Research Article

Yulia Chernin and Yaron Lahav*

"The People Demand Social Justice" A Case Study on the Impact of Protests on Financial Markets

Abstract: In Israel, the summer of 2011 will be remembered as the summer of social protestation. Steadily increasing food prices that showed no sign of abating motivated people across the nation to voice their discontent in massive weekly protests attended by thousands. As the movement gathered momentum and the impacts of the protests increased, it caught the attention of policy makers, food manufacturers, and food channel retailers. In this article, we show how certain important events during this summer negatively affected the price of food retailers' stocks. We also show that a proper response to the events by retailers targeted by the protestors prevented their stock from falling. We show that a proper response of one retailer converted the goal of protestors and increased its market value.

Keywords: event study, protests, retailers, social response, stock markets

***Corresponding author: Yaron Lahav,** Department of Business Administration, Guilford Glazer Faculty of Business and Management, Ben-Gurion University of the Negev, Beer-Sheva 84105, Israel, E-mail: ylahav@som.bgu.ac.il
Yulia Chernin, Department of Business Administration, Ben-Gurion University of the Negev, Beer-Sheva 84105, Israel, E-mail: yulia.chernin@gmail.com

Table of contents

1 Introduction

On June 12, 2011, an Israeli citizen named Itzik Alrov initiated one of the most powerful and effective protests in the history of the state of Israel by creating a Facebook page through which he implored people to stop buying cottage

cheese. And so began one of the "hottest" summers ever documented in the short history of the state of Israel. Although Alrov focused on one, seemingly insignificant food item, his initiative hit a collective nerve for Israelis who, frustrated by the steadily increasing prices of everything from food, housing, and education to the cost of living in general, hit the streets by the hundreds of thousands to participate in large demonstrations aimed at the government.

For many, protests in general serve a social purpose. Whether the focus of the protest is some injustice or the dissatisfaction of a group of people with a decision made by policy makers, the success of a protest is usually measured by whether it achieved its social goals. However, as we discuss in Section 2, protests may also have financial impacts. Take, for example, a protest against the operations of a certain company. Any change in the company's behavior can be the result of either an intervention by policy makers who respond to the protest or a voluntary action (i.e. preemptive damage control) taken by the company itself. The company will respond to the protest voluntarily if it has adversely affected the behavior or tastes of either its customers (e.g. reduction in demand) or its investors (e.g. reduction in expected return on the company stock), because the company's ultimate market value depends both on demand (which affects revenues) and on share value. Nowadays, the market value of the company is considered as a fundamental measure of performance for its managers, while protests can definitely influence its market value.

In this article, we evaluate the financial effect of the 2011 demonstrations in Israel on the local stock market. In particular, because the protests were aimed mainly at the prices of food and durable goods, we test the effect of the demonstrations on the stock returns of grocery stores. The market at the time was dominated by several grocery store chains, including "Mega", "Shufersal", "Tiv Ta'am", "Hetzi Hinam", "Rami Levy", and "Victory". These companies can be divided into two groups. The first consists of Mega, Shufersal, and Tiv Ta'am, the more established, high-end, or tier 1 companies, each with a significant share of the market. The remaining companies are considered more popular among middle class and lower class households, specifically targeting lower income clientele, and as such, they have lower profit margins. In fact, Rami Levy, the owner of the Rami Levy chain of grocery stores, repeatedly expressed his support for the protest movement, claiming that the high food prices are partly the result of price collusion among the more established food retailers, which he labels "stores for the rich". Empathy toward the protestors notwithstanding, the Rami Levy grocery store chain, just like the rest of the food chains, watched its profits fall in the wake of the protests of 2011.

Although declining profits should lead to a corresponding decline in a company's stock return, in this case, we expect to find that the stock returns

of the first group decreased precipitously, while those of the second group suffered very little or no adverse effects. Moreover, despite the potential risk, Rami Levy declared his support for the protestors and their cause, pitting him against his own industry. We show in our analysis, however, that taking the side of the protestors turned out to be in his and his company's best interests. In particular, we argue (and later show empirically) that the protest events positively affected the stock of the Rami Levy chain, whose owner emerged as a major supporter of the protests. In fact, the objective of this article is to test the effect of Rami Levy's social strategy on the stock performance of his company.

Although the two groups presented above altogether contain six retailers, here we only analyze five of them. The Victory chain became a public company only a few days before the beginning of the 2011 protest events. In fact, daily stock prices for this company are only available in the beginning of June 1, 2011, less than one month before the demonstrations began. We were, therefore, unable to include this company in our analysis.[1] In sum, our final sample consists of five retailers: Mega, Shufersal, Tiv Ta'am, Rami Levy, and Hetzi Hinam. Selected financial data on each retailer is provided in Table 1. Unless

Table 1: Selected financial results for the tested retailers

	Mega	Shufersal	Tiv Ta'am	Rami Levy	Hetzi Hinam
Sales (2011)	6,724	11,533	856	2,222	1,254
EBIT (2011)	177	387	14	123	35
Sales (2010)	6,895	11,071	836	1,707	1,041
EBIT (2010)	242	486	35	115	40
EBIT/sales (2011)	2.6%	3.4%	1.6%	5.5%	2.8%
EBIT/sales (2010)	3.5%	4.4%	4.2%	6.7%	3.8%
Share price	11.55	11.50	2.40	110	41.1
Market cap	1,026	2,918	248	1,586	328
Total assets	9,104	6,455	579	644	378
Equity	1,553	1,212	97	213	120
Market share	12%	21%	2%	4%	2%

All numbers except share prices are in millions of NIS. Data on sales, EBIT, total assets, and equity are from the companies' financial reports. Share prices and market values are for December 31, 2011 and are taken from TASE (www.tase.co.il), except share price for Hetzi Hinam that was taken from Bloomberg. Information on market share is from a research published in the website of the biggest Israeli newspaper, "Yedioth Aharonot".[2]

1 Other food chains exist, but they are smaller and private.

2 http://www.ynet.co.il/articles/0,7340,L-4220082,00.html

we state otherwise, we refer collectively to Mega, Shufersal, and Tiv Ta'am as MST and to Rami Levy and Hetzi Hinam as RH. A detailed description of each retailer is provided in Section 4.

Here, we use the event study methodology, exploited to analyze an event or series of events suspected of having influenced stock returns over time, to investigate the effect of social protests during the summer of 2011 on the stock returns of both MST and RH groups. The period begins June 12 (i.e. Itzik Alrov created his Facebook page) and ends 80 days later (for a total of 81 days). We divide this event period into three sub-periods, each of which we describe and characterize in terms of the events of that summer.

This article is structured as follows: Section 2 reviews the literature on the effect of protests on stock markets. Section 3 describes the chain of events and tells the story of the demonstrations of the summer of 2011. Section 4 provides some financial and general information about the retailers who were analyzed. Section 5 presents the general characteristics of event study methodology. Section 6 describes our application of the event study analysis and includes our findings. In Section 7, we present our conclusions.

