Free Trade Agreements and Stock Prices:
Evidence from **NAFTA**.
Draft 05/21/2001

Pablo Javier Klein

Summary:

This is an event study to measure the effect of all the news related to the North American Free Trade Agreement (NAFTA) during the year of 1993, on the prices of the stocks traded in the Mexican Stock Market. At the time, a long debate took place in the US, focusing on the issue of whether the agreement should be approved by the House at the end of the year, while additional labor and environmental side agreements were being negotiated. If the news generated by these processes altered the probability of approval, and they were not anticipated by the market, then they should have affected the daily returns of Mexican stocks. According to the predictions of classical trade theory, following free trade, some industries expand while others contract according to their cost-based comparative advantages. The stock returns after the publication of news reflect the public's expectations about the future performance of the different industries: after an event that is favorable to NAFTA, the securities from sectors that have comparative advantages should have positive abnormal returns. Comparative advantage can be affected by each industry's use of different inputs and their domestic relative prices before and after trade, but also by the prevalence of barriers to entry, economies of scale, historical specialization, etc.

The selection criterion for the news was their publication in the Wall Street Journal, this produced 22 event windows, beginning with the day president Clinton took office on January 21, and ending with the final voting in the House on November 18. Some of the news considered include the negotiation and signing of the labor and environment side agreements, a court ruling that required that an environmental impact study be filed, the launch of a pro-NAFTA campaign by the president and some days of intense bargaining with Mexico just before the voting, in order to protect some key US industries and make the Agreement more palatable.

First, I run an OLS regression of the returns of the market portfolio (equally weighted) on dummy variables that correspond to the 22 events considered. Then I estimate a system of Seemingly Unrelated Regressions for each industry, where the returns of each individual security are estimated in a separate equation, and the coefficients of the event dummy variables are restricted to be the equal across equations. Because this study deals with news

that affect all the stocks at the same time, the different securities' returns on each event window are contemporaneous and cannot be considered as independent. The SUR system takes into account this contemporaneous cross-sectional correlation. Finally, I estimate separate OLS regressions of the returns of the individual securities, to measure the importance of firm-specific comparative advantage. I also carry out nonparametric rank and sign tests at the market and industry level, to check the robustness of the estimates to distributional assumptions.

Only one event had significant effects on the market portfolio: the conclusion of the side agreements. There is substantial evidence of positive abnormal returns in the week that ends with the final approval (Nov 18 , 1993). The nonparametric tests have stronger results with at least 4 significant events. The strong positive response of the market on the final approval date suggests that stock prices generally tended to increase after response to favorable news about NAFTA. At the industry level, the following industries rejected the null hypothesis that the news did not have an effect on the returns: Paper and Cellulose, Electronics, Iron and Steel, Food and Tobacco, Cement, Telecommunications, Tourism and the large Financial Groups. All industries seem to benefit from favorable news, except Paper and Cellulose and Tourism. This may have reflected investors' perceptions that these industries would not do well under NAFTA.

The returns of the manufacturing industries after the news about the final approval of the agreement seem strongly positively correlated with the initial trade surplus with the US and Canada. This suggests that, in general, investors expected that the sectors which originally had a trade surplus would do even better under the NAFTA, and this was confirmed to some extent by the actual trade performance of the different industries in the first four years of the agreement. These same returns were weakly positively correlated with the share of labor in costs, negatively correlated with the elasticity of scale, very weakly positively correlated with the C4 concentration index, and uncorrelated with the participation of foreign investment in the different industries.

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Abstract.

This event study measures the effects of the news generated by the approval process of the North American Free Trade Agreement (NAFTA), on the returns of Mexican stocks during 1993. In particular, I look at the relationship between the returns on the event dates and industry-specific comparative advantage. The market experienced significant positive abnormal returns around two important dates: the conclusion of the environment and labor side agreements and the final approval. Furthermore, I find a strong positive correlation between the returns of an industry following the approval of the agreement, and that industry's trade surplus in 1993. The correlations of the returns near the approval date and the industry's labor share and elasticity of scale are weak but have the expected signs (positive and negative). The correlation with the C4 concentration index has the wrong sign (returns tended to be positive in the most concentrated industries).

Introduction.

The idea of a North American Free Trade Agreement was conceived in 1990, to extend the already existing US-Canada Free Trade Area. The main reasons behind this ambitious project as analyzed by De Long and Robinson (1996), are (1) to promote economic growth in Mexico as a long term solution to the immigration and drug traffic issues, (2) to reap the gains of free trade for all three countries by exploiting comparative advantage and economies of scale (3) to reduce uncertainty about market access for firms located in the three countries (4) to prevent that a future increase in protectionism bring a reversal of free trade policies (5) to give recognition, credibility, and continuity to the ambitious economic reforms carried out by Mexico's administration in the previous five years (6) to reduce the US trade deficit by opening export markets for American products.

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In May, 1991, the US Congress granted the fast track procedure to the Department of Commerce, which allowed to negotiate the Agreement without the congress having to discuss every proposal, to speed-up the process. In August of 1992 a first draft was completed and submitted to the legislative bodies of the three participating countries.

This was the beginning of fifteen months of debate. The labor unions, the environmental groups and the far right attacked the Agreement while the two main parties, the government and the business groups launched media campaigns to support it. In general, the republicans wanted the NAFTA to be approved as is, while the democrats wanted substantial modifications, especially concerning labor and the environment, however, there where important differences across members of each political party. During this period, president Bill Clinton took office, and demanded that two additional "side" agreements be negotiated to ensure that NAFTA would not have a negative effect on the living standards of US workers as well as on the environment. Finally, after a number of advances and setbacks, NAFTA was approved in November of 1993, to be enforced January 1st., 1994.

This paper focuses on the effects of the news generated between January and November of 1993, on the stocks of Mexican firms. The Hecksher-Ohlin model of international trade, generalized to many goods and factors, predicts that, after trade liberalization, the industries which use more intensively the relatively abundant factors tend to expand, while the industries which are more intensive in the relatively scarce factors tend to contract. The first (second) type of industries have a positive (negative) cost-based comparative advantage. Shortly after free trade, they earn positive (negative) rents, which attract (repel) capital from the other industries and results in higher production capacities in the long run. If the stock prices of firms reflect the expected value of all future cash flows, then the news about NAFTA should affect the returns, as they alter the perceived probability that free trade will occur. After news that are favorable to NAFTA, the prices of the firms producing in industries with a positive (negative) cost-based comparative advantage should increase (decrease) as investors expect these firms to earn positive (negative) rents in the short run and have a larger (smaller) equilibrium capital stock in the long run[1].

