,56	
Case 11	Pegatron	Apple	5,51%	1,20	
Case 12	Licence to Kill	Golden Agri Resources	8,55%	2,08	
Case 12	Licence to Kill	Wilmar	4,50%	1,49	
Case 12	Licence to Kill	Unilever	1,24%	0,62	
Case 13	Palm Oil - P&G	Wilmar	2,36%	0,92	
Case 13	Palm Oil - P&G	Procter & Gamble	-0,82%	-0,37	
Case 13	Palm Oil - P&G	Pepsi Co	2,90%	1,61	
Case 13	Palm Oil - P&G	Johnson & Johnson	0,44%	0,27	
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,02%	-0,01	
Case 14	CP Foods	Wal Mart	-2,62%	-1,61	
Case 14	CP Foods	Tesco	1,57%	0,56	
Case 14	CP Foods	Cotsco	-2,48%	-1,07	
Case 14	CP Foods	Morisson	1,98%	0,47	
Case 14	CP Foods	Carrefour	-0,67%	-0,25	
Case 15	Volkswagen Fraud	Motorola Solutions	5,03%	1,77	
Case 15	Volkswagen Fraud	IBM	1,46%	0,65	
Case 15	Volkswagen Fraud	Nokia	1,68%	0,39	
Case 15	Volkswagen Fraud	Magma	-3,64%	-1,04	
Case 15	Volkswagen Fraud	Visteon	-0,66%	-0,25	

Case 15	Volkswagen Fraud	BorgWarner	-6,33%	-2,02	**
Case 15	Volkswagen Fraud	Honeywell	-4,39%	-2,78	*
Case 15	Volkswagen Fraud	Infineon	-2,50%	-0,73	
Case 15	Volkswagen Fraud	Siemens	-1,37%	-0,78	
Case 15	Volkswagen Fraud	Continental	-1,11%	-0,39	
Case 15	Volkswagen Fraud	SAP	1,34%	0,65	
Case 15	Volkswagen Fraud	BASF	1,76%	1,05	
Case 15	Volkswagen Fraud	Microsoft	4,46%	1,33	
Case 15	Volkswagen Fraud	Ballard	-4,98%	-0,33	
Case 15	Volkswagen Fraud	Dassault	6,32%	2,00	
Case 15	Volkswagen Fraud	Plastic Omnium	-2,97%	-0,70	
Case 15	Volkswagen Fraud	Kumho Tyres	6,76%	1,37	
Case 15	Volkswagen Fraud	LG Eletronics	-2,78%	-0,56	
Case 15	Volkswagen Fraud	Tupy S.A.	8,13%	1,56	
Case 15	Volkswagen Fraud	Maruti	2,54%	0,90	

Notes:

\*  $p < 0.01$

\*\*  $p < 0.05$

For the sixth event window (D-2, D2) in Table 9, 78 out of the 82 assessed companies did not present significant negative abnormal returns. Once more, at the 99% significance level the negative returns detected in two firms (Apple in Case 8 – Child Labor and BorgWarner in Case 15 – Volkswagen Fraud) might suggest a possible reaction.

**Table 9: CAR Results for Event Window 6 (-2 to 2)**

Case No.	Case	Company	CAR	t-stat	
Case 1	Palm Oil – Unilever	Wilmar	5,10%	0,81	
Case 1	Palm Oil – Unilever	Unilever	-3,31%	-1,09	
Case 2	Palm Oil – Nestlé	Wilmar	-3,88%	-1,16	
Case 2	Palm Oil – Nestlé	Nestlé	-1,90%	-0,70	
Case 3	BP Oilspill	Andarko	-1,72%	-0,52	
Case 3	BP Oilspill	Transocean	3,45%	1,09	
Case 3	BP Oilspill	Halliburton	4,12%	1,24	
Case 3	BP Oilspill	National Oilwell Varco	4,78%	1,48	
Case 3	BP Oilspill	Cameron International	0,86%	0,28	
Case 3	BP Oilspill	Weatherford	0,32%	0,07	
Case 4	Zara Brazil	Inditex-Zara	-3,13%	-1,04	
Case 5	Foxconn	Apple	-2,22%	-0,91	
Case 5	Foxconn	Cisco	-0,50%	-0,15	
Case 5	Foxconn	Amazon	-3,99%	-0,93	
Case 5	Foxconn	Acer	-1,40%	-0,24	
Case 5	Foxconn	Sony	-1,17%	-0,31	
Case 5	Foxconn	Nokia	-1,10%	-0,19	

Case 5	Foxconn	Motorola	-1,14%	-0,47	
Case 5	Foxconn	Toshiba	0,69%	0,15	
Case 5	Foxconn	Nintendo	-2,33%	-0,43	
Case 5	Foxconn	Microsoft	-0,85%	-0,45	
Case 5	Foxconn	Google	-5,30%	-1,69	
Case 5	Foxconn	HP	0,34%	0,07	
Case 6	Junking the Jungle	KFC	0,62%	0,24	
Case 7	Bangladesh Fire	Zara	1,10%	0,30	
Case 7	Bangladesh Fire	Wal-Mart	1,34%	0,59	
Case 7	Bangladesh Fire	Disney	-0,28%	-0,14	
Case 7	Bangladesh Fire	GAP	-0,21%	-0,06	
Case 7	Bangladesh Fire	PVH	2,35%	0,51	
Case 7	Bangladesh Fire	Sears	-15,58%	-1,99	**
Case 8	Child Labor	Apple	-8,70%	-2,71	*
Case 9	Zara Argentina	Inditex-Zara	1,70%	0,47	
Case 10	Rana Plaza	GAP	-2,33%	-0,59	
Case 10	Rana Plaza	Primark	2,88%	1,53	
Case 10	Rana Plaza	Next	-0,64%	-0,28	
Case 10	Rana Plaza	Abercrombie & Fitch	0,29%	0,04	
Case 10	Rana Plaza	Carrefour	1,27%	0,37	
Case 10	Rana Plaza	Esprit	-3,07%	-0,40	
Case 10	Rana Plaza	H&M	2,69%	1,46	
Case 10	Rana Plaza	Cato	2,50%	0,68	
Case 10	Rana Plaza	TJX	1,39%	0,61	
Case 10	Rana Plaza	PVH	3,26%	0,71	
Case 10	Rana Plaza	Target	1,86%	0,88	
Case 10	Rana Plaza	Wal-Mart	0,49%	0,26	
Case 10	Rana Plaza	JC Penney	-1,33%	-0,17	
Case 10	Rana Plaza	Marks & Spencer	3,06%	1,18	
Case 10	Rana Plaza	Joe Fresh	-1,95%	-0,66	
Case 10	Rana Plaza	Kohl's	0,64%	0,19	
Case 11	Pegatron	Apple	2,32%	0,60	
Case 12	Licence to Kill	Golden Agri Resources	5,23%	1,51	
Case 12	Licence to Kill	Wilmar	3,04%	1,19	
Case 12	Licence to Kill	Unilever	4,26%	2,58	
Case 13	Palm Oil - P&G	Wilmar	1,88%	0,87	
Case 13	Palm Oil - P&G	Procter & Gamble	0,12%	0,06	
Case 13	Palm Oil - P&G	Pepsi Co	1,75%	1,15	
Case 13	Palm Oil - P&G	Johnson & Johnson	-0,43%	-0,31	
Case 13	Palm Oil - P&G	Colgate-Palmolive	1,03%	0,65	
Case 14	CP Foods	Wal Mart	-1,71%	-1,24	
Case 14	CP Foods	Tesco	0,41%	0,18	
Case 14	CP Foods	Cotsco	-1,96%	-1,00	
Case 14	CP Foods	Morisson	1,01%	0,28	
Case 14	CP Foods	Carrefour	-1,93%	-0,86	
Case 15	Volkswagen Fraud	Motorola Solutions	0,44%	0,18	



Case 15	Volkswagen Fraud	IBM	-0,18%	-0,10	
Case 15	Volkswagen Fraud	Nokia	1,02%	0,28	
Case 15	Volkswagen Fraud	Magma	-3,08%	-1,05	
Case 15	Volkswagen Fraud	Visteon	1,34%	0,59	
Case 15	Volkswagen Fraud	BorgWarner	-7,15%	-2,71	*
Case 15	Volkswagen Fraud	Honeywell	-2,61%	-1,96	
Case 15	Volkswagen Fraud	Infineon	-1,19%	-0,40	
Case 15	Volkswagen Fraud	Siemens	-0,02%	-0,02	
Case 15	Volkswagen Fraud	Continental	-0,74%	-0,30	
Case 15	Volkswagen Fraud	SAP	2,51%	1,44	
Case 15	Volkswagen Fraud	BASF	1,78%	1,23	
Case 15	Volkswagen Fraud	Microsoft	2,56%	0,90	
Case 15	Volkswagen Fraud	Ballard	-0,06%	-0,00	
Case 15	Volkswagen Fraud	Dassault	3,09%	1,13	
Case 15	Volkswagen Fraud	Plastic Omnium	-7,33%	-2,02	**
Case 15	Volkswagen Fraud	Kumho Tyres	0,48%	0,12	
Case 15	Volkswagen Fraud	LG Electronics	-0,29%	-0,07	
Case 15	Volkswagen Fraud	Tupy S.A.	-0,34%	-0,08	
Case 15	Volkswagen Fraud	Maruti	2,51%	1,04	

Notes:

\*  $p < 0.01$

\*\*  $p < 0.05$

The last and wider event window (D-5, D5) captured no reaction from 78 companies at the 95% significance level. However, at the 99% significance level, the negative abnormal returns detected in two companies (Sears in Case 7 – Bangladesh Fire and Honeywell in Case 15 – Volkswagen Fraud) may also point to the possibility of negative reaction.

**Table 10: CAR Results for Event Window 7 (-5 to 5)**

Case No.	Case	Company	CAR	t-stat	
Case 1	Palm Oil - Unilever	Wilmar	6,04%	0,64	
Case 1	Palm Oil - Unilever	Unilever	-3,07%	-0,68	
Case 2	Palm Oil - Nestlé	Wilmar	-7,95%	-1,60	
Case 2	Palm Oil - Nestlé	Nestlé	-2,06%	-0,51	
Case 3	BP Oilspill	Andarko	-2,77%	-0,56	
Case 3	BP Oilspill	Transocean	1,28%	0,27	
Case 3	BP Oilspill	Halliburton	6,12%	1,22	
Case 3	BP Oilspill	National Oilwell Varco	4,11%	0,87	
Case 3	BP Oilspill	Cameron International	-2,70%	-0,58	
Case 3	BP Oilspill	Weatherford	13,65%	2,16	
Case 4	Zara Brazil	Inditex-Zara	-1,35%	-0,31	
Case 5	Foxconn	Apple	-1,16%	-0,32	
Case 5	Foxconn	Cisco	0,38%	0,08	

Case 5	Foxconn	Amazon	2,61%	0,41	
Case 5	Foxconn	Acer	8,81%	1,05	
Case 5	Foxconn	Sony	-6,18%	-1,13	
Case 5	Foxconn	Nokia	9,48%	1,11	
Case 5	Foxconn	Motorola	-0,09%	-0,02	
Case 5	Foxconn	Toshiba	-3,85%	-0,54	
Case 5	Foxconn	Nintendo	-3,70%	-0,46	
Case 5	Foxconn	Microsoft	0,43%	0,16	
Case 5	Foxconn	Google	-9,22%	-1,99	**
Case 5	Foxconn	HP	0,83%	0,12	
Case 6	Junking the Jungle	KFC	-1,32%	-0,34	
Case 7	Bangladesh Fire	Zara	-0,30%	-0,05	
Case 7	Bangladesh Fire	Wal-Mart	1,60%	0,47	
Case 7	Bangladesh Fire	Disney	-0,96%	-0,33	
Case 7	Bangladesh Fire	GAP	-3,41%	-0,59	
Case 7	Bangladesh Fire	PVH	-0,58%	-0,09	
Case 7	Bangladesh Fire	Sears	-43,73%	-4,12	*
Case 8	Child Labor	Apple	-11,77%	-2,45	**
Case 9	Zara Argentina	Inditex-Zara	6,75%	1,26	
Case 10	Rana Plaza	GAP	-0,87%	-0,15	
Case 10	Rana Plaza	Primark	1,46%	0,53	
Case 10	Rana Plaza	Next	-2,49%	-0,72	
Case 10	Rana Plaza	Abercrombie & Fitch	1,00%	0,09	
Case 10	Rana Plaza	Carrefour	-1,00%	-0,19	
Case 10	Rana Plaza	Esprit	5,56%	0,49	
Case 10	Rana Plaza	H&M	3,70%	1,35	
Case 10	Rana Plaza	Cato	-1,54%	-0,28	
Case 10	Rana Plaza	TJX	0,34%	0,10	
Case 10	Rana Plaza	PVH	5,17%	0,75	
Case 10	Rana Plaza	Target	0,93%	0,30	
Case 10	Rana Plaza	Wal-Mart	-2,72%	-0,96	
Case 10	Rana Plaza	JC Penney	13,93%	1,23	
Case 10	Rana Plaza	Marks & Spencer	0,74%	0,19	
Case 10	Rana Plaza	Joe Fresh	0,36%	0,08	
Case 10	Rana Plaza	Kohl's	-2,55%	-0,50	
Case 11	Pegatron	Apple	9,43%	1,68	
Case 12	Licence to Kill	Golden Agri Resources	6,32%	1,22	
Case 12	Licence to Kill	Wilmar	3,99%	1,05	
Case 12	Licence to Kill	Unilever	4,17%	1,69	
Case 13	Palm Oil - P&G	Wilmar	5,52%	1,73	
Case 13	Palm Oil - P&G	Procter & Gamble	-1,09%	-0,40	
Case 13	Palm Oil - P&G	Pepsi Co	3,86%	1,72	
Case 13	Palm Oil - P&G	Johnson & Johnson	-0,26%	-0,13	
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,97%	-0,41	
Case 14	CP Foods	Wal Mart	-2,56%	-1,23	
Case 14	CP Foods	Tesco	-1,54%	-0,44	

Case 14	CP Foods	Cotsco	-1,02%	-0,35	
Case 14	CP Foods	Morisson	-0,39%	-0,07	
Case 14	CP Foods	Carrefour	-2,01%	-0,60	
Case 15	Volkswagen Fraud	Motorola Solutions	0,91%	0,26	
Case 15	Volkswagen Fraud	IBM	0,67%	0,24	
Case 15	Volkswagen Fraud	Nokia	2,00%	0,37	
Case 15	Volkswagen Fraud	Magma	-2,43%	-0,56	
Case 15	Volkswagen Fraud	Visteon	-1,01%	-0,30	
Case 15	Volkswagen Fraud	BorgWarner	-6,22%	-1,59	
Case 15	Volkswagen Fraud	Honeywell	-5,56%	-2,80	*
Case 15	Volkswagen Fraud	Infineon	1,62%	0,38	
Case 15	Volkswagen Fraud	Siemens	-2,37%	-1,07	
Case 15	Volkswagen Fraud	Continental	-0,44%	-0,12	
Case 15	Volkswagen Fraud	SAP	2,62%	1,02	
Case 15	Volkswagen Fraud	BASF	2,43%	1,13	
Case 15	Volkswagen Fraud	Microsoft	4,69%	1,11	
Case 15	Volkswagen Fraud	Ballard	-17,05%	-0,90	
Case 15	Volkswagen Fraud	Dassault	6,97%	1,72	
Case 15	Volkswagen Fraud	Plastic Omnium	-3,52%	-0,65	
Case 15	Volkswagen Fraud	Kumho Tyres	7,30%	1,17	
Case 15	Volkswagen Fraud	LG Eletronics	-0,73%	-0,12	
Case 15	Volkswagen Fraud	Tupy S.A.	2,71%	0,42	
Case 15	Volkswagen Fraud	Maruti	2,65%	0,74	

Notes:

\*  $p < 0.01$

\*\*  $p < 0.05$

Finally, Table 11 summarizes the results for all 7 event windows. Even though a compilation of all results indicate some negative effects, the majority of the studied firms (74 out of 82) did not demonstrate negative CARs in any of the event windows considered. Table 12 complements the general results presenting the CAARs for each event window considered, as well as the respective statistics.

**Table 11: Summary of Results**

Case No.	Case	Company	Negative CAR	Statistical Evidence	Market Value Effect
Case 1	Palm Oil - Unilever	Wilmar			
Case 1	Palm Oil - Unilever	Unilever	Yes		
Case 2	Palm Oil – Nestlé	Wilmar	Yes		
Case 2	Palm Oil – Nestlé	Nestlé	Yes		

Case 3	BP Oilspill	Andarko	Yes		
Case 3	BP Oilspill	Transocean	Yes		
Case 3	BP Oilspill	Halliburton			
Case 3	BP Oilspill	Nat. Oilwell Varco			
Case 3	BP Oilspill	Cameron Intern.	Yes		
Case 3	BP Oilspill	Weatherford	Yes		
Case 4	Zara Brazil	Inditex-Zara	Yes		
Case 5	Foxconn	Apple	Yes		
Case 5	Foxconn	Cisco	Yes		
Case 5	Foxconn	Amazon	Yes		
Case 5	Foxconn	Acer	Yes		
Case 5	Foxconn	Sony	Yes		
Case 5	Foxconn	Nokia	Yes		
Case 5	Foxconn	Motorola	Yes		
Case 5	Foxconn	Toshiba	Yes		
Case 5	Foxconn	Nintendo	Yes		
Case 5	Foxconn	Microsoft	Yes		
Case 5	Foxconn	Google	Yes	95%	Yes
Case 5	Foxconn	HP			
Case 6	Junking the Jungle	KFC	Yes		
Case 7	Bangladesh Fire	Zara	Yes		
Case 7	Bangladesh Fire	Wal-Mart	Yes		
Case 7	Bangladesh Fire	Disney	Yes		
Case 7	Bangladesh Fire	GAP	Yes		
Case 7	Bangladesh Fire	PVH	Yes		
Case 7	Bangladesh Fire	Sears	Yes	99%	Yes
Case 8	Child Labor	Apple	Yes	99%	Yes
Case 9	Zara Argentina	Inditex-Zara	Yes		
Case 10	Rana Plaza	GAP	Yes		
Case 10	Rana Plaza	Primark			
Case 10	Rana Plaza	Next	Yes		
Case 10	Rana Plaza	A&F	Yes		
Case 10	Rana Plaza	Carrefour	Yes		
Case 10	Rana Plaza	Esprit	Yes		
Case 10	Rana Plaza	H&M			
Case 10	Rana Plaza	Cato	Yes		
Case 10	Rana Plaza	TJX	Yes		
Case 10	Rana Plaza	PVH			
Case 10	Rana Plaza	Target			
Case 10	Rana Plaza	Wal-Mart	Yes		
Case 10	Rana Plaza	JC Penney	Yes		
Case 10	Rana Plaza	Marks & Spencer			
Case 10	Rana Plaza	Joe Fresh	Yes		
Case 10	Rana Plaza	Kohl's	Yes		
Case 11	Pegatron	Apple			
Case 12	Licence to Kill	Golden Agri			

Case 12	Licence to Kill	Wilmar			
Case 12	Licence to Kill	Unilever	Yes		
Case 13	Palm Oil - P&G	Wilmar	Yes		
Case 13	Palm Oil - P&G	Procter & Gamble	Yes		
Case 13	Palm Oil - P&G	Pepsi Co	Yes		
Case 13	Palm Oil - P&G	Johnson & Johnson	Yes		
Case 13	Palm Oil - P&G	Colgate-Palmolive	Yes		
Case 14	CP Foods	Wal Mart	Yes		
Case 14	CP Foods	Tesco	Yes		
Case 14	CP Foods	Cotsco	Yes		
Case 14	CP Foods	Morisson	Yes		
Case 14	CP Foods	Carrefour	Yes		
Case 15	Volkswagen Fraud	Motorola Solutions			
Case 15	Volkswagen Fraud	IBM	Yes		
Case 15	Volkswagen Fraud	Nokia	Yes		
Case 15	Volkswagen Fraud	Magma	Yes	95%	Yes
Case 15	Volkswagen Fraud	Visteon	Yes		
Case 15	Volkswagen Fraud	BorgWarner	Yes	99%	Yes
Case 15	Volkswagen Fraud	Honeywell	Yes	99%	Yes
Case 15	Volkswagen Fraud	Infineon	Yes		
Case 15	Volkswagen Fraud	Siemens	Yes	95%	Yes
Case 15	Volkswagen Fraud	Continental	Yes		
Case 15	Volkswagen Fraud	SAP	Yes		
Case 15	Volkswagen Fraud	BASF	Yes		
Case 15	Volkswagen Fraud	Microsoft	Yes		
Case 15	Volkswagen Fraud	Ballard	Yes		
Case 15	Volkswagen Fraud	Dassault			
Case 15	Volkswagen Fraud	Plastic Omnium	Yes	99%	Yes
Case 15	Volkswagen Fraud	Kumho Tyres	Yes		
Case 15	Volkswagen Fraud	LG Eletronics	Yes		
Case 15	Volkswagen Fraud	Tupy S.A.	Yes		
Case 15	Volkswagen Fraud	Maruti			

Source: Elaborated by the author

**Table 12: CAARs for the Seven Event Windows**

	<b>CAAR</b>	<b>t-stat</b>
Event Window 1	-0,09%	-0,04
Event Window 2	0,01%	0,00
Event Window 3	0,01%	0,01
Event Window 4	-0,27%	-0,11
Event Window 5	0,38%	0,09
Event Window 6	-0,16%	-0,05
Event Window 7	-0,04%	-0,01

As shown in the table above, none of the CAAR's calculated presented statistical significance, meaning that the negative social / environmental events analyzed did not impact the market value of supply chain partners when observed through this view.

## 6 Discussion

As demonstrated above, market value destructions were not detected in 74 out of the 82 different companies analyzed. As better addressed ahead in the text, the results suggest that investors do not react to negative social / environmental events in supply chains. Grouping the analysis by cases, the affected returns within the estimated significance levels are shown in Table 13 below:

**Table 13: Affected Companies and Respective Cases**

Case No.	Case	Affected Companies
5	Foxconn	Google
7	Bangladesh Fire	Sears
8	Child Labor	Apple
15	Volkswagen Fraud	Magma Borgwarner Honeywell Siemens Plastic Omnium

Considering the heterogeneity of cases and companies, the following discussion approaches each case individually, comprehending two distinct objectives: firstly, it aims to provide further analysis on the reasons why negative reactions were not detected in most of the cases (and why they were in the above mentioned); and secondly, discuss the possible reasons as to why some supply chains partners within the same case were negatively affected and others were not.

We begin assessing the cases that relate to environmental practices. Cases 1 - Palm Oil Unilever, 2 - Palm Oil Nestlé, 6 – Junking the Jungle, 12 – License to Kill and 13 – Palm Oil P&G hold diverse similarities, as they all comprehend environmental accusations by Greenpeace around deforestation in tropical areas. Beyond that, they also share the fact that the market value of the involved companies did not accuse significant negative reaction in any of the event windows considered. This corroborates the idea that damages to corporate image or to reputational issues do not affect the market value of firms. No operational glitches were expected in any of the case also, as none of their suppliers signaled immediate changes in operational issues.

Also related to environmental issues, even though being considered one of the worst environmental disasters ever occurred, the BP Oil Spill case (Case 3) did not cause negative reactions for any of its supply chain partners, in terms of market value. As all of the involved companies are mainly placed in business-to-business interactions, this may suggest that reputational issues do not strongly influence investors' perception, as organizations do not engage in direct consumers interface. As the investigation around the responsibilities in this case took years, it is also possible that investors did not perceive any immediate compensation risk.

Moving along to workforce conditions, despite the several protest around the globe for the enhancement of working conditions, the considerable attention of the traditional media to the tenth case (i.e. Case 10 – Rana Plaza collapse) and the great impact it had on social networks, none of the companies involved in the episode suffered market value losses in any of the seven event windows analyzed. The fact that the Rana Plaza sweatshops did not concentrate a critically large portion of the firms' production (i.e. it was one of several small global suppliers) may be relevant for that. Possibly, as investors did not expect a significant glitche on the flow of goods, sales were not expected to be seriously impacted. That means that, from an operational perspective, the incident may have been interpreted as presenting no major impact to the involved firms, as the production addressed in the sweatshops could be easily and rapidly redirected to other suppliers. Additionally, as pointed in the description of the case, nobody had ever been responsabilized for deaths in sweatshops in Bangladesh. That may have led investors to believe that no major consequences (e.g. lawsuits, compensations and fines) would be imposed to anybody. This would explain the lack of market value adjustments under the profit maximization logic, as the cash flow of companies would not directly be affected. The image and reputational impact did not seem to be valued by investors as well.

The Bangladesh Fire (Case 7), in turn, showed that out of the six supply chain partners linked to the case, only Sears had its market value negatively impacted. In comparison to the other five supply chain partners analyzed, however, Sears was not detected to be the most closely linked to the incident. Instead, the news and discussions were relatively homogenous in the citation of all the six firms. The fact that Sears was not more prominently responsabilized than any of the other companies is particularly curious. This may suggest that investors' reaction



may not be linked to the eventual damage against the image or reputation of the company. If this was the case, a similar penalization would be expected for all firms.

The discussion of the results may then be restricted to operational aspects. Within this reasoning, it is possible that a higher portion of Sears' production was concentrated on the factory. Nevertheless, the analysis of the case did not allow such conclusion. Further assessment would be necessary to certify that the company held a relevant part of its production on the factory. In case this proves to be true, it would contribute to the comprehension that, rather than valuing CSR in Supply Chains, investors would concentrate their analysis on the operational issues that may affect the cash flow of companies. Previous to the event day itself, however, Sears' market value already presented abnormal behavior, with a high volatility. This may suggest that the negative market value reaction detected might not be directly related to the event analyzed, but actually due to another firm specific situation in the period.

On what concerns the other five companies in the Bangladesh Fire's case, the discussion of the results may be analogous the one in Case 10 (Rana Plaza collapse). Both cases share several similarities, such as location (i.e. Bangladesh), the loss of several lives, the industry on which they concentrate (i.e. Fashion Business), the use of extremely poor working force conditions related to employees' safety and the involvement of international brands.

Even though the fourth case (Zara Brazil) is also comprehended within the Fashion Business, differently from the cases discussed above it does not relate to a numerous death count tragedy. Moreover, it focuses on a single company, instead of diverse supply chain partners. Based on this, it may be argued to have received a lower level of mediatic attention. The more delimited focus allows a specific analysis of Zara's operation. Despite AHA was responsible for 90% of the company's production in Brazil, the closed sweatshops did not represent a large portion of Zara's production all alone. It is possible then that investors' did not identify a representative supply issue. The absence of investors' negative reactions to slavery practices suggests that reputational issues were not relevant for them either. Zara's case in Argentina (Case 9), linking the company to poor working force conditions in the country holds great similarity to the case in Brazil. The results of the empirical study were the same, with investors presenting no negative reaction to the disclosure of such practices.

In the Foxconn case (Case 5), out of the 12 companies analyzed, only Google presented a negative reaction from investors. This contradicts the idea that damages to corporate image or to corporate reputation may drive investors' negative reaction to CSR issues, as in this particular case Apple was much more strongly linked to Foxconn. The reasons why Google's investors did negatively react to the disclosure of extreme working force conditions shall be further analyzed. Differently from the other 11 companies, Google's most representative relation with Foxconn is not around the electronic goods manufacturing. Instead, both companies are close Research and Development (R&D) partners in the field of robotics, with Foxconn being responsible for the new products development. It is possible that investors have perceived a higher threat to this kind of long-term partnership, presumably more sophisticated and riskier. In case Foxconn would have complications in the issue, finding a new product developer would be more difficult to Google than finding new electronic manufacturers to the other involved companies.

The documentary research around the event also showed that Foxconn held a significant part of Apple's production. The episode, however, did not seem to represent a major glitch in the operational flow of the company (or on the operational flow of any other client, including Google). Several measures were announced by the involved firms, signaling the continuity of operations, including hiring of personnel. As discussed, the production costs were expected to increase but not significantly, as the labor portion of electronic goods is not representative. Based on the documental analysis, no immediate impact to the operational performance of firms would be expected in result of the event. Within a profit maximization logic, the fact that no serious harms on the cash flow of firms were forecasted by investors may subside the absence of market losses.

Similarly to the Foxconn case, the announcement of extreme working force conditions in China in Case 11 - Pegatron did not trigger the reaction of Apple's investors. Differently from Case 7 above, the announcement relates to a single supplier and not to several ones, which may have led investors to believe that no serious operational glitches would take place in consequence of the announcement. Furthermore, the disclosure was not made by Apple itself, but by media channels instead. That could even imply that announcements of media channels do not hold as much credibility as those held by companies.

The Child Labor case (Case 8) carries the particularity that Apple itself announced severe working abuses in several of its supply chain partners. This may have led investors to anticipate operational problems, as the involved companies held a significant portion of Apple's production (mainly in China). Moreover, investors' negative reaction may have been also driven by the expectation of compensations to be paid, as the case concerned a large number of employees. Another possibility is that higher control costs were expected, as Apple announced several measures to be adopted in that sense.

Case 14 - CP Foods brought to light the announcement of extreme working conditions, human traffic, slavery, torture and death of employees. Yet, no negative reaction from investors was detected on the case. Supply chain partners were largely cited in the media (especially in the United Kingdom), contradicting the idea that reputational damage is linked to the destruction of market value. No operational glitch was expected also, as the shrimp production was not interrupted. Moreover, the involved firms (mainly supermarket chains) hold a particularly large portfolio, which could contribute to the idea that, even if the shrimp supply suffered a glitch, that would not be relevant to the general sales of these companies.