2 Literature review

In this article, we use the event study methodology to evaluate the effects of the Israeli social protests during the summer of 2011 on the market value of Israeli grocery stores. This work capitalizes on the experience gained from other studies that apply the same methodology to test the effect of some event on stock prices.

In their extensive study, King and Soule (2007) apply event study analysis to test the effects of protests on targeted companies. Using a large dataset of 342 protest events between 1962 and 1990, they find that on average, the stock returns of companies targeted by protestors are significantly lower than expected, echoing the findings of many similar studies. Pruitt and Friedman (1986) find that boycott announcements significantly lower the stock returns of the targeted companies in the immediate aftermath of the threat. As a result, stock return is also reduced in the longer term. Consistent with their findings, Pruitt, Wei, and White (1988) find that union-led product boycotts lead to significantly reduced stock returns. Koku, Akhigbe, and Springer (1997) further explore the effect of boycotts using event study analysis. They find no significant difference between boycotts and threats of boycotts. Surprisingly, they also find positive abnormal return on the stock of targeted companies on the day the

boycott is announced. Using event study analysis to investigate the effect of decertification elections[3] on stock returns, Huth and MacDonald (1990) find that decertification elections increase market value when successful and decrease it when unsuccessful.

While the event study methodology is applied studies of the protest effect, it is also used extensively in the financial and economic literature. Examples of such studies include Johnson, Kasznik, and Nelson (2000), Carow and Heron (2002), Carow and Kane (2002), and Howe and Jain (2004) on the effect of legislation on investors' wealth; the works of Schwert (1981), Henry (2000), and Jackson and Madura (2007) on the effects of regulations and liberalization on stock performance; research by Cooper, Dimitrov, and Raghavendra Rau (2001) on the effect of company change of name on its stock returns; Chen and Siems (2004) on the effect of terrorism; and works by Berman, Brooks, and Davidson (2000) and Veraros, Kasimati, and Dawson (2004) on the effect of major sports events. This list, of course, is not exhaustive.[4]

3 Summer 2011 protest events

Two days after Mr. Alrov created his Facebook page calling on all Israeli citizens to boycott cottage cheese, he had 32 friends. Then, Israel's biggest newspaper – Yedioth Aharonot – brought the story to the public's attention via its official website, *ynet.co.il*. One day after the story was published, the number of "friends" of Alrov's cottage cheese Facebook page had increased to 7,000, showing a trend of almost exponential increase that continued to more than 50,000 friends the next day to over 140,000 ten days later.

The boycott was instigated by the increasing price of an Israeli staple food, cottage cheese, whose cost had risen 48% (from NIS[5] 4.82 to around NIS 7.00) between August 2008 and June 2011. Behind the steep rise in price was the 2006 decision of the minister of the treasury to open the dairy market to competition with the hope that prices would eventually decrease as product quality and the number of market participants and competitors increased.

3 Decertification election is the right granted to employees in a certain workplace (under the *National Labor Relations Act*) to get rid of their union as their exclusive representative.

4 More recent examples are Milevsky and Song (2010), Konchitchki and O'leary (2011), Filbeck, Swinarski, and Zhao (2013), and Gomber, Schweickert, and Theissen (2013). See also MacKinlay (1997) for review.

5 New Israeli Shekels, the Israeli currency.

For readers not familiar with Israeli food habits, note that milk products, particularly cottage cheese, constitute an important part of the Israeli diet. According to the Israeli Milk Board, total sales of dairy products during 2011 amounted to NIS 9.4 billion (~$2.6 billion), with an average annual nominal increase of almost 2%. Currently, cheese products account for 57% of total dairy sales. According to the same source, during 2011, an average Israeli household spent 12.6% of its income on dairy products. The biggest competitor in the Israeli dairy market at the time was Tnuva, which, until 2006, had been the sole manufacturer of cottage cheese in Israel. By 2011, the company's market share of cottage cheese was around 70%. Responding to the cottage cheese protest, the new CEO of Tnuva at that time, Zehavit Cohen, announced that Tnuva would not lower its cottage cheese prices, adding that the rise in the price of cottage cheese fairly reflected the increased burden on Tnuva as all of its inputs, including labor and energy, had become more expensive in recent years.[6] Eventually, however, Israeli food retailers succumbed to the pressure applied through the protests and began lowering the prices of cheese products around June 29, 2011. Incidentally, four months later Zehavit Cohen resigned from her job as the CEO of Tnuva.

Around the same time that Alrov created his Facebook page, another Israeli citizen – Daphni Leef – put up a tent in the middle of a wide pedestrian refuge island (i.e. traffic island) on a main street in the middle of Tel-Aviv to protest steadily increasing housing prices.[7] Together with some of her friends, Daphni announced their intention to live in their tents until the Israeli government committed to provide housing solutions for the growing numbers of young couples and families for whom a house had become an unaffordable luxury. These few initial tents soon ballooned into a massive encampment that occupied the entire refuge island (about the length of one city block) and whose population comprised both individual citizens concerned about the rising cost of living and social organizations and their representatives. Moreover, the encampment attracted numerous artists and celebrities as well as politicians from both the government coalition and the opposition who came to the tent camp either to express their support or to explain their position on the matter.

As the summer progressed, the number and sizes of the protests grew as more people organized events across the country. Moreover, although the

6 As published in many Israeli newspapers. See, for example, the website of the biggest Israeli newspaper in Israel, Yedioth Aharonot (http://www.ynet.co.il/articles/0,7340,L-4132530,00.html).

7 As published in "The Market" an Israeli financial newspaper (http://www.themarker.com/news/protest/1.669662).

movement began with cottage cheese, it gradually morphed into a more inclusive uprising against the cost of living in general, and demonstrations later in the summer typically addressed multiple related issues simultaneously. On July 28, 2011, thousands of people in several locations across Israel gathered in groups to march with baby strollers toward the nation's capital to protest the increased costs associated with raising children, and – according to protestors – the decreasing quality of education. Thus, in addition to being united under the cost-of-living umbrella, protestors at all events used the same slogan that soon became a mantra among all Israelis: "The people demand social justice".[8]

The tumultuous events of the summer culminated in the "March of the Million" on September 3, 2011. The name of the demonstration signified the goal of its organizers to realize, for the first time ever in Israel, a march with one million participants (i.e. sum of the participants at different protest locations across the country). Although the final number of participants was only about 400,000, it ranks as one of the largest demonstrations that ever took place in Israel.

4 The tested companies[9]

As stated above, in this article, we analyze the stock performances of the five public Israeli food chain retailers. In this section, we use published data from "Globes" (a leading financial newspaper in Israel) and from the information the companies themselves file to the Tel-Aviv Stock Exchange (TASE) to describe each company in detail.