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[1] Industry-level comparative advantage can be affected by a number of factors, including : labor, capital and natural resource intensities, economies of scale, intensity in qualified labor and R&D, use of and access to intermediate inputs and their prices after NAFTA, historical specialization, monopolistic rents before and after trade, etc. Thompson (1993)'s similar event study on the US-Canada Free trade agreement classified industries in two groups (winners and losers) based on industry reports generated by a government agency, and on the position of industry associations in the negotiation.

While the news about NAFTA should have very different significant effects across industries, their aggregate impact at the market level is ambiguous; on one side there are clear efficiency gains from economies of scale and cheaper sources for inputs, while on the other hand, trade theory predicts that, after free trade, in the labor–abundant country (in this case Mexico), wages should increase and the returns to capital should decrease, especially in highly concentrated industries where capital earned rents before trade (in Mexico, trade protection has been an indirect subsidy to capital). These two effects affect capital returns in opposite directions. Since the stock prices measure only expected returns to capital, it could be the case that, on average, stock prices fall after favorable news, even though the gains from trade are large and positive for the Mexican economy. The previous analysis has ignored firm-specific factors that may be important to determine comparative advantage, such as management and production efficiency, relative size of the firm, past export experience, etc. We can expect firm-specific factors to be more important in industries with product differentiation.

I start by estimating the effect of the news at the market level, by regressing the returns of the equally weighted market portfolio on the 22 event dummies. In a second part, I estimate the effects at the industry level with a system of Seemingly Unrelated Regressions for each industry, where the system's equations are linear regressions of individual security returns on the dummy variables, and the dummy coefficients are restricted to be equal for all equations. Because this study deals with news that affect all the stocks at the same time, the different securities' returns on each event window are contemporaneous and cannot be considered as independent. The SUR estimation computes the variance-covariance matrix between the errors terms of the equations in a first step and uses it in a second step to produce a variance-efficient GLS estimator for the dummy coefficients[2]. Third, I estimate separate OLS regressions of the returns of the individual securities, to measure the importance of firm-specific comparative advantage. I also carry out nonparametric rank and sign tests at the market and industry level, to check the robustness of the estimates to distributional assumptions.

Only one event had significant effects on the market portfolio at the 90% level: the conclusion of the labor and environmental side agreements. There is substantial evidence of

[2] For other applications of this technique to event studies with event clustering, see Schipper and Thompson (1983, 1985), Malatesta and Thompson (1985) and Collins and Dent (1984).

positive abnormal returns ion the week ending with NAFTA's final approval. The strong positive response of the market in both cases suggests that Mexican firms on average were expected to benefit from NAFTA. For the industry-level estimation, I was able to reject the null hypothesis that the news did not have any effect for Paper and Cellulose, Electronics, Iron and Steel, Food and Tobacco, Cement, Telecommunications, Tourism and the large Financial Groups. All these industries seemed to benefit from favorable news, except Paper and Cellulose and Tourism. This may have reflected investors' perceptions that these industries would not do well under NAFTA.

The returns of the manufacturing industries after the news about the final approval of the agreement seem strongly positively correlated with the initial trade surplus with the US and Canada. This suggests that, in general, investors expected that the sectors which originally had a trade surplus would do even better under the NAFTA. These same returns were weakly correlated with the share of labor in costs, negatively correlated with the elasticity of scale, very weakly positively correlated with the C4 concentration index, and uncorrelated with the participation of foreign investment in the different industries.

For a survey of the applications and issues surrounding the technique of event studies, see Mc Kinlay (1997) and Thompson (1985). The first use of an Event Study accounts to Dolley (1933)'s study of stock splits. The Event Study technique was developed for corporate finance, early examples carry out standard t-tests on abnormal returns of stocks to measure the effects of mergers and stock splits. Examples of this are: Myers and Bakay (1948), Barker (1956, 1957 and 1958), Ashley (1962), Ball and Brown (1968), Fama, Fisher, Jensen, and Roll (1969) and Grinblatt, Masulis and Titman (1984).

In International Finance, Frankel and Rose (1996) use an event study to look at the conditions prevailing in the years before and after a currency crises, with a cross section of countries. Mathurand and Sundaram (1997) study the effect of announcements about Brazil's external debt with the international financial institutions, on the major US banks with exposure to Brazilian investments, and finds that the effect is important and proportional to exposure. Almeida, Goodhart and Payne (1998) measure the effect of the announcement of new macroeconomic data (particularly near Central Bank meetings) on the bilateral US$/ DM exchange rate, with the finding that the coefficients indicate the future direction of monetary policy, instead of the Keynesian model. Timirachi (1990) and Mirus (1990) investigate the relationship between the publication of polls and the exchange rate. McQueen and Roley (1993) measure the effect of various macroeconomic announcements on the prices of securities. Langhor and Viallet (1986) and Boardman, Freedman and Eckel (1986) measure the effects of sudden shifts in economic policy on the stock prices.. A summary of the applications of the Event Study technique to the political process can be found in Hibbs (1987) and Frey (1978)

In International Trade, Hartigan, Kamma, and Perry, (1986, 1989) study the effect of USTC antidumping resolutions (threat/damage) on the stocks of affected firms, and finds that, only for the threat category we observe an increase in the stock price. In the damage category, the prices actually fall, probably because the market learns that the industry is actually in bad shape. More closely related to the topic this paper, Thompson (1994) starts from to the traditional 2x2x2 Hecksher-Ohlin framework with an additional input (natural resources) and economies of scale in order to determine comparative advantage in her study on the effect of news related to the US-Canada Free Trade Agreement on US and Canadian stocks. Brander (1991) has an event study where he wants to determine whether the effect of the Gallup election polls results on the Toronto Stock Exchange (TSE) is due to the investor's preference for the Conservatives (direct channel), or to the fact that a Conservative victory would result in a US-Canada Free Trade Agreement (which would benefit most securities: trade channel). He finds a strong aggregate effect of the polls favoring the Conservatives, but the effect is not very differentiated between traded and nontraded industries, suggesting that the trade channel of the poll effect is relatively weak.

Economic Background

After the approval of the Free Trade Agreement, some industries expand, while other industries contract. The value of the firms in the expanding industries increases while the value of the firms in the contracting industries falls, as physical capital migrates from the second to the first. The most general version of the Hecksher-Ohlin theorem states that, after free trade, a given country will, on average, export the goods that are more intensive in the factors that are relatively more abundant (and less expensive at before trade prices), and import the goods that are more intensive in the less abundant (and more expensive) factors. Therefore, after the NAFTA, the equilibrium value of firms from industries which use more intensively the more abundant factors will increase, while the value of firms from other industries will decrease. The current stock prices reflect the expected long run change in the equilibrium value of the firms as a result of free trade, and therefore the prices of firms with a positive (negative) comparative advantage increase (decrease) after favorable news about NAFTA.

