The North American Free Trade Agreement: A Market Analysis

Leonard Bierman

Donald R. Fraser

James W. Kolari

The North American Free Trade Agreement: A Market Analysis

*Leonard Bierman**
*Donald R. Fraser***
*James W. Kolari****

ABSTRACT

The North American Free Trade Agreement (NAFTA) was the subject of heated debate in the United States Congress. The central issue of the debate was whether NAFTA would have a positive or negative economic impact on the parties to the treaty. This Article is a direct empirical market analysis that measures the perceived economic impact of NAFTA on the parties to the agreement and other states. The authors use stock market event analysis to study the effect of NAFTA on different sectors of the economy of the United States, Mexico, Canada, Europe, and the Asia/Pacific region. In doing so, the authors test the hypothetical predictions of other scholars and conclude that, contrary to speculation, NAFTA has had no meaningful economic impact on the economies of the United States and Canada, a strong positive economic effect on Mexico's economy, a slight positive economic effect on Europe, and a slight negative economic effect on the Asia/Pacific region.

*Associate Professor, Graduate School of Business, Texas A & M University.
**Hugh Roy Cullen Chair of Business Administration, Graduate School of Business, Texas A & M University.
***Texas Commerce Bank Professor, Graduate School of Business, Texas A & M University.

TABLE OF CONTENTS

I. INTRODUCTION

On January 1, 1994, the North American Free Trade Agreement (NAFTA or Agreement)[1] became effective. NAFTA joins the United States, Canada, and Mexico in the largest free trade zone in history, a zone of 8.2 million square miles, 364 million consumers, and approximately seven trillion dollars of economic activity.[2] The Agreement represents an extension of the Canada-United States Free Trade Agreement,[3] which became effective on January 1, 1989.

---

1. North American Free Trade Agreement, Dec. 17, 1992, 32 I. L. M. 289-456, 605-799 (1993).

2. See Nicholas Kublicki, *The Greening of Free Trade: NAFTA, Mexican Environmental Law, and Debt Exchanges for Mexican Environmental Infrastructure Development*, 19 COLUM. J. ENVIR. L. 59, 60 (1994). *See generally* James Gerstenzang, *Explaining NAFTA*, L. A. TIMES, Oct. 21, 1993, at A31.

3. Canada-United States Free Trade Agreement, Dec. 22, 1987 - Jan. 2, 1988, 27 I.L.M. 281 (1988). *See generally* Leonard Bierman et al., *Effects of the Canada-United States Free Trade Agreement on the Equity Values of U.S. and*

While the Canada-United States Free Trade Agreement sparked little controversy in the United States and was approved with ease by both houses of the United States Congress,[4] NAFTA and its ratification by Congress was one of the most controversial issues in recent U.S. political history.[5] Spearheaded by Ross Perot and the AFL-CIO, opposition to NAFTA focused especially on its potentially deleterious impact on jobs and the environment.[6]

The controversy reached a crescendo on November 17, 1993, the date the United States House of Representatives voted on whether to approve NAFTA. The outcome of the House vote was uncertain until the last minute.[7] Ultimately, the House did vote to approve NAFTA by a narrow margin on November 17.[8] Three days later, the United States Senate approved the Agreement by a large majority.[9]

II. EVENT STUDY ANALYSIS

During the debate about NAFTA, an extraordinary amount of discussion focused on the economic impact of the Agreement.[10] Would NAFTA economically help or hurt the United States?

Canadian Banks, 10 NW. J. INT'L L. & BUS. 268 (1989) [hereinafter *Effects of the Canada-United States Free Trade Agreement*].

4 .   See *Effects of the Canada-United States Free Trade Agreement, supra* note 3, at 268 n.3. However, the Canada-U.S. Agreement sparked considerably more controversy in Canada where a national election was called regarding the issue. *Id.*

5 .   See generally Alan Wright, Comment, *The North American Free Trade Agreement (NAFTA) and Process Patent Protection*, 43 AM. U. L. REV. 603, 603-04 (1994); Kublicki, *supra* note 2, at 60-62; Kenneth J. Cooper, *Democrats' House Whips Cut Both Ways on NAFTA: Party Leadership Split Has White House Scrambling to Rally Support for Trade Pact*, WASH. POST., Sept. 5, 1993, at A26; Robert J. Samuelson, *The Great Fog Over NAFTA*, NEWSWEEK, Nov. 8, 1993, at 54-55.

6 .   See generally David Van Biema, *Gored But Not Gone*, TIME, Nov. 22, 1993, at 40-41; Eleanor Clift & Bob Cohn, *President Cliffhanger*, NEWSWEEK, Nov. 22, 1993, at 26-29; Rich Thomas, *NAFTA: More Winners Than Losers*, NEWSWEEK, Nov. 29, 1993, at 30; Gene Green, *There Were Good Reasons for Opposing NAFTA*, HOUS. CHRON., Nov. 24, 1993, at C11; Andrew Le Page, *Free Trade Pact Targeted by Protesters: About 500 Workers and Labor and Environmental Leaders Rally Against Agreement*, L.A. TIMES, Oct. 23, 1992, at B4.

7 .   See generally Melissa August et al., *As NAFTA As They Want to Be*, TIME, Nov. 22, 1993, at 15; Clift & Cohn, *supra* note 6.

8 .   See Kenneth J. Cooper, *House Approves U.S.-Canada-Mexico Trade Pact on 234 to 200 Vote, Giving Clinton Big Victory*, WASH. POST, Nov. 18, 1993, at A1; Joe Klein, *Standing Tall*, NEWSWEEK, Nov. 29, 1993, at 29.

9 .   See Helen Dewar, *NAFTA Wins Final Congressional Test*, WASH. POST, Nov. 21, 1993, at A1.

10 .   See, e.g., Samuelson, *supra* note 5, at 49-50; Sen. Phil Gramm, *Leaving Mexico at the Alter*, WASH. POST, June 1, 1993, at A17; Sen. Ernest F. Hollings, *NAFTA is a 'Shotgun' Marriage for the U.S.*, WASH. POST, June 14, 1993, at A18; Gerstenzang, *supra* note 2, at A31.

Likewise, would the Agreement economically help or hurt Mexico and Canada? What about the impact of NAFTA on other countries in the world? To date, there has been no direct empirical market analysis measuring the perceived economic impact of NAFTA. This Article provides such an analysis.