According to Globes, during 2012 Israeli households spent a total of NIS22.5 billion (~$6.3 billion) for groceries among the 10 largest food chain retailers. The biggest in terms of market share is Shufersal, which has a 60% market share. An Israeli company incorporated in 1957, Shufersal became publically traded on the TASE in 1980. As of the end of the 2011 fiscal year, the company operated 267 stores throughout Israel, with a headcount of 11,900 workers. Company sales that year were NIS11.6 billion (~$3 billion). In addition to its involvement in the

8 http://www.ynet.co.il/articles/0,7340,L-4098989,00.html.

9 Although this article was written long after the protests for social justice took place, all data that we provide in this section pertains to the fiscal year 2011, since it is the most relevant to this research. As we analyze the effects on stock returns during the summer of 2011, we find information from that period to be the most pertinent to the analysis. Most of the information in this section is from the companies' financial reports, with some additional information taken from the media.

retail sale and marketing of food, Shufersal also operates an online supermarket, and it is involved in the real estate market. Sales generated from its real estate interests, however, account for less than 1% of the company's total sales.

According to Shufersal's financial report for 2011, the company's financials were adversely affected by the protest events that year. In its financial report, however, Shufersal dedicates only two paragraphs to describe the protest events. When characterizing risk effects on the company, the effect of the protest events was assigned "intermediate" (those with "high" effect are future regulations and competition). Other than that, the report does not make any connection between the events and the behavior of the company. It seems that the only concern of Shufersal is that the company may force to reduce food prices temporarily if the protest events will continue. In fact, from the financial report, it seems that Shufersal is more concerned with the "committee of Competition Enhancement"[10] than it is with the protest events.

"Alon Blue Square", the holding company that owns the Mega supermarket chain, owned a total of 211 Mega stores as of the end of the 2011 fiscal year, employing ~7,000 workers. Sales that year totaled NIS12.5 billion (~$3.3 billion), which represented a 47% increase in revenue compared to the previous fiscal year. The operating margin (measured as operating profit – or EBIT – divided by revenues) is ~2.3%. The company's retail food stores constitute its main business, and it is traded on both the NYSE and the TASE. According to the company's 20-F report for 2011, it sold mainly food products, but its stores also contained a variety of other products such as cosmetics, health products, baby products, and cleaning supplies, among others. The company operates in four business segments, but its supermarket interests generate the majority of its revenues.

According to the statement of the company's CEO (which is part of the company's financial report), the company's financial performance during 2011 was adversely affected by the protest events that year, mainly through its retail segment. As stated, the company showed improvements in performance during the first half of 2011, while the second half was characterized by decline in sales and profits. In fact, according to the statement, most of the decline in sales during the second half of 2011 was attributed to the protest events that year. The company had to lay-off 15% of its labor force and cut on expenses.

10 During October 2010, the Israeli Prime Minister formed a committee for competition enhancement. The committee mandate is to recommend the government on possible actions that can be taken to reduce market power in certain markets and to confront issues arising with the business structure of corporations (namely, "pyramids").

Established as a private company in 1965, Tiv-Taam became public in 1994, and its shares became available to the public in 1997. The company engages in the manufacture, importation, marketing, and retail sale of food products. As of the end of 2011, the company operated 28 stores across the country, employed ~1,400 workers, and its revenues were NIS1,049 million (~$278 million) with an operating margin of 3.3%. Its retail business accounted for ~82% of its revenues, with the remainder being attributed to its manufacturing, importation, and marketing interests.

Tiv-Taam's financial report for 2011 barely mentions the effect of the protest events that year on the company's business. Other than explaining the events and their impact on the food market, the company agrees that the decline in revenues can be attributed, at least to some extent, to the protest events.

The Rami Levy's company, Rami Levy Shivuk Hashikma, was created in 2006 as a private company, and it registered for trade on the TASE in 2007. The company operates retail stores that sell mostly food products and employs ~3,000 workers. Prior to establishing this company and since 1976, Rami Levy operated small food stores in the Jerusalem metropolitan area in Israel. Mostly discount stores, they sold food and consumption goods at low prices. As of the end of 2011, the company operated 21 stores across the country, almost all of which are discount stores that sell food and consumer goods (such as clothing, cosmetics, cleaning supplies, and more) at low prices. In addition, the company also supplies other smaller unrelated stores in the Jerusalem metropolitan area. During the 2011 fiscal year, the company's total revenues were NIS2, 222 million (~$589 million), an ~30% increase over the 2010 fiscal year, with an operating margin of 10%.

A substantial part of the company's financial report for 2011 relate to the protest events that year. Accordingly, the company's actual sales that year were lower than expected. The biggest effect was on sales of "premium products". The company also mentioned the effect of the protestation on food prices. Interestingly, the company also stated that its policy to stand in favor of consumers is consistent with the company's "pro-consumer status". As the financial report was released around the end of the first quarter of 2012 (i.e. ~6 months after the protest events), this may serve as evidence to social responsibility as a strategic behavior of Rami Levy relating to the protest events. One example is the announcement of Rami Levy that his bonus for the last quarter of 2011 will instead be divided among 780 of the company's employees with the lowest income.

The Hetzi Hinam supermarket chain is owned by the Zim Direct Marketing holding company, which operates in the food chain retail business. Established in 1983, the company became public in 2010, and as of 2012 it operates 33 food

product stores across the country, employing ~2,000 workers. The company is also involved in the distribution of produce. However, more than 98% of company revenues are from retail sales. During the 2011 fiscal year, company revenues were NIS 1,271 million (~$337 million) with an operating margin of 4%. Compared to fiscal year 2010, Zim revenues grew by ~21% in 2011.

According to the company's financial report for 2011, the protest events contributed significantly to the "negative economic trend".[11] One of the company's main concerns is that the protest events will eventually lead to government reforms that will affect the Israeli economy. According to the report, the company had no choice but to lower prices, causing a decline in sales and profits. In addition, the company also believes that the protestation will eventually increase the demand for discount stores like its own.

In sum, it seems that from the five retailers above, only Rami Levy took an initiative approach dealing with the protest events. Others treated these events as a force majeure – a "storm" that may cause damages in which the companies have no control on, just wait for it to pass so they can deal with the aftermath. The proactive response of Rami Levy to the protest events is used in this article as a case study.

5 Event study methodology

In general, event study analysis is a common methodology for testing the influence of some event (or events) in time on a group of stocks or on a single stock. Researchers attribute this methodology to the work of Dolley (1933), who examines the influence of stock splits on stock prices. Patell (1976) and Boehmer, Musumeci, and Poulsen (1991) contribute to the event study methodology by suggesting ways to account for event-induced changes in variance. Brown and Warner (1980, 1985) test the event study methodology empirically for the effect of events on the variance of stock returns conducting sampling and simulations. Finally, Kolari and Pynnonen (2010) suggest a modification to the event study analysis to account for co-movements of the prices of stock from the same industry that reacts in the same way to the same event. In our work, we apply this proposed methodology of Kolari and Pynnonen.