For example, suppose that in May 1993, a new study shows that the NAFTA will not displace a significant number of jobs from the US to Mexico. This announcement makes it more likely that the House will vote for the Agreement in November. Ceteris paribus, this event should increase the stock prices of the Mexican firms that produce in labor-intensive industries, because labor is a factor that is relatively less expensive in Mexico than in the rest of North America, and therefore these industries are expected to expand in the event of free trade. The same argument applied to intermediate inputs says that the values of firms that are intensive in intermediate goods that were cheaper in Mexico before trade will increase as a result of good news about NAFTA. This effect is offset, however, if these intermediate goods also become more expensive as a result of trade liberalization in their own industries. Also, we might expect that the values of firms in industries where economies of scale are significant will decrease after good news about NAFTA. This is because these firms produce for a smaller market than their North American counterparts, and are at a cost disadvantage. This need not be the case in industries with significant product differentiation. After free trade, the values of these firms might increase if they are expected to expand their production and sell their products in the larger NAFTA area[3].

The Estimation

I extend the simple Constant Mean Return Model by allowing the event dummies to affect the returns of firms. The regression equation is:

$$r_{i,t} = \alpha_i + \sum_{e=1}^{22} D_{e,t}\mu_{ei} + \varepsilon_{i,t} \tag{1}$$

Where r_{it} is the return of firm security *i* in period *t*, $\varepsilon_{i,t}$ is an error term with mean zero and variance σ_i , $D_{e,t}$ is a dummy variable that is equal to 1 for the five days starting with the publication date of event *e*, and μ_{ei} is the coefficient of event dummy $D_{e,t}$ for firm *i*, that measures the abnormal performance of the returns of security *i* during event window *e.* I estimate this relationship for three levels of restriction: (1) restricting the coefficients μ_{ei} to be equal across all securities; this is the most restrictive estimation, and it produces a measure of aggregate market-level abnormal performance. (2) restricting the coefficients μ_{ei} to be the same for all firms within each industry, but allowing them to vary across industries, this

[3] For a formal derivation of the relationship between the news and the stock prices, see Appendix B.

provides a measure of industry-level abnormal performance, and finally (3) the unrestricted estimation where the coefficients μ_{ei} are different for across securities[4]. In addition to the parametric estimations, I carry out nonparametric rank and sign tests at the market-level and industry-level.[5] The purpose of these tests is to check the robustness of the results to distributional assumptions.

Market Level

I estimate the aggregate effect of the news by running an OLS regression of the returns of the equally-weighted market portfolio on an intercept and dummy variables that correspond to the 22 event windows. $\mathbf{r}_i$ is the *T x 1* vector of daily returns for firm *i*. The market portfolio return is defined as:

$$\mathbf{r} = \frac{1}{n}\sum_i \mathbf{r}_i \tag{2}$$

Where n is the number of securities in the market ($n = 131$) . The regression equation for the market portfolio, in vector notation, is:

$$\mathbf{r} = \alpha + \boldsymbol{\delta\mu} + \boldsymbol{\varepsilon} \tag{3}$$

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[4] I propose also an estimation which addresses the problem of infrequently traded securities, by allowing the event dates to differ across two types of stocks. This estimation is presented in Appendix C.

[5] The sign test is formed by computing n_{Ik}^{+}, the number of positive realizations for the total returns of the securities from industry *I* over the five day event window k and n_I the total number of securities in industry *I*, and the test statistic is:

$$Z_{Ik} = \left(\frac{n_{Ik}^{+}}{n_I} - 0.5\right)\frac{\sqrt{n_I}}{0.5} \overset{a}{\sim} N(0,1)$$

Another commonly used nonparametric test is the rank test, see Corrado (1989). The test consists in ordering each firm's series of returns in the estimation period in ascending order and assigning them a rank. This converts all the series into ranks and virtually eliminates the bias that traditional tests have in the presence of asymmetric distributions. The corresponding statistic is:

$$Z_{Ie} = \frac{\sum_{s=t_e}^{t_e+5}\left[\frac{1}{n_I}\sum_{i=1}^{n_I}\left[K_{is} - \frac{T+1}{2}\right]\right]}{\sqrt{\frac{5}{T}\sum_{s=0}^{T}\left[\frac{1}{n_I}\sum_{i=1}^{n_I}\left[K_{is} - \frac{T+1}{2}\right]\right]^2}} \overset{a}{\sim} N(0,1)$$

Where T is the number of periods, t_e is the first day of the event window e , K_{it} is the rank of the return of firm i on period t. n_I is the total number of firms in industry I.

where:

$$\boldsymbol{\delta} = \begin{bmatrix} D_{01} & D_{02} & \cdots & D_{22} \end{bmatrix} \qquad \boldsymbol{\mu} = \begin{bmatrix} \mu_{01} \\ \mu_{02} \\ \vdots \\ \mu_{22} \end{bmatrix}$$

$D_{01} \dots D_{22}$ are the dummy variables that correspond to each of the 22 event windows considered in this study (see the Data section). $\boldsymbol{\mu}$ is the coefficient vector at the market-level. This specification restricts the coefficients to be equal across securities. The t-statistics of the coefficients can be used to test for the aggregate effect of particular news on the market. An F-statistic tests the joint explanatory power of all the news on the market portfolio. If the test statistic rejects the null hypothesis, then the news had a significant impact on the returns of the market portfolio.

Industry Level

The vector notation equivalent of equation (3), with the cross-equation restriction that the $\boldsymbol{\mu}_I$ coefficient is the same for all the securities, is:

$$\mathbf{r}_i = \alpha_i + \boldsymbol{\delta}\boldsymbol{\mu}_I + \boldsymbol{\varepsilon}_i \tag{4}$$