One of the best ways to gain insight into the economic implications of regulatory changes such as NAFTA is through stock market event analysis.[11] This type of analysis involves examining the impact of a given "event" on stock prices in various markets throughout the world. This analysis assumes, pursuant to the so-called "efficient markets hypothesis,"[12] that all present and future economic implications of given events are immediately reflected in stock prices throughout relevant markets. Stock market event analysis is designed to measure the effect of an event on stock prices independent of the effect of other factors. To achieve this goal, estimates of the normal "expected return" of stock prices are designed and then compared with the actual post-event returns. The difference is referred to as the "abnormal return" and is attributed to the given event.[13]

In distinguishing between expected and abnormal returns, event analysis focuses on two time periods: (1) the "estimation period" prior to the event, during which a regression model that is designed to measure the normal relationship between the world stock index and the stock index of a particular state or industry is developed, and (2) the "analysis period," which encompasses a small number of days immediately surrounding the event day. The market model version of the capital asset pricing model[14] is

---

11. *See generally* Leonard Bierman et al., *Denmark and the Maastricht Treaty: A Market Analysis*, 3 DUKE J. COMP. & INT'L L. 147 (1992); *Effects of the Canada-United States Free Trade Agreement, supra* note 2; ROBERT C. RADCLIFFE, INVESTMENT CONCEPTS, ANALYSIS, STRATEGY (4th ed. 1994).

12. *See* Eugene F. Fama et al., *The Adjustment of Stock Prices to New Information*, 10 INT'L ECON. REV. 1, 12-16 (1969); SEHA M. TINIC & RICHARD R. WEST, INVESTING IN SECURITIES: AN EFFICIENT MARKETS APPROACH 278-79 (1979); Fischer Black, *Implications of the Random Walk Hypothesis for Portfolio Management*, FIN. ANALYSTS J., Mar.-Apr. 1971, at 16; Daniel Seligman, *Can You Beat the Stock Market?*, FORTUNE, Dec. 26, 1983, at 82.

13. Obviously stock markets will have general price movements regardless of the given event. Thus, it is necessary to isolate the impact of the event from the impact of other pricing factors.

14. *See* William F. Sharpe, *Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk*, 19 J. FIN. 425, 427 (1964). *See generally* TINIC & WEST, *supra* note 12, at 278-79.

The market model was estimated using ordinary least squares (OLS) for the period from August 2, 1993, through January 2, 1994. Because there was considerable coverage of the deliberations in Congress over NAFTA, the estimation period for the regression analyses ended ten days prior to the event date. The individual indexes were regressed on the world market index. The parameter $ß_I$ represents a beta risk measure for a particular stock market index relative to the world portfolio index. Based on the estimated market model,

commonly used to estimate these relationships and is used in the present study.

In this study, the focal "event" is the U.S. House of Representatives approval of NAFTA on November 17, 1993. As noted previously,[15] the outcome of the House vote was uncertain until virtually the last minute. Therefore, the vote on November 17 approving the Agreement represented a significant and clearly demarcated "event."[16] This study examines stock market reaction to this event in Canada, Mexico, the United States, Europe and the Asia/Pacific region. Moreover, with respect to Mexico and the United States, this study discusses the market impact of this event on numerous industry groups.

---

prediction errors were calculated in the analysis period encompassing the dates from ten days prior to ten days after the event data.

The table below shows the results of estimating the OLS equations for Canada, Mexico, the United States, Asia/Pacific, and Europe. The $ß_I$ coefficient may be interpreted as a measure of the risk (or volatility) of the stocks in state or region I as compared to the world stock index. A coefficient greater than 1 indicates that the risk or volatility of the state or region index is higher than the world index, while a coefficient less than 1 indicates less risk. As noted in the table below, the betas vary widely from area to area. The betas are over 1 for both Asia/Pacific and Europe (respectively 1.63 and 1.09), but less than 1 for Canada, Mexico, and the United States. The betas for the Canadian and United States indexes are the lowest among the areas examined. The beta for the Mexican stock market, or Bolsa, is higher than that of Canada and the United States, but lower than that of Asia/Pacific and Europe. Most of the betas are statistically significant. The R^2 values are relatively low, implying that world stock price movements explains a relatively small portion of the variability of stock market returns in individual states or regions.

OLS Estimates For the Market Model
By Country and Geographic Region

Statistic	Canada	Mexico	United States	Asia/Pacific	Europe
α_I	0.00041	0.00153	0.00045	-0.00102	0.00089
$ß_I$	0.27501**	0.5536[a]	0.36361***	1.62725****	1.0922****
R^2	0.05	0.04	0.16	0.62	0.36

* indicates statistical significance at the 10 percent level
** indicates statistical significance at the 5 percent level
*** indicates statistical significance at the 1 percent level
a This coefficient is statistically significant at the 11 percent level.

15 . See *supra* notes 7-8 and accompanying text.

16 . *Id.* See *generally* TIME, July 4, 1994, at 12 (chart noting numerous journalistic citations of congressional "gridlock" during the month Congress ultimately approved NAFTA).

III. EVENT STUDY HYPOTHESES

A. *United States Economy*

1. Overview

Operating from the general premise that free trade creates wealth,[17] nearly all scholarly predictions regarding NAFTA's impact on the United States economy have been that it will have a positive effect.[18] Because Mexican tariffs on imports have been approximately twice those imposed by the United States, NAFTA's phased elimination of those duties should increase U.S. exports over time.[19] Indeed, since Mexico began lowering trade barriers in 1988,[20] U.S. exports to that country have grown from twelve billion dollars to over forty billion dollars a year, and transformed a U.S. trade deficit with Mexico of over five billion dollars per year into an annual surplus of approximately the same amount.[21] By expanding U.S. exports, NAFTA should eventually bolster the U.S. economy and increase overall employment.[22] Additionally, under NAFTA, U.S. companies will have increased business opportunities in Mexico both in terms of investment and production.[23]

Nevertheless, while the impact of NAFTA on the U.S. economy and U.S. companies should tend to be positive, the overall impact of NAFTA on U.S. businesses should also be relatively small. One estimate predicts that NAFTA will result in an annual gain to the U.S. economy of six billion dollars, or approximately only one-tenth of one percent of the U.S. Gross Domestic Product (GDP).[24] The reason for this small impact is that Mexico—which has a population of about 86 million people compared to the U.S.

---

17 .   *See generally* ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS (R.H. Campbell & A.S. Skinner eds., 1976) (1776); Kublicki, *supra* note 2, at 59-60 & n.1.

18 .   *See* James Carney & Adam Zagorin, *A Tale of Two Jobs: One Lost, One Gained*, TIME, Sept. 27, 1993, at 58; *see also* Paul Krugman, *The Uncomfortable Truth about NAFTA*, 72 FOREIGN AFF. 13, 16 (1993).