As mentioned, the event study methodology consists of measuring the effect of a certain event on the return of one or more stocks. Accordingly, after defining a period during which the stocks are assumed to be affected by the event, daily returns during this period are compared with the expected daily returns of the

11 Authors' translation.

same stocks during the same period but assuming that the event did not take place. If the differences between actual and expected daily returns within the event period are statistically significant, then the event in fact affected the stock returns. Specifically, for every day in the event period, a measure for stock return abnormality is calculated as follows:

$$AR_{i,t} = R_{i,t} - E\left(R_{i,t}\right) \quad [1]$$

where $AR_{i,t}$ is the abnormal return of company i on day t, $R_{i,t}$ is the actual return on stock i on day t, and $E\left(R_{i,t}\right)$ is the expected return on stock i on day t if the event had not occurred. Usually, the expected return of the stock is estimated using the market model:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t} \quad [2]$$

where $R_{m,t}$ is the daily return of the market portfolio on day t, α_i and β_i are the model parameters, and $\varepsilon_{i,t}$ are the error terms that are assumed to be independent, and independently distributed. The model parameters are estimated using daily data from the estimation window – a time period that ends before the event and is, therefore, not affected by the series of events under investigation. Then, the cumulative abnormal return ($CAR_{(ab),i}$) by company, as well as the average abnormal return (AAR_t) and the average cumulative abnormal return ($ACAR_{(ab)}$) for the whole market are calculated as follows:[12]

$$CAR_{(ab),i} = \sum_{t=a}^{b} AR_{i,t} \quad [3]$$

$$AAR_t = M^{-1} \sum_{i=1}^{M} AR_{i,t} \quad [4]$$

$$ACAR_{(ab)} = M^{-1} \sum_{i=1}^{M} CAR_{i,t} \quad [5]$$

where M is the number of stocks, and a and b are the starting and ending days of the event period, respectively. The CAR_{ab} is, then, used to estimate the

12 Event study analysis in general, and our analysis in particular, measure "abnormal" return values assuming that eq. [2] characterizes a "normal" return. This is merely an assumption. Biondi, Giannoccolo, and Galam (2012) provide a model that releases this assumption.

t-statistic that tests the significance of the cumulative abnormal return within the event period, as follows:

$$t_{CAR_{(ab)}} = \frac{CAR_{(ab)}}{S\sqrt{T_p}}$$

where $t_{CAR_{(ab)}}$ is the t-statistic, T_p is the number of days in the event window p, and S is a measure of the standard deviation of abnormal returns calculated using the data from the estimation period.

In our work, all event periods took place at the same time for all the tested stocks. Since all stocks are taken from the same industry, it is plausible that the return of one stock may influence the returns of the others. Similar stocks tend to co-move in this case because of intra-sectional correlations.[13] To avoid the effects of intra-industry correlations, we implement the procedure suggested by Kolari and Pynnonen (2010), which we describe in detail in the next section.

6 Analysis and results

Daily returns of the five retailers studied in this work and of the TA100 index (measured as the weighted average of the 100 public companies traded on the TASE with the largest market values) were taken from the TASE website. We define the estimation period as the 180 trading days that ended one day prior to June 12, 2011,[14] the day that the event period of 81 trading days begins. We divide the event period into three sub-periods, the first of which comprises 25 trading days and represents the cottage cheese protest (henceforth, "phase I"). The second period, 35 trading days, coincides with the encampment protest (henceforth, "phase II"), and the third period is the 21 trading days after the "march of the million" (henceforth, "phase III").

To characterize the stock behavior of the five food chains described in Section 1, we use the model presented in eq. (2) and estimate the parameters based on the 180 trading days (described above). α_i and β_i from eq. (2) are the parameters of the model. β_i represents the portion of the stock return attributed to changes in the market return, while α_i represents the average return of the stock, independent of the market return. The values of these parameters are described in Table 2. The table shows that both parameters are positive and statistically significant with 5% significance level (i.e. a hypothesis that each

13 For further explanations, see Boehmer et al. (1991), Brown and Warner (1985), and Kolari and Pynnonen (2010).

14 Usually, estimation periods consist of 120–250 days. See Mackinlay (1997).

Table 2: Regression results – eq. [2]

	Coef.		St. Err.
Mega			
β	0.943	***	0.001
Intercept	0.000		0.129
R sq. adjusted	0.227		
Number of observations	180		
Shufersal			
β	0.743	***	0.001
Intercept	(0.000)		0.082
R sq. adjusted	0.310		
Number of observations	180		
Tiv Ta'am			
β	0.628	***	0.203
Intercept	0.003		0.001
R sq. adjusted	0.045		
Number of observations	180		
Rami Levy			
β	1.283	***	0.001
Intercept	0.002		0.129
R sq. adjusted	0.354		
Number of observations	180		
Hetzi Hinam			
β	0.550	***	0.175
Intercept	0.002		0.001
R sq. adjusted	0.047		
Number of observations	179		

Notes: Coefficients of a pooled OLS regression expressed by eq. [2] for the stocks of each food chain retailer. The independent variable is the daily change of the TA100 index, which compiles the largest 100 stocks traded on the TASE. The dependent variable is the daily return of each stock, calculated separately and independently. *Significant at 10% level. **Significant at 5% level. ***Significant at 1% level.

parameter value is zero will be rejected with a probability of 5% for error). We use the parameters from Table 2 to characterize expected daily returns for each company and for each day during the event phases. Then, we calculate $AR_{i,t}$ for each company and each day using eq. (1). We then calculate $CAR_{(ab),i}$ and $ACAR_{(ab)}$ for each event period. Both measures are calculated cumulatively.[15]

15 That is, we measured both $CAR_{(ab),i}$ and $ACAR_{(ab)}$ for the first two days of each event window, the first three days, the first four days, and so forth.

Following Kolari and Pynnonen (2010), we calculate the standardized cumulative abnormal return ($SCAR_{(ab),i}$) for each company and phase and the average standardized cumulative abnormal return ($ASCAR_{(ab)}$) for each group of companies and for each phase as follows[16]:

$$SCAR_{(ab),i} = \frac{CAR_{(ab),i}}{\hat{\sigma}_{(ab),i}} \quad [7]$$

$$ASCAR_{(ab)} = M^{-1}\sum_{i=1}^{M} SCAR_{(ab),i} \quad [8]$$

The relevant measures appear in Table 3. Finally, the test statistic is calculated as:

$$\tau_p = \frac{ASCAR_{(ab)}\sqrt{M}}{\left[\frac{\sum_{i=1}^{M}\left(SCAR_{(ab),i}-ASCAR_{(ab)}\right)^2}{M-1}\right]^{1/2}}\sqrt{\frac{1-\bar{r}}{1+(M-1)\bar{r}}} \quad [9]$$

where $\bar{r}$ is the average of the sample correlations of estimation period residuals. We also test for daily abnormal returns during the event periods as follows[17]:

$$SAR_{i,t} = \frac{AR_{i,t}}{\hat{\sigma}_{i,t}} \quad [10]$$

$$ASAR_t = M^{-1}\sum_{i=1}^{M} SAR_{i,t} \quad [11]$$

$$\tau_t = \frac{ASAR_t\sqrt{M}}{\left[\frac{\sum_{i=1}^{M}\left(SAR_{i,t}-ASAR_t\right)^2}{M-1}\right]^{1/2}}\sqrt{\frac{1-\bar{r}}{1+(M-1)\bar{r}}} \quad [12]$$