This specification allows me to measure the effect of particular news at the industry level. To estimate all the individual security equations together with the covariance matrix of excess returns across securities, I stack all the returns into a single vector. The regression equation becomes:

$$\mathbf{R}_I = \mathbf{X}_I \boldsymbol{\Gamma}_I + \mathbf{E}_I \tag{5}$$

where:

$$\mathbf{R}_I = \begin{bmatrix} \mathbf{r}_1 \\ \vdots \\ \mathbf{r}_{n_I} \end{bmatrix} \qquad \mathbf{X}_I = \begin{bmatrix} \mathbf{1} & \mathbf{0} & \cdots & \mathbf{0} & \boldsymbol{\delta} \\ \mathbf{0} & \mathbf{1} & & & \boldsymbol{\delta} \\ \vdots & & & & \vdots \\ \mathbf{0} & & & \mathbf{1} & \boldsymbol{\delta} \end{bmatrix} \qquad \boldsymbol{\Gamma}_I = \begin{bmatrix} \alpha_1 \\ \vdots \\ \alpha_{n_I} \\ \boldsymbol{\mu}_I \end{bmatrix} \qquad \mathbf{E}_I = \begin{bmatrix} \boldsymbol{\varepsilon}_1 \\ \vdots \\ \boldsymbol{\varepsilon}_{n_I} \end{bmatrix}$$

n_I is the number of firms in industry I. In this study, $\mathbf{R}_I$ is a Tn_I *x 1* vector, $\mathbf{X}_I$ is Tn_I *x (22+*n_I*)*, $\boldsymbol{\Gamma}_I$ is *(22+*n_I*) x 1* and $\mathbf{E}_I$ is Tn_I *x1*. $\boldsymbol{\delta}$ is the matrix of dummy variables as defined previously. The stacked regression (7) is first estimated by Ordinary Least Squares, and the residuals are used to compute $\mathbf{\Sigma}_I$, the variance-covariance matrix between the contemporaneous terms of $\boldsymbol{\varepsilon}_1 \ldots \boldsymbol{\varepsilon}_{n_I}$.

$$\mathbf{\Sigma}_I = \begin{bmatrix} \sigma_1^2 & \cdots & \sigma_{1,n_I} \\ \vdots & & \\ \sigma_{n_I,1} & & \sigma_{n_I}^2 \end{bmatrix} \tag{6}$$

$$\operatorname{var}(\mathbf{E}_I) = \mathbf{\Sigma}_I \otimes \mathbf{I} \tag{7}$$

The corresponding estimate of $\mathbf{\Sigma}_I$, $\hat{\mathbf{S}}_I$ is then used to compute a consistent Generalized Least Squares estimate of the parameter vector, and its corresponding variance matrix.

The t- statistics for the industry-level coefficients are used to test the effect of particular news on an industry, and F-statistics to test the joint explanatory power of all the 22 event windows on an industry. Additionally, this model can be tested against the less restrictive alternative where we allow the coefficients to vary by security. If the alternative model explains significantly more of the returns, it means that firm-specific characteristics are more important that industry-wide comparative advantage, and intra industry trade is the key factor that explains post-NAFTA performance.

Firm Level

At the firm level, I take out the cross equation restriction that the parameter vector is the same for all securities in a given industry.

$$\mathbf{r}_i = \alpha_i + \boldsymbol{\delta}\boldsymbol{\mu}_i + \boldsymbol{\varepsilon}_i \tag{8}$$

$\boldsymbol{\mu}_i$ can be interpreted as the effect of the event dummies on the returns of security i. I estimate equation (10) by Ordinary Least Squares for each firm in the study. A closer look at the coefficients of different firms within a particular industry could reveal a pattern of product differentiation, intra industry trade or firm-specific comparative advantage, if there arte significant differences between the different firms' coefficients. Additionally, I carry out F-tests against a regression with only the intercept to determine which firms were significantly affected by the news.

The Data

The events of this study are all the news about NAFTA that appeared between January and November 1993 in the Wall Street Journal. They are presented in Table 3. I chose not to extend the event windows to the days immediately before the publication. Figures 10-54 show the behavior of some of the industry portfolios around the publication date for some events. While in some of these figures it seems that the news were anticipated, it is difficult to determine to what extent these anticipation effects are not due to other factors unrelated to the NAFTA. To avoid contaminating the estimates by other factors, I chose to focus exclusively on the post-publication period. Some of the news presented in Table 1 have clear positive or negative implications for NAFTA, however in most cases the implications are ambiguous from the news text. The contents of each news, as they appeared on the first page of the Wall Street Journal, are shown in Appendix E.

Table 1

News about the negotiation process for NAFTA.

Event	Window	News Content	Dummy
1	01/21-01/25	01/21- Clinton takes office and proclaims the need to negotiate side agreements on labor and the environment, as well as additional safeguards in the event of a sudden increase in imports.	D01
2	03/18-03/23	03/18- The negotiation of the side agreements begins. Mexico and Canada are opposed to the use of trade sanctions (like setting tariffs to pre-NAFTA level on some goods) as an enforcement vehicle.	D02
3	04/12-04/17	04/12- President Clinton plans to limit the power of environmental and labor panels , and to ask the House to cast a yes/no vote to avoid long revisions and amendments.	D03
4	05/04-05/09	05/04- Seven environmental groups claim they will support NAFTA only if the Agreement includes tough environmental sanctions.	D04
5	05/24-05/29	05/24- The US, Canada and Mexico reported serious differences in the negotiation of the side agreements, stemming mainly from the controversial trade sanction provisions.	D05
6	06/15-06/20	06/15- NAFTA got a boost when both Los Angeles and Mexico agreed to clean up an abandoned lead recycling plant in Mexico.	D06
7	07/01-07/06	07/01- As a consequence of a lawsuit filed by 3 environmental groups, a federal judge ruled that an environmental impact statement must be prepared by the Clinton Administration before NAFTA can be passed to the Congress. This could take up to a year	D07

		and significantly slow the process, and is a serious blow to the agreement. The Clinton Administration decides to appeal the ruling.	
8	07/12-07/17	07/12- Negotiators agree on a trilateral commission for enforcing the labor and environment side agreements.	D08
9	07/21-07/26	07/21- The Clinton administration is pressing ahead to complete side deals. Chicago lawyer is appointed as “NAFTA czar”.	D09
10	07/26-07/31	07/26- Side accords could be set by the end of the week.	D10
11	08/03-08/08	08/03- Clinton aides meet with union leaders to soften opposition to NAFTA with little success.	D11
12	08/13-08/21	08/13- Talks stalled over side deals. Mexico and Canada still object against enforcing labor and environmental clauses with trade sanctions and lawsuits against countries. 08/16- Trade Negotiators for the US, Canada and Mexico resolved labor and environmental issues that were stalling the NAFTA, but the arrangements seemed to alienate more lawmakers than they converted.	D10
13	08/25-08/30	08/25- Federal appeals court judges expressed skepticism at arguments that the Clinton administration needs to file an environmental impact statement before proceeding with NAFTA. Ross Perot steps up campaign to defeat the NAFTA accord with a new book.	D13
14	08/31-09/05	08/31- Clinton could accept the unusual process of allowing the Senate to vote before the more reluctant House to gain approval of NAFTA, following a recommendation by Sen. Robert Dole.	D14
15	09/09-09/14	09/09- Ross Perot’s family won approval for a tariff reduction arrangement at his Texas manufacturing center. Top administration officials met on Capitol Hill with a bipartisan group of supporters to boost NAFTA. It has been decided that the more hostile House will vote before the Senate does.	D15
16	09/15-09/20	09/15- Clinton signs environmental and labor side agreements, in addition to a treaty to protect the US industry in case of a sudden rise in imports. This sets the beginning of a pro-NAFTA campaign in the House.	D16
17	09/27-10/02	09/24 The appeals court overturned the previous ruling that required the Clinton Administration to file an environmental impact statement. A major poll shows that a wide majority of voters oppose NAFTA.	D17
18	10/08-10/13	10/08- The analysis group “Conference Board” concluded in a study that NAFTA would increase Mexican wages, reducing threats to the US labor force.	D18
19	10/14-10/19	10/14- The White House proposed a tax increase on airline tickets to pay for the revenue loss from NAFTA. The move is likely to spur resistance among consumer groups.	D19