Finally, and more recently, the Volkswagen Fraud (Case 15), in turn, is the most representative case of investors' negative reaction on announcements of CSR failure occurred in a supply chain partner. Five out of the twenty identified supply chain partners presented significant losses in their market value. Volkswagen is the main client of many of these firms, which may reflect investors' concerns on their sales being seriously affected. According to the website [bloomberg.com](http://bloomberg.com), Magma International Inc., one of the five companies that suffered market loss, reports 11% of its annual revenues from Volkswagen. In the occasion of the announcement, David Tyerman (investment analyst at Cannacord Genuity) stated that "Magma has a lot at stake here"; and "On a day like today, everyone involved with Volkswagen gets tarred with the same bush", referring to the case. The company is the biggest Canadian auto parts maker publicly listed. For BorgWarner, in turn, Volkswagen sales account for 17% of its total revenues. Despite not comprehending the objective of the study, in order to provide an additional perspective on this case, the same event study analysis was conducted to test the impact of the event in the market value of Volkswagen itself. The results show that the company

suffered severe market value losses (significant at 99% confidence level) in event windows 2, 3, 4, 5, 6 and 7, as follows:

**Table 14: Event Study for Volkswagen**

	Event Window			Event Impact		
	Number of Days	Initial Day	Final Day	Number of Days	Calculated CAR	t-stat
Event Window 1	2	D-1	D0	200	-0,31%	-0,209
Event Window 2	2	D0	D1	200	-17,71%	-12,000
Event Window 3	3	D0	D2	200	-30,39%	-16,769
Event Window 4	3	D-1	D1	200	-17,76%	-9,825
Event Window 5	7	D-1	D5	200	-27,61%	-9,974
Event Window 6	5	D-2	D2	200	-30,43%	-13,006
Event Window 7	11	D-5	D5	200	-27,29%	-7,839

The gravity of the market value loss in the company may be an additional factor for the comprehension of impact its supply chain partners experienced.

## 7 Conclusion

The present study proposed the assessment of investors' reaction to negative social / environmental events in supply chains, testing if negative events originated in a company affect the market value of other chain partners. Over the discussion of relevant and largely employed concepts on the Operations Management and Management literature, such as supply chains, supply chain management, corporate social responsibility, sustainable development, sustainable management, sustainable supply chain management and the principle of extended producer responsibility, negative social / environmental events were hypothesized as being potentially harmful to the market value of supply chain partners. The link between these concepts and the creation and maintenance of competitive advantage to firms is also addressed, supporting the idea that eventual sustainability fails in business levels may destroy value to shareholders, specifically in what relates to supply chain contexts.

Adding to this discussion, the main arguments of the Stakeholder Theory are presented, as they complement the idea that social / environmental practices are valuable to a diverse set of stakeholders. In that sense, they have been positioned as representing an extension of the profit maximization objective of firms, on which most of the Theories of the Firm are comprehended. On what relates to business' objectives, the broader approach offered by the Stakeholder Theory allows for the assessment of business and business practices from an different perspective which encompasses sustainable management, and sustainable supply chain management as ways firms may employ to meet societies demand for an effective sustainable development.

As discussed on the text, the meeting of social / environmental agenda is not disconnected of the value creation. The triple bottom line of sustainable development stands that real sustainability in business level shall be achieved when its three axes – social, environmental and economic developments - are considered in the conduction of business. By reaffirming the need for value creation, the perspectives offered by the Stakeholder Theory also add to the hypothesized market value destruction in face of negative social / environmental events.

On what regards more particularly the theoretical bases of investors' reactions, a discussion on the main developments of the efficient market hypothesis is also proposed, as well as on the adjustment of stock prices to new information. Beyond offering a better understanding on the

functioning of the stock market, both discussions contribute to the comprehension that the event study method is an appropriate method in testing the reaction of investors to events.

Through the employment of a particular approach and focusing the supply chain, we proposed the evaluation of market value loss of supply chain partners when negative social / environmental events are disclosed. Along with the documentary analysis and description of 15 such supply chain cases, the variation of the market value of 82 supply chain partners was analyzed through the event study method. The results of the study suggest that, in the majority of assessed companies (74/82), no statistically significant reaction was detected.

The documentary research also allowed a critical evaluation of the results, largely contributing to the discussion section. As presented in the description of the cases, the information gathered in the research process led to the contextualization of each event. Based on this material, each case was individually analyzed, considering the nature of the events, the characteristics of the evolved companies, the social, environmental, and operational consequences, as well as the media reaction. The former showed to be particularly relevant, as it represented the main mean of dissemination of new information.

Based on the analysis of the results of the event study, as well as on the results of the documentary research, the main conclusion of the study is that apparently investors do not react to negative social / environmental issues in supply chains. Considering the operational consequences of events, the results discussed in the previous section show that cases concentrated on small suppliers did not cause negative reaction of investors. In such cases, even if production was completely interrupted, it could be (presumably) easily and fastly reconfigured, resulting in no major operational consequences to supply chain partners. In other cases, in turn, despite the source firms were expressive in transactional volumes, operations do not seem to have been severely affected. As discussed, several measures to manage the issue were announced, such as the hiring of new employees and the adequacy of working conditions. These two categories might suggest that investors' decisions are not directly based on the consequences of firms' operations to stakeholders. Instead, as long as there are no operational consequences to the involved firms, their positions remain apparently unaffected. A third category refers to those cases on which source firms concentrated a strategic portion of supply chain partners' operations, such as in the Volkswagen Fraud. As shown in the discussion

section, based on the operational consequences to some of the firms involved, investors themselves stated their concerns around the stock market reaction.

As discussed throughout the study, CSR and sustainable supply chain management have been argued to represent powerful tools for the strategic positioning of firms as sustainable enterprises. Moreover, most of the discussed cases received great attention of the media, linking large firms to slavery, suicides, environmental damage among other negative consequences of their operations. This negative publicity would be expected to cause reputational damages to companies, as they would be associated to the disrespect of nature and human rights. The results, however, suggest that damages to corporate image, identity or reputation of firms do not seem to be relevant to investors, or at least did not cause a reevaluation of the fair stock price of the analyzed firms. This also suggests that either such events do not cause damage to corporate reputations, or that corporate reputations have no effect on the market value of firms, what contradicts most of the literature concerning the issue. The fact that negative events related on this study did not cause market value losses (with the exception of operational consequences, as discussed above) deserves a deeper addressment, as it potentially presents a new perspective of stakeholders' expectations and values towards firms.

From a theoretical perspective, our results may be understood as possibly presenting a questioning of the main arguments of the Stakeholder Theory. This means that the concern of firms around their operations may not be directly related to the consequences suffered by clients, employees or societies in general. The value creation logics would be stronger in that sense. This is aligned with the mainstream Strategic and Operations management literature, which ultimately searches for the sources of competitive advantage and differential performance among firms. As discussed in the literature review, this also supports the Theories of the Firm rooted in the Economics literature. In a nutshell, once more the results suggest that investors' decisions might possibly be mainly driven by profit maximization, and that negative social / environmental events in supply chains in general do not affect investors' decisions.

However, due to the limitations of the present study, such theoretical conclusions count on its own limitations. In that sense it would not be possible to say that investors do not value sustainability at business level, as they may have perceived the negative events discussed as punctual failures, not related to the policies and practices normally employed by firms. In order

to assess their actual judgement on the issue, further research would be necessary, as the proposed study is limited on that sense. The limitations in question as well as the suggestions for future research are better addressed in the next and final section. The study contributes tough to the Operations Management literature. More specifically it provides empirical support on the effects that members of supply chains may cause on each other, a promising and still not fully addressed field of research. This contribution ultimately adds to the development of a supply chain specific theory.

The present study reached its objectives, as it has:

- 1 – Identified and descripted relevant negative social / environmental events that could possibly have impacted the market value of supply chain partners in the period between January 2005 and September 2015;
- 2 – Identified the supply chains and the supply chain partners possibly affected;
- 3 – Measured eventual abnormal returns for all the supply chain partners identified, considering seven different event windows around the date of the identified events.

In that sense, the answer to the research question proposed - Do investors negatively react to announcements of negative social / environmental events related to a supply chain partner? – is NO, as the results did not allow for the rejection of the null hypothesis.



## 8 Limitations and Future Research

Several limitations emerged during the development of this study, delimitating opportunities for future research as follows:

As the documentary research developed, it is possible that some supply chain partners were not identified, and hence not included in the event study sample. Deeper documental analysis could allow for the construction of a bigger sample, framing a wider range of the supply chains and enhancing the generalization of the results.

Other negative social / environmental events may have not been identified also as, despite intense, the procedures adopted in the research are not exhausting. More cases may be identified, enriching the analysis and allowing for more robust conclusions.

Regarding the detection of negative CARs, it is also possible that they may be due to firm specific contexts in the moment of the announcements. Future research could consider allying specific analysis (e.g. case studies) with the event study method, capturing eventual disparities that the research design of the present study was not able to accomplish.

As our study considered documentary research and publicly available data, investors' perceptions were measured through market value variation. Further research could also consider addressing them through other sources of primary data, such as interviews, allowing for deeper insights into the investors' positioning and actions. In the same sense, other stakeholders could also be assessed (e.g. clients, supply chain partners, employees) to enrichen the analysis.

The study does not allow the conclusion that sustainable management or sustainable supply chain management are not valuable for investors. Due to its limitations, it may only suggest such thought, as the results indicate that there may be evidences in that sense. As discussed, it is possible that investors do not perceive such events as proves of a lack of sustainable supply chain management, comprehending them as punctual failures. A longitudinal research that considers a series of negative social / environmental events could provide further evidences that

sustainable management or sustainable supply chain management are not applied by firms. This would allow the test of investors' reaction in more solid basis in that regard.

The study concentrated on negative social / environmental events. The expansion of the research to other sorts of events may add valuable inputs to the conclusions.

## 9 Bibliographic References

AGRAWAL, J.; KAMAKURA, W.A. (1995) The Economic Worth of Celebrity Endorsers: An Event Study Analysis. *Journal of Marketing*, v.59, n.3, pp.56-62.

ALAM, A.; BAGCHI, P.K.; KIM, B.; MITRA, S.; SEABRA, F. (2012) Supply chain Integration and its Effect on Performance: A Multi-Country Study. *POMS 23rd Annual Conference*. Chicago, Illinois, USA.

ALCHIAN, A.A.; DEMSETZ, H. (1972) Production, Information Costs, and Economic Organization. *American Economic Review*, v.62, n.5, pp. 777-795.

ARROYO-LÓPEZ, P.; BITRAN, G. (2007). Coordination of Supply Chain Networks and the Emergence of Mini-Maestros. *MIT Sloan School Working Paper No. 4674- 08*. Cambridge, MA: MIT Press.

ASHLEY, J.W. (1962) Stock Prices and Changes in Earnings and Dividends. *Journal of Political Economy*, v.70, n.1, pp.82-85.

AZORÍN, J.F.M.; CLAVER-CORTÉS, E.; PEREIRA-MOLINER, J.; TARÍ, J.J. (2009) Environmental Practices and Firm Performance: an Empirical Analysis in the Spanish Hotel Industry. *Journal of Cleaner Production*, v.17, n.5, pp.516-524.

BAKKER, F.G.A.; GROENEWEGEN, P.; DEN HOND, F. (2005). A Bibliometric Analysis of 30 years of Research and Theory on Corporate Social Responsibility and Corporate Social Performance. *Business & Society*, v.44, n.3, pp.283–317.

BALL, R.; BROWN, P. (1968) An Empirical Analysis of Accounting Income Numbers. *Journal of Accounting Research*, v.6, n.2, pp.159-178.

BARKER, C.A. (1956) Effective Stock Splits. *Harvard Business Review*, v.34, n.1, pp.101-106.

BARKER, C.A. (1957) Stock Splits in a Bull Market. *Harvard Business Review*, v.35, n.3, pp.72-79.

BARKER, C.A. (1958) Evaluation of Stock Dividends. *Harvard Business Review*, v.36, n.4, pp.99-114.

BARNARD, C. (1938) Functions of the Executive. *Cambridge, MA: Harvard University Press*.

BARON, J.; DOBBIN, F.; DOBBIN, J.; DEVEREAUX, P. (1986) War and Peace: The Evolution of Modern Personnel Administration in U.S. Industry. *American Journal of Sociology*, v.92, pp. 384-411.

BELL, D. (1960) The End of Ideology. *New York, Collier*.

BENJAMIN, B.A.; PODOLNY, J.M. (1999) Status, Quality, and Social Order in the California Wine Industry. *Administrative Science Quarterly*, v.44, n.3, pp.563-589.

BERGER, P.L.; LUCKMANN, T. (1966) The Social Construction of Reality. A Treatise in the Sociology of Knowledge. *Penguin Books*.

BERLE, A.A.; MEANS, G.C. (1932) *The Modern Corporation and Private Property*.

BOWEN, H.R. (1953) *Social Responsibilities of the businessman*. New York: Harper & Brothers.

BOWEN, F.E.; COUSINS, P.D.; LAMMING, R. C.; FARUK, A.C. (2001) The Role of Supply Management Capabilities in Green Supply. *Production and Operations Management*, v.10, n.2, pp.174-189.

BRESSER, R.H.; HARL, J.E. (1986) Collective Strategy: Vice or Virtue? *Academy of Management Review*, v.11, n.2, pp.408-427.

BRITO, L.A.L.; PIGNANELLI, A. (2012) O Efeito Cadeia de Suprimentos sobre o Desempenho das Empresas: uma Abordagem Multinível. In: XXXVI Encontro da Associação Nacional de Pós-Graduação e Pesquisa em Administração. Rio de Janeiro. Anais do XXXVI Encontro da ANPAD.

BROWN, S.J.; WARNER, J.B. (1980) Measuring Security Price Performance. *Journal of Financial Economics*, v.8, pp.205-258.

BURGESS, K.; SINGH, P.J.; KOROGLU, R. (2006) Supply Chain Management: a Structured Literature Review and Implications for Future Research. *International Journal of Operations and Production Management*, v.26, n.7, pp.703-729.

CAMPBELL, J.Y.; LO, A.W.; MACKINLAY, A.C. (1997) The Econometrics of Financial Markets. *Princeton University Press*.

CAPEHART, A.M.; AARON, J.R.; CLINE, B.N. (2010) Investor Reactions to Diversity Reputation Signals. *Corporate Reputation Review*, v.13, n.3, pp.184-197.

CARBONE, V.; MOATTI, V.; VINZI, V. E. (2012) Mapping Corporate Responsibility and Sustainable Supply Chains: An Exploratory Perspective. *Business Strategy and the Environment*, v.21, pp. 475-494.

CARROLL, A.B. (1999) Corporate Social Responsibility: Evolution of a Definitional Construct. *Business & Society*, v.38, pp.268-295.

CARTER, J.R.; PRICE, P.M. (1993) *Integrated Materials Management*. London: Pitman.

CARTER, C.R.; ROGERS, D.S. (2008). A Framework of Sustainable Supply Chain Management: Moving Towards a New Theory. *International Journal of Physical Distribution & Logistics Management*, v.38, n.5, pp.360-387.

CELLARD, A (2008). A Análise Documental. In: POUPART, J. et al. A Pesquisa Qualitativa: Enfoques Epistemológicos e Metodológicos. *Petrópolis, Vozes*.

CHATTERJEE, D.; PACINI, C.; SAMBAMURTHY, V. (2002) The Shareholder-Wealth and Trading-Volume Effects of Information-Technology Infrastructure Investments. *Journal of Management Information Systems*, v.19, n.2, pp.7-42.

CHEN, I.J., & PAULRAJ, A. (2004). Towards a Theory of Supply Chain Management: the Constructs and Measurements. *Journal of Operations Management*, v.22, pp.119-150.

CHEN, I.J., & PAULRAJ, A., LADO, A. (2004). Strategic Purchasing, Supply Management and Firm Performance. *Journal of Operations Management*, v.22, pp.505-523.

CHEUNG, A.W.K. (2011) Do Stock Investors Value Corporate Sustainability? Evidence from an Event Study. *Journal of Business Ethics*, v.99, n.2, pp.145-165.

CHRISTOPHER, M. (1992) *Logistics and Supply Chain Management*. London: Pitman Publishing.

CHKANIKOVA, O. (2012) Sustainable Supply Chain Management: Theoretical Literature Overview. *Working Paper*, pp.1-29.

CHOUDHARY, H.; TRIPATHI, G. (2012) An Analysis of Inventory Turnover in Indian Retail Industry and Its Impact on Financial Performance. *Journal of Services Research*, v.12, n.1, pp.43-64.

CLYDE, P.; KARNANI, A. (2015) Improving Private Sector Impact on Poverty Alleviation: A Cost-Based Taxonomy. *California Management Review*, v.57, n.2, pp.20-35.

COCHRAN, P.L.; WOOD, R.A. (1984) Corporate Social Responsibility and Financial Performance. *Academy of Management Journal*, v.27, n.1, pp.42-56.

CONNER, K.R. (1991) A Historical Comparison of Resource-Based Theory and Five Schools of Thought Within Industrial Organization Economics: Do We Have a New Theory of the Firm? *Journal of Management*, v.17, n.1, pp.121-154.

COOPER, M.C.; ELLRAM, L.M. (1993) Characteristics of Supply Chain Management and the Implications for Purchasing and Logistics Strategy. *The International Journal of Logistics Management*, p.4, n.2, pp.13-24.

COOPER, M.C.; LAMBERT, D.M.; PAGH, J.D. (1997) Supply Chain Management: More than a New Name for Logistics. *International Journal of Logistics Management*, v.8, n.1, pp.1-13.

- CORRADO, C.J. (2010) Event Studies: a Methodology Review. *Accounting & Finance*, v.51, n.1, pp.207-234.
- CRUBELLATE, J. M. (2007) Three Neofunctionalist Conceptual Contributions to the Institutional Theory in Organizations. *Brazilian Administrative Review*, v.4, n.1, pp. 66-81.
- DALE, B.G.; LASCELLES, D.M.; LLOYD, A. (1994) Supply Chain Management and Development. In: DALE, B.G. (Ed.) *Managing Quality*. London: Prentice-Hall, pp.292-315.
- DAHLSUD, A. (2006) How Corporate Social Responsibility is Defined: an Analysis of 37 Definitions. *Corporate Social Responsibility and Environmental Management*, v.15, pp.1-13.
- DAHRENDORFF, R. (1959) *Class and Class Conflict in Industrial Society*. Stanford, California: Stanford University Press.
- DAVIS, K. (1960) Can Business Afford to Ignore Social Responsibilities? *California Management Review*, v.2, n.3, pp.70-76.
- DE BRITO, M. P.; CARBONE, V.; BLANQUART, C. M. (2008) Towards a Sustainable Fashion Retail Supply Chain in Europe: Organization and Performance. *International Journal of Production Economics*, v.114, pp. 534-553.
- DiMAGGIO, P.; POWELL, W. (1983) The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, v. 48, n.2, pp.147-160.
- DiMAGGIO, P.; POWELL, W. (1991) *The New Institutionalism in Organizational Analysis*. University of Chicago Press
- DONALDSON, T.; PRESTON, L. (1995) The Stakeholder Theory of the Corporation - Concepts, Evidence, and Implications. *Academy of Management Review*, v.20, n.1, pp. 65–91.
- DOLLEY, J.C. (1933) Characteristics and Procedure of Common Stock Split-ups. *Harvard Business Review*, v.12, pp.316-326.
- DOWLING, G. (1986) Managing Your Corporate Images. *Industrial Marketing Management*, v.15, n.2, pp.109-115.
- 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*, v.20, n.2, pp.435-446.
- DUBOIS, A.A.; HULTHEN, K.; PEDERSEN, A.C. (2004) Supply Chains and Interdependence: a Theoretical Analysis. *Journal of Purchasing and Supply Management*, v.10, n.1, pp.3-9.

- DWYER, G.P. (2001) The Use of Event Studies in Finance and Economics. *University of Rome at Tor Vergata*, working paper.
- DYER, J.H.; SINGH, H. (1998) The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage. *The Academy of Management Review*, v.23, n.4, pp.660–679.
- EDELMAN, L. (1992) Legal Ambiguity and Symbolic Structures: Organizational Mediation of Civil Rights Law. *American Journal of Sociology*. v.97, pp. 1531-1576.
- EISENHARDT, K. M. (1985). Control: Organizational and Economic Approaches. *Management Science*, v.31, n.2, pp. 134.
- EISENHARDT, K. M. (1989). Agency Theory: An Assessment and Review. *Academy of Management Review*, v.14, n.1, pp. 57.
- ELKINGTON, J. (1994) Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development. *California Management Review*, v.36, n.2 pp. 90-100.
- ELKINGTON, J. (1997) *Cannibals with Forks: the Triple Bottom Line of 21<sup>st</sup> Century Business*. Stony Creek, CT: New Society Publishers.
- FAMA, E. F. (1970) Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance*, v. 25, n. 2, pp. 383-417.
- FAMA, E.F.; FISHER, L.; JENSEN, M.C.; ROLL, R. (1969) The Adjustment of Stock Prices to New Information. *International Economic Review*, v.10, pp.1-27.
- FARMER, D. (1997) Purchasing Myopia Revisited. *European Journal of Purchasing Supply Management*, v.3, n.1, pp.1-8.
- FARMER, D.H.; VAN AMSTEL, R. (1991) *Effective Pipeline Management: How to Manage Integrated Logistics*. Aldershot: Gower.
- FLIGSTEIN, N. (1985) The Spread of the Multidivisional form among large firms, 1919-1979. *American Sociology Review*, v.50, pp. 377-391.
- FREDERICK, W.C. (1960) The Growing Concern Over Social Responsibility. *California Management Review*, v.2, pp.54-61.
- FORD, D. (1990) *Understanding Business Markets*. London: Academic Press.
- FORNELL, C.; MITHAS, S.; MARGESON, F.V.; KRISHNAN, M.S. (2006) Customer Satisfaction and Stock Prices: High Returns, Low Risk. *Journal of Marketing*, v.70, n.1, pp.3-14.

- FORRESTER, J. (1958) Industrial Dynamics: a Major Breakthrough for Decision Maker. *Harvard Business Review*, v.36, n.4, pp.37-66.
- FORRESTER, J. (1961) *Industrial Dynamics*. New York: Wiley.
- FREEMAN, R. E. (1984) Strategic Management: A stakeholder Approach. Boston, MA: Pitman.
- FREEMAN, R. E. (1994) The Politics of Stakeholder Theory. *Business Ethics Quarterly*, v.4, n.4, pp. 409-421.
- FREEMAN, R. E.; WICKS, A. C.; PARMAR, B. (2004) Stakeholder Theory and “The Corporate Objective Revisited”. *Organization Science*, v.15, n.3, pp. 364-369.
- FRIEDMAN, M. (1970) The Social Responsibility of Business is to Increase its Profits. *The New York Times Magazine*, September 13, 1970, The New York Times Company.
- GARCÍA, L. S.; BERNAU, M. A. G.; ZORIO, A. (2014) Credibility in Latin America of Social Responsibility Reports. *RAE FGV-EAESP – Revista de Administração de Empresas, Escola de Administração de Empresas de São Paulo da Fundação Getúlio Vargas*, v.54, n.1, pp. 28-38.
- GONÇALVES, O.; ROBINOT, E.; MICHEL, H. (2015) Does it Pay to be Green? The Case of French Ski Resorts. *Journal of Travel Research*, forthcoming.
- GONG, S.X.H. (2009) Event Study in Transport Research: Methodology and Applications. *Transport Reviews*, v.29, n.2, pp.207-222.
- GUNASEKARAN, A. (2004) Supply Chain Management: Theory and Applications. *European Journal of Operational Research*, Editorial, v.159, pp.265-268.
- HAKANSSON, H.; SNEHOTA, I. (1995) *Developing Relationships in Business Networks*. Boston: International Thomson Press.
- HARLAND, C.M.; LAMMING, R.C.; COUSINS, P.D. (1999) Developing the Concept of Supply Strategy. *International Journal of Operations and Production Management*, v.19, pp.650-673.
- HARRISON, A.; NEW, C. (2002) The Role of Coherent Supply Chain Strategy and Performance Management in Achieving Competitive Advantage: an International Survey. *Journal of the Operational Research Society*, v.53, n.3, pp.263-271.
- HART, S. (1997) Beyond Greening: Strategies for a Sustainable World. *Harvard Business Review* v.75, n.1, pp. 66-76.
- HEALD, M. (1957) Management’s Responsibility to Society: the Growth of an Idea. *Business History Review*, v.31, n.4, pp.375-384.



- HELPER, S. (1991) Strategy and Irreversibility in Supplier Relations: the Case of the US Automobile Industry. *Business History Review*, v.65, n.4, pp.781-824.
- HENDERSON, B.D. (1979) Henderson on Corporate Strategy. *New York, Mentor*.
- HENDRICKS, K.B.; SINGHAL, V.R. (2003) The Effect of Supply Chain Glitches on Shareholder Wealth. *Journal of Operations Management*, v.21, n.5, pp.501-522.
- HENDRICKS, K.B.; SINGHAL, V.R. (2005a) Association between Supply Chain Glitches and Operation Performance. *Management Science*, v.51, pp.695-711.
- HENDRICKS, K.B.; SINGHAL, V.R. (2005b) An Empirical Analysis of the Effect of Supply Chain Disruptions on Long-run Stock Price Performance and Equity Risk of the Firm. *Production and Operations Management*, v.14, pp.35-52.
- HINES, P. (1994) *Creating World Class Suppliers: Unlocking Mutual Competitive Advantage*. London: Pitman Publishing.
- HOLMSTRON, B.R.; TIROLE, J. (1989) Theory of the Firm. In: SCHMALENSEE, R.; WILLING, R.D. (Eds.) *Handbook of Industrial Organization*, v.1, pp.61-133.
- HOPKINS, M. (1998) *The Planetary Bargain: Corporate Social Responsibility Comes of Age*. London: MacMillan.
- JABBOUR, A.B.L.S.; JABBOUR, C.J.C.; LATAN, H.; TEIXEIRA, A. V.; OLIVEIRA, J.H.C. (2014) Quality Management, Environmental Management Maturity, Green Supply Chain Practices and Green Performance of Brazilian Companies with ISO 14001 Certification: Direct and Indirect Effects. *Transportation Research Part E*, v.67, pp.39-51.
- JACOBS, B.W.; SINGHAL, V.R.; SUBRAMANIAN, R. (2010) An Empirical Investigation of Environmental Performance and the Market Value of the Firm. *Journal of Operations Management*, v.28, n.5, pp.430-441.
- JARILLO, J.C. (1993) *Strategic Networks: Creating the Borderless Organization*. Bodmin, Cornwall: MPG Books Ltd.
- JENSEN, M.; MECKLING, W. (1976). Theory of the firm: Managerial Behavior, Agency Costs, and Ownership Structure. *Journal of Financial Economics*, v.3, pp. 305-360.
- JENSEN, M.; ROY, A. (2008) Staging Exchange Partner Choices: When Do Status and Reputation Matter? *Academy of Management Journal*, v.51, n.3, pp.495-516.
- JONES, T.; RILEY, D. (1985) Using Inventory for Competitive Supply Chain Management. *International Journal of Physical Distribution & Materials Management*, v.15, n.6, pp.16-26.

JONSSON, P.; MATTSOZ, S. (2008) Inventory Management Practices and Their Implications on Perceived Planning Performance. *International Journal of Production Research*, v.46, n.7, pp.1787-1812.

KAMENS, D. (1977) Legitimizing myths and educational organization: the relationship between organizational ideology and formal structure. *American Sociological Review*, v.42, pp. 208-219.

KATHAWALA, Y.; ABDOL, K. (2003) Supply Chain Evaluation in the Service Industry: a Framework Development Compared to Manufacturing. *Managerial Auditing Journal*, n.2, pp.140-149.

KEITH, O.R.; WEBBER, M.D. (1982) Supply Chain Management: Logistics Catches up with Strategy.

KIRON, D.; KRUSCHWITZ, N.D.; HAANAES, K.; VELKEN, I.V.S. (2012) Sustainability Nears a Tipping Point. *MIT Sloan Management Review*, v.53, n.2, pp.69-74.

KONAR; COHEN, 2001; KOVÁCS, R.V. (2008) Corporate Environmental Responsibility in the Supply Chain. *Journal of Cleaner Production*, v.16, n.15, pp.1571-1578.

KOTHARI, S.; WARNER, J. (2005) Econometrics of Event Studies. *Center for Corporate Governance, Tuck School of Business at Dartmouth, working paper*.

LALONDE, B.J.; MASTERS, J.M. (1994) Emerging Logistics Strategies: Blueprints for the Next Century. *International Journal of Physical Distribution & Logistics Management*, v.24, n.7, pp.35-47.

LAMBERT, D.M.; STOCK, J.R.; ELLRAM, L.M. (1998) *Fundamentals of Logistics Management*. Boston: McGraw Hill.

LAMMING, R.C. (1993) *Beyond Partnership: Strategies for Innovation and Lean Supply*. Hempstead: Prentice Hall.

LANTOS, G.P. (2001) The Boundaries of Strategic Corporate Social Responsibility. *Journal of Consumer Marketing*, v.18, n.7, pp.595-630.

LANTOS, G.P. (2002) The Ethicality of Altruistic Corporate Social Responsibility. *Journal of Consumer Marketing*, v.19, p.3, pp.205-230.

LE GOFF, J. (1988) *Histoire et Mémoire*. Paris, Gallimard.

LEE, H.L. (2000) Creating Value through Supply Chain Integration. *Supply Chain Management Review*, v.4, n.4, pp.30-37.

LEE, H.L.; BILLINGTON, C. (1992) Managing Supply Chain Inventory: Pitfalls and Opportunities. *Sloan Management Review*, Spring, pp.65-73.

LI, S.; RAO, S.S.; RAGU-NATHAN, T.S.; RAGU-NATHAN, B. (2005) Development and Validation of a Measurement for Studying Supply Chain Management Practices. *Journal of Operations Management*, v.23, n.6, pp.618-641.