19 .   Carney & Zagorin, *supra* note 18; *see also* Gerstenzang, *supra* note 2.

20 .   These trade reforms were part of an overall economic reform program implemented by Mexican President Carlos Salinas de Gortari following his election in 1988. *See* Kublicki, *supra* note 2, at 79-82.

21 .   *See* Carney & Zagorin, *supra* note 18.

22 .   *Id.*

23 .   Alan M. Rugman & Michael Gestrin, *The Strategic Response of Multinational Enterprises to NAFTA*, 28 COLUM. J. WORLD BUS. 18 (1993). *See generally* Kublicki, *supra* note 2, at 81-82 (addressing Mexico's new policies to encourage growth and attract foreign investment).

24 .   *See* Krugman, *supra* note 18, at 17.

population of about 250 million people—has a GDP of only about $330 billion as compared with the United States GDP of about $6 trillion.[25] Mexico, which has an overall economy only about one twentieth as large as that of the United States, simply cannot afford to buy too much from the United States or to integrate a substantial amount of U.S. business investment.[26]

For these reasons, it can be hypothesized that the U.S. House of Representatives approval of NAFTA probably had a negligible overall impact on U.S. stock markets. If any impact did occur, it should have been slightly positive. Moreover, the authors expect that congressional ratification of the Agreement will have the most positive impact on the industries that currently export or have the most potential to export to Mexico, as well as on the U.S. industries that have the greatest opportunity to invest in Mexico.

2. Sectoral Analysis

a. Overview

Obviously, some sectors of the United States economy will benefit more than others from NAFTA. Some commentators have predicted that the Mexican economy will be a "sponge" for U.S. computers and telecommunications and will also soak up automobiles, processed foods, and textiles produced in the United States.[27] In addition, although Mexico has delayed opening up its financial markets,[28] both Canadian and U.S. providers of financial services should ultimately benefit from new access to Mexico's huge retail financial market.[29] In the United States, various industries, such as natural-fiber broom makers, will be directly hurt by the Agreement because NAFTA has dramatically lowered barriers to the importation of this product.[30] Other U.S. industries that may be hurt by NAFTA include clothing manufacturers and farmers.[31] However, special phase-in

---

25. *See* Carl T. Hall, *New Trade Talks Open Today,* SAN FRAN. CHRON., Mar. 17, 1993, at E1; Samuelson, *supra* note 5, at 54.

26. Ross Perot made the same general point in his exhortations that "you can't sell things to people with no money." *Fair Trade? Tariffs With and Without NAFTA,* TIME, Nov. 22, 1993, at 16. *See* Hall, *supra* note 25; Samuelson, *supra* note 5, at 54; *see also* Krugman, *supra* note 18, at 16-17.

27. *See, e.g.,* Thomas, *supra* note 6.

28. *Id.*

29. *See generally Making A Break For the Border,* BUS. WK., June 6, 1994, at 104 (describing the Canada Bank of Montreal's goal to build the "first truly North American bank") [hereinafter *Border Break*].

30. *See* Thomas, *supra* note 6; *Free Trade? They Can Hardly Wait,* BUS. WK., Sept. 14, 1992, at 24.

31. *Id.*

agreements protect other products, such as citrus and sugar, for up to fifteen years.[32]

The chart below provides an overview of recent, pre-NAFTA leading exports and imports to and from the United States and Mexico.[33]

Chart One
Effect of NAFTA on Tariffs for Leading Imports and Exports Between the United States and Mexico

	Leading U.S. Exports to Mexico in 1992		Mexican Pre-NAFTA Tariff	Tariff Phaseout Under NAFTA
1	Motor vehicle body parts	$ 1.3 billion	10-15%	5 years
2	Motor vehicle parts (other)	$ 1.3 billion	10-15%	5 years
3	Oil, not crude	$ 809 million	10%	10 years
4	Radio-TV parts	$ 749 million	10%	immediate
5	Ignition-wire sets	$ 657 million	15%	10 years

	Leading U.S. Imports from Mexico in 1992		Pre-NAFTA U.S. Tariff	Tariff Phaseout Under NAFTA
1	Crude petroleum	$ 4.3 billion	0.5%	10 years
2	Passenger cars	$ 2.8 billion	2.5%	immediate
3	Ignition-wire sets	$ 15 billion	0-5%	immediate
4	Color TV's	$ 112 billion	5%	immediate
5	Seat belts	$ 711 million	3.1%	5 years

From the above chart it is possible to hypothesize, for example, that the U.S. radio and television parts industry should benefit immediately from NAFTA, as should Mexico's color television manufacturing sector.

b. Firm, State, and Region Specific Advantages

In a provocative recent article, University of Toronto scholars Alan M. Rugman and Michael Gestrin analyzed the economic impact of NAFTA from a firm, state, and region specific advantages perspective.[34]   According to Rugman and Gestrin, certain companies or firms have particular competitive strengths ("firm specific advantages") that are influenced by political or other advantages of being located in a certain state ("country specific advantages") or region ("region specific advantages").[35]

---

32.   Thomas, *supra* note 6.
33.   These 1992 figures were furnished by the Office of the U.S. Trade Representative. TIME, Nov. 22, 1993, at 16.
34.   *See* Rugman & Gestrin, *supra* note 23.
35.   *Id.* at 19-20.

Rugman and Gestrin conclude that under NAFTA certain industries in each of the signatory states—Canada, Mexico, and the United States—will be strengthened and weakened vis-à-vis the same industries in the other signatory states. Their "country specific advantages" analysis is set forth in Chart Two below.[36]

Chart Two
The Impact of NAFTA:
State Specific Advantages

Firm Specific Advantages

	Strong	Weak
Strengthened by NAFTA	**1** **United States** High technology related to defense; some energy. **Canada** Some energy. **Mexico** None.	**3** **United States** Maritime; cabotage; steel; agriculture; textiles. **Canada** Culture; agriculture. **Mexico** Energy; telecom. services; natural resources.
Weakened by NAFTA	**2** **United States** None. **Canada** Apparel. **Mexico** None.	**4** **United States** Apparel; citrus products; roses; household appliances. **Canada** Textiles; household appliances; steel; beer. **Mexico** Most manufacturing.

State Specific Advantages

In quadrant four of Chart Two, Rugman and Gestrin hypothesize that NAFTA will create considerable new competition from other signatory states for Mexico's manufacturing sector, for the United States apparel and citrus products industries, and for

---

36 . *See id.* at 24.