20	10/25-10/31	10/25- Clinton drops his previous plan for higher transportation taxes and customs fees to compensate for the loss of revenues from NAFTA.	D20
21	11/01-11/09	11/01- The White House urges US companies not to move jobs to Mexico if NAFTA passes. The corporate response is low. 11/03- Clinton tries to sweeten the effects of NAFTA by proposing legislation to help various industries. 11/04- Clinton strikes deals with Mexico to protect six sensitive industries: sugar, citrus and fresh vegetables. Mexico is expected to quicken the tariff reductions on flat glass, wine and appliances. Further agreements on wine and apparel and textiles are expected. 11/10- Peso falls as speculators bet against NAFTA.	D21
22	11/10-11/12	11/11- Stocks rise in the US and Mexico amid NAFTA optimism, after Gore destroys Perot's arguments in yesterday's TV debate.	D22
23	11/15-11/23	11/17- Stock prices rally in Mexico as investor respond bullishly to signs that NAFTA will pass in a House vote scheduled for today. 11/18- The House cleared the NAFTA. The Senate could take up NAFTA as early as tomorrow, and is expected to approve it by a wide margin.	D23

The stock price data includes all the stocks traded in the Mexican Stock Exchange (Bolsa Mexicana de Valores) for the year of 1993. The prices were harvested from a CD-ROM released by "El Financiero", the second financial newspaper in Mexico. This CD-ROM contains all the daily financial columns that were published in the paper version of "El Financiero". The dataset had to be considerably cleaned, due to the irregular layout.

The dataset translated into a panel of 275 securities for 270 trading days. All the securities originally included are presented in Appendix E. For many of these securities (marked in the appendix), there are too many missing observations to yield reliable estimates. In addition, I decided to exclude all the holding firms, which invest in groups of other firms from different industries, as it complicates the analysis. The estimations are made on a subset of 131 securities, which translates into 20,829 actual observations.

Table 2 contains some summary statistics of the price data. These summaries refer to equal-weighted portfolios of securities from each industry. Figures 1-20 show the daily returns from January to November, 1993. These industry aggregates correspond roughly to the categories referred to in the listings of "El Financiero". The Chemical industry (SIC 28, 30) includes all pharmaceuticals, rubber and plastic, but does not include any basic petrochemical goods, which were excluded from the agreement. The Paper industry (SIC 26, 27) includes stationery, cardboard packages and sanitary products as well as an editorial firm. The electronic industry (SIC 36) includes household appliances which are assembled from foreign parts and re-exported, but also other products such as electric fixtures and electric machinery. The heavy equipment industry (SIC 34, 35, 37) includes transportation equipment, industrial machinery but also simpler goods such as metal desks. The textile denomination (SIC 22, 23) includes apparel, footwear and textile mill products. Minerals refer to Stone, Clay and Glass (SIC 32). Cement (SIC 17) basically refers to prepared concrete mixes for the Building industry. The series and the graphs show that most of the industry averages tended to increase during the period of study, with the exception of Retail, Chemicals, Print/Edition, Transportation and Brokerage Houses. Transportation is composed basically of air and maritime companies and Financial Groups refer to traditional large conglomerates that invest in a variety of sectors.

Table 2

Industry Portfolios

Summary Statistics

Industry	Securities	Mean	Std. Dev.	Min.	Max.	Skew.	Kurtosis
CHEMICAL	9	-0.00027	0.00918	-0.05355	0.04435	-1.38144	14.18649
PAPER/ CELLULOSE	8	0.00023	0.01133	-0.04613	0.07303	0.96718	14.75084
IRON/ STEEL	1	0.00036	0.02787	-0.07246	0.12245	1.17629	4.20579
ELECTRONICS	5	0.00207	0.01121	-0.03910	0.05830	1.33135	7.08985
HEAVY EQUIPMENT	7	0.00014	0.00738	-0.06434	0.04110	-3.40297	43.21119
FOOD/ TOBACCO	13	0.00182	0.01229	-0.05814	0.05507	0.34707	6.09391
TEXTILES	3	0.00006	0.01305	-0.04054	0.09314	2.29473	17.26985
MINERALS	1	-0.00037	0.01879	-0.08179	0.05541	-0.56618	3.71849
CEMENT	8	0.00123	0.01329	-0.03872	0.06104	0.67234	3.26369
BUILDING MATERIALS	4	0.00012	0.01421	-0.07291	0.07353	-0.61913	13.35023
RETAIL	18	-0.00024	0.00803	-0.04571	0.04527	-1.55569	19.61897
TRANSPORTATION	4	-0.00127	0.02286	-0.16148	0.07653	-1.80446	16.30593
TELECOMM.	3	-0.00010	0.01789	-0.09346	0.07654	0.04839	7.03149
TOURISM	7	-0.00083	0.01246	-0.09023	0.03283	-2.48682	18.05635
INSURANCE	5	0.00205	0.01049	-0.02905	0.07689	3.75636	24.05528
BANKS	10	0.00056	0.00963	-0.07059	0.03398	-2.09377	19.04609
BROKERAGE HOUSES	3	-0.00081	0.01869	-0.21264	0.04372	-9.16640	105.48521
FIN. GROUPS	17	0.00082	0.00808	-0.02866	0.04765	1.51885	8.46777
MINING	4	0.00124	0.02133	-0.15024	0.16146	0.70582	35.79291
MARKET	131	0.00051	0.00569	-0.02519	0.03109	0.59098	7.50973