LOCKAMY, A.; McCORMACK, K. (2004) Linking SCOR Planning Practices to Supply Chain Performance, an Exploratory Study. *International Journal of Operations & Production Management*, v.24, n.12, pp.1192-1218.

LUDKE, M.; ANDRÉ, M.E.D. (1986) Pesquisa em Educação: Abordagens Qualitativas. São Paulo, EPU

MACHADO-DA-SILVA, C.L.; FONSECA, V. (1999) Competitividade Organizacional: Conciliando Padrões Concorrenciais e Padrões Institucionais. In: VIEIRA, M.; OLIVEIRA, L. M. (Eds.) *Administração Contemporânea*. São Paulo: Atlas, 1999, p. 27-39.

MACKENZIE, A.; THOMSEN, M. (2001) The Effect of E. Coli O157:H7 on Beef Price. *Journal of Agricultural and Resource Economic*, v.26, n.2, pp.431-444.

MALKIEL, B.G. (2003) The Efficient Market Hypothesis and Its Critics. *Journal of Economic Perspectives*, v.17, n.1, pp.59-82.

MACKINLAY, A.C. (1997) Event Studies in Economics and Finance. *Journal of Economic Literature*, v.35, n.1, pp.13-39.

MANDELBROT, B. (1966) Forecasts of Future Prices, Unbiased Markets, and “Martingale” Models. *Journal of Business*, v.39, pp.242-255.

MARCH, J.; SIMON, H. (1957) Organizations. New York, Wiley

MAY, T. (2004) Pesquisa Social: Questões, Métodos e Processos. Porto Alegre, Artmed.

McCLOSKEY, D. (1998) The Rhetoric of Economics 2nd ed. Madison, University of Wisconsin Press.

MENTZER, J.T. ; DeWITT, W. ; KEEBLER, J.S.; MIN, S. ; NIX, N.W. ; SMITH, C.D. ; ZACHARIA, Z.G. (2001) Defining Supply Chain Management. *Journal of Business Logistics*, v.22, n.2, pp.1-25.

MERTON, R. (1948) Social Theory and Social Structure. Glencoe, Illinois. Free Press, pp. 37-59.

MEYER, J.; ROWAN, B. (1977) Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology*, v.83, n.2, pp. 340-363.

- MEYER, J.; ZUCKER, L. (1989) Permanently Failing Organizations. *Newbury Park, CA, Sage*.
- MICHELS, R. (1962) Political Parties. *New York, Free Press*.
- MILES, M.P.; COVIN, J.G. (2000) Environmental Marketing: A Source of Reputational, Competitive, and Financial Advantage. *Journal of Business Ethics*, v.23, n.3, pp.299-312.
- MILLER, M.H.; MODIGLIANI, F. (1958) The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review*, v.48, n.3, pp.261-297.
- MILLER, M.H.; MODIGLIANI, F. (1961) Dividend Policy, Growth, and the Valuation of Shares. *The Journal of Business*, v.34, n.4, pp.411-433.
- MILLER, M.H.; MODIGLIANI, F. (1963) Corporate Income Taxes and the Cost of Capital : A Correction. *American Economic Review*, v.53, pp.433-43.
- MISRA, L.; RAO, V.S. (2009) The Launching of Transactional Web Sites: Market Response to Announcements by Incumbent B2C Companies. *Journal of Organizational Computing and Electronic Commerce*, v.19, n.1, pp.50-82.
- MIZRUCHI, M.A. (2004) Berle and Means revisited: The Governance and Power of Large U.S. Corporations, *University of Michigan*.
- MORGAN, J.; MONCZKA, R.M. (1996) Supplier Integration: a New Level of Supply Chain Management. *Purchasing*, v.120, n.1, pp.110-113.
- MYERS, J.H.; BAKAY, A.J. (1948) Influence of Stock Split-ups on Market Price. *Harvard Business Review*, v.26, n.2, pp.251-265.
- NARUS, J.A.; ANDERSON, J.C. (1995) Using Teams to Manage Collaborative Relationships in Business Markets. *Journal of Business-to-Business Marketing*, v.2, pp.17-47.
- NICOLAU, J.L. (2002) Assessing New Hotel Openings Through an Event Study. *Tourism Management*, v.23, n.1, pp.251-255.
- NICOLAU, J.L.; SELLERS, R. (2002) The Stock Market's Reaction to Quality Certification: Empirical Evidence from Spain. *European Journal of Operational Research*, v.142, n.3, pp.632-641.
- NIDUMOLU, R.; PRAHALAD, C. K.; RANGASWANI, M. R. (2009) Why Sustainability Is Now the Key Driver of Innovation. *Harvard Business Review*, Sept-2009, pp. 2-10
- OLIVEIRA, M. M. (2007) Como Fazer Pesquisa Qualitativa. *Petrópolis, Vozes*
- PAPADAKIS, Y. (2002) Operations Risk & Supply Chain Design: an Event Study. *Philadelphia, Wharton Center for Risk Management & Decision Processes*.

- PARK, R. E. (1922) *The Immigrant Press and its Control*. New York, Harper and Row.
- PFARRER, M.D.; POLLOCK, T.G.; RINDOVA, V.P. (2010) A Tale of Two Assets: The Effects of Firm Reputation and Celebrity on Earnings Surprises and Investors' Reactions. *Academy of Management Journal*, v.53, n.5, pp.1131-1152.
- PRAHALAD, C.K.; HAMMOND, A. (2002) Serving the World's Poor, Profitability. *Harvard Business Review*, pp.4-11.
- PORTER, M. E. (1980) *Competitive Strategy*. New York, Free Press.
- PORTER, M.E. (1987) Managing Value from Competitive Advantage to Corporate Strategy. *Harvard Business Review*, v.65, n.3, pp.43-59.
- PORTER, M.E.; KRAMER, M.R. (2006) Strategy and Society: the Link between Corporate Social Responsibility and Competitive Advantage. *Harvard Business Review*, v.84, n.12, pp.78-92.
- PORTER, M. E.; KRAMER, M., R. (2011) Creating Shared Value. *Harvard Business Review*, v. 89, n.1-2, pp. 62-77.
- PORTER, M. E.; VAN DER LINDE, C. (1995) Green and Competitive: Ending the Stalemate. *Harvard Business Review*. v.73, n.5, pp.120-134.
- RAHMAN, S. (2011) Evaluation of Definitions: Ten Dimensions of Corporate Social Responsibility. *World Review of Business Research*, v.1, n.1, pp.166-176.
- RAMANATHAN, U. (2012) Supply Chain Collaboration for Improved Forecast Accuracy of Promotional Sales. *International Journal of Operations & Production Management*, v.32, n.6, pp.676-695.
- REINHARDT, E.D.; KEANE, R.E.; CALKIN, D.E.; COHEN, J.D. (2008) Objectives and Considerations for Wildland Fuel Treatment in Forested Ecosystems of the Interior Western United States. *Forest Ecology and Management*, pp.256.
- ROBERTS, P.W.; DOWLING, G.R. (2002) Corporate Reputation and Sustained Superior Financial Performance. *Strategic Management Journal*, v.23, n.12, pp.1077-1093.
- ROSS, D. F. (1998) *Competing Through Supply Chain Management*, New York: Chapman & Hall.
- SÁ-SILVA, J.R.; ALMEIDA, C.D.; GUINDANI, J.F. (2009) Pesquisa Documental: Pistas Teóricas e Metodológicas. *Revista Brasileira de História e Ciências Sociais*, pp.1-15.
- SAMUELSON, P.A. (1965) Proof that Properly Anticipated Prices Fluctuate Randomly. *Industrial Management Review*, v.6, pp.41-49.

- SCHIMIDT, W.; RAMAN, A. (2012) When Supply-Chain Disruptions Matter. *Harvard Business School, working paper*.
- SCOTT, W.R. (2001) Institutions and Organizations, 2nd edition. *Thousand Oaks, Sage*.
- SCOTT, R.; MEYER, J. (1994) Institutional Environments and Organizations: Structural Complexity and Individualism. *Thousand Oaks, CA: Sage*.
- SELZNICK, P. (1957) Leadership in Administration: a Sociological Interpretation. *Evanston, IL: Row, Peterson*
- SELZNICK, P. (1966) TVA and the Grass Roots. *New York, Harper & Row*.
- SHARPE, W.F. (1964) Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. *Journal of Finance*, v.19, pp.425-442.
- SHRIVASTAVA, P. (1995) The role of Corporations in Achieving Ecological Sustainability. *Academy of Management Review*, v.20, pp. 936–960.
- SILTAOJA, M.; MALIN, V.; PYYKKONEN, M. (2015) ‘We are all Responsible Now’: Governmentality and Responsibilized Subjects in Corporate Social Responsibility. *Management Learning*, v.46, pp.444-460.
- SILVA, L. R. C.; DAMACENO, M. C. R.; SOBRAL, K. M.; FARIAS, I. M. S. (2009) Pesquisa Documental Investigativa na Formação Docente. *IX Congresso Nacional de Educação*, pp.4554-4566.
- SIMON, H. A. (1947) Administrative Behavior. *New York: Free Press*.
- SINGHAL, V.R. (2005) Excess Inventory and Long-Term Stock Price Performance. *Georgia Institute of Technology, working paper*.
- SNOW, C.C.; MILES, R.E.; COLEMAN JR., H.J. (1992) Managing 21st Century Network Organizations. *Organizational Dynamics*, v.20, n.3, pp.5–20.
- SPINA, D.; DI SERIO, L.C.; BRITO, L.A.L.; DUARTE, A.L.C.M. (2014) The Influence of Supply Chain Management Practices in the Enterprise Performance. In: *POMS 25<sup>th</sup> Annual Conference*, 2014, Atlanta.
- STEVENS, G. (1989) Integrating the Supply Chain. *International Journal of Physical Distribution and Materials Management*, v.19, n.8, pp.3-8.
- STRANG, D. (1990) From Dependency to Sovereignty: An Event History Analysis of Decolonization 1870-1987. *American Sociological Review*, v.55, pp. 846-860.
- SUNDARAM, A.; INKPEN, A. (2004) The Corporate Objective Revisited. *Organization Science*. v.55, n.3, pp. 846-860.

- THOMAS, W.I; ZNANIECKI, F. (1927) *The Polish Peasant in Europe and America*. New York: Dover
- THOMSEN, M.; MCKENZIE, A.M. (2001) Market Incentives for Safe Foods: An Examination of Shareholder Losses from Meat and Poultry Recalls. *American Journal of Agricultural Economics*, v.82, n.3, pp.526-538.
- THORELLI, H. (1986). Networks: Between Markets and Hierarchies. *Strategic Management Journal*, v.7, n.1, pp.37–51.
- TOLBERT, P. S. (1985) Institutional Environments and Resource Dependence: Sources of Administrative Structure in Institutions of Higher Education. *Administrative Science Quarterly*, v.30, pp.1-13.
- TOLBERT, P.; ZUCKER, L. (1983) Institutional Sources of Change in the Formal Structure of Organizations: The Diffusion of Civil Service Reform 1880-1935. *Administrative Science Quarterly*, v.28, pp. 22-39.
- TOLBERT, P.; ZUCKER, L. (1996) The Institutionalization of Institutional Theory. *Organizational Behavior and Theory Commons*. ILR School, Cornell University.
- TUCK, C.E. (2005) A Quality Award and Stock Market Reaction: Evidence from the European Union. *Total Quality Management*, v.16, n.8-9, pp.979-986.
- TYNDALL, G.; GOPAL, C.; PARTSCH, W.; KAMAUFF, J. (1998) *Supercharging Supply Chains: New Ways to Increase Value Through Global Operational Excellence*. New York: John Wiley & Sons.
- VAN MARREWIK, M. (2003) Concepts and Definitions of CSR and Corporate Sustainability: Between Agency and Communion. *Journal of Business Ethics*, v.44, pp.95-105.
- VENKATARAMAN, S. (2002) Stakeholder Value Equilibration and the Entrepreneurial Process. R. E. Freeman, S. Venkataraman, eds. *The Ruffin Series No. 3: Ethics and Entrepreneurship*. Philosophy Documentation Center, Charlottesville, VA, pp. 45-57.
- WAHBA, H. (2007) Does the Market Value Corporate Environmental Responsibility? *Corporate Social Responsibility and Environmental Management*, v.15, n.2, pp.89-99.
- WANG; CUI; LIANG (2015) Does it Pay to be Green? Financial Benefits of Environmental Labeling among Chinese Firms. *Management and Organization Review*, v.11, pp.493-519.
- WEBER, M. (1946) *The Theory of Social and Economic Organization*. A.M. Henderson and Talcott Parsons, Glencoe Illinois. Free Press.
- WOMACK, J.P.; JONES, D.T.; ROOS, D. (1990) *The Machine that Changed the World*. Macmillan: Maxwell.

WOMACK, J.P.; JONES, D.T. (1994) From lean production to the lean enterprise. *Harvard Business Review*, v.72, n.2, pp.93–103.

WOODWARD-CLYDE (1999) Key Opportunities and Risks to New Zealand's Export Trade from Green Market Signals. *Sustainable Management Fund Project 6117*. Auckland: New Zealand Trade and Development Board.

ZHOU, X. (1993) Occupational Power, State Capacities, and the Diffusion of Licensing in the American States: 1890-1950. *American Sociological Review*, v.58, pp. 536-552.

ZUCKER, L.G. (1977) The Role of Institutionalization in Cultural Persistence. *American Sociological Review*, v.42, pp. 726-743.



## Appendix A: Estimated Parameters – Market Model

**Table 15: Estimated Parameters for Event Window 1 (-1 to 0)**

Case No.	Case	Company	$\alpha^i$	$\beta^i$	$\varepsilon^i$
Case 1	Palm Oil - Unilever	Wilmar	0,0028	1,0447	0,0282
Case 1	Palm Oil - Unilever	Unilever	0,0008	0,6942	0,0136
Case 2	Palm Oil - Nestlé	Wilmar	0,0007	1,0061	0,0149
Case 2	Palm Oil - Nestlé	Nestlé	0,0010	0,5731	0,0121
Case 3	BP Oilspill	Andarko	0,0006	1,5309	0,0148
Case 3	BP Oilspill	Transocean	-0,0009	1,3571	0,0141
Case 3	BP Oilspill	Halliburton	0,0002	1,6661	0,0149
Case 3	BP Oilspill	National Oilwell Varco	-0,0007	1,7390	0,0145
Case 3	BP Oilspill	Cameron International	0,0002	1,7398	0,0136
Case 3	BP Oilspill	Weatherford	-0,0026	1,5062	0,0191
Case 4	Zara Brazil	Inditex-Zara	0,0012	0,5612	0,0134
Case 5	Foxconn	Apple	0,0011	0,7534	0,0109
Case 5	Foxconn	Cisco	0,0006	0,9837	0,0147
Case 5	Foxconn	Amazon	0,0006	0,9943	0,0191
Case 5	Foxconn	Acer	-0,0012	1,0593	0,0258
Case 5	Foxconn	Sony	-0,0028	0,9572	0,0166
Case 5	Foxconn	Nokia	-0,0015	1,5180	0,0262
Case 5	Foxconn	Motorola	0,0005	0,8231	0,0109
Case 5	Foxconn	Toshiba	-0,0009	0,7391	0,0209
Case 5	Foxconn	Nintendo	-0,0032	0,5819	0,0243
Case 5	Foxconn	Microsoft	0,0006	0,7755	0,0085
Case 5	Foxconn	Google	0,0004	0,8387	0,0144
Case 5	Foxconn	HP	-0,0019	1,1249	0,0204
Case 6	Junking the Jungle	KFC	0,0015	0,7717	0,0117
Case 7	Bangladesh Fire	Zara	0,0030	0,5890	0,0164
Case 7	Bangladesh Fire	Wal-Mart	0,0006	0,3887	0,0101
Case 7	Bangladesh Fire	Disney	0,0009	0,8981	0,0088
Case 7	Bangladesh Fire	GAP	0,0024	1,0284	0,0159
Case 7	Bangladesh Fire	PVH	0,0017	1,4432	0,0205
Case 7	Bangladesh Fire	Sears	0,0009	1,7479	0,0351
Case 8	Child Labor	Apple	-0,0009	1,3341	0,0143
Case 9	Zara Argentina	Inditex-Zara	0,0015	0,6970	0,0161
Case 10	Rana Plaza	GAP	0,0013	0,8074	0,0176
Case 10	Rana Plaza	Primark	0,0015	0,6593	0,0084
Case 10	Rana Plaza	Next	0,0013	0,5731	0,0104
Case 10	Rana Plaza	Abercrombie & Fitch	0,0016	1,2705	0,0335
Case 10	Rana Plaza	Carrefour	0,0017	1,1382	0,0154
Case 10	Rana Plaza	Esprit	0,0005	0,7710	0,0341
Case 10	Rana Plaza	H&M	-0,0008	0,7837	0,0082
Case 10	Rana Plaza	Cato	-0,0016	1,2592	0,0164
Case 10	Rana Plaza	TJX	0,0002	0,6782	0,0101
Case 10	Rana Plaza	PVH	0,0010	1,1944	0,0206
Case 10	Rana Plaza	Target	0,0007	0,4553	0,0095

Case 10	Rana Plaza	Wal-Mart	0,0004	0,4557	0,0086
Case 10	Rana Plaza	JC Peney	-0,0022	1,0628	0,0340
Case 10	Rana Plaza	Marks & Spencer	0,0009	0,8624	0,0116
Case 10	Rana Plaza	Joe Fresh	0,0012	0,6035	0,0132
Case 10	Rana Plaza	Kohl's	0,0001	0,5599	0,0152
Case 11	Pegatron	Apple	-0,0028	1,3585	0,0173
Case 12	Licence to Kill	Golden Agri Resources	-0,0010	0,9263	0,0155
Case 12	Licence to Kill	Wilmar	0,0000	0,8867	0,0114
Case 12	Licence to Kill	Unilever	-0,0006	0,8918	0,0077
Case 13	Palm Oil - P&G	Wilmar	0,0005	0,8122	0,0097
Case 13	Palm Oil - P&G	Procter & Gamble	-0,0003	0,7252	0,0082
Case 13	Palm Oil - P&G	Pepsi Co	-0,0006	0,7381	0,0068
Case 13	Palm Oil - P&G	Johnson & Johnson	-0,0001	0,8709	0,0062
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,0004	0,9521	0,0071
Case 14	CP Foods	Wal Mart	-0,0001	0,5727	0,0062
Case 14	CP Foods	Tesco	-0,0011	0,6927	0,0105
Case 14	CP Foods	Cotsco	-0,0001	0,4262	0,0087
Case 14	CP Foods	Morisson	-0,0018	0,6377	0,0159
Case 14	CP Foods	Carrefour	0,0001	1,1088	0,0101
Case 15	Volkswagen Fraud	Motorola Solutions	0,0005	0,8587	0,0107
Case 15	Volkswagen Fraud	IBM	-0,0001	1,0417	0,0085
Case 15	Volkswagen Fraud	Nokia	-0,0005	1,0760	0,0163
Case 15	Volkswagen Fraud	Magma	0,0001	1,0732	0,0132
Case 15	Volkswagen Fraud	Visteon	0,0004	0,7333	0,0101
Case 15	Volkswagen Fraud	BorgWarner	-0,0009	1,1122	0,0118
Case 15	Volkswagen Fraud	Honeywell	0,0004	1,0675	0,0060
Case 15	Volkswagen Fraud	Infineon	0,0012	0,9630	0,0131
Case 15	Volkswagen Fraud	Siemens	-0,0005	0,8915	0,0067
Case 15	Volkswagen Fraud	Continental	0,0007	1,0950	0,0108
Case 15	Volkswagen Fraud	SAP	0,0002	0,8640	0,0078
Case 15	Volkswagen Fraud	BASF	-0,0003	1,1123	0,0065
Case 15	Volkswagen Fraud	Microsoft	-0,0003	1,1958	0,0126
Case 15	Volkswagen Fraud	Ballard	-0,0017	1,0020	0,0574
Case 15	Volkswagen Fraud	Dassault	0,0008	0,6547	0,0122
Case 15	Volkswagen Fraud	Plastic Omnium	0,0004	1,0773	0,0161
Case 15	Volkswagen Fraud	Kumho Tyres	-0,0018	1,1721	0,0186
Case 15	Volkswagen Fraud	LG Eletronics	-0,0014	0,6197	0,0186
Case 15	Volkswagen Fraud	Tupy S.A.	0,0001	0,2309	0,0197
Case 15	Volkswagen Fraud	Maruti	0,0018	0,8396	0,0107

Table 16: Estimated Parameters for Event Window 2 (0 a 1)

Case No.	Case	Company	$\alpha^i$	$\beta^i$	$\varepsilon^{it}$
Case 1	Palm Oil - Unilever	Wilmar	0,0029	1,0438	0,0282
Case 1	Palm Oil - Unilever	Unilever	0,0008	0,6950	0,0136
Case 2	Palm Oil - Nestlé	Wilmar	0,0005	0,9824	0,0147
Case 2	Palm Oil - Nestlé	Nestlé	0,0011	0,5797	0,0121
Case 3	BP Oilspill	Andarko	0,0005	1,5286	0,0149

Case 3	BP Oilspill	Transocean	-0,0008	1,3555	0,0141
Case 3	BP Oilspill	Halliburton	0,0001	1,6656	0,0149
Case 3	BP Oilspill	National Oilwell Varco	-0,0007	1,7365	0,0145
Case 3	BP Oilspill	Cameron International	0,0002	1,7388	0,0136
Case 3	BP Oilspill	Weatherford	-0,0027	1,4989	0,0191
Case 4	Zara Brazil	Inditex-Zara	0,0010	0,5531	0,0132
Case 5	Foxconn	Apple	0,0011	0,7513	0,0109
Case 5	Foxconn	Cisco	0,0006	0,9874	0,0146
Case 5	Foxconn	Amazon	0,0005	0,9884	0,0191
Case 5	Foxconn	Acer	-0,0013	1,0525	0,0259
Case 5	Foxconn	Sony	-0,0028	0,9583	0,0166
Case 5	Foxconn	Nokia	-0,0014	1,5221	0,0262
Case 5	Foxconn	Motorola	0,0003	0,8180	0,0108
Case 5	Foxconn	Toshiba	-0,0009	0,7388	0,0209
Case 5	Foxconn	Nintendo	-0,0032	0,5821	0,0243
Case 5	Foxconn	Microsoft	0,0005	0,7750	0,0085
Case 5	Foxconn	Google	0,0004	0,8385	0,0144
Case 5	Foxconn	HP	-0,0020	1,1222	0,0204
Case 6	Junking the Jungle	KFC	0,0015	0,7712	0,0117
Case 7	Bangladesh Fire	Zara	0,0030	0,5882	0,0164
Case 7	Bangladesh Fire	Wal-Mart	0,0007	0,4007	0,0102
Case 7	Bangladesh Fire	Disney	0,0008	0,8981	0,0088
Case 7	Bangladesh Fire	GAP	0,0024	1,0229	0,0159
Case 7	Bangladesh Fire	PVH	0,0016	1,4360	0,0205
Case 7	Bangladesh Fire	Sears	0,0008	1,7310	0,0351
Case 8	Child Labor	Apple	-0,0016	1,3865	0,0164
Case 9	Zara Argentina	Inditex-Zara	0,0014	0,6973	0,0161
Case 10	Rana Plaza	GAP	0,0011	0,7561	0,0176
Case 10	Rana Plaza	Primark	0,0016	0,6584	0,0083
Case 10	Rana Plaza	Next	0,0013	0,5735	0,0104
Case 10	Rana Plaza	Abercrombie & Fitch	0,0013	1,1548	0,0333
Case 10	Rana Plaza	Carrefour	0,0017	1,1354	0,0155
Case 10	Rana Plaza	Esprit	0,0005	0,7690	0,0341
Case 10	Rana Plaza	H&M	-0,0007	0,7802	0,0083
Case 10	Rana Plaza	Cato	-0,0018	1,2261	0,0165
Case 10	Rana Plaza	TJX	0,0001	0,6459	0,0101
Case 10	Rana Plaza	PVH	0,0010	1,1889	0,0206
Case 10	Rana Plaza	Target	0,0007	0,4532	0,0095
Case 10	Rana Plaza	Wal-Mart	0,0004	0,4339	0,0086
Case 10	Rana Plaza	JC Penney	-0,0021	1,0391	0,0340
Case 10	Rana Plaza	Marks & Spencer	0,0009	0,8584	0,0116
Case 10	Rana Plaza	Joe Fresh	0,0011	0,5600	0,0131
Case 10	Rana Plaza	Kohl's	0,0000	0,5429	0,0152
Case 11	Pegatron	Apple	-0,0027	1,3619	0,0173
Case 12	Licence to Kill	Golden Agri Resources	-0,0009	0,9285	0,0155
Case 12	Licence to Kill	Wilmar	0,0001	0,8874	0,0114
Case 12	Licence to Kill	Unilever	-0,0006	0,9306	0,0076
Case 13	Palm Oil - P&G	Wilmar	0,0006	0,8069	0,0099
Case 13	Palm Oil - P&G	Procter & Gamble	-0,0003	0,7231	0,0082
Case 13	Palm Oil - P&G	Pepsi Co	-0,0006	0,7381	0,0068

Case 13	Palm Oil - P&G	Johnson & Johnson	-0,0001	0,8721	0,0062
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,0003	0,9521	0,0071
Case 14	CP Foods	Wal Mart	-0,0001	0,5749	0,0061
Case 14	CP Foods	Tesco	-0,0011	0,6962	0,0105
Case 14	CP Foods	Cotsco	-0,0001	0,4238	0,0087
Case 14	CP Foods	Morisson	-0,0018	0,6403	0,0159
Case 14	CP Foods	Carrefour	0,0000	1,1020	0,0101
Case 15	Volkswagen Fraud	Motorola Solutions	0,0004	0,8599	0,0107
Case 15	Volkswagen Fraud	IBM	-0,0001	1,0421	0,0085
Case 15	Volkswagen Fraud	Nokia	-0,0005	1,0763	0,0163
Case 15	Volkswagen Fraud	Magma	0,0001	1,0740	0,0132
Case 15	Volkswagen Fraud	Visteon	0,0005	0,7324	0,0101
Case 15	Volkswagen Fraud	BorgWarner	-0,0009	1,1120	0,0118
Case 15	Volkswagen Fraud	Honeywell	0,0004	1,0681	0,0060
Case 15	Volkswagen Fraud	Infineon	0,0013	0,9671	0,0130
Case 15	Volkswagen Fraud	Siemens	-0,0006	0,8915	0,0067
Case 15	Volkswagen Fraud	Continental	0,0008	1,0953	0,0108
Case 15	Volkswagen Fraud	SAP	0,0002	0,8649	0,0078
Case 15	Volkswagen Fraud	BASF	-0,0003	1,1144	0,0064
Case 15	Volkswagen Fraud	Microsoft	-0,0003	1,1957	0,0126
Case 15	Volkswagen Fraud	Ballard	-0,0017	1,0021	0,0574
Case 15	Volkswagen Fraud	Dassault	0,0010	0,6570	0,0119
Case 15	Volkswagen Fraud	Plastic Omnium	0,0005	1,0780	0,0161
Case 15	Volkswagen Fraud	Kumho Tyres	-0,0018	1,1721	0,0186
Case 15	Volkswagen Fraud	LG Eletronics	-0,0013	0,6199	0,0186
Case 15	Volkswagen Fraud	Tupy S.A.	0,0002	0,2274	0,0197
Case 15	Volkswagen Fraud	Maruti	0,0017	0,8410	0,0107

**Table 17: Estimated Parameters for Event Window 3 (0 to 2)**

Case No.	Case	Company	$\alpha^i$	$\beta^i$	$\varepsilon^{it}$
Case 1	Palm Oil - Unilever	Wilmar	0,0030	1,0441	0,0283
Case 1	Palm Oil - Unilever	Unilever	0,0009	0,6954	0,0136
Case 2	Palm Oil - Nestlé	Wilmar	0,0006	0,9963	0,0147
Case 2	Palm Oil - Nestlé	Nestlé	0,0011	0,5813	0,0122
Case 3	BP Oilspill	Andarko	0,0007	1,5320	0,0148
Case 3	BP Oilspill	Transocean	-0,0007	1,3579	0,0141
Case 3	BP Oilspill	Halliburton	0,0002	1,6667	0,0149
Case 3	BP Oilspill	National Oilwell Varco	-0,0006	1,7390	0,0145
Case 3	BP Oilspill	Cameron International	0,0003	1,7418	0,0135
Case 3	BP Oilspill	Weatherford	-0,0026	1,5004	0,0191
Case 4	Zara Brazil	Inditex-Zara	0,0010	0,5546	0,0133
Case 5	Foxconn	Apple	0,0010	0,7506	0,0109
Case 5	Foxconn	Cisco	0,0007	0,9877	0,0146
Case 5	Foxconn	Amazon	0,0005	0,9885	0,0191
Case 5	Foxconn	Acer	-0,0012	1,0550	0,0259
Case 5	Foxconn	Sony	-0,0028	0,9587	0,0167
Case 5	Foxconn	Nokia	-0,0013	1,5230	0,0262