Canada's textile and beer industries.[37]   They also hypothesize that NAFTA will strengthen certain industries, such as the maritime industry in the United States and Mexico's energy industry, vis-à-vis competition from other signatory state industries.[38]

Rugman and Gestrin also hypothesize that NAFTA will benefit a variety of industries in all three signatory states because of competitors in states that are not part of NAFTA; in other words, certain industries in signatory states gain "region specific advantages."[39]   Among the industries seen as benefiting from NAFTA under this perspective are the auto and auto parts industries in both Canada and the United States and the electronics industry in Mexico.[40]   None of the industries in Canada, Mexico, or the United States will be weakened by competition from industries in states that are not signatories to NAFTA.[41]   Chart Three sets forth the complete analysis.[42]

While the hypotheses set forth by Rugman and Gestrin are provocative, they are also highly theoretical and speculative. To the extent that industry-specific market data was available, the study described in this Article empirically tests some of Rugman and Gestrin's assertions from the perspective of market participant reaction to congressional ratification of NAFTA.[43]

---

37 .   *See id.* at 24-26.
38 .   *Id.* These industries frequently are politically protected.
39 .   *See id.* 26-28.
40 .   *Id.*
41 .   *See id.* at 26.
42 .   *See id.*
43 .   *See infra* notes 77-82 and 90-98 and accompanying text.

Chart Three
The Impact of NAFTA:
Region Specific Advantages

Firm Specific Advantages

	Strong	**Weak**
Strengthened by NAFTA	**1** **United States** Chemicals; computers; trucking; energy; petro-chemicals; agriculture; electronics. **Canada** Chemicals; energy; some forest products. **Mexico** Electronics; apparel.	**3** **United States** Autos; auto parts. **Canada** Autos; auto parts. **Mexico** TV tubes.
Weakened by NAFTA	**2** **United States** None. **Canada** None. **Mexico** None.	**4** **United States** None. **Canada** None. **Mexico** None.

Region Specific Advantages

B. *Mexican Economy*

NAFTA should generally be a boon for the Mexican economy. Under the Agreement, Mexican producers will be given unfettered access to nearly 280 million relatively wealthy consumers.[44] Mexican producers of commercial products—such as color televisions, which will be afforded immediate tariff relief under NAFTA[45]—should do very well under the Agreement. Moreover, general United States and Canadian investment in Mexico should markedly increase under the Agreement,[46] thereby providing Mexico with considerable new "infrastructure."[47] Accordingly, the construction industry in Mexico will likely be an early beneficiary of NAFTA.[48] Overall, it has been estimated that the Mexican economy will be bolstered by approximately $6 billion annually as a result of NAFTA[49]—just under two percent of its roughly $330 billion GDP.[50] Nevertheless, as Rugman and Gestrin point out,[51] the rapid elimination of all tariff protection for Mexico's relatively weak manufacturing sector may have negative implications for this sector of the Mexican economy.

C. *Canadian Economy*

The Canadian economy, which is about one-tenth the size of the United States economy,[52] seems to be in a position to benefit considerably from NAFTA. Canada currently engages in relatively low levels of trade with Mexico. Annual two-way trade between these countries totals approximately $3.5 billion,[53] as compared with the over $211 billion in annual two-way trade between

---

44. *See generally* Kublicki, *supra* note 2, at 60 & n.5.

45. *See supra* note 33 and accompanying chart.

46. This development can be viewed as an extension of the Mexican government's efforts since 1988 to attract additional foreign investment. *See generally* Kublicki, *supra* note 2, at 81-82.

47. *See, e.g.,* Neal Templin, *Detroit South: Mexican Industrial Belt Is Beginning to Form As Car Makers Expand,* WALL ST. J., June 29, 1994, at A1. *See generally* Kublicki, *supra* note 2, at 81-82.

48. *See* Amy Dunkin, *For Now, the NAFTA Game Is For The Gutsy,* BUS. WK., Nov. 15, 1993, at 176.

49. *See* Krugman, *supra* note 18, at 17.

50. *See* Samuelson, *supra* note 5, at 54. *See generally* Stephen Fidler, *The Miracle Seems to Have Faded,* FIN. TIMES, Nov. 10, 1993, at II (providing the Mexican GDP figures for 1992).

51. *See* Rugman & Gestrin, *supra* note 23, at 24-25; *see also supra* notes 36-37 and accompanying text.

52. *See* Neela Banerjee, *Canada's Recovery is Expected to Cross Border and Boost Business in the U.S.,* WALL ST. J., June 20, 1994, at A2; *see also* Materials From Canadian Consulate General, Dallas, Texas (June 22, 1994) (on file with Texas A & M Business School) [hereinafter Consulate Materials].

53. *See* Consulate Materials, *supra* note 52 (amount in U.S. dollars).

Canada and the United States.[54] Canada also currently has a large trade deficit with Mexico. Canadian exports to Mexico total approximately $634 million per year, but imports from Mexico amount to about $2.9 billion annually.[55] Although the figures for Canadian exports to Mexico may be understated because of significant "transshipment" of goods via the United States,[56] there still seems to be significant room for growth for potential Canadian exports to Mexico and for greater overall trade between Canada and Mexico.

The following chart outlines the primary current areas of trade between Canada and Mexico.[57]

Chart Four
Overview of Trade Between Canada and Mexico

Canadian Exports to Mexico		
1	Vehicles and parts	$ 100.5 million
2	Cereals	$ 83.5 million
3	Electrical Equipment	$ 55.5 million
4	Seeds	$ 54.5 million
5	Paper and wood pulp	$ 42 million
Canadian Imports from Mexico		
1	Vehicles and parts	$ 1.2 billion
2	Electrical equipment	$ 467 million
3	Machinery, mechanical appliances, and engines	$ 435 million
4	Furniture	$ 202 million
5	Mineral fuel and oils	$ 179 million

Although Mexico currently exports approximately eighty-five percent of its exported goods to the United States, it exports only about three and one-half percent of its goods to Canada.[58] Conversely, although Mexico imports about eighty percent of its imported goods from the United States, it imports less than one percent of its imported goods from Canada.[59] Thus, NAFTA could open up the Mexican market to Canadian trade and have a positive impact on the Canadian economy, especially in certain

---

54 . *See* Banerjee, *supra* note 52.

55 . *See* Consulate Materials, *supra* note 52 (amount in U.S. dollars).

56 . *Id.*

57 . *See id.* Figures are for calendar year 1993 and are expressed in U. S. dollars.