The results are presented in Table 3 and in Figures 1, 2, and 3. Each of the three panels of Figure 1 compares the ASCAR values of the MST group to those of the RH group for a different phase of the protest. Figure 1a shows that although

16 Where $\hat{\sigma}_{(ab),i} = \hat{\sigma}_i\left[(T_p) + \frac{T_p}{T} + \frac{\sum_{t=a}^{b}\left(R_{m,t}-\bar{R}_m\right)^2}{\sum_T\left(R_{m,t}-\bar{R}_m\right)^2}\right]^{1/2}$, $\hat{\sigma}_i$ is the standard deviation of firm i's market model residuals, T_p is the number of trade days in event window $p = \{p1, p2, p3\}$, T is the number of days in the estimation window, and $\bar{R}_m$ is the average market return during the relevant period.

17 Where $\hat{\sigma}_{i,t} = \hat{\sigma}_i\left[1 + \frac{1}{T} + \frac{\left(R_{m,t}-\bar{R}_m\right)^2}{\sum_T\left(R_{m,t}-\bar{R}_m\right)^2}\right]^{1/2}$.

Table 3: ASCARs and CARs of MST group, RH group, Rami Levy, and Hetzi Hinam for selected periods and for each protest phase

	Phase I					Phase II								Phase III	
Days since begin of phase	4	9	14	19	24	6	12	18	24	30	35	5	10	15	21
MST Group (ASCAR)	(0.26)	**(1.37)**	(0.85)	**(0.99)**	**(1.19)**	(0.16)	0.06	(0.06)	(0.18)	(0.83)	**(0.53)**	**(2.05)**	**(1.98)**	**(1.37)**	(1.13)
	(0.58)	***(4.50)***	*(1.43)*	***(3.84)***	***(32.12)***	*(0.21)*	*0.08*	*(0.16)*	*(0.32)*	*(1.60)*	***(2.15)***	***(2.03)***	***(2.20)***	***(5.10)***	*(1.04)*
RH group (ASCAR)	**(1.2)**	**(1.5)**	**(1.4)**	**(1.3)**	**(1.5)**	(0.2)	(0.1)	(0.2)	(0.5)	(0.4)	(0.2)	(0.5)	(0.6)	**(0.7)**	(0.3)
	(18.2)	***(12.2)***	***(8.0)***	***(7.1)***	***(6.1)***	*(1.5)*	*(0.2)*	*(0.2)*	*(0.8)*	*(0.5)*	*(0.4)*	*(1.0)*	*(1.6)*	***(7.2)***	*(1.3)*
Rami Levy (CAR)	**(1.1)**	**(1.3)**	**(1.1)**	**(1.0)**	**(1.1)**	0.0	**0.5**	**1.4**	**0.5**	**0.9**	**0.8**	(0.1)	**(0.9)**	**(0.6)**	**(0.1)**
	(5.7)	***(12.6)***	***(17.3)***	***(19.7)***	***(27.6)***	*0.2*	***5.4***	***24.8***	***13.2***	***27.0***	***29.2***	*(0.6)*	***(9.1)***	***(9.9)***	***(3.0)***
Hetzi Hinam (CAR)	**(1.4)**	**(1.7)**	**(1.8)**	**(1.6)**	**(1.9)**	**(0.4)**	**(0.6)**	**(1.8)**	**(1.5)**	**(1.6)**	**(1.3)**	**(0.8)**	**(0.3)**	**(0.8)**	**(0.5)**
	(6.8)	***(16.7)***	***(26.4)***	***(31.9)***	***(48.5)***	***(2.7)***	***(7.1)***	***(32.2)***	***(37.5)***	***(48.9)***	***(45.0)***	***(4.2)***	***(3.4)***	***(12.1)***	***(10.4)***

Each column represents a period of days within a phase since the beginning of that phase. For example, the first column from the left represents ASCAR (when measuring cumulative abnormal returns of the MST group or the RH group) or CAR (when measuring cumulative abnormal returns of Rami Levy and Hetzi Hinam) for 5-day periods beginning the first day of the protests (start of phase I). Numbers in italics represent the *t*-statistic of the hypothesis test of significance. With $\alpha = 0.05$, we reject the null hypothesis of either ASCAR or CAR equal to zero if the absolute value of the *t*-statistic is higher than 1.96. If the null hypothesis is rejected, then $t > 0$ implies positive ASCAR/CAR, while $t < 0$ implies negative ASCAR/CAR.