Case 5	Foxconn	Motorola	0,0004	0,8189	0,0108
Case 5	Foxconn	Toshiba	-0,0008	0,7395	0,0209
Case 5	Foxconn	Nintendo	-0,0031	0,5824	0,0244
Case 5	Foxconn	Microsoft	0,0006	0,7753	0,0085
Case 5	Foxconn	Google	0,0005	0,8391	0,0144
Case 5	Foxconn	HP	-0,0019	1,1231	0,0204
Case 6	Junking the Jungle	KFC	0,0015	0,7667	0,0117
Case 7	Bangladesh Fire	Zara	0,0030	0,5881	0,0164
Case 7	Bangladesh Fire	Wal-Mart	0,0007	0,4013	0,0102
Case 7	Bangladesh Fire	Disney	0,0008	0,8968	0,0088
Case 7	Bangladesh Fire	GAP	0,0024	1,0234	0,0159
Case 7	Bangladesh Fire	PVH	0,0016	1,4353	0,0205
Case 7	Bangladesh Fire	Sears	0,0005	1,7292	0,0350
Case 8	Child Labor	Apple	-0,0016	1,3843	0,0164
Case 9	Zara Argentina	Inditex-Zara	0,0014	0,6973	0,0161
Case 10	Rana Plaza	GAP	0,0011	0,7556	0,0176
Case 10	Rana Plaza	Primark	0,0016	0,6700	0,0083
Case 10	Rana Plaza	Next	0,0013	0,5780	0,0104
Case 10	Rana Plaza	Abercrombie & Fitch	0,0013	1,1560	0,0334
Case 10	Rana Plaza	Carrefour	0,0018	1,1305	0,0153
Case 10	Rana Plaza	Esprit	0,0005	0,7762	0,0341
Case 10	Rana Plaza	H&M	-0,0007	0,7786	0,0083
Case 10	Rana Plaza	Cato	-0,0019	1,2222	0,0164
Case 10	Rana Plaza	TJX	0,0001	0,6451	0,0101
Case 10	Rana Plaza	PVH	0,0009	1,1874	0,0206
Case 10	Rana Plaza	Target	0,0007	0,4532	0,0095
Case 10	Rana Plaza	Wal-Mart	0,0004	0,4350	0,0086
Case 10	Rana Plaza	JC Penney	-0,0020	1,0431	0,0340
Case 10	Rana Plaza	Marks & Spencer	0,0008	0,8599	0,0116
Case 10	Rana Plaza	Joe Fresh	0,0011	0,5600	0,0132
Case 10	Rana Plaza	Kohl's	0,0001	0,5435	0,0153
Case 11	Pegatron	Apple	-0,0027	1,3574	0,0173
Case 12	Licence to Kill	Golden Agri Resources	-0,0009	0,9286	0,0156
Case 12	Licence to Kill	Wilmar	0,0001	0,8857	0,0114
Case 12	Licence to Kill	Unilever	-0,0005	0,9290	0,0076
Case 13	Palm Oil - P&G	Wilmar	0,0006	0,8082	0,0099
Case 13	Palm Oil - P&G	Procter & Gamble	-0,0003	0,7231	0,0083
Case 13	Palm Oil - P&G	Pepsi Co	-0,0006	0,7375	0,0068
Case 13	Palm Oil - P&G	Johnson & Johnson	-0,0000	0,8720	0,0062
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,0003	0,9526	0,0071
Case 14	CP Foods	Wal Mart	-0,0002	0,5806	0,0061
Case 14	CP Foods	Tesco	-0,0011	0,7046	0,0105
Case 14	CP Foods	Cotsco	-0,0001	0,4219	0,0087
Case 14	CP Foods	Morisson	-0,0019	0,6639	0,0159
Case 14	CP Foods	Carrefour	0,0000	1,1014	0,0101
Case 15	Volkswagen Fraud	Motorola Solutions	0,0004	0,8603	0,0108
Case 15	Volkswagen Fraud	IBM	-0,0001	1,0433	0,0085
Case 15	Volkswagen Fraud	Nokia	-0,0006	1,0809	0,0163
Case 15	Volkswagen Fraud	Magma	-0,0000	1,0796	0,0131
Case 15	Volkswagen Fraud	Visteon	0,0005	0,7277	0,0101

Case 15	Volkswagen Fraud	BorgWarner	-0,0009	1,1167	0,0118
Case 15	Volkswagen Fraud	Honeywell	0,0004	1,0645	0,0059
Case 15	Volkswagen Fraud	Infineon	0,0013	0,9671	0,0131
Case 15	Volkswagen Fraud	Siemens	-0,0005	0,8916	0,0066
Case 15	Volkswagen Fraud	Continental	0,0008	1,0953	0,0109
Case 15	Volkswagen Fraud	SAP	0,0002	0,8649	0,0078
Case 15	Volkswagen Fraud	BASF	-0,0002	1,1145	0,0063
Case 15	Volkswagen Fraud	Microsoft	-0,0005	1,2166	0,0124
Case 15	Volkswagen Fraud	Ballard	-0,0014	0,9679	0,0574
Case 15	Volkswagen Fraud	Dassault	0,0010	0,6571	0,0119
Case 15	Volkswagen Fraud	Plastic Omnium	0,0005	1,0780	0,0161
Case 15	Volkswagen Fraud	Kumho Tyres	-0,0018	1,1717	0,0186
Case 15	Volkswagen Fraud	LG Eletronics	-0,0013	0,6196	0,0186
Case 15	Volkswagen Fraud	Tupy S.A.	0,0002	0,2284	0,0197
Case 15	Volkswagen Fraud	Maruti	0,0018	0,8399	0,0107

**Table 18: Estimated Parameters for Event Window 4 (-1 to 1)**

Case No.	Case	Company	$\alpha^i$	$\beta^i$	$\varepsilon^{it}$
Case 1	Palm Oil - Unilever	Wilmar	0,0028	1,0447	0,0282
Case 1	Palm Oil - Unilever	Unilever	0,0008	0,6942	0,0136
Case 2	Palm Oil - Nestlé	Wilmar	0,0007	1,0061	0,0149
Case 2	Palm Oil - Nestlé	Nestlé	0,0010	0,5731	0,0121
Case 3	BP Oilspill	Andarko	0,0006	1,5309	0,0148
Case 3	BP Oilspill	Transocean	-0,0009	1,3571	0,0141
Case 3	BP Oilspill	Halliburton	0,0002	1,6661	0,0149
Case 3	BP Oilspill	National Oilwell Varco	-0,0007	1,7390	0,0145
Case 3	BP Oilspill	Cameron International	0,0002	1,7398	0,0136
Case 3	BP Oilspill	Weatherford	-0,0026	1,5062	0,0191
Case 4	Zara Brazil	Inditex-Zara	0,0012	0,5612	0,0134
Case 5	Foxconn	Apple	0,0011	0,7534	0,0109
Case 5	Foxconn	Cisco	0,0006	0,9837	0,0147
Case 5	Foxconn	Amazon	0,0006	0,9943	0,0191
Case 5	Foxconn	Acer	-0,0012	1,0593	0,0258
Case 5	Foxconn	Sony	-0,0028	0,9572	0,0166
Case 5	Foxconn	Nokia	-0,0015	1,5180	0,0262
Case 5	Foxconn	Motorola	0,0005	0,8231	0,0109
Case 5	Foxconn	Toshiba	-0,0009	0,7391	0,0209
Case 5	Foxconn	Nintendo	-0,0032	0,5819	0,0243
Case 5	Foxconn	Microsoft	0,0006	0,7755	0,0085
Case 5	Foxconn	Google	0,0004	0,8387	0,0144
Case 5	Foxconn	HP	-0,0019	1,1249	0,0204
Case 6	Junking the Jungle	KFC	0,0015	0,7717	0,0117
Case 7	Bangladesh Fire	Zara	0,0030	0,5890	0,0164
Case 7	Bangladesh Fire	Wal-Mart	0,0006	0,3887	0,0101
Case 7	Bangladesh Fire	Disney	0,0009	0,8981	0,0088
Case 7	Bangladesh Fire	GAP	0,0024	1,0284	0,0159
Case 7	Bangladesh Fire	PVH	0,0017	1,4432	0,0205

Case 7	Bangladesh Fire	Sears	0,0009	1,7479	0,0351
Case 8	Child Labor	Apple	-0,0009	1,3341	0,0143
Case 9	Zara Argentina	Inditex-Zara	0,0015	0,6970	0,0161
Case 10	Rana Plaza	GAP	0,0013	0,8074	0,0176
Case 10	Rana Plaza	Primark	0,0015	0,6593	0,0084
Case 10	Rana Plaza	Next	0,0013	0,5731	0,0104
Case 10	Rana Plaza	Abercrombie & Fitch	0,0016	1,2705	0,0335
Case 10	Rana Plaza	Carrefour	0,0017	1,1382	0,0154
Case 10	Rana Plaza	Esprit	0,0005	0,7710	0,0341
Case 10	Rana Plaza	H&M	-0,0008	0,7837	0,0082
Case 10	Rana Plaza	Cato	-0,0016	1,2592	0,0164
Case 10	Rana Plaza	TJX	0,0002	0,6782	0,0101
Case 10	Rana Plaza	PVH	0,0010	1,1944	0,0206
Case 10	Rana Plaza	Target	0,0007	0,4553	0,0095
Case 10	Rana Plaza	Wal-Mart	0,0004	0,4557	0,0086
Case 10	Rana Plaza	JC Peney	-0,0022	1,0628	0,0340
Case 10	Rana Plaza	Marks & Spencer	0,0009	0,8624	0,0116
Case 10	Rana Plaza	Joe Fresh	0,0012	0,6035	0,0132
Case 10	Rana Plaza	Kohl's	0,0001	0,5599	0,0152
Case 11	Pegatron	Apple	-0,0028	1,3585	0,0173
Case 12	Licence to Kill	Golden Agri Resources	-0,0010	0,9263	0,0155
Case 12	Licence to Kill	Wilmar	0,0000	0,8867	0,0114
Case 12	Licence to Kill	Unilever	-0,0006	0,8918	0,0077
Case 13	Palm Oil - P&G	Wilmar	0,0005	0,8122	0,0097
Case 13	Palm Oil - P&G	Procter & Gamble	-0,0003	0,7252	0,0082
Case 13	Palm Oil - P&G	Pepsi Co	-0,0006	0,7381	0,0068
Case 13	Palm Oil - P&G	Johnson & Johnson	-0,0001	0,8709	0,0062
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,0004	0,9521	0,0071
Case 14	CP Foods	Wal Mart	-0,0001	0,5727	0,0062
Case 14	CP Foods	Tesco	-0,0011	0,6927	0,0105
Case 14	CP Foods	Cotsco	-0,0001	0,4262	0,0087
Case 14	CP Foods	Morisson	-0,0018	0,6377	0,0159
Case 14	CP Foods	Carrefour	0,0001	1,1088	0,0101
Case 15	Volkswagen Fraud	Motorola Solutions	0,0005	0,8587	0,0107
Case 15	Volkswagen Fraud	IBM	-0,0001	1,0417	0,0085
Case 15	Volkswagen Fraud	Nokia	-0,0005	1,0760	0,0163
Case 15	Volkswagen Fraud	Magma	0,0001	1,0732	0,0132
Case 15	Volkswagen Fraud	Visteon	0,0004	0,7333	0,0101
Case 15	Volkswagen Fraud	BorgWarner	-0,0009	1,1122	0,0118
Case 15	Volkswagen Fraud	Honeywell	0,0004	1,0675	0,0060
Case 15	Volkswagen Fraud	Infineon	0,0012	0,9630	0,0131
Case 15	Volkswagen Fraud	Siemens	-0,0005	0,8915	0,0067
Case 15	Volkswagen Fraud	Continental	0,0007	1,0950	0,0108
Case 15	Volkswagen Fraud	SAP	0,0002	0,8640	0,0078
Case 15	Volkswagen Fraud	BASF	-0,0003	1,1123	0,0065
Case 15	Volkswagen Fraud	Microsoft	-0,0003	1,1958	0,0126
Case 15	Volkswagen Fraud	Ballard	-0,0017	1,0020	0,0574
Case 15	Volkswagen Fraud	Dassault	0,0008	0,6547	0,0122
Case 15	Volkswagen Fraud	Plastic Omnium	0,0004	1,0773	0,0161
Case 15	Volkswagen Fraud	Kumho Tyres	-0,0018	1,1721	0,0186

Case 15	Volkswagen Fraud	LG Eletronics	-0,0014	0,6197	0,0186
Case 15	Volkswagen Fraud	Tupy S.A.	0,0001	0,2309	0,0197
Case 15	Volkswagen Fraud	Maruti	0,0018	0,8396	0,0107

**Table 19: Estimated Parameters for Event Window 5 (-1 to 5)**

Case No.	Case	Company	$\alpha^i$	$\beta^i$	$\varepsilon^{it}$
Case 1	Palm Oil - Unilever	Wilmar	0,0028	1,0438	0,0282
Case 1	Palm Oil - Unilever	Unilever	0,0008	0,6930	0,0136
Case 2	Palm Oil - Nestlé	Wilmar	0,0006	0,9842	0,0148
Case 2	Palm Oil - Nestlé	Nestlé	0,0010	0,5766	0,0121
Case 3	BP Oilspill	Andarko	0,0006	1,5302	0,0149
Case 3	BP Oilspill	Transocean	-0,0008	1,3539	0,0141
Case 3	BP Oilspill	Halliburton	0,0002	1,6672	0,0149
Case 3	BP Oilspill	National Oilwell Varco	-0,0006	1,7374	0,0145
Case 3	BP Oilspill	Cameron International	0,0002	1,7398	0,0136
Case 3	BP Oilspill	Weatherford	-0,0026	1,5020	0,0191
Case 4	Zara Brazil	Inditex-Zara	0,0010	0,5529	0,0133
Case 5	Foxconn	Apple	0,0011	0,7521	0,0109
Case 5	Foxconn	Cisco	0,0007	0,9903	0,0146
Case 5	Foxconn	Amazon	0,0005	0,9893	0,0191
Case 5	Foxconn	Acer	-0,0012	1,0618	0,0259
Case 5	Foxconn	Sony	-0,0028	0,9570	0,0167
Case 5	Foxconn	Nokia	-0,0015	1,5188	0,0262
Case 5	Foxconn	Motorola	0,0004	0,8190	0,0108
Case 5	Foxconn	Toshiba	-0,0009	0,7390	0,0209
Case 5	Foxconn	Nintendo	-0,0031	0,5842	0,0244
Case 5	Foxconn	Microsoft	0,0006	0,7757	0,0085
Case 5	Foxconn	Google	0,0005	0,8397	0,0144
Case 5	Foxconn	HP	-0,0020	1,1219	0,0204
Case 6	Junking the Jungle	KFC	0,0015	0,7717	0,0117
Case 7	Bangladesh Fire	Zara	0,0030	0,5889	0,0164
Case 7	Bangladesh Fire	Wal-Mart	0,0006	0,3886	0,0101
Case 7	Bangladesh Fire	Disney	0,0008	0,8987	0,0088
Case 7	Bangladesh Fire	GAP	0,0024	1,0282	0,0159
Case 7	Bangladesh Fire	PVH	0,0017	1,4433	0,0205
Case 7	Bangladesh Fire	Sears	0,0009	1,7480	0,0352
Case 8	Child Labor	Apple	-0,0010	1,3434	0,0143
Case 9	Zara Argentina	Inditex-Zara	0,0014	0,6973	0,0161
Case 10	Rana Plaza	GAP	0,0012	0,7610	0,0176
Case 10	Rana Plaza	Primark	0,0016	0,6585	0,0083
Case 10	Rana Plaza	Next	0,0013	0,5727	0,0104
Case 10	Rana Plaza	Abercrombie & Fitch	0,0014	1,1611	0,0334
Case 10	Rana Plaza	Carrefour	0,0017	1,1351	0,0155
Case 10	Rana Plaza	Esprit	0,0005	0,7689	0,0342
Case 10	Rana Plaza	H&M	-0,0008	0,7839	0,0083
Case 10	Rana Plaza	Cato	-0,0017	1,2318	0,0165
Case 10	Rana Plaza	TJX	0,0001	0,6459	0,0101



Case 10	Rana Plaza	PVH	0,0010	1,1900	0,0206
Case 10	Rana Plaza	Target	0,0007	0,4539	0,0095
Case 10	Rana Plaza	Wal-Mart	0,0004	0,4362	0,0086
Case 10	Rana Plaza	JC Peney	-0,0022	1,0335	0,0341
Case 10	Rana Plaza	Marks & Spencer	0,0008	0,8590	0,0116
Case 10	Rana Plaza	Joe Fresh	0,0012	0,5624	0,0132
Case 10	Rana Plaza	Kohl's	0,0001	0,5446	0,0153
Case 11	Pegatron	Apple	-0,0028	1,3613	0,0173
Case 12	Licence to Kill	Golden Agri Resources	-0,0010	0,9245	0,0155
Case 12	Licence to Kill	Wilmar	0,0000	0,8865	0,0114
Case 12	Licence to Kill	Unilever	-0,0006	0,9302	0,0076
Case 13	Palm Oil - P&G	Wilmar	0,0004	0,8077	0,0097
Case 13	Palm Oil - P&G	Procter & Gamble	-0,0003	0,7240	0,0083
Case 13	Palm Oil - P&G	Pepsi Co	-0,0006	0,7393	0,0068
Case 13	Palm Oil - P&G	Johnson & Johnson	-0,0001	0,8724	0,0062
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,0003	0,9528	0,0071
Case 14	CP Foods	Wal Mart	-0,0001	0,5749	0,0062
Case 14	CP Foods	Tesco	-0,0011	0,6928	0,0105
Case 14	CP Foods	Cotsco	-0,0001	0,4247	0,0087
Case 14	CP Foods	Morisson	-0,0018	0,6377	0,0159
Case 14	CP Foods	Carrefour	0,0000	1,1020	0,0101
Case 15	Volkswagen Fraud	Motorola Solutions	0,0004	0,8592	0,0108
Case 15	Volkswagen Fraud	IBM	-0,0001	1,0422	0,0085
Case 15	Volkswagen Fraud	Nokia	-0,0006	1,0771	0,0163
Case 15	Volkswagen Fraud	Magma	0,0000	1,0745	0,0132
Case 15	Volkswagen Fraud	Visteon	0,0004	0,7329	0,0101
Case 15	Volkswagen Fraud	BorgWarner	-0,0009	1,1118	0,0119
Case 15	Volkswagen Fraud	Honeywell	0,0004	1,0678	0,0060
Case 15	Volkswagen Fraud	Infineon	0,0013	0,9671	0,0130
Case 15	Volkswagen Fraud	Siemens	-0,0005	0,8915	0,0067
Case 15	Volkswagen Fraud	Continental	0,0007	1,0953	0,0109
Case 15	Volkswagen Fraud	SAP	0,0002	0,8649	0,0078
Case 15	Volkswagen Fraud	BASF	-0,0002	1,1144	0,0064
Case 15	Volkswagen Fraud	Microsoft	-0,0003	1,1958	0,0126
Case 15	Volkswagen Fraud	Ballard	-0,0015	1,0032	0,0575
Case 15	Volkswagen Fraud	Dassault	0,0010	0,6569	0,0119
Case 15	Volkswagen Fraud	Plastic Omnium	0,0004	1,0773	0,0161
Case 15	Volkswagen Fraud	Kumho Tyres	-0,0019	1,1716	0,0186
Case 15	Volkswagen Fraud	LG Eletronics	-0,0013	0,6200	0,0186
Case 15	Volkswagen Fraud	Tupy S.A.	0,0002	0,2272	0,0197
Case 15	Volkswagen Fraud	Maruti	0,0017	0,8429	0,0107

**Table 20: Estimated Parameters for Event Window 6 (-2 to 2)**

Case No.	Case	Company	$\alpha^i$	$\beta^i$	$\varepsilon^{it}$
Case 1	Palm Oil - Unilever	Wilmar	0,0027	1,0401	0,0282
Case 1	Palm Oil - Unilever	Unilever	0,0009	0,6944	0,0136
Case 2	Palm Oil - Nestlé	Wilmar	0,0008	1,0037	0,0149

Case 2	Palm Oil - Nestlé	Nestlé	0,0010	0,5730	0,0121
Case 3	BP Oilspill	Andarko	0,0005	1,5375	0,0149
Case 3	BP Oilspill	Transocean	-0,0010	1,3666	0,0141
Case 3	BP Oilspill	Halliburton	0,0002	1,6656	0,0149
Case 3	BP Oilspill	National Oilwell Varco	-0,0008	1,7560	0,0144
Case 3	BP Oilspill	Cameron International	0,0001	1,7478	0,0136
Case 3	BP Oilspill	Weatherford	-0,0026	1,5066	0,0191
Case 4	Zara Brazil	Inditex-Zara	0,0012	0,5613	0,0135
Case 5	Foxconn	Apple	0,0012	0,7534	0,0109
Case 5	Foxconn	Cisco	0,0006	0,9837	0,0147
Case 5	Foxconn	Amazon	0,0007	0,9946	0,0191
Case 5	Foxconn	Acer	-0,0014	1,0628	0,0257
Case 5	Foxconn	Sony	-0,0028	0,9571	0,0167
Case 5	Foxconn	Nokia	-0,0015	1,5182	0,0262
Case 5	Foxconn	Motorola	0,0005	0,8235	0,0109
Case 5	Foxconn	Toshiba	-0,0009	0,7391	0,0209
Case 5	Foxconn	Nintendo	-0,0032	0,5818	0,0244
Case 5	Foxconn	Microsoft	0,0006	0,7757	0,0084
Case 5	Foxconn	Google	0,0007	0,8393	0,0141
Case 5	Foxconn	HP	-0,0019	1,1248	0,0205
Case 6	Junking the Jungle	KFC	0,0014	0,7712	0,0117
Case 7	Bangladesh Fire	Zara	0,0029	0,5876	0,0164
Case 7	Bangladesh Fire	Wal-Mart	0,0006	0,3892	0,0101
Case 7	Bangladesh Fire	Disney	0,0009	0,8978	0,0089
Case 7	Bangladesh Fire	GAP	0,0024	1,0280	0,0159
Case 7	Bangladesh Fire	PVH	0,0017	1,4451	0,0205
Case 7	Bangladesh Fire	Sears	0,0012	1,7561	0,0350
Case 8	Child Labor	Apple	-0,0010	1,3317	0,0143
Case 9	Zara Argentina	Inditex-Zara	0,0015	0,6948	0,0161
Case 10	Rana Plaza	GAP	0,0013	0,8169	0,0176
Case 10	Rana Plaza	Primark	0,0015	0,6526	0,0084
Case 10	Rana Plaza	Next	0,0013	0,5738	0,0104
Case 10	Rana Plaza	Abercrombie & Fitch	0,0015	1,2679	0,0336
Case 10	Rana Plaza	Carrefour	0,0017	1,1316	0,0154
Case 10	Rana Plaza	Esprit	0,0006	0,7821	0,0342
Case 10	Rana Plaza	H&M	-0,0008	0,7836	0,0083
Case 10	Rana Plaza	Cato	-0,0017	1,2578	0,0165
Case 10	Rana Plaza	TJX	0,0002	0,6780	0,0102
Case 10	Rana Plaza	PVH	0,0009	1,1876	0,0206
Case 10	Rana Plaza	Target	0,0007	0,4510	0,0095
Case 10	Rana Plaza	Wal-Mart	0,0004	0,4486	0,0086
Case 10	Rana Plaza	JC Peney	-0,0022	1,0632	0,0341
Case 10	Rana Plaza	Marks & Spencer	0,0008	0,8541	0,0116
Case 10	Rana Plaza	Joe Fresh	0,0013	0,6048	0,0132
Case 10	Rana Plaza	Kohl's	0,0001	0,5563	0,0153
Case 11	Pegatron	Apple	-0,0028	1,3638	0,0173
Case 12	Licence to Kill	Golden Agri Resources	-0,0009	0,9274	0,0155
Case 12	Licence to Kill	Wilmar	0,0001	0,8882	0,0114
Case 12	Licence to Kill	Unilever	-0,0007	0,8755	0,0074
Case 13	Palm Oil - P&G	Wilmar	0,0005	0,8112	0,0097

Case 13	Palm Oil - P&G	Procter & Gamble	-0,0003	0,7283	0,0083
Case 13	Palm Oil - P&G	Pepsi Co	-0,0006	0,7357	0,0068
Case 13	Palm Oil - P&G	Johnson & Johnson	-0,0000	0,8762	0,0062
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,0004	0,9517	0,0071
Case 14	CP Foods	Wal Mart	-0,0001	0,5743	0,0062
Case 14	CP Foods	Tesco	-0,0011	0,6989	0,0105
Case 14	CP Foods	Cotsco	-0,0001	0,4257	0,0087
Case 14	CP Foods	Morisson	-0,0018	0,6375	0,0159
Case 14	CP Foods	Carrefour	0,0002	1,1164	0,0101
Case 15	Volkswagen Fraud	Motorola Solutions	0,0005	0,8602	0,0108
Case 15	Volkswagen Fraud	IBM	-0,0001	1,0431	0,0085
Case 15	Volkswagen Fraud	Nokia	-0,0006	1,0716	0,0163
Case 15	Volkswagen Fraud	Magma	0,0000	1,0661	0,0132
Case 15	Volkswagen Fraud	Visteon	0,0004	0,7277	0,0101
Case 15	Volkswagen Fraud	BorgWarner	-0,0010	1,1041	0,0118
Case 15	Volkswagen Fraud	Honeywell	0,0004	1,0691	0,0060
Case 15	Volkswagen Fraud	Infineon	0,0012	0,9624	0,0132
Case 15	Volkswagen Fraud	Siemens	-0,0005	0,8914	0,0067
Case 15	Volkswagen Fraud	Continental	0,0007	1,0944	0,0108
Case 15	Volkswagen Fraud	SAP	0,0001	0,8629	0,0078
Case 15	Volkswagen Fraud	BASF	-0,0003	1,1119	0,0065
Case 15	Volkswagen Fraud	Microsoft	-0,0003	1,1957	0,0126
Case 15	Volkswagen Fraud	Ballard	-0,0018	0,9969	0,0576
Case 15	Volkswagen Fraud	Dassault	0,0008	0,6587	0,0123
Case 15	Volkswagen Fraud	Plastic Omnium	0,0004	1,0746	0,0162
Case 15	Volkswagen Fraud	Kumho Tyres	-0,0019	1,1590	0,0186
Case 15	Volkswagen Fraud	LG Eletronics	-0,0014	0,5984	0,0186
Case 15	Volkswagen Fraud	Tupy S.A.	0,0003	0,2559	0,0195
Case 15	Volkswagen Fraud	Maruti	0,0018	0,8409	0,0108

**Table 21: Estimated Parameters for Event Window 7 (-5 to 5)**

Case No.	Case	Company	$\alpha^i$	$\beta^i$	$\varepsilon^{it}$
Case 1	Palm Oil - Unilever	Wilmar	0,0028	1,0372	0,0284
Case 1	Palm Oil - Unilever	Unilever	0,0009	0,6942	0,0137
Case 2	Palm Oil - Nestlé	Wilmar	0,0009	1,0076	0,0150
Case 2	Palm Oil - Nestlé	Nestlé	0,0010	0,5728	0,0122
Case 3	BP Oilspill	Andarko	0,0005	1,5221	0,0149
Case 3	BP Oilspill	Transocean	-0,0010	1,3605	0,0141
Case 3	BP Oilspill	Halliburton	0,0000	1,6198	0,0151
Case 3	BP Oilspill	National Oilwell Varco	-0,0007	1,7659	0,0143
Case 3	BP Oilspill	Cameron International	0,0003	1,7832	0,0140
Case 3	BP Oilspill	Weatherford	-0,0026	1,5095	0,0191
Case 4	Zara Brazil	Inditex-Zara	0,0011	0,5815	0,0134
Case 5	Foxconn	Apple	0,0011	0,7548	0,0110
Case 5	Foxconn	Cisco	0,0006	0,9841	0,0146
Case 5	Foxconn	Amazon	0,0007	0,9958	0,0190
Case 5	Foxconn	Acer	-0,0018	1,0611	0,0252

Case 5	Foxconn	Sony	-0,0026	0,9627	0,0166
Case 5	Foxconn	Nokia	-0,0016	1,5108	0,0258
Case 5	Foxconn	Motorola	0,0007	0,8216	0,0110
Case 5	Foxconn	Toshiba	-0,0003	0,7470	0,0215
Case 5	Foxconn	Nintendo	-0,0031	0,5902	0,0243
Case 5	Foxconn	Microsoft	0,0005	0,7774	0,0082
Case 5	Foxconn	Google	0,0009	0,8463	0,0140
Case 5	Foxconn	HP	-0,0019	1,1240	0,0205
Case 6	Junking the Jungle	KFC	0,0014	0,7685	0,0116
Case 7	Bangladesh Fire	Zara	0,0030	0,5811	0,0164
Case 7	Bangladesh Fire	Wal-Mart	0,0006	0,3791	0,0101
Case 7	Bangladesh Fire	Disney	0,0009	0,9256	0,0089
Case 7	Bangladesh Fire	GAP	0,0028	1,0217	0,0175
Case 7	Bangladesh Fire	PVH	0,0018	1,4505	0,0206
Case 7	Bangladesh Fire	Sears	0,0023	1,8781	0,0320
Case 8	Child Labor	Apple	-0,0008	1,3428	0,0145
Case 9	Zara Argentina	Inditex-Zara	0,0014	0,6982	0,0161
Case 10	Rana Plaza	GAP	0,0013	0,7989	0,0177
Case 10	Rana Plaza	Primark	0,0016	0,6452	0,0084
Case 10	Rana Plaza	Next	0,0013	0,5752	0,0104
Case 10	Rana Plaza	Abercrombie & Fitch	0,0016	1,2418	0,0338
Case 10	Rana Plaza	Carrefour	0,0017	1,1299	0,0155
Case 10	Rana Plaza	Esprit	0,0005	0,7869	0,0344
Case 10	Rana Plaza	H&M	-0,0009	0,7818	0,0083
Case 10	Rana Plaza	Cato	-0,0014	1,2545	0,0165
Case 10	Rana Plaza	TJX	0,0002	0,6811	0,0102
Case 10	Rana Plaza	PVH	0,0010	1,1882	0,0208
Case 10	Rana Plaza	Target	0,0006	0,4735	0,0095
Case 10	Rana Plaza	Wal-Mart	0,0005	0,4491	0,0086
Case 10	Rana Plaza	JC Penney	-0,0025	1,0223	0,0341
Case 10	Rana Plaza	Marks & Spencer	0,0008	0,8620	0,0115
Case 10	Rana Plaza	Joe Fresh	0,0013	0,6036	0,0133
Case 10	Rana Plaza	Kohl's	0,0001	0,5848	0,0153
Case 11	Pegatron	Apple	-0,0030	1,3675	0,0169
Case 12	Licence to Kill	Golden Agri Resources	-0,0008	0,9374	0,0156
Case 12	Licence to Kill	Wilmar	0,0001	0,8899	0,0115
Case 12	Licence to Kill	Unilever	-0,0007	0,8856	0,0074
Case 13	Palm Oil - P&G	Wilmar	0,0004	0,8199	0,0096
Case 13	Palm Oil - P&G	Procter & Gamble	-0,0004	0,7345	0,0082
Case 13	Palm Oil - P&G	Pepsi Co	-0,0007	0,7257	0,0068
Case 13	Palm Oil - P&G	Johnson & Johnson	-0,0001	0,8732	0,0063
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,0003	0,9459	0,0071
Case 14	CP Foods	Wal Mart	-0,0003	0,6062	0,0063
Case 14	CP Foods	Tesco	-0,0009	0,7021	0,0105
Case 14	CP Foods	Cotsco	-0,0002	0,4300	0,0087
Case 14	CP Foods	Morisson	-0,0015	0,6325	0,0160
Case 14	CP Foods	Carrefour	0,0002	1,1023	0,0101
Case 15	Volkswagen Fraud	Motorola Solutions	0,0007	0,8724	0,0106
Case 15	Volkswagen Fraud	IBM	-0,0000	1,0415	0,0085
Case 15	Volkswagen Fraud	Nokia	-0,0004	1,0939	0,0162