58 . *Id.*

59 . *Id.*

sectors such as agriculture.[60]   Indeed, Rugman and Gestrin predict strong potential benefits to the Canadian agriculture, energy, and other sectors under NAFTA.[61]

Moreover, there may be various "indirect" benefits to Canadian businesses given the new opportunities to invest and produce in Mexico.   The Bank of Montreal, for example, is expanding its banking activities in Mexico in the hope of building "the first truly North American bank."[62]   Indirect benefits to the Canadian economy should contribute further to NAFTA's positive effect on Canada.

D. *Europe and Asia/Pacific Economies*

In general, NAFTA will probably hurt the economies of both Europe and the Asian/Pacific states.   Currently, almost ten percent of Mexico's imported goods come from Germany and France, and almost eight percent are from Japan.[63]   Under a scheme of reduced trade barriers with the United States and Canada, more of Mexico's imports may come from these countries and less from Germany, France, and Japan.   Similarly, about eight percent of Mexico's exports currently go to Spain and France, and about four percent are shipped to Japan.[64]   These amounts could be reduced under NAFTA. In addition, Mexico had tentative plans to expand its trading relations with Asian and European countries if the U.S. Congress decided to reject NAFTA.[65]

Moreover, as Rugman and Gestrin point out,[66] NAFTA is likely to provide "region specific advantages." That is, NAFTA may provide advantages to certain industries in all three signatory states over competitors from other regions of the world, such as those in Europe and Asia. Thus, the ultimate approval of NAFTA by the U.S. Congress would seem likely to have a negative impact on European and Asian/Pacific markets.

One offsetting circumstance, however, is the fact that the NAFTA debate was going on during the same general period of

---

60.   Both "cereals" and "seeds" are currently among the top five Canadian exports to Mexico. *See id.*

61.   *See* Rugman & Gestrin, *supra* note 23, at 24-28. However, Rugman and Gestrin also predict that some other Canadian industries, such as steel, beer, and apparel may be hurt by NAFTA. *Id. See generally supra* notes 34-42 and accompanying text.

62.   *See Border Break, supra* note 29, at 104-05. Indeed, the Bank of Montreal seeks to earn at least half of its net income outside of Canada. *Id.*

63.   *See* Consulate Materials, *supra* note 52.

64.   *Id.*

65.   *See* Damian Fraser, *Mexico Enjoys Few Alternatives*, FIN. TIMES, Nov. 17, 1993, at 6.

66.   *See* Rugman & Gestrin, *supra* note 23, at 26-28; *see also supra* notes 39-43 and accompanying text.

time that negotiations were being conducted to complete the Uruguay Round of the General Agreement on Tariffs and Trade (GATT). The goal of the GATT negotiations was to achieve "freer" trade worldwide.[67] At the time, there was considerable fear that a rejection of NAFTA by the U.S. House of Representatives would spell danger for the Uruguay Round.[68] As one observer stated, "other countries will figure if the (Clinton) Administration can't get NAFTA through the Congress, it will be difficult to get the Uruguay Round through the Congress."[69] Consequently, to the extent congressional approval of NAFTA served as a proxy for potential congressional approval of the Uruguay Round, NAFTA might have a positive impact on European and Asian markets.

In addition, there is some evidence that European and Asian countries might be more comfortable investing in Mexico since the enactment of NAFTA because it assures their access to the United States pursuant to the Agreement.[70] Overall, the net outcome of the various effects of NAFTA in Europe and Asia is not entirely clear.

IV. EVENT STUDY RESULTS AND ANALYSIS

A. United States

1. Overall Market

Table One, in Appendix A, sets forth the prediction errors for the overall stock markets of Canada, Mexico, and the United States.[71] This table also contains aggregated stock market

---

67. *See* Michael R. Sesit, *A World Without NAFTA Sparks Concern Among Analysts Mulling Consequences*, WALL ST. J., Nov. 9, 1993, at C1.

68. *See id.*

69. *Id.* at C13 (Statement of Robert Hormats, Vice-Chairman, Goldman, Sachs International).

70. *See* Fraser, *supra* note 65; *see also* Geri Smith, *Japan and NAFTA*, BUS. WK., Nov. 15, 1993, at 55.

71. *See* Table One *infra* app. a. For our purposes, prediction error is calculated as follows:

$$PE_{It} = R_{It} - \left(\hat{\alpha}_I + \hat{\beta}_I R_{Wt} \right)$$

when all rates of return are in *ex post* terms. Prediction errors are tested for statistically significant differences from zero with the following t-test technique:

$$t_{It} = \frac{PE_{It}}{SE_{It}}$$

statistics for the Asia/Pacific and European regions.[72]   Market statistics for the United States are based on the composite "Dow Jones Equity Market Index" as reported daily in the *Wall Street Journal*.[73]   Because of the recent nature of the "event" analyzed in this Article, relevant data was not yet available on computer tape. As such, all overall market data had to be collected from the *Wall Street Journal*.

Table One shows that none of the prediction errors are statistically significant for any of the days in the analysis period with respect to the United States stock market.[74]   In other words, the overall U.S. stock market registered no response to the congressional ratification of NAFTA.   Indeed, comparing the number of days in which the signs of the prediction errors in Table One are positive to the number of days in which the prediction errors are negative shows almost a precisely even split—a type of split that might be attributable to random

---

when

$$SE_{It} = \sqrt{s^2\left[1+\frac{1}{n}\right] + \frac{\left(R_{wt} - \overline{R_w}\right)^2}{\sum_{t=1}^{n}\left(R_{wt} - \overline{R_w}\right)^2}}$$

with
s2 = the variance of the market model residuals in the estimation period; and
n = the number of days in the estimation period.

In words, SE_{It} is the square root of the estimated forecast variance for day τ in the analysis period. This test statistic has n-2 degrees of freedom and is Student's t-distributed. The null and alternate statistical hypotheses to be tested using the equation to determine SE_{It} are:

H_0 : $E(PE_{It})$ = 0

H_a : $E(PE_{It})$ ≠ 0

"Event clustering" problems are avoided here by using portfolio results rather than individual security returns. *See* Larry Y. Dann & Christoper M. James, *An Analysis of the Impact of Deposit Rate Ceilings on the Market Value of Thrift Institutions*, 37 J. FIN. 1259 (1982).

72 .   *Id. See* Table One *infra* pp. app. a. These regional statistics are from the *Wall Street Journal.* The Asia/Pacific statistics represent an aggregation of market data from: Australia, Hong Kong, Indonesia, Japan, Malaysia, New Zealand, Singapore, and Thailand.   The Europe statistics represent an aggregation of data from: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom. *See, e.g.*, WALL ST. J., July 8, 1994, at C-3.