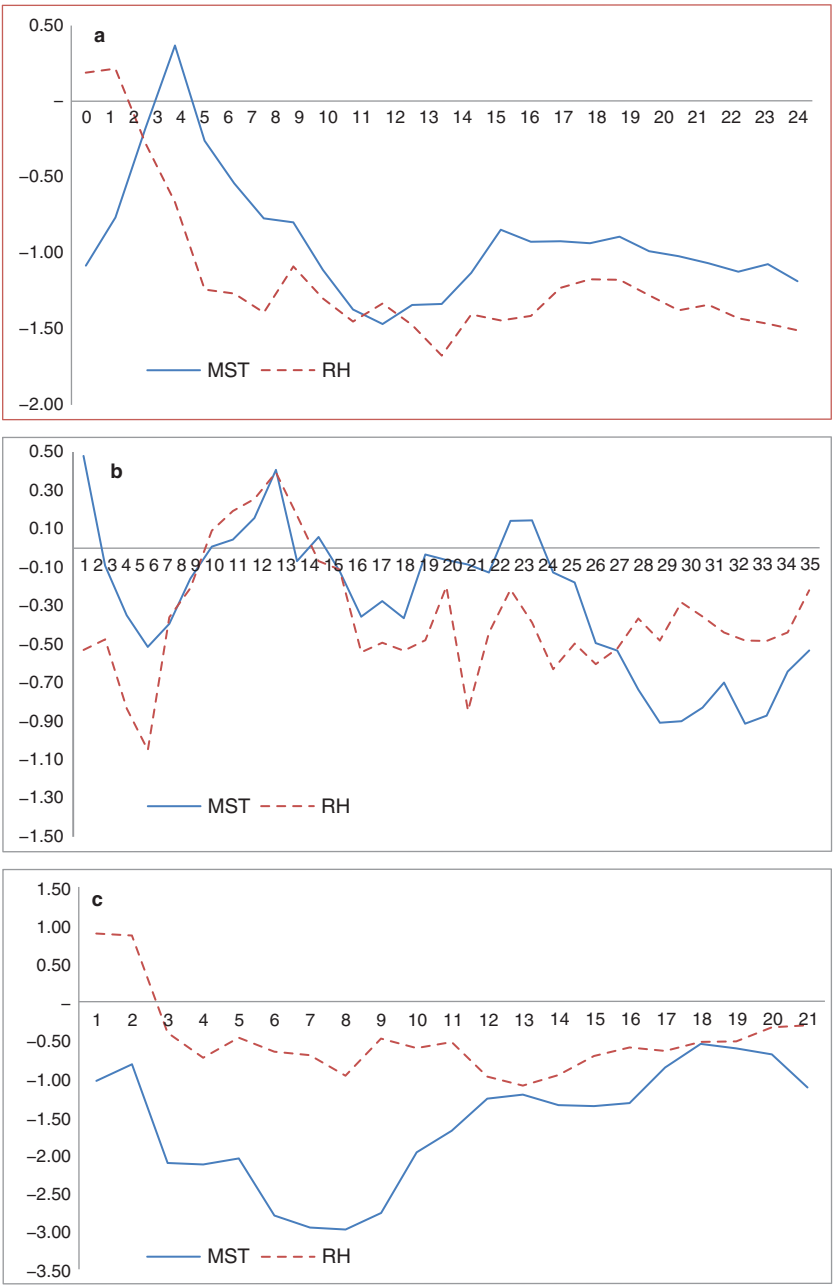

Figure 1: ASCAR of MST group vs RH group for each phase. Cumulative abnormal returns for (a) phase I, (b) phase II, and (c) phase III

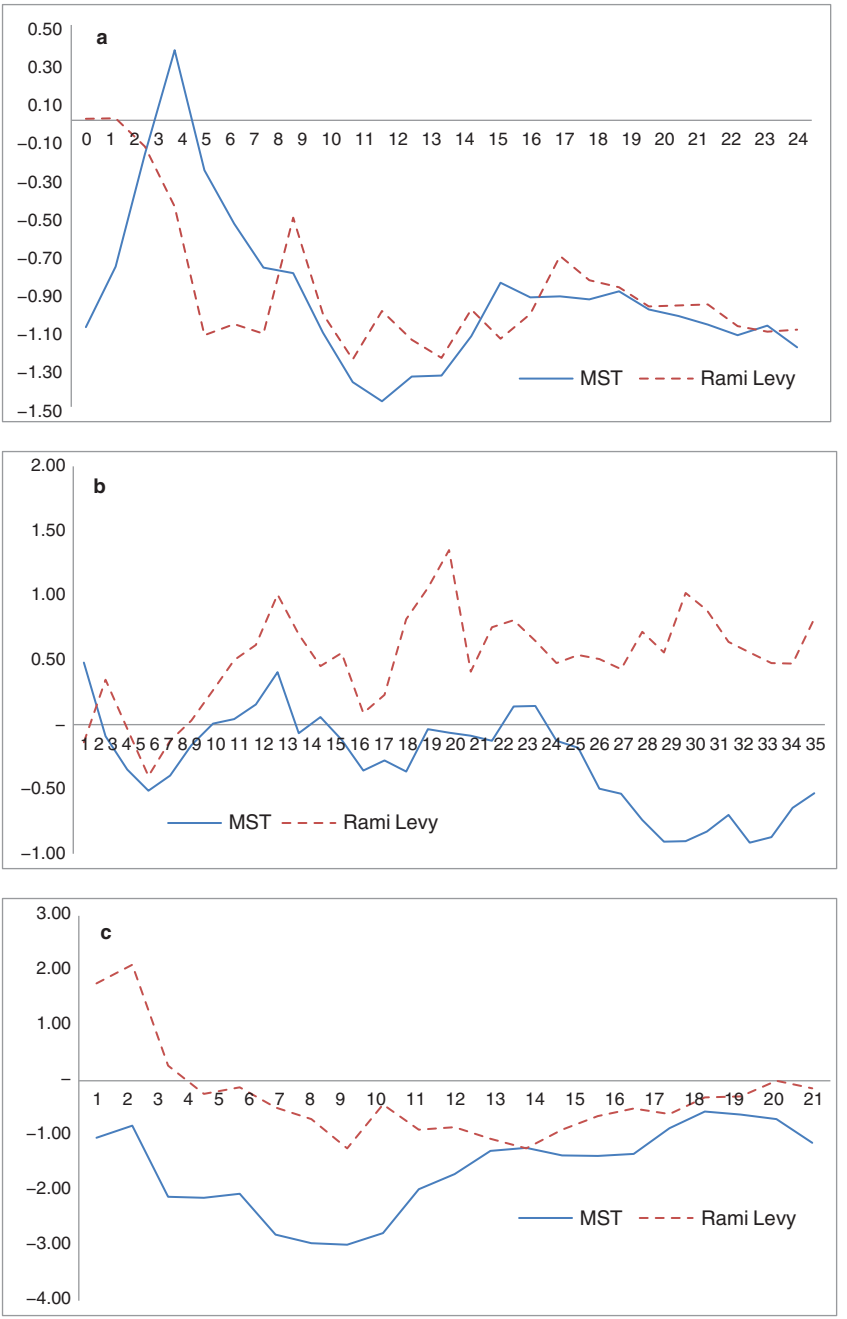

Figure 2: ASCAR of MST group vs CAR of Rami Levy. Cumulative abnormal returns for (a) phase I, (b) phase II, and (c) phase III