Case 15	Volkswagen Fraud	Magma	0,0001	1,0572	0,0131
Case 15	Volkswagen Fraud	Visteon	0,0005	0,7377	0,0102
Case 15	Volkswagen Fraud	BorgWarner	-0,0010	1,1113	0,0118
Case 15	Volkswagen Fraud	Honeywell	0,0005	1,0713	0,0060
Case 15	Volkswagen Fraud	Infineon	0,0009	0,9521	0,0130
Case 15	Volkswagen Fraud	Siemens	-0,0005	0,8925	0,0067
Case 15	Volkswagen Fraud	Continental	0,0007	1,0945	0,0109
Case 15	Volkswagen Fraud	SAP	0,0001	0,8631	0,0078
Case 15	Volkswagen Fraud	BASF	-0,0003	1,1122	0,0065
Case 15	Volkswagen Fraud	Microsoft	-0,0004	1,1831	0,0127
Case 15	Volkswagen Fraud	Ballard	-0,0013	1,0015	0,0572
Case 15	Volkswagen Fraud	Dassault	0,0008	0,6565	0,0122
Case 15	Volkswagen Fraud	Plastic Omnium	0,0004	1,0765	0,0163
Case 15	Volkswagen Fraud	Kumho Tyres	-0,0020	1,1577	0,0188
Case 15	Volkswagen Fraud	LG Eletronics	-0,0016	0,6064	0,0184
Case 15	Volkswagen Fraud	Tupy S.A.	0,0005	0,2827	0,0193
Case 15	Volkswagen Fraud	Maruti	0,0018	0,8494	0,0108

## Appendix B: Calculated Daily Abnormal Returns

**Table 22: Calculated Daily Abnormal Returns for Event Window 1 (-1 to 0)**

Case No.	Case	Company	D-1	D0
Case 1	Palm Oil - Unilever	Wilmar	2,26%	-2,07%
Case 1	Palm Oil - Unilever	Unilever	0,38%	-0,30%
Case 2	Palm Oil - Nestlé	Wilmar	-0,68%	-1,03%
Case 2	Palm Oil - Nestlé	Nestlé	1,10%	-0,62%
Case 3	BP Oilspill	Andarko	-0,99%	-0,44%
Case 3	BP Oilspill	Transocean	1,00%	3,22%
Case 3	BP Oilspill	Halliburton	-1,01%	4,18%
Case 3	BP Oilspill	National Oilwell Varco	-0,58%	2,21%
Case 3	BP Oilspill	Cameron International	-0,63%	1,28%
Case 3	BP Oilspill	Weatherford	-1,93%	4,70%
Case 4	Zara Brazil	Inditex-Zara	-0,24%	1,52%
Case 5	Foxconn	Apple	-0,49%	-0,51%
Case 5	Foxconn	Cisco	-1,75%	0,91%
Case 5	Foxconn	Amazon	-0,59%	-0,62%
Case 5	Foxconn	Acer	-2,94%	-0,92%
Case 5	Foxconn	Sony	0,75%	0,20%
Case 5	Foxconn	Nokia	1,86%	-1,20%
Case 5	Foxconn	Motorola	-0,54%	-0,49%
Case 5	Foxconn	Toshiba	-0,13%	0,61%
Case 5	Foxconn	Nintendo	-1,23%	-0,09%
Case 5	Foxconn	Microsoft	-0,45%	-0,72%
Case 5	Foxconn	Google	-0,75%	0,15%
Case 5	Foxconn	HP	0,14%	-0,03%
Case 6	Junking the Jungle	KFC	0,59%	-1,92%
Case 7	Bangladesh Fire	Zara	-1,12%	0,54%
Case 7	Bangladesh Fire	Wal-Mart	1,34%	-0,39%
Case 7	Bangladesh Fire	Disney	-0,07%	-0,37%
Case 7	Bangladesh Fire	GAP	-0,59%	0,31%
Case 7	Bangladesh Fire	PVH	-0,80%	-0,08%
Case 7	Bangladesh Fire	Sears	-2,44%	-1,96%
Case 8	Child Labor	Apple	-11,28%	-3,09%
Case 9	Zara Argentina	Inditex-Zara	-0,02%	1,26%
Case 10	Rana Plaza	GAP	-1,43%	-0,69%
Case 10	Rana Plaza	Primark	0,07%	6,58%
Case 10	Rana Plaza	Next	-0,56%	0,93%
Case 10	Rana Plaza	Abercrombie & Fitch	-1,84%	-1,50%
Case 10	Rana Plaza	Carrefour	-1,39%	1,30%
Case 10	Rana Plaza	Esprit	0,24%	-0,40%
Case 10	Rana Plaza	H&M	1,32%	-0,54%
Case 10	Rana Plaza	Cato	-1,61%	-0,26%

Case 10	Rana Plaza	TJX	-0,03%	-0,68%
Case 10	Rana Plaza	PVH	-0,33%	1,41%
Case 10	Rana Plaza	Target	-0,19%	0,31%
Case 10	Rana Plaza	Wal-Mart	-0,67%	0,92%
Case 10	Rana Plaza	JC Peney	1,56%	-1,47%
Case 10	Rana Plaza	Marks & Spencer	0,47%	0,84%
Case 10	Rana Plaza	Joe Fresh	-1,01%	1,19%
Case 10	Rana Plaza	Kohl's	-0,48%	0,19%
Case 11	Pegatron	Apple	0,55%	2,35%
Case 12	Licence to Kill	Golden Agri Resources	1,90%	1,96%
Case 12	Licence to Kill	Wilmar	0,42%	0,83%
Case 12	Licence to Kill	Unilever	0,09%	-0,46%
Case 13	Palm Oil - P&G	Wilmar	2,96%	0,35%
Case 13	Palm Oil - P&G	Procter & Gamble	0,46%	-0,30%
Case 13	Palm Oil - P&G	Pepsi Co	0,61%	-0,67%
Case 13	Palm Oil - P&G	Johnson & Johnson	0,12%	0,01%
Case 13	Palm Oil - P&G	Colgate-Palmolive	0,36%	-0,16%
Case 14	CP Foods	Wal Mart	-0,30%	-0,48%
Case 14	CP Foods	Tesco	1,17%	0,57%
Case 14	CP Foods	Cotsco	-0,52%	-0,59%
Case 14	CP Foods	Morisson	0,85%	0,14%
Case 14	CP Foods	Carrefour	0,02%	0,43%
Case 15	Volkswagen Fraud	Motorola Solutions	-0,49%	1,43%
Case 15	Volkswagen Fraud	IBM	0,09%	-0,76%
Case 15	Volkswagen Fraud	Nokia	0,63%	-0,29%
Case 15	Volkswagen Fraud	Magma	0,36%	0,01%
Case 15	Volkswagen Fraud	Visteon	0,34%	-0,02%
Case 15	Volkswagen Fraud	BorgWarner	-0,14%	-1,38%
Case 15	Volkswagen Fraud	Honeywell	-0,19%	-0,78%
Case 15	Volkswagen Fraud	Infineon	-1,71%	-0,01%
Case 15	Volkswagen Fraud	Siemens	-0,51%	-1,54%
Case 15	Volkswagen Fraud	Continental	0,43%	1,02%
Case 15	Volkswagen Fraud	SAP	-0,15%	0,04%
Case 15	Volkswagen Fraud	BASF	-1,23%	-0,12%
Case 15	Volkswagen Fraud	Microsoft	-0,17%	-0,08%
Case 15	Volkswagen Fraud	Ballard	-3,00%	1,54%
Case 15	Volkswagen Fraud	Dassault	0,42%	1,28%
Case 15	Volkswagen Fraud	Plastic Omnium	0,70%	-0,42%
Case 15	Volkswagen Fraud	Kumho Tyres	1,26%	-1,95%
Case 15	Volkswagen Fraud	LG Eletronics	-0,11%	0,17%
Case 15	Volkswagen Fraud	Tupy S.A.	0,99%	0,02%
Case 15	Volkswagen Fraud	Maruti	-0,44%	0,27%

Table 23: Calculated Daily Abnormal Returns for Event Window 2 (0 to 1)

Case No.	Case	Company	D0	D1
Case 1	Palm Oil - Unilever	Wilmar	-2,08%	2,60%

Case 1	Palm Oil - Unilever	Unilever	-0,30%	-0,09%
Case 2	Palm Oil - Nestlé	Wilmar	-1,00%	-0,20%
Case 2	Palm Oil - Nestlé	Nestlé	-0,63%	-0,51%
Case 3	BP Oilspill	Andarko	-0,43%	-1,75%
Case 3	BP Oilspill	Transocean	3,22%	-1,58%
Case 3	BP Oilspill	Halliburton	4,19%	0,09%
Case 3	BP Oilspill	National Oilwell Varco	2,21%	1,18%
Case 3	BP Oilspill	Cameron International	1,28%	-1,05%
Case 3	BP Oilspill	Weatherford	4,71%	-2,95%
Case 4	Zara Brazil	Inditex-Zara	1,54%	-1,73%
Case 5	Foxconn	Apple	-0,50%	-0,77%
Case 5	Foxconn	Cisco	0,91%	-0,15%
Case 5	Foxconn	Amazon	-0,60%	-2,22%
Case 5	Foxconn	Acer	-0,91%	-0,63%
Case 5	Foxconn	Sony	0,19%	-2,38%
Case 5	Foxconn	Nokia	-1,21%	-0,41%
Case 5	Foxconn	Motorola	-0,47%	-0,07%
Case 5	Foxconn	Toshiba	0,61%	-0,04%
Case 5	Foxconn	Nintendo	-0,09%	-0,10%
Case 5	Foxconn	Microsoft	-0,72%	0,56%
Case 5	Foxconn	Google	0,15%	0,11%
Case 5	Foxconn	HP	-0,02%	1,10%
Case 6	Junking the Jungle	KFC	-1,93%	0,22%
Case 7	Bangladesh Fire	Zara	0,54%	-0,73%
Case 7	Bangladesh Fire	Wal-Mart	-0,40%	-0,44%
Case 7	Bangladesh Fire	Disney	-0,37%	-0,49%
Case 7	Bangladesh Fire	GAP	0,31%	-1,03%
Case 7	Bangladesh Fire	PVH	-0,08%	-0,72%
Case 7	Bangladesh Fire	Sears	-1,94%	-1,39%
Case 8	Child Labor	Apple	-3,06%	2,22%
Case 9	Zara Argentina	Inditex-Zara	1,26%	1,84%
Case 10	Rana Plaza	GAP	-0,62%	0,17%
Case 10	Rana Plaza	Primark	6,57%	-2,88%
Case 10	Rana Plaza	Next	0,93%	-0,20%
Case 10	Rana Plaza	Abercrombie & Fitch	-1,36%	1,02%
Case 10	Rana Plaza	Carrefour	1,31%	0,07%
Case 10	Rana Plaza	Esprit	-0,40%	-0,78%
Case 10	Rana Plaza	H&M	-0,54%	0,83%
Case 10	Rana Plaza	Cato	-0,21%	1,86%
Case 10	Rana Plaza	TJX	-0,64%	0,54%
Case 10	Rana Plaza	PVH	1,42%	-0,01%
Case 10	Rana Plaza	Target	0,32%	-0,04%
Case 10	Rana Plaza	Wal-Mart	0,95%	-1,38%
Case 10	Rana Plaza	JC Penney	-1,45%	-1,47%
Case 10	Rana Plaza	Marks & Spencer	0,85%	-0,60%
Case 10	Rana Plaza	Joe Fresh	1,21%	-1,90%
Case 10	Rana Plaza	Kohl's	0,21%	-0,44%
Case 11	Pegatron	Apple	2,34%	0,85%
Case 12	Licence to Kill	Golden Agri Resources	1,95%	-0,33%
Case 12	Licence to Kill	Wilmar	0,83%	2,58%



Case 12	Licence to Kill	Unilever	-0,46%	1,13%
Case 13	Palm Oil - P&G	Wilmar	0,34%	-0,85%
Case 13	Palm Oil - P&G	Procter & Gamble	-0,30%	0,10%
Case 13	Palm Oil - P&G	Pepsi Co	-0,68%	0,23%
Case 13	Palm Oil - P&G	Johnson & Johnson	0,00%	-0,15%
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,16%	-0,16%
Case 14	CP Foods	Wal Mart	-0,48%	-0,39%
Case 14	CP Foods	Tesco	0,56%	0,32%
Case 14	CP Foods	Cotsco	-0,59%	-0,66%
Case 14	CP Foods	Morisson	0,14%	1,02%
Case 14	CP Foods	Carrefour	0,43%	-0,01%
Case 15	Volkswagen Fraud	Motorola Solutions	1,44%	-0,48%
Case 15	Volkswagen Fraud	IBM	-0,76%	0,90%
Case 15	Volkswagen Fraud	Nokia	-0,29%	-0,13%
Case 15	Volkswagen Fraud	Magma	0,01%	-1,32%
Case 15	Volkswagen Fraud	Visteon	-0,02%	0,30%
Case 15	Volkswagen Fraud	BorgWarner	-1,38%	-1,21%
Case 15	Volkswagen Fraud	Honeywell	-0,78%	-0,83%
Case 15	Volkswagen Fraud	Infineon	-0,01%	-0,49%
Case 15	Volkswagen Fraud	Siemens	-1,54%	1,25%
Case 15	Volkswagen Fraud	Continental	1,02%	-3,79%
Case 15	Volkswagen Fraud	SAP	0,04%	0,69%
Case 15	Volkswagen Fraud	BASF	-0,11%	1,13%
Case 15	Volkswagen Fraud	Microsoft	-0,08%	1,44%
Case 15	Volkswagen Fraud	Ballard	1,53%	0,13%
Case 15	Volkswagen Fraud	Dassault	1,27%	0,50%
Case 15	Volkswagen Fraud	Plastic Omnium	-0,43%	-4,07%
Case 15	Volkswagen Fraud	Kumho Tyres	-1,95%	1,17%
Case 15	Volkswagen Fraud	LG Electronics	0,16%	-0,59%
Case 15	Volkswagen Fraud	Tupy S.A.	0,00%	1,88%
Case 15	Volkswagen Fraud	Maruti	0,28%	1,72%

**Table 24: Calculated Daily Abnormal Returns for Event Window 3 (0 to 2)**

Case No.	Case	Company	D0	D1	D2
Case 1	Palm Oil - Unilever	Wilmar	-2,08%	2,60%	0,20%
Case 1	Palm Oil - Unilever	Unilever	-0,30%	-0,09%	-2,42%
Case 2	Palm Oil - Nestlé	Wilmar	-1,01%	-0,21%	-0,29%
Case 2	Palm Oil - Nestlé	Nestlé	-0,64%	-0,51%	-1,42%
Case 3	BP Oilspill	Andarko	-0,45%	-1,76%	0,68%
Case 3	BP Oilspill	Transocean	3,21%	-1,59%	-0,33%
Case 3	BP Oilspill	Halliburton	4,18%	0,09%	0,92%
Case 3	BP Oilspill	National Oilwell Varco	2,20%	1,17%	-0,01%
Case 3	BP Oilspill	Cameron International	1,27%	-1,06%	0,33%
Case 3	BP Oilspill	Weatherford	4,70%	-2,96%	0,46%
Case 4	Zara Brazil	Inditex-Zara	1,54%	-1,72%	-2,63%
Case 5	Foxconn	Apple	-0,49%	-0,76%	-0,09%
Case 5	Foxconn	Cisco	0,91%	-0,16%	-0,03%

Case 5	Foxconn	Amazon	-0,60%	-2,22%	1,88%
Case 5	Foxconn	Acer	-0,92%	-0,64%	-1,65%
Case 5	Foxconn	Sony	0,19%	-2,38%	0,00%
Case 5	Foxconn	Nokia	-1,22%	-0,41%	-0,99%
Case 5	Foxconn	Motorola	-0,48%	-0,08%	1,04%
Case 5	Foxconn	Toshiba	0,60%	-0,05%	0,21%
Case 5	Foxconn	Nintendo	-0,10%	-0,10%	-1,83%
Case 5	Foxconn	Microsoft	-0,72%	0,55%	1,23%
Case 5	Foxconn	Google	0,15%	0,11%	-0,36%
Case 5	Foxconn	HP	-0,03%	1,09%	-0,96%
Case 6	Junking the Jungle	KFC	-1,94%	0,21%	0,73%
Case 7	Bangladesh Fire	Zara	0,54%	-0,73%	1,34%
Case 7	Bangladesh Fire	Wal-Mart	-0,40%	-0,45%	1,14%
Case 7	Bangladesh Fire	Disney	-0,36%	-0,48%	0,46%
Case 7	Bangladesh Fire	GAP	0,31%	-1,03%	0,86%
Case 7	Bangladesh Fire	PVH	-0,08%	-0,72%	5,27%
Case 7	Bangladesh Fire	Sears	-1,91%	-1,36%	-4,86%
Case 8	Child Labor	Apple	-3,05%	2,22%	2,07%
Case 9	Zara Argentina	Inditex-Zara	1,26%	1,85%	0,18%
Case 10	Rana Plaza	GAP	-0,62%	0,17%	1,11%
Case 10	Rana Plaza	Primark	6,56%	-2,88%	-2,12%
Case 10	Rana Plaza	Next	0,93%	-0,20%	-0,68%
Case 10	Rana Plaza	Abercrombie & Fitch	-1,36%	1,02%	2,31%
Case 10	Rana Plaza	Carrefour	1,32%	0,06%	-0,13%
Case 10	Rana Plaza	Esprit	-0,40%	-0,79%	-1,22%
Case 10	Rana Plaza	H&M	-0,54%	0,83%	0,35%
Case 10	Rana Plaza	Cato	-0,19%	1,87%	2,34%
Case 10	Rana Plaza	TJX	-0,64%	0,54%	1,57%
Case 10	Rana Plaza	PVH	1,42%	0,00%	1,16%
Case 10	Rana Plaza	Target	0,31%	-0,04%	1,13%
Case 10	Rana Plaza	Wal-Mart	0,94%	-1,38%	0,58%
Case 10	Rana Plaza	JC Penney	-1,47%	-1,48%	0,11%
Case 10	Rana Plaza	Marks & Spencer	0,85%	-0,60%	0,87%
Case 10	Rana Plaza	Joe Fresh	1,21%	-1,90%	0,07%
Case 10	Rana Plaza	Kohl's	0,21%	-0,45%	0,85%
Case 11	Pegatron	Apple	2,34%	0,85%	-0,28%
Case 12	Licence to Kill	Golden Agri Resources	1,95%	-0,33%	1,97%
Case 12	Licence to Kill	Wilmar	0,83%	2,58%	-0,43%
Case 12	Licence to Kill	Unilever	-0,46%	1,13%	0,39%
Case 13	Palm Oil - P&G	Wilmar	0,34%	-0,85%	-1,00%
Case 13	Palm Oil - P&G	Procter & Gamble	-0,30%	0,10%	0,43%
Case 13	Palm Oil - P&G	Pepsi Co	-0,68%	0,23%	1,12%
Case 13	Palm Oil - P&G	Johnson & Johnson	0,00%	-0,15%	0,59%
Case 13	Palm Oil - P&G	Colgate-Palmolive	-0,16%	-0,16%	0,91%
Case 14	CP Foods	Wal Mart	-0,48%	-0,38%	-0,14%
Case 14	CP Foods	Tesco	0,57%	0,33%	-0,91%
Case 14	CP Foods	Cotsco	-0,59%	-0,67%	-0,35%
Case 14	CP Foods	Morisson	0,15%	1,04%	-1,03%
Case 14	CP Foods	Carrefour	0,44%	-0,01%	-0,73%
Case 15	Volkswagen Fraud	Motorola Solutions	1,44%	-0,48%	0,32%

Case 15	Volkswagen Fraud	IBM	-0,76%	0,90%	-0,10%
Case 15	Volkswagen Fraud	Nokia	-0,27%	-0,13%	-0,12%
Case 15	Volkswagen Fraud	Magma	0,03%	-1,31%	-3,62%
Case 15	Volkswagen Fraud	Visteon	-0,04%	0,30%	-0,51%
Case 15	Volkswagen Fraud	BorgWarner	-1,37%	-1,20%	-6,16%
Case 15	Volkswagen Fraud	Honeywell	-0,79%	-0,83%	-0,47%
Case 15	Volkswagen Fraud	Infineon	-0,01%	-0,49%	0,21%
Case 15	Volkswagen Fraud	Siemens	-1,55%	1,25%	0,59%
Case 15	Volkswagen Fraud	Continental	1,02%	-3,79%	0,88%
Case 15	Volkswagen Fraud	SAP	0,04%	0,69%	0,55%
Case 15	Volkswagen Fraud	BASF	-0,12%	1,12%	1,53%
Case 15	Volkswagen Fraud	Microsoft	-0,03%	1,45%	1,39%
Case 15	Volkswagen Fraud	Ballard	1,46%	0,10%	-0,79%
Case 15	Volkswagen Fraud	Dassault	1,27%	0,50%	1,84%
Case 15	Volkswagen Fraud	Plastic Omnium	-0,43%	-4,07%	-3,95%
Case 15	Volkswagen Fraud	Kumho Tyres	-1,96%	1,16%	-0,86%
Case 15	Volkswagen Fraud	LG Electronics	0,16%	-0,59%	-1,17%
Case 15	Volkswagen Fraud	Tupy S.A.	0,00%	1,89%	0,89%
Case 15	Volkswagen Fraud	Maruti	0,28%	1,72%	0,40%

**Table 25: Calculated Daily Abnormal Returns for Event Window 4 (-1 to 1)**

Case No.	Case	Company	D-1	D0	D1
Case 1	Palm Oil - Unilever	Wilmar	2,26%	-2,07%	2,61%
Case 1	Palm Oil - Unilever	Unilever	0,38%	-0,30%	-0,09%
Case 2	Palm Oil - Nestlé	Wilmar	-0,68%	-1,03%	-0,22%
Case 2	Palm Oil - Nestlé	Nestlé	1,10%	-0,62%	-0,51%
Case 3	BP Oilspill	Andarko	-0,99%	-0,44%	-1,75%
Case 3	BP Oilspill	Transocean	1,00%	3,22%	-1,57%
Case 3	BP Oilspill	Halliburton	-1,01%	4,18%	0,09%
Case 3	BP Oilspill	National Oilwell Varco	-0,58%	2,21%	1,18%
Case 3	BP Oilspill	Cameron International	-0,63%	1,28%	-1,06%
Case 3	BP Oilspill	Weatherford	-1,93%	4,70%	-2,96%
Case 4	Zara Brazil	Inditex-Zara	-0,24%	1,52%	-1,71%
Case 5	Foxconn	Apple	-0,49%	-0,51%	-0,78%
Case 5	Foxconn	Cisco	-1,75%	0,91%	-0,14%
Case 5	Foxconn	Amazon	-0,59%	-0,62%	-2,23%
Case 5	Foxconn	Acer	-2,94%	-0,92%	-0,64%
Case 5	Foxconn	Sony	0,75%	0,20%	-2,37%
Case 5	Foxconn	Nokia	1,86%	-1,20%	-0,39%
Case 5	Foxconn	Motorola	-0,54%	-0,49%	-0,09%
Case 5	Foxconn	Toshiba	-0,13%	0,61%	-0,04%
Case 5	Foxconn	Nintendo	-1,23%	-0,09%	-0,10%
Case 5	Foxconn	Microsoft	-0,45%	-0,72%	0,56%
Case 5	Foxconn	Google	-0,75%	0,15%	0,11%
Case 5	Foxconn	HP	0,14%	-0,03%	1,09%

Case 6	Junking the Jungle	KFC	0,59%	-1,92%	0,23%
Case 7	Bangladesh Fire	Zara	-1,12%	0,54%	-0,73%
Case 7	Bangladesh Fire	Wal-Mart	1,34%	-0,39%	-0,44%
Case 7	Bangladesh Fire	Disney	-0,07%	-0,37%	-0,49%
Case 7	Bangladesh Fire	GAP	-0,59%	0,31%	-1,02%
Case 7	Bangladesh Fire	PVH	-0,80%	-0,08%	-0,72%
Case 7	Bangladesh Fire	Sears	-2,44%	-1,96%	-1,40%
Case 8	Child Labor	Apple	-11,28%	-3,09%	2,16%
Case 9	Zara Argentina	Inditex-Zara	-0,02%	1,26%	1,84%
Case 10	Rana Plaza	GAP	-1,43%	-0,69%	0,15%
Case 10	Rana Plaza	Primark	0,07%	6,58%	-2,87%
Case 10	Rana Plaza	Next	-0,56%	0,93%	-0,20%
Case 10	Rana Plaza	Abercrombie & Fitch	-1,84%	-1,50%	1,00%
Case 10	Rana Plaza	Carrefour	-1,39%	1,30%	0,06%
Case 10	Rana Plaza	Esprit	0,24%	-0,40%	-0,78%
Case 10	Rana Plaza	H&M	1,32%	-0,54%	0,84%
Case 10	Rana Plaza	Cato	-1,61%	-0,26%	1,84%
Case 10	Rana Plaza	TJX	-0,03%	-0,68%	0,53%
Case 10	Rana Plaza	PVH	-0,33%	1,41%	-0,01%
Case 10	Rana Plaza	Target	-0,19%	0,31%	-0,04%
Case 10	Rana Plaza	Wal-Mart	-0,67%	0,92%	-1,38%
Case 10	Rana Plaza	JC Penney	1,56%	-1,47%	-1,47%
Case 10	Rana Plaza	Marks & Spencer	0,47%	0,84%	-0,60%
Case 10	Rana Plaza	Joe Fresh	-1,01%	1,19%	-1,97%
Case 10	Rana Plaza	Kohl's	-0,48%	0,19%	-0,45%
Case 11	Pegatron	Apple	0,55%	2,35%	0,86%
Case 12	Licence to Kill	Golden Agri Resources	1,90%	1,96%	-0,32%
Case 12	Licence to Kill	Wilmar	0,42%	0,83%	2,59%
Case 12	Licence to Kill	Unilever	0,09%	-0,46%	1,16%
Case 13	Palm Oil - P&G	Wilmar	2,96%	0,35%	-0,84%
Case 13	Palm Oil - P&G	Procter & Gamble	0,46%	-0,30%	0,10%
Case 13	Palm Oil - P&G	Pepsi Co	0,61%	-0,67%	0,23%
Case 13	Palm Oil - P&G	Johnson & Johnson	0,12%	0,01%	-0,15%
Case 13	Palm Oil - P&G	Colgate-Palmolive	0,36%	-0,16%	-0,16%
Case 14	CP Foods	Wal Mart	-0,30%	-0,48%	-0,38%
Case 14	CP Foods	Tesco	1,17%	0,57%	0,33%
Case 14	CP Foods	Cotsco	-0,52%	-0,59%	-0,67%
Case 14	CP Foods	Morisson	0,85%	0,14%	1,02%
Case 14	CP Foods	Carrefour	0,02%	0,43%	-0,01%
Case 15	Volkswagen Fraud	Motorola Solutions	-0,49%	1,43%	-0,48%
Case 15	Volkswagen Fraud	IBM	0,09%	-0,76%	0,90%
Case 15	Volkswagen Fraud	Nokia	0,63%	-0,29%	-0,13%
Case 15	Volkswagen Fraud	Magma	0,36%	0,01%	-1,32%
Case 15	Volkswagen Fraud	Visteon	0,34%	-0,02%	0,31%
Case 15	Volkswagen Fraud	BorgWarner	-0,14%	-1,38%	-1,21%
Case 15	Volkswagen Fraud	Honeywell	-0,19%	-0,78%	-0,83%
Case 15	Volkswagen Fraud	Infineon	-1,71%	-0,01%	-0,49%
Case 15	Volkswagen Fraud	Siemens	-0,51%	-1,54%	1,25%
Case 15	Volkswagen Fraud	Continental	0,43%	1,02%	-3,79%
Case 15	Volkswagen Fraud	SAP	-0,15%	0,04%	0,69%