73 .   *See* WALL ST. J., July 8, 1994, at C2-3.

74 .   *See* Table One *infra* app. a.

chance.[75] The empirical result that NAFTA's ratification had no impact on the overall U.S. stock market is consistent with the hypothesis that NAFTA will probably have a minimal overall effect on the United States because of the very large size of the U.S. economy.[76]

2. Sectoral Analysis

The fact that the congressional ratification of NAFTA had no net wealth effect on the overall U.S. market does not necessarily mean that the Agreement did not statistically impact certain U.S. industries.   To test the impact of NAFTA on certain U.S. industries, industry group performance data was collected for the following industries: basic materials (such as aluminum, chemicals, and steel), conglomerates, consumer cyclicals (such as airlines, media, and lodging), consumer noncyclicals (such as beverages, cosmetics, and health care), energy, finance (such as banks and insurance companies), industrials (such as factory equipment, pollution control, and trucking), technology (such as computers and semiconductors), and utilities (including electric, gas, telephone, and water).[77] The results of this sectoral analysis are set forth in Table Two, Appendix B.

The results in Table Two's sectoral analyses are generally consistent with the findings in Table One that NAFTA had no overall impact on the U.S. market. In Table Two, there are few patterns that would suggest that NAFTA had either a positive or negative impact on the U.S. economy. Most of the industry prediction errors are not statistically significant. Indeed, there are no statistically significant observations in the basic materials, consumer cyclicals, consumer noncyclicals, industrials, and technology industries.[78] Moreover, for those industries with statistically significant observations, the patterns are not strong. Conglomerates, for example, have one statistically significant prediction error with a negative return, but only eight of twenty-one overall observations are negative.[79] Similarly, both the energy industry and the finance industry have two significant prediction errors, but one is positive and one is negative.[80] Interestingly, the only industry with any sort of clear pattern is the utilities industry which, perhaps reflecting concerns over possible Mexican competition, has two statistically significant

---

75 .   *See id.; see also* Dann & James, *supra* note 71.

76 .   *See supra* notes 17-26 and accompanying text.

77 .   The performance data was collected from the *Wall Street Journal.* For a complete listing of industry components, see for example, *Industry Group Performance,* WALL ST. J., July 8, 1994, at C12.

78 .   *See* Table Two *infra* app. b.

79 .   *Id.*

80 .   *Id.*

negative observations during the observation period.[81]   However, contrary to the hypothetical observations of Rugman and Gestrin,[82] there does not appear to be any strong evidence that NAFTA has had a significant perceived effect on specific U.S. industry groups.

B. *Mexico*

1. Overall Market

Unlike the results for the United States, an examination of the prediction errors in Table One shows that the U.S. House of Representatives ratification of NAFTA had a significant effect on the Mexican stock market, the Bolsa.[83]   Three of the prediction errors are statistically significant, with two observations strongly positive and one somewhat negative.[84]   The net of these observations is .063598, or a positive 6.3598 percent.[85]   If the nonsignificant coefficients are interpreted as zero, the ratification of NAFTA produced approximately a six percent increase in the wealth of the Mexican stock market during this analysis.[86]

A similar conclusion is reached by examining the number of positive and negative prediction errors for Mexico in Table One. Unlike the results for the United States—and the results for Canada, which will be discussed below—in which the positives and the negatives are roughly equal, the positive prediction errors dominate the results for Mexico.   Seventy percent of the days in the analysis period—fourteen out of twenty[87]—reflect positive prediction errors.[88]   This empirical evidence is clearly consistent with our hypothesis that NAFTA would have a very positive effect on the Mexican economy overall.[89]

2. Sectoral Analysis

The overall positive effect of NAFTA's ratification on the Mexican stock exchange carried through to individual industry groups.   Table Three contains analysis period data for the following Mexican stock market industry groups: cement, commerce, communications and transportation, construction,

---

81 .   *Id.*
82 .   *See generally* Rugman & Gestrin, *supra* note 23.
83 .   *See* Table One *infra* app. a.
84 .   *Id.*
85 .   *Id.*
86 .   *Id.*
87 .   The Mexican market was closed one day in the period.
88 .   Table One *infra* app. a.
89 .   *See supra* notes 44-51 and accompanying text.

controls, food, and transformation.[90] Each of these Mexican industry groups had statistically significant prediction errors, with a total of twenty-nine statistically significant observations across all groups.[91] Of these twenty-nine observations, the vast majority—twenty-two of the observations—were positive, with various industries showing net positive observations in excess of the approximately six percent positive analysis period return on the overall Mexican market.[92]

The construction industry provides a useful example of the perceived positive wealth effects for Mexico from NAFTA. As noted above,[93] increased investment under the Agreement should prompt the need for new infrastructure in Mexico, which will help the construction industry. Empirical results set forth in Table Three confirm this hypothesis, with net significant observations totaling almost a positive ten percent.[94]

Similarly, and in apparent contradiction to Rugman and Gestrin's hypothesis that NAFTA may have a negative impact on the manufacturing sector in Mexico,[95] Mexico's commerce industry group also had net positive significant observations of around ten percent.[96] Indeed, the only Mexican industries in which the impact of NAFTA was viewed as somewhat uncertain were communications and transportation. In this group of eight statistically significant observations, five were positive and three were negative. However, out of all twenty observations, nine were positive and eleven were negative.[97] These results may cut against the prediction of Rugman and Gestrin that Mexico's telecommunications services industry would be positively affected by NAFTA.[98]

In sum, NAFTA's ratification had a positive wealth effect on nearly all of Mexico's major industry groups. These results are consistent with the positive effect that congressional ratification of NAFTA had on the overall Mexican stock market.

---

90. *See* Table Three *infra* app. c. The authors are indebted to Intercontinental Asset Management Group, Ltd. for this data. With the assistance of this group, which has an office in Mexico City, we analyzed period data for certain Mexican stock market industry groups. *See* Table Three, *infra* app. c.

91. *Id.*

92. *See* Tables One and Three *infra* apps. a, c.

93. *See supra* notes 46-47 and accompanying text.

94. *See* Table Three *infra* app. c.

95. *See* Rugman & Gestrin, *supra* note 23, at 24-26; *see also supra* text accompanying note 36.

96. *See* Table Three *infra* app. c.

97. *Id.*

98. *See* Rugman & Gestrin, *supra* note 23, at 24-26; *see also* Chart Two *supra* note 36 and accompanying text.