Figures 1-20
Daily Returns and Event Dates
Industry Portfolios

Figure 1:CHEM

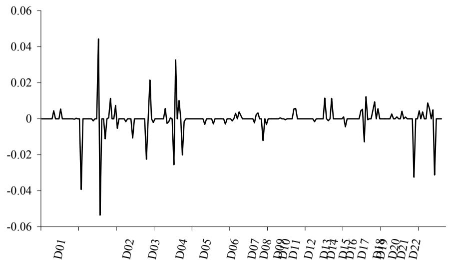


Figure 2: PAPER

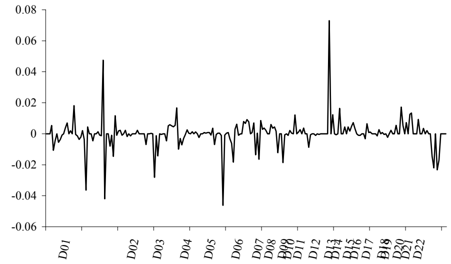


Figure 3: IRON

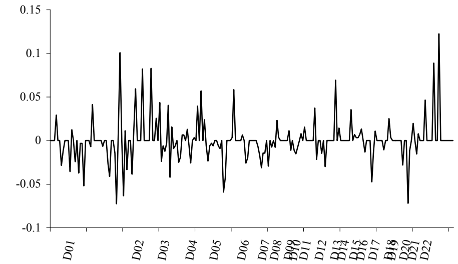


Figure 4: FOOD

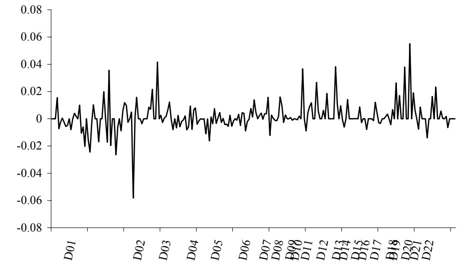


Figure 5: RETAIL

Figure 6: GROUPS

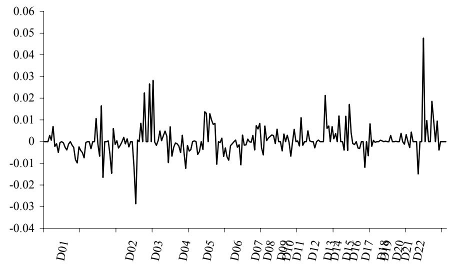


Figure 7: ELEC

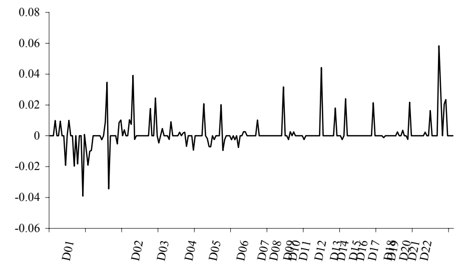
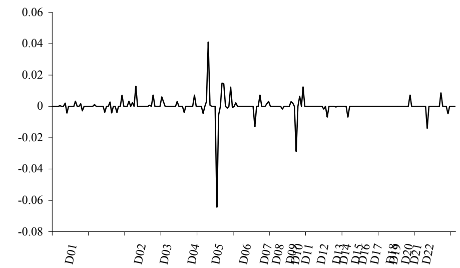