Case 15	Volkswagen Fraud	BASF	-1,23%	-0,12%	1,14%
Case 15	Volkswagen Fraud	Microsoft	-0,17%	-0,08%	1,44%
Case 15	Volkswagen Fraud	Ballard	-3,00%	1,54%	0,14%
Case 15	Volkswagen Fraud	Dassault	0,42%	1,28%	0,53%
Case 15	Volkswagen Fraud	Plastic Omnium	0,70%	-0,42%	-4,06%
Case 15	Volkswagen Fraud	Kumho Tyres	1,26%	-1,95%	1,17%
Case 15	Volkswagen Fraud	LG Eletronics	-0,11%	0,17%	-0,59%
Case 15	Volkswagen Fraud	Tupy S.A.	0,99%	0,02%	1,90%
Case 15	Volkswagen Fraud	Maruti	-0,44%	0,27%	1,71%

**Table 26: Calculated Daily Abnormal Returns for Event Window 5 (-1 to 5)**

Case No.	Case	Company	D-1	D0	D1	D2	D3	D4	D5
Case 1	PO-Unil.	Wilmar	2,27%	-2,07%	2,61%	0,21%	-4,21%	0,32%	4,42%
Case 1	PO-Unil.	Unilever	0,39%	-0,29%	-0,09%	-2,41%	-0,11%	-0,80%	0,65%
Case 2	PO-Nestlé	Wilmar	-0,65%	-1,00%	-0,21%	-0,28%	0,01%	-1,46%	0,43%
Case 2	PO-Nestlé	Nestlé	1,09%	-0,63%	-0,51%	-1,42%	0,80%	-0,64%	-1,49%
Case 3	BP Oilspill	Andarko	-0,99%	-0,44%	-1,75%	0,68%	-0,14%	-0,65%	-0,70%
Case 3	BP Oilspill	Transocean	1,00%	3,22%	-1,57%	-0,32%	-1,32%	-1,43%	-0,70%
Case 3	BP Oilspill	Halliburton	-1,01%	4,18%	0,09%	0,92%	2,43%	-0,70%	-0,91%
Case 3	BP Oilspill	Nat. Oil.Varco	-0,58%	2,21%	1,17%	-0,01%	2,56%	1,20%	-2,47%
Case 3	BP Oilspill	Cam. Intern.	-0,63%	1,28%	-1,06%	0,33%	1,99%	0,26%	-3,38%
Case 3	BP Oilspill	Weatherford	-1,93%	4,70%	-2,96%	0,46%	5,29%	4,06%	1,97%
Case 4	Zara Br.	Inditex-Zara	-0,23%	1,54%	-1,74%	-2,64%	0,11%	-0,87%	-0,20%
Case 5	Foxconn	Apple	-0,48%	-0,50%	-0,77%	-0,10%	0,57%	-0,22%	-0,93%
Case 5	Foxconn	Cisco	-1,77%	0,90%	-0,16%	-0,03%	0,60%	-0,39%	0,54%
Case 5	Foxconn	Amazon	-0,57%	-0,60%	-2,22%	1,88%	1,13%	2,72%	1,93%
Case 5	Foxconn	Acer	-2,95%	-0,93%	-0,65%	-1,65%	-0,61%	3,01%	-1,25%
Case 5	Foxconn	Sony	0,75%	0,20%	-2,37%	0,01%	-2,16%	1,31%	0,57%
Case 5	Foxconn	Nokia	1,86%	-1,20%	-0,40%	-0,98%	7,86%	-1,01%	0,99%
Case 5	Foxconn	Motorola	-0,52%	-0,47%	-0,08%	1,04%	0,66%	0,10%	0,85%
Case 5	Foxconn	Toshiba	-0,13%	0,61%	-0,04%	0,22%	-2,85%	0,48%	2,59%
Case 5	Foxconn	Nintendo	-1,23%	-0,10%	-0,11%	-1,83%	1,13%	-2,76%	1,18%
Case 5	Foxconn	Microsoft	-0,45%	-0,72%	0,56%	1,23%	-0,52%	-1,34%	-0,97%
Case 5	Foxconn	Google	-0,75%	0,15%	0,11%	-0,35%	-0,01%	-0,64%	0,44%
Case 5	Foxconn	HP	0,15%	-0,02%	1,10%	-0,95%	-0,31%	0,99%	0,20%
Case 6	J. Jungle	KFC	0,59%	-1,92%	0,22%	0,74%	-2,01%	-0,44%	1,11%
Case 7	Bang. Fire	Zara	-1,13%	0,54%	-0,73%	1,34%	0,33%	-0,29%	-1,53%
Case 7	Bang. Fire	Wal-Mart	1,34%	-0,39%	-0,44%	1,16%	0,16%	1,61%	-0,82%
Case 7	Bang. Fire	Disney	-0,06%	-0,37%	-0,49%	0,45%	0,59%	-0,22%	-0,40%
Case 7	Bang. Fire	GAP	-0,59%	0,31%	-1,03%	0,85%	-4,76%	0,03%	0,39%
Case 7	Bang. Fire	PVH	-0,80%	-0,08%	-0,72%	5,26%	-2,17%	-0,41%	0,96%
Case 7	Bang. Fire	Sears	-2,43%	-1,96%	-1,40%	-4,91%	-4,38%	-2,52%	0,61%
Case 8	Ch. Labor	Apple	-11,3%	-3,09%	2,16%	2,00%	0,27%	-0,19%	-1,90%
Case 9	Zara Arg.	Inditex-Zara	-0,02%	1,26%	1,84%	0,18%	1,96%	-0,43%	1,46%
Case 10	Rana Plaza	GAP	-1,40%	-0,63%	0,16%	1,10%	0,19%	-0,61%	0,97%
Case 10	Rana Plaza	Primark	0,06%	6,57%	-2,88%	-2,12%	0,58%	0,14%	0,02%
Case 10	Rana Plaza	Next	-0,57%	0,93%	-0,20%	-0,68%	0,63%	-0,14%	-1,27%
Case 10	Rana Plaza	A&F	-1,78%	-1,37%	1,02%	2,30%	0,64%	0,56%	0,38%
Case 10	Rana Plaza	Carrefour	-1,39%	1,31%	0,06%	-0,13%	-0,37%	1,04%	-1,16%

Case 10	Rana Plaza	Esprit	0,24%	-0,40%	-0,77%	-1,20%	-0,55%	4,62%	2,84%
Case 10	Rana Plaza	H&M	1,33%	-0,54%	0,84%	0,35%	-0,17%	0,38%	-0,38%
Case 10	Rana Plaza	Cato	-1,59%	-0,22%	1,85%	2,32%	0,78%	-1,39%	1,81%
Case 10	Rana Plaza	TJX	-0,01%	-0,64%	0,54%	1,56%	0,34%	0,44%	-0,32%
Case 10	Rana Plaza	PVH	-0,32%	1,42%	-0,01%	1,15%	0,35%	1,51%	0,53%
Case 10	Rana Plaza	Target	-0,19%	0,31%	-0,04%	1,13%	-0,19%	-0,22%	-0,29%
Case 10	Rana Plaza	Wal-Mart	-0,65%	0,94%	-1,38%	0,58%	0,54%	-1,18%	-1,00%
Case 10	Rana Plaza	JC Penney	1,57%	-1,44%	-1,46%	0,13%	11,96%	0,60%	-4,52%
Case 10	Rana Plaza	M&S	0,47%	0,85%	-0,60%	0,87%	0,32%	-1,01%	-0,83%
Case 10	Rana Plaza	Joe Fresh	-0,99%	1,20%	-1,90%	0,07%	0,58%	0,06%	1,90%
Case 10	Rana Plaza	Kohl's	-0,47%	0,21%	-0,45%	0,85%	0,66%	-2,39%	-0,69%
Case 11	Pegatron	Apple	0,54%	2,35%	0,86%	-0,27%	-0,66%	1,05%	1,65%
Case 12	Lic. to Kill	Gold.Agri.	1,90%	1,96%	-0,32%	1,97%	-1,03%	2,17%	1,89%
Case 12	Lic. to Kill	Wilmar	0,42%	0,83%	2,59%	-0,43%	0,52%	0,35%	0,23%
Case 12	Lic. to Kill	Unilever	0,06%	-0,46%	1,13%	0,39%	0,10%	-1,18%	1,20%
Case 13	PO- P&G	Wilmar	2,96%	0,36%	-0,83%	-0,98%	0,86%	-0,50%	0,49%
Case 13	PO- P&G	P & G	0,47%	-0,30%	0,10%	0,43%	-0,93%	0,18%	-0,76%
Case 13	PO- P&G	Pepsi Co	0,60%	-0,67%	0,23%	1,12%	-0,08%	0,60%	1,10%
Case 13	PO- P&G	J & J	0,12%	0,00%	-0,15%	0,60%	0,04%	0,62%	-0,79%
Case 13	PO- P&G	C.-Palmolive	0,36%	-0,16%	-0,16%	0,91%	-0,23%	-0,15%	-0,58%
Case 14	CP Foods	Wal Mart	-0,30%	-0,48%	-0,39%	-0,15%	-0,76%	0,04%	-0,58%
Case 14	CP Foods	Tesco	1,17%	0,57%	0,33%	-0,91%	0,74%	-0,73%	0,40%
Case 14	CP Foods	Cotsco	-0,52%	-0,59%	-0,67%	-0,34%	-0,24%	0,02%	-0,13%
Case 14	CP Foods	Morisson	0,85%	0,15%	1,02%	-1,03%	0,32%	-1,68%	2,35%
Case 14	CP Foods	Carrefour	0,03%	0,43%	-0,01%	-0,74%	-0,79%	-0,32%	0,73%
Case 15	Volkswagen	Motorola S.	-0,49%	1,43%	-0,48%	0,31%	1,96%	0,41%	1,88%
Case 15	Volkswagen	IBM	0,09%	-0,76%	0,90%	-0,11%	-0,30%	0,88%	0,75%
Case 15	Volkswagen	Nokia	0,63%	-0,28%	-0,13%	-0,13%	2,27%	0,57%	-1,25%
Case 15	Volkswagen	Magma	0,37%	0,02%	-1,31%	-3,63%	-1,42%	1,83%	0,51%
Case 15	Volkswagen	Visteon	0,34%	-0,02%	0,31%	-0,50%	-0,29%	0,40%	-0,90%
Case 15	Volkswagen	BorgWarner	-0,14%	-1,38%	-1,21%	-6,17%	-0,65%	0,21%	3,02%
Case 15	Volkswagen	Honeywell	-0,19%	-0,78%	-0,83%	-0,46%	-1,33%	-0,70%	-0,10%
Case 15	Volkswagen	Infineon	-1,72%	-0,01%	-0,50%	0,20%	-2,61%	0,36%	1,79%
Case 15	Volkswagen	Siemens	-0,51%	-1,54%	1,25%	0,59%	-0,15%	-0,40%	-0,62%
Case 15	Volkswagen	Continental	0,43%	1,02%	-3,79%	0,88%	0,17%	-1,14%	1,31%
Case 15	Volkswagen	SAP	-0,16%	0,04%	0,69%	0,55%	-0,40%	0,48%	0,15%
Case 15	Volkswagen	BASF	-1,24%	-0,12%	1,13%	1,53%	-0,21%	0,84%	-0,17%
Case 15	Volkswagen	Microsoft	-0,17%	-0,08%	1,44%	1,34%	0,04%	0,60%	1,29%
Case 15	Volkswagen	Ballard	-3,02%	1,52%	0,12%	-0,73%	-4,64%	-2,03%	3,80%
Case 15	Volkswagen	Dassault	0,40%	1,27%	0,50%	1,84%	-0,26%	0,53%	2,03%
Case 15	Volkswagen	Pl. Omnium	0,70%	-0,42%	-4,06%	-3,94%	3,02%	-1,27%	3,00%
Case 15	Volkswagen	Kumho Tyres	1,26%	-1,95%	1,17%	-0,85%	0,26%	0,92%	5,94%
Case 15	Volkswagen	LG Eletronics	-0,11%	0,16%	-0,59%	-1,17%	-1,52%	-0,95%	1,40%
Case 15	Volkswagen	Tupy S.A.	0,98%	0,00%	1,89%	0,89%	1,58%	-0,78%	3,57%
Case 15	Volkswagen	Maruti	-0,43%	0,27%	1,72%	0,41%	0,63%	1,24%	-1,30%

Table 27: Calculated Daily Abnormal Returns for Event Window 6 (-2 to 2)

Case No.	Case	Company	D-2	D-1	D0	D1	D2
Case 1	PO-Unil.	Wilmar	2,05%	2,27%	-2,06%	2,62%	0,22%

Case 1	PO-Unil.	Unilever	-0,87%	0,38%	-0,30%	-0,10%	-2,42%
Case 2	PO - Nestlé	Wilmar	-1,62%	-0,69%	-1,04%	-0,23%	-0,31%
Case 2	PO - Nestlé	Nestlé	-0,44%	1,09%	-0,63%	-0,51%	-1,42%
Case 3	BP Oilspill	Andarko	0,77%	-0,99%	-0,44%	-1,74%	0,69%
Case 3	BP Oilspill	Transocean	1,09%	1,01%	3,22%	-1,56%	-0,31%
Case 3	BP Oilspill	Halliburton	-0,05%	-1,01%	4,18%	0,09%	0,92%
Case 3	BP Oilspill	Nat Oil. Varco	1,95%	-0,57%	2,21%	1,19%	0,00%
Case 3	BP Oilspill	Cam.Intern.	0,92%	-0,62%	1,28%	-1,05%	0,34%
Case 3	BP Oilspill	Weatherford	0,04%	-1,93%	4,70%	-2,96%	0,46%
Case 4	Zara Brazil	Inditex-Zara	-0,05%	-0,24%	1,52%	-1,71%	-2,64%
Case 5	Foxconn	Apple	-0,34%	-0,49%	-0,51%	-0,78%	-0,10%
Case 5	Foxconn	Cisco	0,50%	-1,75%	0,92%	-0,14%	-0,02%
Case 5	Foxconn	Amazon	-2,38%	-0,60%	-0,63%	-2,24%	1,86%
Case 5	Foxconn	Acer	4,66%	-2,92%	-0,90%	-0,62%	-1,62%
Case 5	Foxconn	Sony	0,24%	0,75%	0,20%	-2,37%	0,01%
Case 5	Foxconn	Nokia	-0,38%	1,86%	-1,20%	-0,40%	-0,98%
Case 5	Foxconn	Motorola	-1,04%	-0,55%	-0,49%	-0,09%	1,03%
Case 5	Foxconn	Toshiba	0,02%	-0,13%	0,61%	-0,04%	0,22%
Case 5	Foxconn	Nintendo	0,90%	-1,22%	-0,09%	-0,10%	-1,83%
Case 5	Foxconn	Microsoft	-1,45%	-0,46%	-0,73%	0,55%	1,23%
Case 5	Foxconn	Google	-4,38%	-0,77%	0,13%	0,09%	-0,37%
Case 5	Foxconn	HP	0,09%	0,14%	-0,03%	1,09%	-0,96%
Case 6	J. the Jungle	KFC	0,97%	0,60%	-1,92%	0,23%	0,74%
Case 7	Bang.Fire	Zara	1,05%	-1,12%	0,55%	-0,72%	1,35%
Case 7	Bang.Fire	Wal-Mart	-0,31%	1,33%	-0,39%	-0,44%	1,16%
Case 7	Bang. Fire	Disney	0,20%	-0,06%	-0,37%	-0,49%	0,44%
Case 7	Bang. Fire	GAP	0,24%	-0,59%	0,31%	-1,02%	0,86%
Case 7	Bang. Fire	PVH	-1,28%	-0,81%	-0,09%	-0,73%	5,25%
Case 7	Bang. Fire	Sears	-4,75%	-2,47%	-1,99%	-1,42%	-4,95%
Case 8	Child Labor	Apple	1,49%	-11,3%	-3,08%	2,17%	2,00%
Case 9	Zara Arg.	Inditex-Zara	-1,51%	-0,03%	1,25%	1,83%	0,17%
Case 10	Rana Plaza	GAP	-1,39%	-1,44%	-0,70%	0,15%	1,06%
Case 10	Rana Plaza	Primark	1,17%	0,08%	6,60%	-2,86%	-2,10%
Case 10	Rana Plaza	Next	-0,13%	-0,56%	0,93%	-0,20%	-0,68%
Case 10	Rana Plaza	A & F	0,38%	-1,84%	-1,50%	1,00%	2,24%
Case 10	Rana Plaza	Carrefour	1,36%	-1,38%	1,33%	0,07%	-0,12%
Case 10	Rana Plaza	Esprit	-0,88%	0,23%	-0,39%	-0,81%	-1,22%
Case 10	Rana Plaza	H&M	0,70%	1,33%	-0,54%	0,84%	0,35%
Case 10	Rana Plaza	Cato	0,21%	-1,61%	-0,25%	1,85%	2,31%
Case 10	Rana Plaza	TJX	0,03%	-0,03%	-0,68%	0,53%	1,54%
Case 10	Rana Plaza	PVH	1,00%	-0,32%	1,42%	0,00%	1,15%
Case 10	Rana Plaza	Target	0,63%	-0,19%	0,32%	-0,04%	1,13%
Case 10	Rana Plaza	Wal-Mart	1,03%	-0,66%	0,93%	-1,38%	0,57%
Case 10	Rana Plaza	JC Peney	-0,07%	1,56%	-1,47%	-1,47%	0,12%
Case 10	Rana Plaza	M & S	1,44%	0,48%	0,86%	-0,59%	0,87%
Case 10	Rana Plaza	Joe Fresh	-0,20%	-1,01%	1,19%	-1,98%	0,04%
Case 10	Rana Plaza	Kohl's	0,52%	-0,48%	0,20%	-0,45%	0,84%
Case 11	Pegatron	Apple	-1,15%	0,54%	2,35%	0,85%	-0,27%
Case 12	Lic. to Kill	G. Agri R.	-0,27%	1,90%	1,96%	-0,33%	1,97%
Case 12	Lic. to Kill	Wilmar	-0,36%	0,42%	0,83%	2,58%	-0,43%
Case 12	Lic. to Kill	Unilever	3,03%	0,11%	-0,44%	1,18%	0,39%
Case 13	PO - P&G	Wilmar	0,39%	2,96%	0,36%	-0,83%	-0,98%
Case 13	PO - P&G	P & G	-0,56%	0,46%	-0,31%	0,09%	0,43%
Case 13	PO - P&G	Pepsi Co	0,45%	0,61%	-0,67%	0,23%	1,12%
Case 13	PO - P&G	J & J	-0,99%	0,12%	0,00%	-0,16%	0,59%

Case 13	PO - P&G	C.-Palmolive	0,08%	0,36%	-0,16%	-0,16%	0,91%
Case 14	CP Foods	Wal Mart	-0,40%	-0,30%	-0,48%	-0,39%	-0,14%
Case 14	CP Foods	Tesco	-0,73%	1,16%	0,57%	0,33%	-0,92%
Case 14	CP Foods	Cotsco	0,16%	-0,52%	-0,59%	-0,67%	-0,34%
Case 14	CP Foods	Morisson	0,02%	0,85%	0,14%	1,02%	-1,03%
Case 14	CP Foods	Carrefour	-1,61%	0,01%	0,42%	-0,01%	-0,75%
Case 15	Volkswagen	Motorola S.	-0,32%	-0,49%	1,43%	-0,48%	0,31%
Case 15	Volkswagen	IBM	-0,30%	0,09%	-0,76%	0,90%	-0,11%
Case 15	Volkswagen	Nokia	0,94%	0,63%	-0,29%	-0,13%	-0,13%
Case 15	Volkswagen	Magma	1,49%	0,37%	0,00%	-1,31%	-3,64%
Case 15	Volkswagen	Visteon	1,20%	0,34%	-0,02%	0,32%	-0,50%
Case 15	Volkswagen	BorgWarner	1,73%	-0,13%	-1,39%	-1,20%	-6,17%
Case 15	Volkswagen	Honeywell	-0,34%	-0,19%	-0,78%	-0,83%	-0,46%
Case 15	Volkswagen	Infineon	0,80%	-1,70%	-0,01%	-0,48%	0,20%
Case 15	Volkswagen	Siemens	0,18%	-0,50%	-1,54%	1,25%	0,59%
Case 15	Volkswagen	Continental	0,70%	0,44%	1,03%	-3,78%	0,88%
Case 15	Volkswagen	SAP	1,36%	-0,15%	0,05%	0,70%	0,55%
Case 15	Volkswagen	BASF	0,45%	-1,23%	-0,12%	1,14%	1,53%
Case 15	Volkswagen	Microsoft	0,03%	-0,17%	-0,08%	1,44%	1,34%
Case 15	Volkswagen	Ballard	1,95%	-2,99%	1,54%	0,15%	-0,71%
Case 15	Volkswagen	Dassault	-1,00%	0,42%	1,29%	0,52%	1,86%
Case 15	Volkswagen	Plastic Omnium	0,39%	0,70%	-0,42%	-4,06%	-3,95%
Case 15	Volkswagen	Kumho Tyres	0,84%	1,26%	-1,94%	1,15%	-0,84%
Case 15	Volkswagen	LG Eletronics	1,37%	-0,10%	0,19%	-0,61%	-1,14%
Case 15	Volkswagen	Tupy S.A.	-4,19%	0,97%	0,07%	1,91%	0,90%
Case 15	Volkswagen	Maruti	0,56%	-0,44%	0,27%	1,71%	0,40%

Table 28: Calculated Daily Abnormal Returns for Event Window 7 (-5 to 5)

Case No.	Case	Company	D-5	D-4	D-3	D-2	D-1	D0	D1	D2	D3	D4	D5
1	PO-Unil.	Wilmar	1%	0%	0%	2%	2%	-2%	3%	0%	-4%	0%	4%
1	PO-Unil.	Unilever	0%	0%	0%	-1%	0%	0%	0%	-2%	0%	-1%	1%
2	PONestlé	Wilmar	-1%	-1%	-1%	-2%	-1%	-1%	0%	0%	0%	-2%	0%
2	PONestlé	Nestlé	0%	0%	1%	0%	1%	-1%	-1%	-1%	1%	-1%	-1%
3	BP Oil.	Andarko	-1%	0%	1%	1%	-1%	0%	-2%	1%	0%	-1%	-1%
3	BP Oil.	Transocean	-1%	2%	1%	1%	1%	3%	-2%	0%	-1%	-1%	-1%
3	BP Oil.	Halliburton	0%	1%	0%	0%	-1%	4%	0%	1%	2%	-1%	-1%
3	BP Oil.	Nat Oil.Var.	-2%	-1%	1%	2%	-1%	2%	1%	0%	3%	1%	-2%
3	BP Oil.	Cam.Intern.	-3%	1%	0%	1%	-1%	1%	-1%	0%	2%	0%	-3%
3	BP Oil.	Weatherford	1%	2%	-1%	0%	-2%	5%	-3%	0%	5%	4%	2%
4	Zara Br	Inditex-Zara	2%	2%	-1%	0%	0%	2%	-2%	-3%	0%	-1%	0%
5	Foxconn	Apple	0%	0%	1%	0%	0%	-1%	-1%	0%	1%	0%	-1%
5	Foxconn	Cisco	2%	-1%	-1%	0%	-2%	1%	0%	0%	1%	0%	1%
5	Foxconn	Amazon	-1%	-1%	3%	-2%	-1%	-1%	-2%	2%	1%	3%	2%
5	Foxconn	Acer	1%	1%	7%	5%	-3%	-1%	-1%	-2%	-1%	3%	-1%
5	Foxconn	Sony	-1%	-3%	-1%	0%	1%	0%	-2%	0%	-2%	1%	1%
5	Foxconn	Nokia	-1%	6%	-3%	0%	2%	-1%	0%	-1%	8%	-1%	1%
5	Foxconn	Motorola	-1%	0%	0%	-1%	-1%	-1%	0%	1%	1%	0%	1%
5	Foxconn	Toshiba	-2%	-2%	-1%	0%	0%	1%	0%	0%	-3%	0%	3%
5	Foxconn	Nintendo	2%	-2%	-1%	1%	-1%	0%	0%	-2%	1%	-3%	1%



5	Foxconn	Microsoft	2%	0%	1%	-1%	0%	-1%	1%	1%	-1%	-1%	-1%
5	Foxconn	Google	0%	-2%	-2%	-4%	-1%	0%	0%	0%	0%	-1%	0%
5	Foxconn	HP	0%	-1%	0%	0%	0%	0%	1%	-1%	0%	1%	0%
6	J. Jungle	KFC	2%	-1%	-2%	1%	1%	-2%	0%	1%	-2%	0%	1%
7	Bang.Fire	Zara	1%	0%	-1%	1%	-1%	1%	-1%	1%	0%	0%	-2%
7	Bang.Fire	Wal-Mart	-1%	1%	0%	0%	1%	0%	0%	1%	0%	2%	-1%
7	Bang Fire	Disney	-1%	-1%	1%	0%	0%	0%	0%	0%	1%	0%	0%
7	Bang Fire	GAP	0%	0%	1%	0%	-1%	0%	-1%	1%	-5%	0%	0%
7	Bang Fire	PVH	0%	0%	-1%	-1%	-1%	0%	-1%	5%	-2%	0%	1%
7	Bang Fire	Sears	-20%	-4%	3%	-5%	-3%	-2%	-1%	-5%	-5%	-3%	1%
8	Ch Labor	Apple	-1%	0%	1%	1%	-11%	-3%	2%	2%	0%	0%	-2%
9	Zara Arg.	Inditex-Zara	2%	0%	0%	-1%	0%	1%	2%	0%	2%	0%	1%
10	R. Plaza	GAP	1%	-1%	1%	-1%	-1%	-1%	0%	1%	0%	-1%	1%
10	R. Plaza	Primark	-2%	0%	0%	1%	0%	7%	-3%	-2%	1%	0%	0%
10	R. Plaza	Next	0%	0%	0%	0%	-1%	1%	0%	-1%	1%	0%	-1%
10	R.Plaza	A & F	1%	-1%	-1%	0%	-2%	-1%	1%	2%	1%	0%	0%
10	R.Plaza	Carrefour	0%	0%	-1%	1%	-1%	1%	0%	0%	0%	1%	-1%
10	R.Plaza	Esprit	2%	0%	0%	-1%	0%	0%	-1%	-1%	-1%	5%	3%
10	R.Plaza	H&M	1%	-1%	1%	1%	1%	-1%	1%	0%	0%	0%	0%
10	R.Plaza	Cato	-2%	-2%	-1%	0%	-2%	0%	2%	2%	1%	-1%	2%
10	R.Plaza	TJX	-1%	0%	-1%	0%	0%	-1%	1%	2%	0%	0%	0%
10	R.Plaza	PVH	0%	0%	0%	1%	0%	1%	0%	1%	0%	2%	1%
10	R.Plaza	Target	-1%	1%	0%	1%	0%	0%	0%	1%	0%	0%	0%
10	R.Plaza	Wal-Mart	0%	0%	-1%	1%	-1%	1%	-1%	1%	1%	-1%	-1%
10	R.Plaza	JC Peney	4%	-1%	4%	0%	2%	-1%	-1%	0%	12%	1%	-4%
10	R.Plaza	M & S	-1%	2%	-1%	1%	0%	1%	-1%	1%	0%	-1%	-1%
10	R.Plaza	Joe Fresh	1%	0%	-1%	0%	-1%	1%	-2%	0%	1%	0%	2%
10	R.Plaza	Kohl's	-2%	1%	0%	0%	0%	0%	0%	1%	1%	-2%	-1%
11	Pegatron	Apple	0%	-1%	5%	-1%	1%	2%	1%	0%	-1%	1%	2%
12	L. to Kill	G. Agri R.	-1%	1%	-1%	0%	2%	2%	0%	2%	-1%	2%	2%
12	L. to Kill	Wilmar	-1%	0%	1%	0%	0%	1%	3%	0%	1%	0%	0%
12	L. to Kill	Unilever	0%	0%	-1%	3%	0%	0%	1%	0%	0%	-1%	1%
13	PO- P&G	Wilmar	1%	2%	0%	0%	3%	0%	-1%	-1%	1%	0%	0%
13	PO- P&G	P & G	1%	-1%	0%	-1%	0%	0%	0%	0%	-1%	0%	-1%
13	PO- P&G	Pepsi Co	-1%	1%	0%	0%	1%	-1%	0%	1%	0%	1%	1%
13	PO- P&G	J & J	0%	0%	0%	-1%	0%	0%	0%	1%	0%	1%	-1%
13	PO- P&G	C.-Palm.	-1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	-1%
14	CP Foods	Wal Mart	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%
14	CP Foods	Tesco	-1%	-1%	0%	-1%	1%	1%	0%	-1%	1%	-1%	0%
14	CP Foods	Cotsco	0%	1%	1%	0%	-1%	-1%	-1%	0%	0%	0%	0%
14	CP Foods	Morisson	-2%	0%	0%	0%	1%	0%	1%	-1%	0%	-2%	2%
14	CP Foods	Carrefour	-1%	0%	1%	-2%	0%	0%	0%	-1%	-1%	0%	1%
15	VW	Motorola S.	-3%	0%	-1%	0%	-1%	1%	-1%	0%	2%	0%	2%
15	VW	IBM	0%	-1%	0%	0%	0%	-1%	1%	0%	0%	1%	1%
15	VW	Nokia	-1%	2%	-2%	1%	1%	0%	0%	0%	2%	1%	-1%
15	VW	Magma	1%	-2%	0%	1%	0%	0%	-1%	-4%	-1%	2%	1%
15	VW	Visteon	0%	0%	-1%	1%	0%	0%	0%	0%	0%	0%	-1%
15	VW	B.Warner	-2%	0%	0%	2%	0%	-1%	-1%	-6%	-1%	0%	3%
15	VW	Honey.	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	-1%	0%
15	VW	Infineon	-1%	2%	3%	1%	-2%	0%	0%	0%	-3%	0%	2%
15	VW	Siemens	0%	-1%	0%	0%	-1%	-2%	1%	1%	0%	0%	-1%
15	VW	Cont.	0%	-1%	0%	1%	0%	1%	-4%	1%	0%	-1%	1%
15	VW	SAP	0%	0%	0%	1%	0%	0%	1%	1%	0%	0%	0%
15	VW	BASF	0%	0%	0%	0%	-1%	0%	1%	2%	0%	1%	0%
15	VW	Microsoft	0%	-1%	1%	0%	0%	0%	1%	1%	0%	1%	1%