C. *Canada*

Despite formidable hypothetical arguments that NAFTA would benefit the Canadian economy,[99] the overall empirical results set forth in Table One do not appear to provide much support for this thesis.[100]   With respect to the Canadian stock market, none of the prediction errors are statistically significant for any of the days in the analysis period.[101]   Moreover, eleven of the twenty-one days of the analysis period have negative prediction errors.[102] Thus, it does not appear that the ratification of NAFTA by the U.S. House of Representatives had any positive wealth effect on the Canadian market.

D. *Asia/Pacific*

In contrast to Canada, the ratification of NAFTA did register three statistically significant observations with respect to the Asia/Pacific stock markets.[103]   Two of these observations were negative and one was positive—a net result of about negative two percent.[104]   However, only ten of the twenty-one days of the analysis period set forth in Table One had negative prediction errors.[105]

The possible negative impact of NAFTA's ratification on the Asia/Pacific markets is consistent with the earlier discussion[106] regarding the potential impact of the Agreement on this region. After NAFTA, Asian and Pacific industries will likely face greater competition from stronger North American markets.   Moreover, Asian and Pacific companies may have greater difficulty doing business in Mexico due to North American competitors.[107] However, to the extent that the Asia/Pacific markets will benefit from the Uruguay Round of GATT (in that the U.S. Congress' ratification of NAFTA may be a harbinger of congressional approval of the Uruguay Round), the negative effects on these markets will probably be mitigated.[108]   In sum, the possible slight overall negative impact of congressional ratification of NAFTA on the Asia/Pacific markets seems reasonable from an economic standpoint.

---

99 .   *See supra* notes 52-62 and accompanying text. *See generally* Rugman & Gestrin, *supra* note 23.

100 .   *See* Table One *infra* app. a.

101 .   *Id.*

102 .   *Id.*

103 .   *Id.*

104 .   *Id.*

105 .   *Id.*

106 .   *See supra* notes 63-70 and accompanying text.

107 .   *Id.*

108 .   *Id.*

E. *Europe*

The prediction errors set forth in Table One for Europe show only one statistically significant observation—a positive observation of slightly over two percent.[109] On an aggregate basis, eleven of the prediction errors are positive and ten are negative.[110] Overall, the empirical results seem to show that NAFTA's ratification had a mixed or slightly positive effect on European markets.

These results for Europe mirror the mixed or slightly negative results for the Asia/Pacific markets and raise the interesting question of why European markets reacted more positively to Congress' ratification of NAFTA than the markets in the Asia/Pacific region. Both regional markets will face increased competition from the North American market as well as decreased access to that newly unified market. However, the empirical results suggest two possible conclusions: (1) European markets will be less negatively affected by North American competition and limited access to North America, or (2) that the potential benefits to Europe from the potential U.S. congressional ratification of the Uruguay Round are greater than for markets in the Asia/Pacific region.[111]

V. CONCLUSION

Congressional ratification of NAFTA in November 1993 was one of the most important legal, political, and economic events in recent United States history. Despite extraordinary public debate regarding the Agreement's potential economic impact, careful empirical examination has revealed that the ratification of the Agreement had no meaningful effect on U.S. equity markets either on an aggregate or sectoral basis. Similar results were found with respect to Canadian markets. In contrast, our empirical study demonstrated that the ratification of NAFTA had a strong positive effect on Mexican markets, with the Bolsa as a whole experiencing an approximately six percent net gain in wealth. Moreover, some Mexican industry groups, such as construction and commerce, experienced net gains of approximately ten percent.

But while Mexico's markets soared in response to NAFTA's ratification, markets in the Asia/Pacific region fell slightly, in part because they will be facing new competition. However, markets in

---

109. *See* Table One *infra* app. a.

110. *Id.*

111. *See supra* notes 63-70 and accompanying text. This latter question in particular seems worthy of further empirical investigation. The authors are currently conducting a study examining the impact of GATT Uruguay Round implementation on various regions in the world.

Europe, which will also face new competition from North America, did not fall in reaction to the ratification of NAFTA. Indeed, they experienced a slight rise in response to this event. The response of the European markets—and to some extent the Asia/Pacific markets—seems to have been influenced by market perception that U.S. congressional approval of NAFTA increased the likelihood that the U.S. Congress will ratify the Uruguay Round of GATT.

APPENDIX A

TABLE ONE

Prediction Errors in the Analysis Period by State and Region

Date	Canada	Mexico	United States	Asia/Pacific	Europe
November 3 (t-10)	-0.003341	0.011342	-0.010579	0.008281	0.004154
November 4 (t-9)	-0.003183	-0.018492	-0.008078	0.006689	0.002593
November 5 (t-8)	0.007853	-0.023781*	0.007667	0.000720	-0.011793
November 8 (t-7)	-0.002543	0.015806	-0.000124	-0.001504	0.001938
November 9 (t-6)	0.001981	0.038772***	0.002739	-0.009428	0.007705
November 10 (t-5)	0.001223	0.007646	0.005690	-0.004902	-0.008810
November 11 (t-4)	-0.001064	0.016953	-0.002826	0.013219**	-0.006765
November 12 (t-3)	-0.001855	0.010422	0.000816	0.003417	-0.006244
November 15 (t-2)	-0.008142	0.014289	-0.001359	-0.005065	0.008112
November 16 (t-1)	0.000775	-0.005062	0.005182	0.002175	-0.010972
November 17 (t=0)	-0.004256	0.007049	-0.004028	-0.001020	0.008545
November 18 (t+1)	-0.006467	0.011954	-0.003094	0.003473	-0.000293
November 19 (t+2)	-0.000548	0.005575	0.000608	-0.001628	0.001149
November 22 (t+3)	-0.006399	-0.013833	-0.002995	0.000010	0.004077
November 23 (t+4)	0.005000	0.001462	0.003823	-0.003497	-0.001641
November 24 (t+5)	0.000579	0.048607***	0.002430	-0.007567	0.006811
November 25 (t+6)	-0.000176	-0.000098	0.005075	-0.013133**	0.009008
November 26 (t+7)	-0.011947	-0.017271	0.003126	-0.021798***	0.023100**
November 29 (t+8)	0.000611	-0.017271	-0.003568	0.009666	-0.005775
November 30 (t+9)	0.005329	-0.004893	-0.006000	0.016576	-0.009707
December 1 (t+10)	0.002929	0.012842	0.000053	0.002881	-0.003584