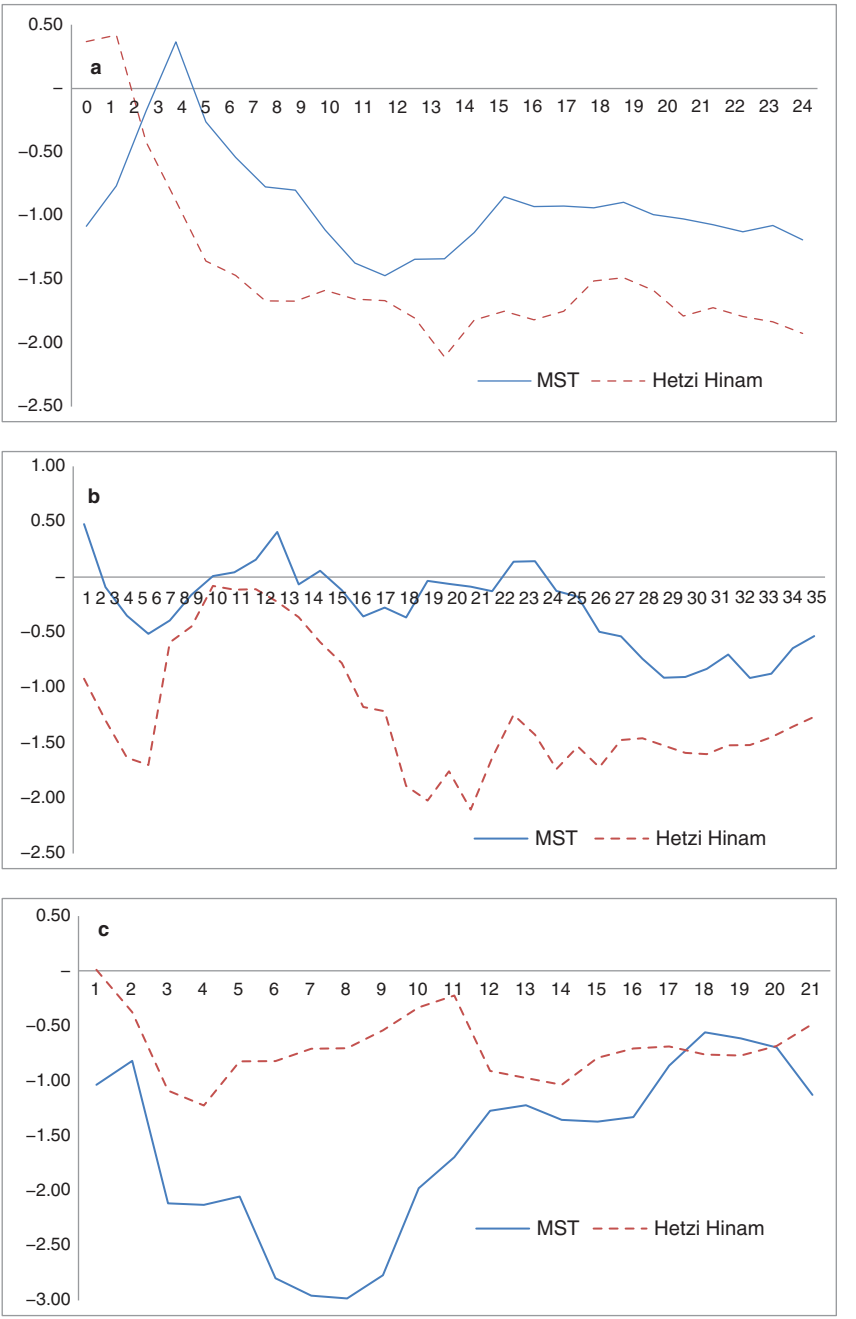

Figure 3: ASCAR of MST group vs CAR of Hetzi Hinam. Cumulative abnormal returns for (a) phase I, (b) phase II, and (c) phase III

both groups were affected during phase I, most of the impact was felt during the first 10 days of phase I. Figure 1b shows that phase II had only a minor effect, if any, on both groups. In contrast to the similar reactions of both groups to the first two phases of the protest, phase III adversely affected the (standardized) average returns of the MST group but had little effect on those of the RH group.

Table 3 presents the ASCAR values and *t*-statistics for 5-day (phases I and III) and 6-day (for phase II) periods of the protest. Each column represents a period of days within a phase since the beginning of the measured phase. The table also shows CAR measures for each company from the RH group. According to Table 3, both groups show significant declines in the (standardized) average stock returns in phases I and III. As Figure 1b shows, there was no significant effect during phase II.

Analyzing the effect of Rami Levy's reaction to the protest, we compare the ASCAR of the MST group to the CAR[18] of each company from the RH group. Starting with Rami Levy, Figure 2a shows that the beginning of the protest adversely affected both the MST group and Rami Levy after 4–5 days. The results presented in Table 3 are consistent with Figure 2a, showing the same reaction. However, during phase II Rami Levy attracted an inordinate amount of attention by publically supporting the protestors[19] and the stock market reacted accordingly. As Table 3 shows, CAR values of Rami Levy stock throughout phase II were overwhelmingly positive. During phase III, both the MST group and Rami Levy showed negative abnormal returns. Also, as Figure 2c shows, the CAR of Rami Levy was higher than the ASCAR of the MST group.

The stock returns of Hetzi Hinam tell almost the opposite story. As Figure 3a and b shows, the CAR of Hetzi Hinam is significantly negative, implying significantly negative returns for the Hetzi Hinam stock. During phase II, the Hetzi Hinam CAR is negative while that of Rami Levy is significantly positive. As both Rami Levy and Hetzi Hinam are positioned as discount stores, we conclude that the announcements made by Rami Levy himself made the difference in investors reaction to the protest. While the CAR of Hetzi Hinam is higher than the ASCAR of the MST group, both are significantly negative, as shown in Table 3.

18 We show only the CAR in this case, because the standardized average CAR cannot be computed for a single company.

19 On one occasion on July 26, 2011, Rami Levy stated saying to the protestors: "The power is in your hands – do not fall asleep!" (www.kikarhashabat.co.il). During another event, when asked if he is in favor of the protest, he said: "the protest was right. It was aimed mainly to the private sector..." (http://www.news1.co.il/Archive/0020-D-284832-00.html). According to Rami Levy's financial statements of 2011, Rami Levy himself gave up his right for a bonus, which instead was divided between 780 of the company's workers with the lowest income.

It should be mentioned that the analysis we provide in this research is the short-term reaction of the retailers' stocks to the protestation events. In this research, we also focus on how a company can control this effect with social behavior. Naturally, we do not focus on the long-term effect of the protestation events, but we are aware that some of the readers may be interested in such analysis for investment purposes. We should point out that other statistical analyses may be more appropriate than the event study analysis to test long-term effects.[20]

7 Conclusions

This article adds to the body of literature on investor reactions to protest events. These studies usually make use of the event study analysis to find abnormal returns (either positive or negative) in response to actions taken by a group of protestors. However, unlike most of the existing research, we also test whether (and how) investors react to the response of companies to the protest. In other words, we test the efficiency of their response with regard to the company stock return.

The extant literature pertinent to protests and their effects on company profits suggests that the stock returns of companies that are the targets of protest activities are in fact impacted by it. Although the existing studies consider protest activity an exogenous event that corporations cannot control, we show that a corporation can react to protests effectively by adopting the correct strategy. In this article, we present a case of two food chain stores that operate in the same business segment and have the same business model. During the summer of 2011, as parts of the retail food industry in Israel, the two companies were targeted by large protest events that took place in the country. While the stock returns of one company, Hetzi Hinam, plummeted, the other company's owner, Rami Levy, publically declared his support of the protestors. We show in this research that this stand by Rami Levy made the difference. In fact, while analysts and investment banks recommended selling the stock of food chain retailers, Rami Levy was an exception, and experts gave "buy" recommendations for the company stock.[21]

20 We can suggest the Hansen's test (Hasen, 1992) or the CUSUM test (Brown, Durbin, & Evans, 1975). Alternatively, other models based on AR1 procedure of the GARCH model can also be applied. We refer the readers to chapter 6 of Greene (2011) for a comprehensive review and examples.

21 According to investment house "Psagot", the protest does not "threaten" Rami Levy as it does to other retailers (http://www1.bizportal.co.il/article/286280).