15	VW	Ballard	-1%	-8%	-5%	2%	-3%	1%	0%	-1%	-5%	-2%	4%
15	VW	Dassault	0%	0%	1%	-1%	0%	1%	1%	2%	0%	1%	2%
15	VW	Pl.Om.	-1%	1%	-1%	0%	1%	0%	-4%	-4%	3%	-1%	3%
15	VW	K. Tyres	0%	0%	0%	1%	1%	-2%	1%	-1%	0%	1%	6%
15	VW	LG	3%	-3%	1%	1%	0%	0%	-1%	-1%	-2%	-1%	1%
15	VW	Tupy S.A.	-3%	-3%	4%	-4%	1%	0%	2%	1%	2%	-1%	4%
15	VW	Maruti	0%	0%	-1%	1%	0%	0%	2%	0%	1%	1%	-1%

## Appendix C: Results Statistical Inferences - Statistical Significance of Daily Abnormal Returns (AR)

Table 29: Statistical Significance of ARs for Event Window 1 (-1 to 0)

Case No.	Case	Company	D-1	D0
Case 1	Palm Oil - Unilever	Wilmar	0,80	- 0,74
Case 1	Palm Oil - Unilever	Unilever	0,28	- 0,22
Case 2	Palm Oil - Nestlé	Wilmar	- 0,46	- 0,69
Case 2	Palm Oil - Nestlé	Nestlé	0,91	- 0,51
Case 3	BP Oilspill	Andarko	- 0,67	- 0,30
Case 3	BP Oilspill	Transocean	0,71	2,28
Case 3	BP Oilspill	Halliburton	- 0,68	2,81
Case 3	BP Oilspill	National Oilwell Varco	- 0,40	1,53
Case 3	BP Oilspill	Cameron International	- 0,46	0,94
Case 3	BP Oilspill	Weatherford	- 1,01	2,46
Case 4	Zara Brazil	Inditex-Zara	- 0,18	1,13
Case 5	Foxconn	Apple	- 0,45	- 0,46
Case 5	Foxconn	Cisco	- 1,19	0,62
Case 5	Foxconn	Amazon	- 0,31	- 0,32
Case 5	Foxconn	Acer	- 1,14	- 0,36
Case 5	Foxconn	Sony	0,45	0,12
Case 5	Foxconn	Nokia	0,71	- 0,46
Case 5	Foxconn	Motorola	- 0,49	- 0,44
Case 5	Foxconn	Toshiba	- 0,06	0,29
Case 5	Foxconn	Nintendo	- 0,50	- 0,04
Case 5	Foxconn	Microsoft	- 0,53	- 0,85
Case 5	Foxconn	Google	- 0,52	0,11
Case 5	Foxconn	HP	0,07	- 0,01
Case 6	Junking the Jungle	KFC	0,51	- 1,65
Case 7	Bangladesh Fire	Zara	- 0,69	0,33
Case 7	Bangladesh Fire	Wal-Mart	1,32	- 0,39
Case 7	Bangladesh Fire	Disney	- 0,07	- 0,42
Case 7	Bangladesh Fire	GAP	- 0,37	0,19
Case 7	Bangladesh Fire	PVH	- 0,39	- 0,04
Case 7	Bangladesh Fire	Sears	- 0,69	- 0,56
Case 8	Child Labor	Apple	- 7,87	- 2,16
Case 9	Zara Argentina	Inditex-Zara	- 0,01	0,78
Case 10	Rana Plaza	GAP	- 0,81	- 0,39
Case 10	Rana Plaza	Primark	0,08	7,82
Case 10	Rana Plaza	Next	- 0,54	0,90
Case 10	Rana Plaza	Abercrombie & Fitch	- 0,55	- 0,45
Case 10	Rana Plaza	Carrefour	- 0,90	0,84

Case 10	Rana Plaza	Esprit	0,07	- 0,12
Case 10	Rana Plaza	H&M	1,61	- 0,66
Case 10	Rana Plaza	Cato	- 0,98	- 0,16
Case 10	Rana Plaza	TJX	- 0,03	- 0,67
Case 10	Rana Plaza	PVH	- 0,16	0,69
Case 10	Rana Plaza	Target	- 0,21	0,33
Case 10	Rana Plaza	Wal-Mart	- 0,77	1,07
Case 10	Rana Plaza	JC Peney	0,46	- 0,43
Case 10	Rana Plaza	Marks & Spencer	0,41	0,73
Case 10	Rana Plaza	Joe Fresh	- 0,76	0,91
Case 10	Rana Plaza	Kohl's	- 0,32	0,12
Case 11	Pegatron	Apple	0,32	1,36
Case 12	Licence to Kill	Golden Agri Resources	1,23	1,27
Case 12	Licence to Kill	Wilmar	0,37	0,73
Case 12	Licence to Kill	Unilever	0,12	- 0,59
Case 13	Palm Oil - P&G	Wilmar	3,06	0,37
Case 13	Palm Oil - P&G	Procter & Gamble	0,56	- 0,37
Case 13	Palm Oil - P&G	Pepsi Co	0,89	- 0,99
Case 13	Palm Oil - P&G	Johnson & Johnson	0,20	0,01
Case 13	Palm Oil - P&G	Colgate-Palmolive	0,51	- 0,23
Case 14	CP Foods	Wal Mart	- 0,49	- 0,78
Case 14	CP Foods	Tesco	1,11	0,54
Case 14	CP Foods	Cotsco	- 0,60	- 0,68
Case 14	CP Foods	Morisson	0,54	0,09
Case 14	CP Foods	Carrefour	0,02	0,42
Case 15	Volkswagen Fraud	Motorola Solutions	- 0,46	1,33
Case 15	Volkswagen Fraud	IBM	0,10	- 0,89
Case 15	Volkswagen Fraud	Nokia	0,38	- 0,18
Case 15	Volkswagen Fraud	Magma	0,28	0,01
Case 15	Volkswagen Fraud	Visteon	0,33	- 0,02
Case 15	Volkswagen Fraud	BorgWarner	- 0,12	- 1,17
Case 15	Volkswagen Fraud	Honeywell	- 0,32	- 1,31
Case 15	Volkswagen Fraud	Infineon	- 1,30	- 0,01
Case 15	Volkswagen Fraud	Siemens	- 0,76	- 2,32
Case 15	Volkswagen Fraud	Continental	0,40	0,95
Case 15	Volkswagen Fraud	SAP	- 0,20	0,05
Case 15	Volkswagen Fraud	BASF	- 1,90	- 0,18
Case 15	Volkswagen Fraud	Microsoft	- 0,14	- 0,06
Case 15	Volkswagen Fraud	Ballard	- 0,52	0,27
Case 15	Volkswagen Fraud	Dassault	0,34	1,05
Case 15	Volkswagen Fraud	Plastic Omnium	0,43	- 0,26
Case 15	Volkswagen Fraud	Kumho Tyres	0,68	- 1,05
Case 15	Volkswagen Fraud	LG Electronics	- 0,06	0,09
Case 15	Volkswagen Fraud	Tupy S.A.	0,50	0,01
Case 15	Volkswagen Fraud	Maruti	- 0,41	0,25

**Table 30: Statistical Significance of ARs for Event Window 2 (0 to 1)**

<b>Case No.</b>	<b>Case</b>	<b>Company</b>	<b>D0</b>	<b>D1</b>
Case 1	Palm Oil - Unilever	Wilmar	- 0,74	0,92
Case 1	Palm Oil - Unilever	Unilever	- 0,22	- 0,07
Case 2	Palm Oil - Nestlé	Wilmar	- 0,68	- 0,14
Case 2	Palm Oil - Nestlé	Nestlé	- 0,52	- 0,42
Case 3	BP Oilspill	Andarko	- 0,29	- 1,17
Case 3	BP Oilspill	Transocean	2,28	- 1,12
Case 3	BP Oilspill	Halliburton	2,81	0,06
Case 3	BP Oilspill	National Oilwell Varco	1,53	0,81
Case 3	BP Oilspill	Cameron International	0,95	- 0,78
Case 3	BP Oilspill	Weatherford	2,46	- 1,54
Case 4	Zara Brazil	Inditex-Zara	1,16	- 1,31
Case 5	Foxconn	Apple	- 0,46	- 0,71
Case 5	Foxconn	Cisco	0,62	- 0,10
Case 5	Foxconn	Amazon	- 0,31	- 1,16
Case 5	Foxconn	Acer	- 0,35	- 0,24
Case 5	Foxconn	Sony	0,12	- 1,43
Case 5	Foxconn	Nokia	- 0,46	- 0,15
Case 5	Foxconn	Motorola	- 0,44	- 0,07
Case 5	Foxconn	Toshiba	0,29	- 0,02
Case 5	Foxconn	Nintendo	- 0,04	- 0,04
Case 5	Foxconn	Microsoft	- 0,85	0,66
Case 5	Foxconn	Google	0,11	0,08
Case 5	Foxconn	HP	- 0,01	0,54
Case 6	Junking the Jungle	KFC	- 1,65	0,19
Case 7	Bangladesh Fire	Zara	0,33	- 0,45
Case 7	Bangladesh Fire	Wal-Mart	- 0,39	- 0,44
Case 7	Bangladesh Fire	Disney	- 0,41	- 0,55
Case 7	Bangladesh Fire	GAP	0,19	- 0,65
Case 7	Bangladesh Fire	PVH	- 0,04	- 0,35
Case 7	Bangladesh Fire	Sears	- 0,55	- 0,40
Case 8	Child Labor	Apple	- 1,87	1,35
Case 9	Zara Argentina	Inditex-Zara	0,79	1,15
Case 10	Rana Plaza	GAP	- 0,35	0,10
Case 10	Rana Plaza	Primark	7,91	- 3,47
Case 10	Rana Plaza	Next	0,90	- 0,19
Case 10	Rana Plaza	Abercrombie & Fitch	- 0,41	0,31
Case 10	Rana Plaza	Carrefour	0,85	0,04
Case 10	Rana Plaza	Esprit	- 0,12	- 0,23
Case 10	Rana Plaza	H&M	- 0,65	1,00
Case 10	Rana Plaza	Cato	- 0,13	1,13
Case 10	Rana Plaza	TJX	- 0,64	0,54
Case 10	Rana Plaza	PVH	0,69	- 0,00

Case 10	Rana Plaza	Target	0,33	- 0,04
Case 10	Rana Plaza	Wal-Mart	1,10	- 1,61
Case 10	Rana Plaza	JC Peney	- 0,43	- 0,43
Case 10	Rana Plaza	Marks & Spencer	0,73	- 0,52
Case 10	Rana Plaza	Joe Fresh	0,92	- 1,44
Case 10	Rana Plaza	Kohl's	0,14	- 0,29
Case 11	Pegatron	Apple	1,36	0,49
Case 12	Licence to Kill	Golden Agri Resources	1,26	- 0,21
Case 12	Licence to Kill	Wilmar	0,72	2,27
Case 12	Licence to Kill	Unilever	- 0,61	1,49
Case 13	Palm Oil - P&G	Wilmar	0,35	- 0,86
Case 13	Palm Oil - P&G	Procter & Gamble	- 0,37	0,12
Case 13	Palm Oil - P&G	Pepsi Co	- 0,99	0,33
Case 13	Palm Oil - P&G	Johnson & Johnson	0,01	- 0,25
Case 13	Palm Oil - P&G	Colgate-Palmolive	- 0,23	- 0,23
Case 14	CP Foods	Wal Mart	- 0,78	- 0,63
Case 14	CP Foods	Tesco	0,54	0,31
Case 14	CP Foods	Cotsco	- 0,67	- 0,76
Case 14	CP Foods	Morisson	0,09	0,64
Case 14	CP Foods	Carrefour	0,43	- 0,01
Case 15	Volkswagen Fraud	Motorola Solutions	1,34	- 0,44
Case 15	Volkswagen Fraud	IBM	- 0,89	1,06
Case 15	Volkswagen Fraud	Nokia	- 0,18	- 0,08
Case 15	Volkswagen Fraud	Magma	0,01	- 1,00
Case 15	Volkswagen Fraud	Visteon	- 0,02	0,30
Case 15	Volkswagen Fraud	BorgWarner	- 1,17	- 1,02
Case 15	Volkswagen Fraud	Honeywell	- 1,31	- 1,39
Case 15	Volkswagen Fraud	Infineon	- 0,00	- 0,38
Case 15	Volkswagen Fraud	Siemens	- 2,31	1,88
Case 15	Volkswagen Fraud	Continental	0,94	- 3,50
Case 15	Volkswagen Fraud	SAP	0,05	0,88
Case 15	Volkswagen Fraud	BASF	- 0,17	1,77
Case 15	Volkswagen Fraud	Microsoft	- 0,06	1,14
Case 15	Volkswagen Fraud	Ballard	0,27	0,02
Case 15	Volkswagen Fraud	Dassault	1,07	0,42
Case 15	Volkswagen Fraud	Plastic Omnium	- 0,26	- 2,53
Case 15	Volkswagen Fraud	Kumho Tyres	- 1,05	0,63
Case 15	Volkswagen Fraud	LG Eletronics	0,09	- 0,32
Case 15	Volkswagen Fraud	Tupy S.A.	- 0,00	0,96
Case 15	Volkswagen Fraud	Maruti	0,26	1,61

Table 31: Statistical Significance of ARs for Event Window 3 (0 to 2)

Case No.	Case	Company	D0	D1	D2
Case 1	Palm Oil - Unilever	Wilmar	- 0,74	0,92	0,07
Case 1	Palm Oil - Unilever	Unilever	- 0,22	- 0,07	- 1,78
Case 2	Palm Oil - Nestlé	Wilmar	- 0,69	- 0,14	- 0,19
Case 2	Palm Oil - Nestlé	Nestlé	- 0,52	- 0,42	- 1,17
Case 3	BP Oilspill	Andarko	- 0,30	- 1,19	0,46
Case 3	BP Oilspill	Transocean	2,27	- 1,12	- 0,23
Case 3	BP Oilspill	Halliburton	2,80	0,06	0,62
Case 3	BP Oilspill	National Oilwell Varco	1,52	0,81	- 0,01
Case 3	BP Oilspill	Cameron International	0,94	- 0,79	0,24
Case 3	BP Oilspill	Weatherford	2,46	- 1,54	0,24
Case 4	Zara Brazil	Inditex-Zara	1,16	- 1,30	- 1,98
Case 5	Foxconn	Apple	- 0,45	- 0,70	- 0,08
Case 5	Foxconn	Cisco	0,62	- 0,11	- 0,02
Case 5	Foxconn	Amazon	- 0,31	- 1,16	0,98
Case 5	Foxconn	Acer	- 0,35	- 0,25	- 0,63
Case 5	Foxconn	Sony	0,11	- 1,43	- 0,00
Case 5	Foxconn	Nokia	- 0,46	- 0,16	- 0,38
Case 5	Foxconn	Motorola	- 0,44	- 0,08	0,96
Case 5	Foxconn	Toshiba	0,29	- 0,02	0,10
Case 5	Foxconn	Nintendo	- 0,04	- 0,04	- 0,75
Case 5	Foxconn	Microsoft	- 0,85	0,65	1,45
Case 5	Foxconn	Google	0,10	0,07	- 0,25
Case 5	Foxconn	HP	- 0,01	0,54	- 0,47
Case 6	Junking the Jungle	KFC	- 1,66	0,18	0,62
Case 7	Bangladesh Fire	Zara	0,33	- 0,44	0,82
Case 7	Bangladesh Fire	Wal-Mart	- 0,39	- 0,44	1,12
Case 7	Bangladesh Fire	Disney	- 0,41	- 0,55	0,52
Case 7	Bangladesh Fire	GAP	0,19	- 0,65	0,54
Case 7	Bangladesh Fire	PVH	- 0,04	- 0,35	2,57
Case 7	Bangladesh Fire	Sears	- 0,55	- 0,39	- 1,39
Case 8	Child Labor	Apple	- 1,86	1,35	1,26
Case 9	Zara Argentina	Inditex-Zara	0,78	1,15	0,11
Case 10	Rana Plaza	GAP	- 0,35	0,10	0,63
Case 10	Rana Plaza	Primark	7,91	- 3,47	- 2,55
Case 10	Rana Plaza	Next	0,89	- 0,19	- 0,65
Case 10	Rana Plaza	Abercrombie & Fitch	- 0,41	0,31	0,69
Case 10	Rana Plaza	Carrefour	0,86	0,04	- 0,09
Case 10	Rana Plaza	Esprit	- 0,12	- 0,23	- 0,36
Case 10	Rana Plaza	H&M	- 0,65	1,00	0,42
Case 10	Rana Plaza	Cato	- 0,12	1,14	1,43
Case 10	Rana Plaza	TJX	- 0,63	0,54	1,55
Case 10	Rana Plaza	PVH	0,69	- 0,00	0,56
Case 10	Rana Plaza	Target	0,33	- 0,04	1,19
Case 10	Rana Plaza	Wal-Mart	1,10	- 1,61	0,67
Case 10	Rana Plaza	JC Peney	- 0,43	- 0,44	0,03
Case 10	Rana Plaza	Marks & Spencer	0,74	- 0,52	0,75

Case 10	Rana Plaza	Joe Fresh	0,91	- 1,44	0,06
Case 10	Rana Plaza	Kohl's	0,14	- 0,29	0,55
Case 11	Pegatron	Apple	1,35	0,49	- 0,16
Case 12	Licence to Kill	Golden Agri Resources	1,26	- 0,21	1,26
Case 12	Licence to Kill	Wilmar	0,72	2,26	- 0,38
Case 12	Licence to Kill	Unilever	- 0,61	1,48	0,51
Case 13	Palm Oil - P&G	Wilmar	0,34	- 0,86	- 1,01
Case 13	Palm Oil - P&G	Procter & Gamble	- 0,37	0,12	0,52
Case 13	Palm Oil - P&G	Pepsi Co	- 0,99	0,33	1,63
Case 13	Palm Oil - P&G	Johnson & Johnson	0,00	- 0,24	0,96
Case 13	Palm Oil - P&G	Colgate-Palmolive	- 0,23	- 0,23	1,29
Case 14	CP Foods	Wal Mart	- 0,78	- 0,62	- 0,22
Case 14	CP Foods	Tesco	0,54	0,32	- 0,87
Case 14	CP Foods	Cotsco	- 0,68	- 0,77	- 0,40
Case 14	CP Foods	Morisson	0,10	0,66	- 0,65
Case 14	CP Foods	Carrefour	0,43	- 0,01	- 0,73
Case 15	Volkswagen Fraud	Motorola Solutions	1,33	- 0,44	0,29
Case 15	Volkswagen Fraud	IBM	- 0,88	1,06	- 0,12
Case 15	Volkswagen Fraud	Nokia	- 0,17	- 0,08	- 0,07
Case 15	Volkswagen Fraud	Magma	0,02	- 1,00	- 2,76
Case 15	Volkswagen Fraud	Visteon	- 0,04	0,30	- 0,51
Case 15	Volkswagen Fraud	BorgWarner	- 1,16	- 1,02	- 5,21
Case 15	Volkswagen Fraud	Honeywell	- 1,33	- 1,40	- 0,79
Case 15	Volkswagen Fraud	Infineon	- 0,01	- 0,38	0,16
Case 15	Volkswagen Fraud	Siemens	- 2,34	1,88	0,89
Case 15	Volkswagen Fraud	Continental	0,94	- 3,49	0,81
Case 15	Volkswagen Fraud	SAP	0,05	0,88	0,70
Case 15	Volkswagen Fraud	BASF	- 0,19	1,79	2,43
Case 15	Volkswagen Fraud	Microsoft	- 0,03	1,17	1,12
Case 15	Volkswagen Fraud	Ballard	0,25	0,02	- 0,14
Case 15	Volkswagen Fraud	Dassault	1,06	0,42	1,54
Case 15	Volkswagen Fraud	Plastic Omnium	- 0,26	- 2,53	- 2,46
Case 15	Volkswagen Fraud	Kumho Tyres	- 1,05	0,63	- 0,46
Case 15	Volkswagen Fraud	LG Electronics	0,09	- 0,32	- 0,63
Case 15	Volkswagen Fraud	Tupy S.A.	0,00	0,96	0,45
Case 15	Volkswagen Fraud	Maruti	0,26	1,61	0,38

Table 32: Statistical Significance of ARs for Event Window 4 (-1 to 1)

Case No.	Case	Company	D-1	D0	D1
Case 1	Palm Oil - Unilever	Wilmar	0,80	- 0,74	0,93
Case 1	Palm Oil - Unilever	Unilever	0,28	- 0,22	- 0,07
Case 2	Palm Oil - Nestlé	Wilmar	- 0,46	- 0,69	- 0,15
Case 2	Palm Oil - Nestlé	Nestlé	0,91	- 0,51	- 0,42
Case 3	BP Oilspill	Andarko	- 0,67	- 0,30	- 1,18
Case 3	BP Oilspill	Transocean	0,71	2,28	- 1,11



Case 3	BP Oilspill	Halliburton	- 0,68	2,81	0,06
Case 3	BP Oilspill	Nat. Oilwell Varco	- 0,40	1,53	0,81
Case 3	BP Oilspill	Cameron Intern.	- 0,46	0,94	- 0,78
Case 3	BP Oilspill	Weatherford	- 1,01	2,46	- 1,55
Case 4	Zara Brazil	Inditex-Zara	- 0,18	1,13	- 1,28
Case 5	Foxconn	Apple	- 0,45	- 0,46	- 0,71
Case 5	Foxconn	Cisco	- 1,19	0,62	- 0,10
Case 5	Foxconn	Amazon	- 0,31	- 0,32	- 1,17
Case 5	Foxconn	Acer	- 1,14	- 0,36	- 0,25
Case 5	Foxconn	Sony	0,45	0,12	- 1,43
Case 5	Foxconn	Nokia	0,71	- 0,46	- 0,15
Case 5	Foxconn	Motorola	- 0,49	- 0,44	- 0,08
Case 5	Foxconn	Toshiba	- 0,06	0,29	- 0,02
Case 5	Foxconn	Nintendo	- 0,50	- 0,04	- 0,04
Case 5	Foxconn	Microsoft	- 0,53	- 0,85	0,66
Case 5	Foxconn	Google	- 0,52	0,11	0,08
Case 5	Foxconn	HP	0,07	- 0,01	0,54
Case 6	Junking the Jungle	KFC	0,51	- 1,65	0,19
Case 7	Bangladesh Fire	Zara	- 0,69	0,33	- 0,45
Case 7	Bangladesh Fire	Wal-Mart	1,32	- 0,39	- 0,44
Case 7	Bangladesh Fire	Disney	- 0,07	- 0,42	- 0,56
Case 7	Bangladesh Fire	GAP	- 0,37	0,19	- 0,64
Case 7	Bangladesh Fire	PVH	- 0,39	- 0,04	- 0,35
Case 7	Bangladesh Fire	Sears	- 0,69	- 0,56	- 0,40
Case 8	Child Labor	Apple	- 7,87	- 2,16	1,51
Case 9	Zara Argentina	Inditex-Zara	- 0,01	0,78	1,15
Case 10	Rana Plaza	GAP	- 0,81	- 0,39	0,09
Case 10	Rana Plaza	Primark	0,08	7,82	- 3,41
Case 10	Rana Plaza	Next	- 0,54	0,90	- 0,19
Case 10	Rana Plaza	A&F	- 0,55	- 0,45	0,30
Case 10	Rana Plaza	Carrefour	- 0,90	0,84	0,04
Case 10	Rana Plaza	Esprit	0,07	- 0,12	- 0,23
Case 10	Rana Plaza	H&M	1,61	- 0,66	1,02
Case 10	Rana Plaza	Cato	- 0,98	- 0,16	1,12
Case 10	Rana Plaza	TJX	- 0,03	- 0,67	0,53
Case 10	Rana Plaza	PVH	- 0,16	0,69	- 0,00
Case 10	Rana Plaza	Target	- 0,21	0,33	- 0,04
Case 10	Rana Plaza	Wal-Mart	- 0,77	1,07	- 1,61
Case 10	Rana Plaza	JC Peney	0,46	- 0,43	- 0,43
Case 10	Rana Plaza	Marks & Spencer	0,41	0,73	- 0,52
Case 10	Rana Plaza	Joe Fresh	- 0,76	0,91	- 1,50
Case 10	Rana Plaza	Kohl's	- 0,32	0,12	- 0,29
Case 11	Pegatron	Apple	0,32	1,36	0,50
Case 12	Licence to Kill	Golden Agri	1,23	1,27	- 0,21
Case 12	Licence to Kill	Wilmar	0,37	0,73	2,27
Case 12	Licence to Kill	Unilever	0,12	- 0,59	1,51
Case 13	Palm Oil - P&G	Wilmar	3,06	0,37	- 0,87
Case 13	Palm Oil - P&G	Procter & Gamble	0,56	- 0,37	0,12
Case 13	Palm Oil - P&G	Pepsi Co	0,89	- 0,99	0,34
Case 13	Palm Oil - P&G	Johnson & Johnson	0,20	0,01	- 0,24

Case 13	Palm Oil - P&G	Colgate-Palmolive	0,51	- 0,23	- 0,23
Case 14	CP Foods	Wal Mart	- 0,49	- 0,78	- 0,62
Case 14	CP Foods	Tesco	1,11	0,54	0,31
Case 14	CP Foods	Cotsco	- 0,60	- 0,68	- 0,77
Case 14	CP Foods	Morisson	0,54	0,09	0,64
Case 14	CP Foods	Carrefour	0,02	0,42	- 0,01
Case 15	Volkswagen Fraud	Motorola Solutions	- 0,46	1,33	- 0,45
Case 15	Volkswagen Fraud	IBM	0,10	- 0,89	1,05
Case 15	Volkswagen Fraud	Nokia	0,38	- 0,18	- 0,08
Case 15	Volkswagen Fraud	Magma	0,28	0,01	- 1,00
Case 15	Volkswagen Fraud	Visteon	0,33	- 0,02	0,30
Case 15	Volkswagen Fraud	BorgWarner	- 0,12	- 1,17	- 1,02
Case 15	Volkswagen Fraud	Honeywell	- 0,32	- 1,31	- 1,39
Case 15	Volkswagen Fraud	Infineon	- 1,30	- 0,01	- 0,37
Case 15	Volkswagen Fraud	Siemens	- 0,76	- 2,32	1,88
Case 15	Volkswagen Fraud	Continental	0,40	0,95	- 3,50
Case 15	Volkswagen Fraud	SAP	- 0,20	0,05	0,89
Case 15	Volkswagen Fraud	BASF	- 1,90	- 0,18	1,76
Case 15	Volkswagen Fraud	Microsoft	- 0,14	- 0,06	1,14
Case 15	Volkswagen Fraud	Ballard	- 0,52	0,27	0,02
Case 15	Volkswagen Fraud	Dassault	0,34	1,05	0,43
Case 15	Volkswagen Fraud	Plastic Omnium	0,43	- 0,26	- 2,52
Case 15	Volkswagen Fraud	Kumho Tyres	0,68	- 1,05	0,63
Case 15	Volkswagen Fraud	LG Eletronics	- 0,06	0,09	- 0,32
Case 15	Volkswagen Fraud	Tupy S.A.	0,50	0,01	0,97
Case 15	Volkswagen Fraud	Maruti	- 0,41	0,25	1,59

**Table 33: Statistical Significance of ARs for Event Window 5 (-1 to 5)**

Case No.	Case	Company	D-1	D0	D1	D2	D3	D4	D5
1	PO-Unil.	Wilmar	0,80	-0,73	0,92	0,07	-1,49	0,11	1,57
1	PO-Unil.	Unilever	0,29	-0,22	-0,07	-1,77	-0,08	-0,59	0,48
2	PO-Nestlé	Wilmar	-0,44	-0,68	-0,14	-0,19	0,00	-0,99	0,29
2	PO-Nestlé	Nestlé	0,90	-0,52	-0,42	-1,17	0,66	-0,52	-1,23
3	BP Oilspill	Andarko	-0,67	-0,30	-1,18	0,46	-0,09	-0,44	-0,47
3	BP Oilspill	Transocean	0,71	2,28	-1,11	-0,22	-0,93	-1,01	-0,50
3	BP Oilspill	Halliburton	-0,68	2,81	0,06	0,62	1,63	-0,47	-0,61
3	BP Oilspill	Nat. Oil.Varco	-0,40	1,52	0,81	-0,00	1,76	0,83	-1,70
3	BP Oilspill	Cam. Intern.	-0,46	0,94	-0,78	0,25	1,47	0,19	-2,49
3	BP Oilspill	Weatherford	-1,01	2,46	-1,55	0,24	2,77	2,13	1,03
4	Zara Br.	Inditex-Zara	-0,17	1,16	-1,31	-1,99	0,08	-0,65	-0,15
5	Foxconn	Apple	-0,44	-0,46	-0,71	-0,09	0,52	-0,20	-0,86
5	Foxconn	Cisco	-1,22	0,62	-0,11	-0,02	0,41	-0,27	0,37
5	Foxconn	Amazon	-0,30	-0,32	-1,16	0,98	0,59	1,42	1,01
5	Foxconn	Acer	-1,14	-0,36	-0,25	-0,64	-0,24	1,16	-0,48
5	Foxconn	Sony	0,45	0,12	-1,42	0,00	-1,29	0,78	0,34
5	Foxconn	Nokia	0,71	-0,46	-0,15	-0,37	3,00	-0,38	0,38
5	Foxconn	Motorola	-0,48	-0,44	-0,07	0,96	0,61	0,09	0,78