* indicates statistical significance at the 10 percent level

** indicates statistical significance at the 5 percent level

*** indicates statistical significance at the 1 percent level

APPENDIX B

TABLE TWO

Prediction Errors in the Analysis Period For Different Industries in Mexico

Date	Cement	Commerce	Communication and Transportation	Construction	Controls	Food	Transformation
November 3 (t-10)	0.015942	0.001882	0.010858	0.016115	0.016316	0.006626	0.004286
November 4 (t-9)	-0.009658	-0.022066*	-0.029215**	-0.008083	-0.016898	-0.012172	-0.010068
November 5 (t-8)	-0.032289**	-0.025153	-0.026489**	-0.029563**	-0.018129*	-0.013844	-0.014848
November 8 (t-7)	0.001827	0.009505	0.021474*	0.003939	0.010819	-0.002380	0.002972
November 9 (t-6)	0.053266***	0.036178***	0.027830*	0.047001**	0.042927***	0.028348**	0.031195***
November 10 (t-5)	0.004464	0.001700	0.011150	0.006044	-0.004490	0.011891	0.012507
November 11 (t-4)	0.015595	0.015680	0.024071**	0.014374	0.017294*	0.016162	0.013459
November 12 (t-3)	0.016201	0.004323	-0.001108	0.016314	0.020447*	0.011657	0.013575
November 15 (t-2)	0.004023	0.012973	0.024292**	0.009307	0.007721	0.003998	0.010870
November 16 (t-1)	-0.012544	0.003565	-0.003920	-0.008219	-0.010723	-0.008995	-0.009899
November 17 (t-0)	0.005829	0.016658	0.000641	0.006541	-0.003227	0.003639	0.004250
November 18 (t+1)	0.017531	0.031664**	-0.006627	0.020266*	0.007499	0.007709	0.004285
November 19 (t+2)	0.006770	0.027603**	-0.006635	0.009799	0.003006	0.000044	-0.000877
November 22 (t+3)	-0.008032	-0.004626	-0.012352	-0.009460	-0.012408	-0.017436	-0.013864
November 23 (t+4)	0.005764	-0.002689	-0.002646	0.007748	0.003834	-0.000245	-0.000153
November 24 (t+5)	0.051447***	0.035106***	0.034243***	0.056770***	0.064536***	0.035571***	0.029364**
November 25 (t+6)	0.005433	-0.002364	-0.002289	0.005085	-0.004607	-0.003317	-0.002572
November 26 (t+7)	-0.017365	-0.016902	-0.022574*	-0.018792	-0.007717	-0.011149	-0.014325
November 29 (t+8)	-0.003671	-0.003792	-0.007824	0.003381	0.004346	-0.010920	-0.007426
November 30 (t+9)	0.024944	0.008589	0.014711	0.027053	0.014180	0.007134	0.010891
December 1 (t+10)							

  * indicates statistical significance at the 10 percent level

  ** indicates statistical significance at the 5 percent level

  *** indicates statistical significance at the 1 percent level

APPENDIX C

TABLE THREE

Prediction Errors in the Analysis Period For Different Industries in the United States

Date	Basic Materials	Conglomerates	Consumer Cyclicals	Consumer Nondurables	Energy	Finance	Industrial	Technology	Utilities
November 3 (t-10)	-0.005247	-0.006752	-0.003422	-0.0033873	-0.005962	-0.021879***	-0.065276	-0.016760	-0.024127***
November 4 (t-9)	0.003755	-0.021122***	-0.010797	-0.0059872	-0.002476	-0.010601	-0.0047166	-0.017238	-0.009589
November 5 (t-8)	0.001725	0.004781	0.000605	0.0092195	0.000985	0.020576***	-0.0007889	0.014459	0.005552
November 8 (t-7)	-0.002574	-0.004000	0.007995	-0.0012321	-0.005001	0.003964	-0.0005967	0.000668	-0.006305
November 9 (t-6)	-0.005572	0.012604	-0.000216	0.0043784	-0.004077	0.008590	0.0043425	0.003044	0.000547
November 10 (t-5)	0.011821	0.000713	0.010351	0.0068902	0.004250	0.000138	0.0047366	0.014103	-0.000843
November 11 (t-4)	0.005382	-0.006994	-0.003408	-0.0020688	-0.012258	-0.007919	-0.0020949	0.008999	-0.005953
November 12 (t-3)	0.010457	-0.004990	0.003905	0.0038199	0.002837	0.001111	0.0026447	-0.002976	-0.007533
November 15 (t-2)	0.001003	0.008447	0.002213	0.0044732	-0.013154	-0.003260	0.0001750	-0.007674	-0.002053
November 16 (t-1)	0.000431	0.016806	0.004096	0.0082689	-0.005414	0.003699	0.0007932	0.008607	0.010935
November 17 (t=0)	-0.005910	0.003869	-0.003616	-0.0089972	0.024701**	-0.007617	-0.0067588	-0.009939	-0.007874
November 18 (t+1)	0.000214	0.008658	-0.002443	-0.0012901	-0.001895	-0.004084	-0.0051039	-0.009384	-0.002623
November 19 (t+2)	0.008333	0.008908	-0.005213	0.0038667	0.000427	0.000972	0.0038554	-0.001144	-0.004552
November 22 (t+3)	0.002850	0.004206	-0.011299	-0.0007261	0.001457	-0.005850	-0.0006075	-0.007299	-0.000035
November 23 (t+4)	-0.002923	0.000322	0.000063	-0.0010025	-0.001067	0.013607	0.0005922	0.009248	0.009375
November 24 (t+5)	0.000165	-0.006725	0.008665	-0.0011451	-0.003681	0.000176	0.0071732	0.005596	0.003880
November 25 (t+6)	0.007545	0.007611	0.007680	0.0055105	-0.024166**	0.009698	0.0068491	0.008019	0.010814
November 26 (t+7)	0.003066	-0.003010	0.003040	0.0029374	-0.006028	0.012868	0.0045073	-0.004786	0.009407
November 29 (t+8)	0.001071	0.002234	-0.009241	-0.0034677	0.007714	-0.004179	-0.0046795	0.000791	-0.010588
November 30 (t+9)	-0.001831	-0.003848	-0.000141	-0.0095881	-0.013161	-0.000203	-0.0055011	-0.005216	-0.013164*
December 1 (t+10)	-0.002930	0.011844	-0.005237	0.0001057	-0.000858	0.002734	-0.0024891	0.003052	0.002007

*   indicates statistical significance at the 10 percent level
**   indicates statistical significance at the 5 percent level
***   indicates statistical significance at the 1 percent level