Figure 8: HEAVY



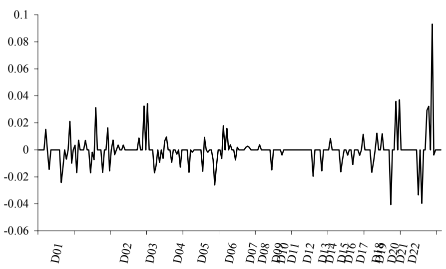


Figure 9: TEXTILE

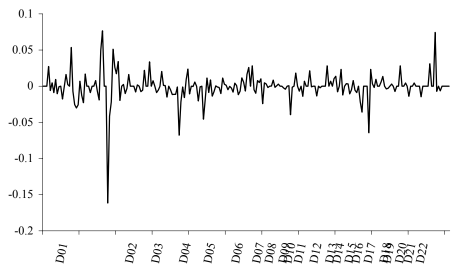


Figure 10: TRANS

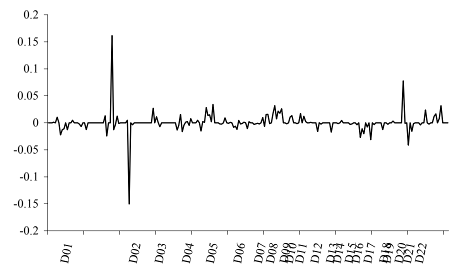


Figure 11: MINING

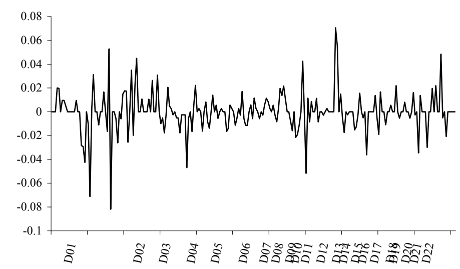


Figure 12: MINERAL

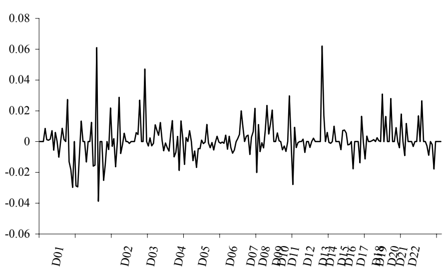


Figure 13: CEMENT

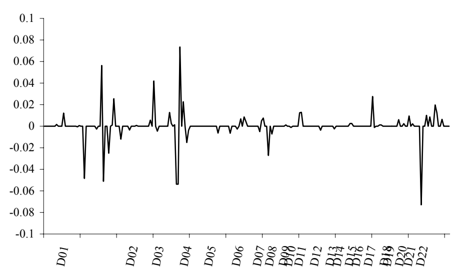


Figure 14: MATERIAL

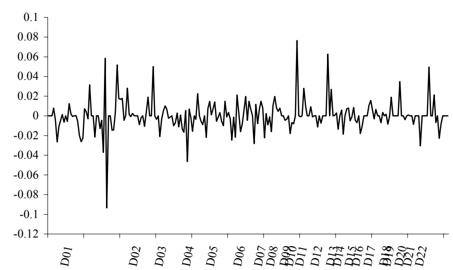


Figure 15: TELECOMM

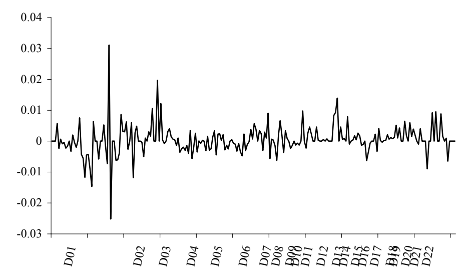


Figure 16: TOTAL

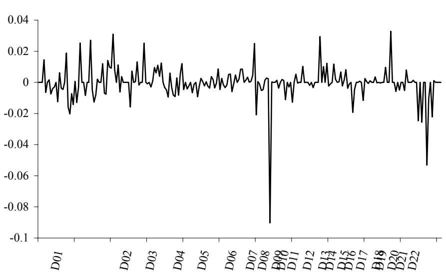


Figure 17: TOURISM

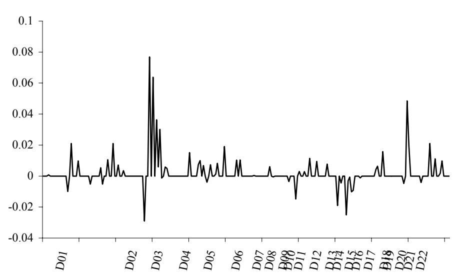


Figure 18: INSUR

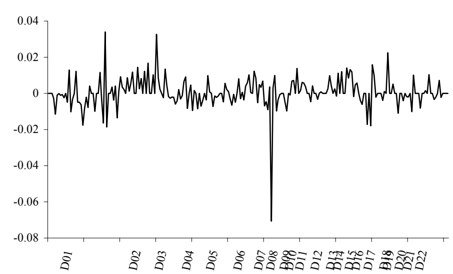


Figure 19: BANKS

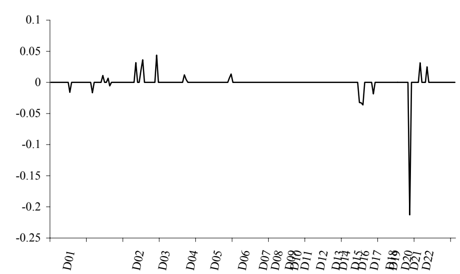


Figure 20: BROKERS

Figures 21-38

Cumulated Standarized Returns Around the Event Dates

(5 days before and after publication)