That being said, we must emphasize that the financial results of Rami Levy for the 2011 fiscal year were no better than those of its competitors, and all five companies investigated in this study reported declines in their profit margins[22] shortly after the end of the summer of 2011, when the protests finally waned. This finding indicates that the social justice protests affected all retailers in the industry. We, therefore, believe that a "social response" by Rami Levy made the difference in the way investors expected the company's stock to react to the events. In so doing, Rami Levy discovered how to influence the connection between social events and investor expectations.

One additional conclusion that can be made is that when corporations consider their social existence, or understand their social role in addition to their business objectives (mainly, profit and value maximization), they do not necessarily act against their purpose.[23] Whether Rami Levy took his stand during the protests because of his social beliefs or business skills is irrelevant to the consequences. Rami Levy's actions can serve as evidence that social responsibility can be achieved by companies not on the expense of profits or reduced value.

In this research, we use the event study methodology, which is mostly used to measure short-term effects of certain events on stock return. For this reason, each of our event windows consists of approximately 3–4 weeks. It is possible that many investors (or even shareholders) are not interested in daily fluctuations and, therefore, may not consider these findings important for long-term investment strategies. While this article serves purposes other than investment strategies, we do believe that a long-term effect of the protest events on stock return of affected corporations and even on the entire stock market should be of interest. We add to that the ongoing debate regarding the long-term social effects of these protest events and, therefore, suggest it as a topic for future research.

Acknowledgments: The author wishes to thank the Marrie Currie International Re-Integration Grants Program (IRG) for the financial support (grant FP7-PEOPLE-2010-RG, No. PIRG07-GA-2010-268360).

References

Avi-Yonah, R., & Sivan, D. (2007). A historical perspective on corporate form and real entity: Implications for corporate social responsibility, chapter 10. In Y. Biondi, A. Canziani, & T. Kirat (Eds.), *The firm as an entity: Implications for economics, accounting and law* (pp. 153–185). New York and London: Routledge.

22 As can be depicted in Table 1.

23 Avi-Yonah and Sivan (2007).

Berman, G., Brooks, R., & Davidson, S. (2000). The Sydney Olympic Games announcement and Australia stock market reaction. *Applied Economic Letters*, *7*, 781–784.

Biondi, Y., Giannoccolo, P., & Galam, S. (2012). Formation of share market prices under heterogeneous beliefs and common knowledge. *Physica A*, *391*, 5532–5545.

Boehmer, E., Musumeci, J., & Poulsen, A. B. (1991). Event-study methodology under conditions of event-induced variance. *Journal of Financial Economics*, *31*, 253–272.

Brown, B., Durbin, J., & Evans, J. (1975). Techniques for testing constancy of regression relationships over time. *Journal of the Royal Statistical Society*, Series B, *37*, 149–172.

Brown, S. J., & Warner, J. B. (1980). Measuring security price performance. *Journal of Financial Economics*, *8*(3), 3–31.

Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, *14*(1), 205–258.

Carow, K. A., & Heron, R. A. (2002). Capital market reactions to the passage of the Financial Services Modernization Act of 1999. *The Quarterly Review of Economics and Finance*, *42*, 465–485.

Carow, K. A., & Kane Edward, J.. (2002). Event-study evidence of the value of relaxing long-standing regulatory restraints on banks, 1970–2000. *The Quarterly Review of Economics and Finance*, *42*, 439–463.

Chen, A. H., & Siems, T. (2004). The effects of terrorism on global capital markets. *European Journal of Political Economy*, *20*, 349–366.

Cooper, M. J., Dimitrov, O., & Raghavendra Rau, P. (2001). A Rose.com by any other name. *Journal of Finance*, *56*(6), 2371–2388.

Dolley J. C. (1933). Characteristics and procedure of common stock split-ups. *Harvard Business Review*, *11*, 316–326.

Filbeck, G., Swinarski, M., & Zhao, X. (2013). Shareholder reaction to firm investments in the capability maturity model: An event study. *European Journal of Information Systems*, *22*, 170–190.

Gomber, P., Schweickert, U., & Theissen, E. (2013). Liquidity dynamics in an electronic open limit order book: And event study approach. *European Financial Management*, forthcoming.

Greene, W. H. (2011). *Econometric analysis* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

Hansen, B. (1992). Testing for parameter instability in linear models. *Journal of Policy Modeling*, *14*, 517–533.

Henry, P. B. (2000). Stock market liberalization, economic reform, and emerging market equity prices. *Journal of Finance*, *LV*(2), 529–564.

Howe, J. S., & Jain, R. (2004). The REIT modernization act of 1999. *Journal of Real Estate Finance and Economics*, *28*(4), 369–388.

Huth, W. L., & MacDonald, D. N. (1990). Equity market response to union decertification petitions and elections. *Journal of Labor Research*, *11*(2), 193–201.

Jackson, D., & Madura, J. (2007). Impact of regulation fair disclosure on the information flow associated with profit warnings. *Journal of Economics and Finance*, *31*(1), 59–74.

Johnson, M. F., Kasznik, R., & Nelson, K. K. (2000). Shareholder wealth effects of the private securities litigation reform act of 1995. *Review of Accounting Studies*, *5*, 217–233.

King, B. G., and Soule, S. (2007). Social movements as extra-institutional entrepreneurs: The effect of protests on stock price returns. *Administrative Science Quarterly*, *52*, 413–442.

Koku, P. S., Akhigbe, A., & Springer, T. M. (1997). The financial impact of boycotts and threats of boycott. *Journal of Business Research*, *40*, 15–20.

Kolari, J. W., & Pynnonen, S. (2010). Event study testing with cross-sectional correlation of abnormal returns. *The Review of Financial Studies*, *23*(11), 3996–4025.

Konchitchki, Y., O'Leary, D. E. (2011). Event study methodologies in information systems research. *International Journal of Accounting Information Systems*, *12*, 99–115.

MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of Economic Literature*, *35*(1), 13–39.

Milevsky, M. A., & Song, K. (2010). Do markets like frozen DB pensions? An event study. *The Journal of Risk and Insurance*, *77*(4), 893–909.

Patell, J. M. (1976). Corporate forecasts of earnings per share and stock price behavior: Empirical test. *Journal of Accounting Research*, *14*(2), 246–276.

Pruitt, S. W., & Friedman, M. (1986). Determining the effectiveness of consumer boycotts: A stock price analysis of their impact on corporate targets. *Journal of Consumer Policy*, *9*, 375–387.

Pruitt, S. W., Wei, J. K. C., & White, R. E. (1988). The impact of union-sponsored boycotts on the stock prices of target firms. *Journal of Labor Research*, *9*(3), 285–289.

Schwert, W. G. (1981). Using financial data to measure effects of regulation. *Journal of Law and Economics*, *24*(1), 121–158.

Veraros, N., Kasimati, E., & Dawson, P. (2004). The 2004 Olympic Games announcement and its effect on the Athens and Milan stock exchanges. *Applied Economics Letters*, *11*, 749–753.