5	Foxconn	Toshiba	-0,06	0,29	-0,02	0,11	-1,36	0,23	1,23
5	Foxconn	Nintendo	-0,51	-0,04	-0,04	-0,75	0,46	-1,13	0,49
5	Foxconn	Microsoft	-0,53	-0,85	0,65	1,45	-0,61	-1,58	-1,14
5	Foxconn	Google	-0,52	0,10	0,08	-0,25	-0,01	-0,44	0,31
5	Foxconn	HP	0,07	-0,01	0,54	-0,46	-0,15	0,49	0,10
6	J. the Jungle	KFC	0,51	-1,65	0,19	0,63	-1,72	-0,38	0,95
7	Bang. Fire	Zara	-0,69	0,33	-0,45	0,82	0,20	-0,18	-0,94
7	Bang. Fire	Wal-Mart	1,32	-0,39	-0,44	1,14	0,15	1,59	-0,81
7	Bang. Fire	Disney	-0,07	-0,41	-0,55	0,51	0,67	-0,24	-0,45
7	Bang. Fire	GAP	-0,37	0,19	-0,64	0,54	-2,99	0,02	0,25
7	Bang. Fire	PVH	-0,39	-0,04	-0,35	2,56	-1,06	-0,20	0,47
7	Bang. Fire	Sears	-0,69	-0,56	-0,40	-1,40	-1,24	-0,72	0,17
8	Ch. Labor	Apple	-7,86	-2,15	1,51	1,40	0,19	-0,13	-1,32
9	Zara Arg.	Inditex-Zara	-0,01	0,78	1,15	0,11	1,22	-0,27	0,91
10	Rana Plaza	GAP	-0,80	-0,36	0,09	0,62	0,11	-0,35	0,55
10	Rana Plaza	Primark	0,07	7,89	-3,46	-2,55	0,69	0,16	0,02
10	Rana Plaza	Next	-0,54	0,90	-0,20	-0,66	0,60	-0,14	-1,22
10	Rana Plaza	A&F	-0,53	-0,41	0,30	0,69	0,19	0,17	0,11
10	Rana Plaza	Carrefour	-0,90	0,85	0,04	-0,08	-0,24	0,67	-0,75
10	Rana Plaza	Esprit	0,07	-0,12	-0,23	-0,35	-0,16	1,35	0,83
10	Rana Plaza	H&M	1,60	-0,66	1,02	0,42	-0,20	0,46	-0,46
10	Rana Plaza	Cato	-0,97	-0,14	1,12	1,41	0,47	-0,84	1,10
10	Rana Plaza	TJX	-0,01	-0,63	0,53	1,55	0,33	0,43	-0,31
10	Rana Plaza	PVH	-0,16	0,69	-0,00	0,56	0,17	0,73	0,26
10	Rana Plaza	Target	-0,20	0,33	-0,04	1,19	-0,21	-0,24	-0,31
10	Rana Plaza	Wal-Mart	-0,76	1,10	-1,61	0,67	0,62	-1,37	-1,17
10	Rana Plaza	JC Penney	0,46	-0,42	-0,43	0,04	3,51	0,17	-1,32
10	Rana Plaza	M&S	0,41	0,73	-0,52	0,75	0,28	-0,87	-0,71
10	Rana Plaza	Joe Fresh	-0,75	0,91	-1,45	0,05	0,44	0,05	1,44
10	Rana Plaza	Kohl's	-0,31	0,14	-0,29	0,55	0,43	-1,56	-0,45
11	Pegatron	Apple	0,31	1,36	0,49	-0,16	-0,38	0,60	0,95
12	Lic. to Kill	Gold.Agri.	1,23	1,27	-0,21	1,27	-0,67	1,40	1,22
12	Lic. to Kill	Wilmar	0,37	0,72	2,26	-0,38	0,45	0,30	0,20
12	Lic. to Kill	Unilever	0,08	-0,61	1,49	0,52	0,14	-1,55	1,57
13	PO- P&G	Wilmar	3,06	0,37	-0,86	-1,01	0,89	-0,51	0,50
13	PO- P&G	P & G	0,56	-0,36	0,12	0,53	-1,13	0,22	-0,93
13	PO- P&G	Pepsi Co	0,89	-0,99	0,34	1,64	-0,12	0,89	1,61
13	PO- P&G	J & J	0,20	0,01	-0,24	0,96	0,07	0,99	-1,27
13	PO- P&G	C.-Palmolive	0,50	-0,23	-0,23	1,29	-0,33	-0,21	-0,82
14	CP Foods	Wal Mart	-0,49	-0,78	-0,63	-0,24	-1,24	0,07	-0,94
14	CP Foods	Tesco	1,11	0,54	0,31	-0,87	0,70	-0,69	0,38
14	CP Foods	Cotsco	-0,59	-0,67	-0,77	-0,39	-0,28	0,02	-0,15
14	CP Foods	Morisson	0,54	0,09	0,64	-0,65	0,20	-1,05	1,47
14	CP Foods	Carrefour	0,03	0,43	-0,01	-0,73	-0,78	-0,32	0,72
15	Volkswagen	Motorola S.	-0,46	1,33	-0,45	0,29	1,82	0,38	1,75
15	Volkswagen	IBM	0,10	-0,89	1,05	-0,12	-0,35	1,03	0,88
15	Volkswagen	Nokia	0,39	-0,17	-0,08	-0,08	1,39	0,35	-0,76
15	Volkswagen	Magma	0,28	0,01	-1,00	-2,76	-1,08	1,39	0,39
15	Volkswagen	Visteon	0,33	-0,02	0,30	-0,49	-0,28	0,39	-0,88
15	Volkswagen	BorgWarner	-0,12	-1,17	-1,02	-5,21	-0,55	0,17	2,55
15	Volkswagen	Honeywell	-0,32	-1,31	-1,39	-0,77	-2,23	-1,18	-0,16
15	Volkswagen	Infineon	-1,33	-0,01	-0,39	0,15	-2,01	0,28	1,38
15	Volkswagen	Siemens	-0,76	-2,32	1,87	0,89	-0,23	-0,60	-0,93
15	Volkswagen	Continental	0,40	0,94	-3,49	0,81	0,16	-1,05	1,21
15	Volkswagen	SAP	-0,20	0,05	0,88	0,70	-0,51	0,61	0,19

15	Volkswagen	BASF	-1,94	-0,18	1,77	2,40	-0,33	1,32	-0,27
15	Volkswagen	Microsoft	-0,14	-0,06	1,14	1,06	0,03	0,48	1,02
15	Volkswagen	Ballard	-0,53	0,26	0,02	-0,13	-0,81	-0,35	0,66
15	Volkswagen	Dassault	0,34	1,07	0,42	1,54	-0,22	0,44	1,71
15	Volkswagen	Pl. Omnium	0,43	-0,26	-2,52	-2,44	1,87	-0,79	1,86
15	Volkswagen	Kumho Tyres	0,68	-1,05	0,63	-0,46	0,14	0,49	3,20
15	Volkswagen	LG Eletronics	-0,06	0,09	-0,32	-0,63	-0,81	-0,51	0,75
15	Volkswagen	Tupy S.A.	0,50	0,00	0,96	0,45	0,80	-0,40	1,82
15	Volkswagen	Maruti	-0,41	0,26	1,61	0,39	0,59	1,16	-1,21

Table 34: Statistical Significance of ARs for Event Window 6 (-2 to 2)

Case No.	Case	Company	D-2	D-1	D0	D1	D2
Case 1	PO-Unil.	Wilmar	0,73	0,81	- 0,73	0,93	0,08
Case 1	PO-Unil.	Unilever	- 0,64	0,28	- 0,22	- 0,07	- 1,78
Case 2	PO - Nestlé	Wilmar	- 1,09	- 0,46	- 0,70	- 0,15	- 0,21
Case 2	PO - Nestlé	Nestlé	- 0,36	0,90	- 0,52	- 0,42	- 1,17
Case 3	BP Oilspill	Andarko	0,51	- 0,67	- 0,30	- 1,17	0,46
Case 3	BP Oilspill	Transocean	0,77	0,71	2,28	- 1,11	- 0,22
Case 3	BP Oilspill	Halliburton	- 0,04	- 0,68	2,80	0,06	0,61
Case 3	BP Oilspill	Nat Oil. Varco	1,35	- 0,40	1,53	0,82	0,00
Case 3	BP Oilspill	Cam.Intern.	0,68	- 0,46	0,94	- 0,77	0,25
Case 3	BP Oilspill	Weatherford	0,02	- 1,01	2,46	- 1,55	0,24
Case 4	Zara Brazil	Inditex-Zara	- 0,04	- 0,18	1,13	- 1,27	- 1,96
Case 5	Foxconn	Apple	- 0,31	- 0,45	- 0,47	- 0,71	- 0,09
Case 5	Foxconn	Cisco	0,34	- 1,19	0,62	- 0,10	- 0,01
Case 5	Foxconn	Amazon	- 1,24	- 0,31	- 0,33	- 1,17	0,97
Case 5	Foxconn	Acer	1,81	- 1,14	- 0,35	- 0,24	- 0,63
Case 5	Foxconn	Sony	0,14	0,45	0,12	- 1,42	0,00
Case 5	Foxconn	Nokia	- 0,15	0,71	- 0,46	- 0,15	- 0,37
Case 5	Foxconn	Motorola	- 0,95	- 0,50	- 0,45	- 0,09	0,94
Case 5	Foxconn	Toshiba	0,01	- 0,06	0,29	- 0,02	0,11
Case 5	Foxconn	Nintendo	0,37	- 0,50	- 0,04	- 0,04	- 0,75
Case 5	Foxconn	Microsoft	- 1,71	- 0,54	- 0,86	0,65	1,45
Case 5	Foxconn	Google	- 3,11	- 0,55	0,09	0,06	- 0,27
Case 5	Foxconn	HP	0,04	0,07	- 0,01	0,53	- 0,47
Case 6	J. the Jungle	KFC	0,83	0,51	- 1,64	0,20	0,64
Case 7	Bang.Fire	Zara	0,64	- 0,68	0,33	- 0,44	0,82
Case 7	Bang.Fire	Wal-Mart	- 0,31	1,32	- 0,39	- 0,44	1,14
Case 7	Bang. Fire	Disney	0,23	- 0,07	- 0,42	- 0,56	0,50
Case 7	Bang. Fire	GAP	0,15	- 0,37	0,19	- 0,64	0,54
Case 7	Bang. Fire	PVH	- 0,62	- 0,39	- 0,04	- 0,35	2,56
Case 7	Bang. Fire	Sears	- 1,36	- 0,71	- 0,57	- 0,41	- 1,41
Case 8	Child Labor	Apple	1,04	- 7,87	- 2,15	1,51	1,40
Case 9	Zara Arg.	Inditex-Zara	- 0,94	- 0,02	0,78	1,14	0,10
Case 10	Rana Plaza	GAP	- 0,79	- 0,82	- 0,40	0,08	0,60
Case 10	Rana Plaza	Primark	1,39	0,09	7,86	- 3,41	- 2,50
Case 10	Rana Plaza	Next	- 0,12	- 0,54	0,90	- 0,19	- 0,65
Case 10	Rana Plaza	A & F	0,11	- 0,55	- 0,45	0,30	0,67
Case 10	Rana Plaza	Carrefour	0,88	- 0,90	0,86	0,05	- 0,08

Case 10	Rana Plaza	Esprit	- 0,26	0,07	- 0,12	- 0,24	- 0,36
Case 10	Rana Plaza	H&M	0,85	1,61	- 0,65	1,02	0,43
Case 10	Rana Plaza	Cato	0,13	- 0,98	- 0,15	1,12	1,40
Case 10	Rana Plaza	TJX	0,02	- 0,03	- 0,67	0,53	1,52
Case 10	Rana Plaza	PVH	0,49	- 0,15	0,69	- 0,00	0,56
Case 10	Rana Plaza	Target	0,67	- 0,20	0,34	- 0,04	1,19
Case 10	Rana Plaza	Wal-Mart	1,20	- 0,77	1,08	- 1,61	0,67
Case 10	Rana Plaza	JC Penney	- 0,02	0,46	- 0,43	- 0,43	0,03
Case 10	Rana Plaza	M & S	1,24	0,41	0,75	- 0,51	0,76
Case 10	Rana Plaza	Joe Fresh	- 0,15	- 0,76	0,90	- 1,50	0,03
Case 10	Rana Plaza	Kohl's	0,34	- 0,31	0,13	- 0,29	0,55
Case 11	Pegatron	Apple	- 0,67	0,31	1,36	0,49	- 0,16
Case 12	Lic. to Kill	G. Agri R.	- 0,18	1,23	1,26	- 0,21	1,27
Case 12	Lic. to Kill	Wilmar	- 0,31	0,37	0,72	2,26	- 0,38
Case 12	Lic. to Kill	Unilever	4,10	0,16	- 0,60	1,60	0,52
Case 13	PO - P&G	Wilmar	0,40	3,06	0,37	- 0,86	- 1,02
Case 13	PO - P&G	P & G	- 0,68	0,56	- 0,37	0,11	0,52
Case 13	PO - P&G	Pepsi Co	0,66	0,89	- 0,98	0,34	1,65
Case 13	PO - P&G	J & J	- 1,59	0,20	0,00	- 0,25	0,96
Case 13	PO - P&G	C.-Palmolive	0,12	0,50	- 0,23	- 0,23	1,29
Case 14	CP Foods	Wal Mart	- 0,64	- 0,49	- 0,78	- 0,62	- 0,23
Case 14	CP Foods	Tesco	- 0,69	1,10	0,54	0,31	- 0,87
Case 14	CP Foods	Cotsco	0,19	- 0,60	- 0,68	- 0,77	- 0,39
Case 14	CP Foods	Morisson	0,01	0,54	0,09	0,64	- 0,65
Case 14	CP Foods	Carrefour	- 1,59	0,01	0,42	- 0,01	- 0,74
Case 15	Volkswagen	Motorola S.	- 0,30	- 0,46	1,33	- 0,45	0,29
Case 15	Volkswagen	IBM	- 0,35	0,10	- 0,89	1,05	- 0,13
Case 15	Volkswagen	Nokia	0,58	0,39	- 0,18	- 0,08	- 0,08
Case 15	Volkswagen	Magma	1,13	0,28	0,00	- 0,99	- 2,77
Case 15	Volkswagen	Visteon	1,19	0,34	- 0,02	0,31	- 0,49
Case 15	Volkswagen	BorgWarner	1,47	- 0,11	- 1,18	- 1,01	- 5,23
Case 15	Volkswagen	Honeywell	- 0,58	- 0,32	- 1,31	- 1,39	- 0,77
Case 15	Volkswagen	Infineon	0,61	- 1,29	- 0,01	- 0,37	0,15
Case 15	Volkswagen	Siemens	0,27	- 0,76	- 2,32	1,88	0,89
Case 15	Volkswagen	Continental	0,65	0,40	0,95	- 3,49	0,81
Case 15	Volkswagen	SAP	1,75	- 0,19	0,06	0,90	0,71
Case 15	Volkswagen	BASF	0,69	- 1,89	- 0,18	1,76	2,37
Case 15	Volkswagen	Microsoft	0,02	- 0,14	- 0,06	1,14	1,06
Case 15	Volkswagen	Ballard	0,34	- 0,52	0,27	0,03	- 0,12
Case 15	Volkswagen	Dassault	- 0,81	0,34	1,05	0,42	1,52
Case 15	Volkswagen	Plastic Omnium	0,24	0,43	- 0,26	- 2,50	- 2,44
Case 15	Volkswagen	Kumho Tyres	0,45	0,68	- 1,04	0,62	- 0,45
Case 15	Volkswagen	LG Eletronics	0,74	- 0,05	0,10	- 0,33	- 0,61
Case 15	Volkswagen	Tupy S.A.	- 2,14	0,50	0,03	0,98	0,46
Case 15	Volkswagen	Maruti	0,52	- 0,41	0,25	1,59	0,37

Table 35: Statistical Significance of ARs for Event Window 7 (-5 to 5)

Case No.	Case	Company	D-5	D-4	D-3	D-2	D-1	D0	D1	D2	D3	D4	D5
1	PO-Unil.	Wilmar	0,2	- 0,2	0,1	0,7	0,8	- 0,7	0,9	0,1	- 1,5	0,1	1,6
1	PO-Unil.	Unilever	0,3	0,0	0,1	- 0,6	0,3	- 0,2	- 0,1	- 1,8	- 0,1	- 0,6	0,5
2	PONestlé	Wilmar	-0,4	- 1,0	- 0,6	- 1,1	- 0,5	- 0,7	- 0,2	- 0,2	- 0,0	- 1,0	0,3
2	PONestlé	Nestlé	0,3	0,1	0,6	- 0,4	0,9	- 0,5	- 0,4	- 1,2	0,7	- 0,5	- 1,2
3	BP Oil.	Andarko	0,4	0,2	0,5	0,5	- 0,7	- 0,3	- 1,2	0,5	- 0,1	- 0,4	- 0,5
3	BP Oil.	Transocean	1,0	1,3	0,5	0,8	0,7	2,3	- 1,1	- 0,2	- 0,9	- 1,0	- 0,5
3	BP Oil.	Halliburton	0,3	0,9	0,1	- 0,1	- 0,6	2,8	0,1	0,6	1,6	- 0,5	- 0,7
3	BP Oil.	Nat Oil.Var.	1,7	- 0,7	1,0	1,4	- 0,4	1,5	0,8	- 0,0	1,8	0,9	- 1,7
3	BP Oil.	Cam.Intern.	1,9	0,5	- 0,3	0,7	- 0,5	0,9	- 0,8	0,2	1,4	0,2	- 2,4
3	BP Oil.	Weatherford	0,3	1,2	- 0,5	0,0	- 1,0	2,5	- 1,6	0,2	2,8	2,1	1,0
4	Zara Br	Inditex-Zara	1,3	1,2	- 0,6	- 0,0	- 0,2	1,1	- 1,2	- 1,9	0,0	- 0,6	- 0,2
5	Foxconn	Apple	0,4	0,4	0,7	- 0,3	- 0,4	- 0,5	- 0,7	- 0,1	0,5	- 0,2	- 0,9
5	Foxconn	Cisco	1,3	- 0,8	- 0,4	0,3	- 1,2	0,6	- 0,1	- 0,0	0,4	- 0,3	0,4
5	Foxconn	Amazon	0,5	- 0,4	1,4	- 1,2	- 0,3	- 0,3	- 1,2	1,0	0,6	1,4	1,0
5	Foxconn	Acer	0,3	0,3	2,8	1,9	- 1,1	- 0,3	- 0,2	- 0,6	- 0,2	1,2	- 0,5
5	Foxconn	Sony	0,4	- 1,7	- 0,6	0,1	0,4	0,1	- 1,4	- 0,0	- 1,3	0,8	0,3
5	Foxconn	Nokia	-0,4	2,4	- 1,0	- 0,1	0,7	- 0,5	- 0,1	- 0,4	3,1	- 0,4	0,4
5	Foxconn	Motorola	-0,6	0,3	- 0,1	- 1,0	- 0,5	- 0,5	- 0,1	0,9	0,6	0,1	0,7
5	Foxconn	Toshiba	-0,8	- 0,7	- 0,5	- 0,0	- 0,1	0,3	- 0,0	0,1	- 1,4	0,2	1,2
5	Foxconn	Nintendo	1,0	- 1,0	- 0,4	0,4	- 0,5	- 0,0	- 0,0	- 0,8	0,5	- 1,1	0,5
5	Foxconn	Microsoft	2,8	0,4	1,7	- 1,7	- 0,5	- 0,9	0,7	1,5	- 0,6	- 1,6	- 1,2
5	Foxconn	Google	0,3	- 1,6	- 1,1	- 3,2	- 0,6	0,1	0,0	- 0,3	- 0,0	- 0,5	0,3
5	Foxconn	HP	0,0	- 0,3	0,0	0,0	0,1	- 0,0	0,5	- 0,5	- 0,2	0,5	0,1
6	J. Jungle	KFC	1,3	- 0,5	- 1,3	0,8	0,5	- 1,7	0,2	0,6	- 1,7	- 0,4	1,0
7	Bang.Fire	Zara	0,8	- 0,2	- 0,5	0,6	- 0,7	0,3	- 0,4	0,8	0,2	- 0,2	- 0,9
7	Bang.Fire	Wal-Mart	-1,2	0,6	- 0,1	- 0,3	1,3	- 0,4	- 0,4	1,2	0,2	1,6	- 0,8
7	Bang Fire	Disney	-0,7	- 1,0	1,1	0,2	- 0,1	- 0,4	- 0,5	0,5	0,6	- 0,3	- 0,4
7	Bang Fire	GAP	0,1	0,1	0,6	0,1	- 0,4	0,2	- 0,6	0,5	- 2,7	- 0,0	0,2
7	Bang Fire	PVH	0,0	- 0,1	- 0,5	- 0,6	- 0,4	- 0,0	- 0,4	2,5	- 1,1	-0,2	0,5
7	Bang Fire	Sears	-6,3	- 1,1	1,0	- 1,5	- 0,9	- 0,7	- 0,5	- 1,6	- 1,4	- 0,8	0,2

8	Ch Labor	Apple	-1,0	- 0,3	0,5	1,0	- 7,8	- 2,1	1,5	1,4	0,2	- 0,1	- 1,3
9	Zara Arg.	Inditex-Zara	1,0	0,0	0,2	- 0,9	- 0,0	0,8	1,1	0,1	1,2	- 0,3	0,9
10	R. Plaza	GAP	0,6	- 0,5	0,4	- 0,8	- 0,8	- 0,4	0,1	0,6	0,1	- 0,4	0,5
10	R. Plaza	Primark	-1,9	- 0,0	- 0,6	1,4	0,1	7,9	- 3,4	- 2,5	0,7	0,2	0,0
10	R. Plaza	Next	-0,3	- 0,4	- 0,3	- 0,1	- 0,5	0,9	- 0,2	- 0,7	0,6	- 0,1	- 1,2
10	R.Plaza	A & F	0,3	- 0,3	- 0,2	0,1	- 0,5	- 0,4	0,3	0,7	0,2	0,1	0,1
10	R.Plaza	Carrefour	-0,3	- 0,0	- 0,8	0,9	- 0,9	0,9	0,0	- 0,1	- 0,2	0,7	- 0,7
10	R.Plaza	Esprit	0,5	- 0,1	0,1	- 0,3	0,1	- 0,1	- 0,2	- 0,4	- 0,2	1,3	0,8
10	R.Plaza	H&M	0,8	- 0,7	1,3	0,9	1,6	- 0,6	1,0	0,4	- 0,2	0,5	- 0,4
10	R.Plaza	Cato	-1,4	- 1,3	- 0,3	0,1	- 1,0	- 0,2	1,1	1,4	0,5	- 0,9	1,1
10	R.Plaza	TJX	-0,6	0,1	- 0,8	0,0	- 0,0	- 0,7	0,5	1,5	0,3	0,4	- 0,3
10	R.Plaza	PVH	-0,1	- 0,0	- 0,1	0,5	- 0,2	0,7	- 0,0	0,6	0,2	0,7	0,3
10	R.Plaza	Target	-0,9	1,2	- 0,5	0,6	- 0,2	0,3	- 0,0	1,2	- 0,2	- 0,2	- 0,3
10	R.Plaza	Wal-Mart	-0,5	0,4	- 1,7	1,2	- 0,8	1,1	- 1,6	0,7	0,6	- 1,4	- 1,2
10	R.Plaza	JC Penney	1,3	- 0,3	1,0	0,0	0,5	- 0,4	- 0,4	0,0	3,5	0,2	- 1,3
10	R.Plaza	M & S	-0,9	1,4	- 1,2	1,2	0,4	0,7	- 0,5	0,8	0,3	- 0,9	- 0,7
10	R.Plaza	Joe Fresh	0,5	0,1	- 0,7	- 0,1	- 0,8	0,9	- 1,5	0,0	0,5	0,0	1,4
10	R.Plaza	Kohl's	-1,0	0,4	0,2	0,3	- 0,3	0,1	- 0,3	0,5	0,4	- 1,6	- 0,5
11	Pegatron	Apple	0,1	- 0,4	3,2	- 0,7	0,3	1,4	0,5	- 0,1	- 0,4	0,6	1,0
12	L. to Kill	G. Agri R.	-0,8	0,3	- 0,7	- 0,2	1,2	1,3	- 0,2	1,3	- 0,7	1,4	1,2
12	L. to Kill	Wilmar	-1,0	0,1	0,8	- 0,3	0,4	0,7	2,3	- 0,4	0,4	0,3	0,2
12	L. to Kill	Unilever	-0,1	0,5	- 0,8	4,1	0,1	- 0,6	1,6	0,5	0,2	- 1,5	1,6
13	PO- P&G	Wilmar	1,1	1,9	- 0,1	0,4	3,1	0,4	- 0,9	- 1,0	0,9	- 0,5	0,5
13	PO- P&G	P & G	0,9	- 0,8	0,3	- 0,7	0,6	- 0,4	0,1	0,5	- 1,1	0,2	- 0,9
13	PO- P&G	Pepsi Co	-1,2	1,2	0,7	0,7	0,9	- 1,0	0,4	1,7	- 0,1	0,9	1,6
13	PO- P&G	J & J	0,0	0,5	- 0,1	- 1,6	0,2	0,0	- 0,2	1,0	0,1	1,0	- 1,3
13	PO- P&G	C.-Palm.	-1,0	- 0,0	- 0,4	0,1	0,5	- 0,2	- 0,2	1,3	- 0,3	- 0,2	- 0,8
14	CP Foods	Wal Mart	-0,0	0,7	- 0,2	- 0,6	- 0,5	- 0,7	- 0,6	- 0,2	- 1,2	0,1	- 0,9
14	CP Foods	Tesco	-0,6	- 1,0	- 0,5	- 0,7	1,1	0,5	0,3	- 0,9	0,7	- 0,7	0,4
14	CP Foods	Cotsco	-0,1	0,6	0,9	0,2	- 0,6	- 0,7	- 0,8	- 0,4	- 0,3	0,0	- 0,1
14	CP Foods	Morisson	-1,1	0,0	- 0,3	- 0,0	0,5	0,1	0,6	- 0,7	0,2	- 1,1	1,5
14	CP Foods	Carrefour	-0,9	0,2	1,1	- 1,6	0,0	0,4	- 0,0	- 0,7	- 0,8	- 0,3	0,7
15	VW	Motorola S.	-2,7	- 0,1	- 0,7	- 0,3	- 0,5	1,4	- 0,5	0,3	1,8	0,4	1,8
15	VW	IBM	0,4	- 0,9	- 0,0	- 0,4	0,1	- 0,9	1,0	- 0,1	- 0,4	1,0	0,9

15	VW	Nokia	-0,7	1,3	- 1,0	0,6	0,4	- 0,2	- 0,1	- 0,1	1,4	0,3	- 0,8
15	VW	Magma	1,0	- 1,3	0,2	1,1	0,3	- 0,0	- 1,0	- 2,8	- 1,1	1,4	0,4
15	VW	Visteon	-0,1	- 0,4	- 1,0	1,2	0,3	- 0,0	0,3	- 0,5	- 0,3	0,4	- 0,9
15	VW	B.Warner	-1,5	0,3	- 0,3	1,5	- 0,1	- 1,2	- 1,0	- 5,2	- 0,5	0,2	2,6
15	VW	Honey.	-0,8	- 0,0	- 0,5	- 0,6	- 0,3	- 1,3	- 1,4	- 0,8	- 2,2	- 1,2	- 0,2
15	VW	Infineon	-1,1	1,4	2,0	0,6	- 1,3	- 0,0	- 0,3	0,1	- 2,0	0,3	1,4
15	VW	Siemens	-0,3	- 0,8	- 0,7	0,3	- 0,8	- 2,3	1,9	0,9	- 0,2	- 0,6	- 0,9
15	VW	Cont.	0,2	- 0,5	0,2	0,6	0,4	0,9	- 3,5	0,8	0,2	- 1,0	1,2
15	VW	SAP	0,0	0,4	- 0,6	1,7	- 0,2	0,1	0,9	0,7	- 0,5	0,6	0,2
15	VW	BASF	0,4	- 0,1	- 0,0	0,7	- 1,9	- 0,2	1,8	2,4	- 0,3	1,3	- 0,2
15	VW	Microsoft	-0,1	- 0,4	0,7	0,0	- 0,1	- 0,1	1,1	1,1	0,0	0,5	1,0
15	VW	Ballard	-0,2	- 1,4	- 0,8	0,3	- 0,5	0,3	0,0	- 0,1	- 0,8	- 0,4	0,7
15	VW	Dassault	0,1	0,3	0,8	- 0,8	0,3	1,1	0,4	1,5	- 0,2	0,4	1,7
15	VW	Pl.Om.	-0,8	0,8	- 0,5	0,2	0,4	- 0,3	- 2,5	- 2,4	1,8	- 0,8	1,8
15	VW	K. Tyres	-0,2	- 0,0	0,1	0,5	0,7	- 1,0	0,6	- 0,4	0,1	0,5	3,2
15	VW	LG	1,4	- 1,7	0,6	0,7	- 0,0	0,1	- 0,3	- 0,6	- 0,8	- 0,5	0,8
15	VW	Tupy S.A.	-1,3	- 1,3	1,9	- 2,2	0,5	0,1	1,0	0,5	0,9	- 0,4	1,9
15	VW	Maruti	0,3	0,2	- 0,9	0,5	- 0,4	0,2	1,6	0,4	0,6	1,1	- 1,2