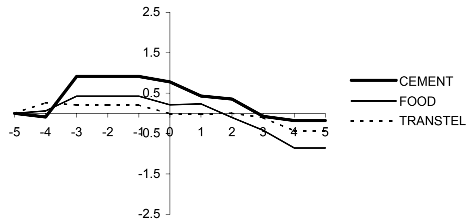


Figure 21: Event D05

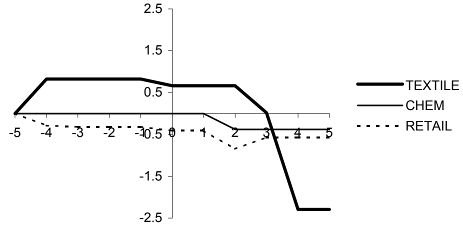


Figure 22: Event D05

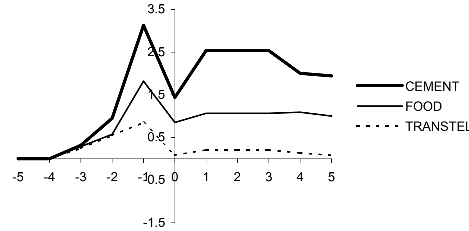


Figure 23: Event D07

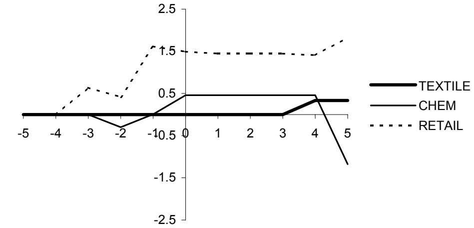


Figure 24: Event D07

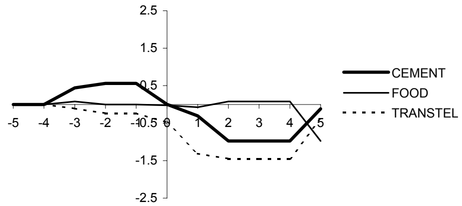


Figure 25: Event D09

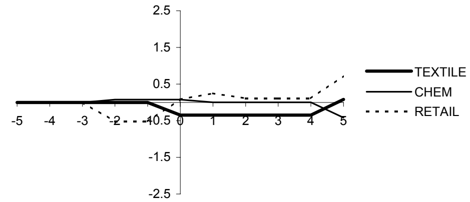


Figure 26: Event D09

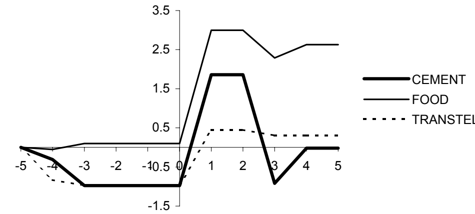


Figure 27: Event D10

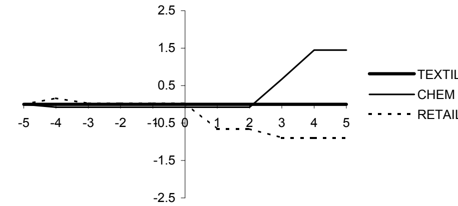


Figure 28: Event D10

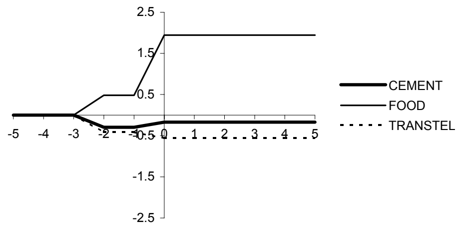


Figure 29: Event D12

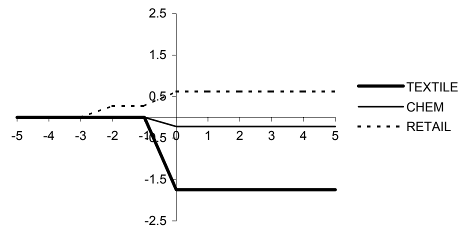


Figure 30: Event D12

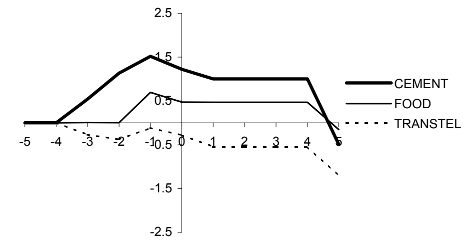


Figure 31: Event D15

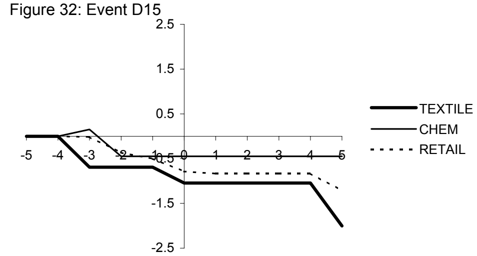


Figure 32: Event D15

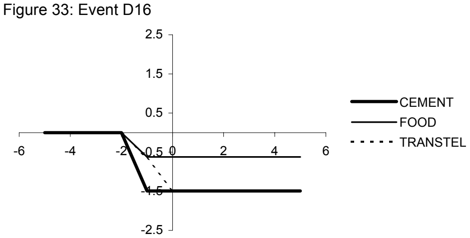


Figure 33: Event D16

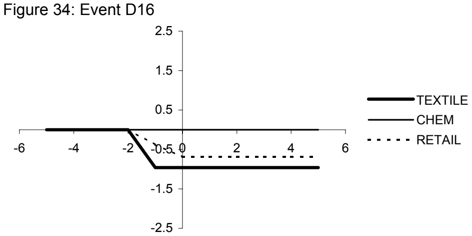


Figure 34: Event D16

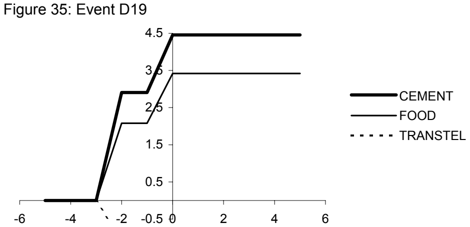


Figure 35: Event D19

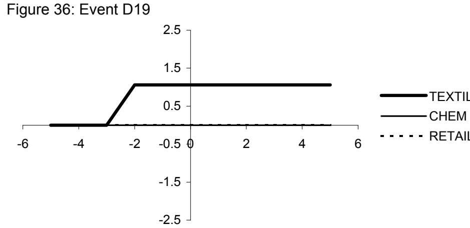


Figure 36: Event D19

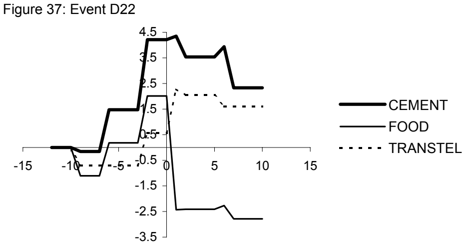


Figure 37: Event D22

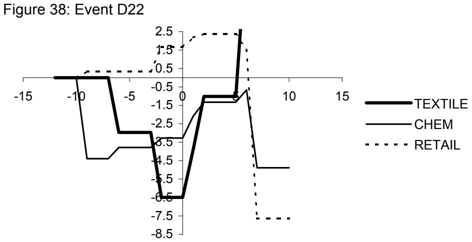


Figure 38: Event D22

Results

Market Level

Table 3 presents the estimates of the coefficients for all the dummy variables for the OLS regression on the market portfolio, and the test statistics corresponding with the rank and sign tests. The first column lists all the 22 event dummies and my prior interpretations about the sign of the effects, based on the content of the corresponding news (favorable indicated by a (+) and unfavorable indicated by a (-)).

During event window 12, the final agreement over the labor and environmental issues that were at the core of Clinton's agenda, the market portfolio had a 3.21% return that was significant at the 95% confidence level, and was the only significant return at the 90% confidence level. However, the return near the approval date (event 23) was also relatively large (2.07%). The nonparametric tests confirm the sign and importance of these two events. Other relatively important events were: event 5 (differences in the negotiation of the side agreements, -0.44% return), event 6 (decision to clean-up an abandoned lead recycling plant, +0.98%) event 7 (a serious blow to NAFTA when a federal judge required an Environmental Impact Statement, -0.61%), event 10 (advances in the negotiation of the side agreements, +1.00%), event 15 (meeting with a bipartisan group in support of NAFTA and decision to make the more reluctant house vote before the senate, -0.87%), event 16 (the signing of the side agreements and a treaty to protect US industry, -0.41%), event 18 (a study showing that NAFTA would not significantly affect US labor, +1.24%), event 19 (the proposal of a tax increase on airline tickets to compensate for the revenue loss resulting from NAFTA, +1.41%), and event 22 (the TV debate where Al Gore successfully countered Ross Perot's arguments against NAFTA, +0.91%)

The F-statistic on the joint effect of all the news on the market portfolio is 0.77894; for this value we cannot reject the null hypothesis that the combined effect of the NAFTA news on the market portfolio was zero. However, if we concentrate on the two events that were significant for the market, the strong positive response in both cases suggests that Mexican firms on average were expected to benefit from NAFTA. This can be confirmed by looking at the signs of the t-statistics for the parametric estimation and nonparametric tests. For example, the news from event 7 implied a serious blow to NAFTA and, not surprisingly, all the tests suggest a negative effect. For 11 of the 22 event windows (*D05, D06, D07, D08, D10, D11, D12, D17, D18* and *D22*) , it is possible to make a prior "guess" about the sign of the effect on the market, based on the interpretation of the corresponding news (see Table 1). For eight of these event windows, the three different test statistics support the prior that the market reacted positively to favorable news about NAFTA.

Table 3

Market-Level Estimates

Table 3
Market -level estimates

Event	Days in Event	Coefficient (Std. Deviation)	Total Return	T- Statistics: Sign Test	T- Statistics: Rank Test
D01	4	0.001253	0.501	2.7293**	0.649
		(0.002478)			
D02	4	-0.000263	-0.105	2.2011**	0.166
		(0.002478)			
D03	5	0.000996	0.498	2.2011**	-0.039
		(0.002224)			
D04	4	-0.000994	-0.397	-0.616	-0.720
		(0.002478)			
D05 (-)	5	-0.000899	-0.449	-2.2011**	-1.401
		(0.002224)			
D06 (+)	4	0.002459	0.984	2.3772**	1.734
		(0.002478)			
D07 (-)	4	-0.001532	-0.613	-1.321	-1.031
		(0.002478)			
D08 (+)	5	0.000457	0.228	3.2576**	0.798
		(0.002224)			
D09	3	-0.001098	-0.329	-0.792	-1.077
		(0.002851)			
D10 (+)	5	0.002009	1.005	2.9054**	0.582
		(0.002224)			
D11 (-)	5	0.001384	0.692	1.6728*	0.746
		(0.002224)			
D12	7	0.004595**	3.2165**	5.0185**	1.9604**
		(0.001894)			
D13	4	0.002304	0.922	2.7293**	0.212
		(0.002478)			
D14	4	0.000248	0.099	0.440	-0.016
		(0.002478)			
D15	4	-0.002190	-0.876	-1.6728*	-1.557
		(0.002478)			
D16	3	-0.001387	-0.416	-3.7859**	-0.515
		(0.002851)			
D17 (+)	5	0.001046	0.523	1.497	0.116
		(0.002478)			

D18 (+)	4	0.003099 (0.00347)	1.240	-1.321	0.714
D19	4	0.003546 (0.002851)	1.419	3.9620**	1.485
D20	5	0.001276 (0.002224)	0.638	0.616	-0.599
D21	6	-0.000844 (0.002038)	-0.507	-0.968	-0.243
D22 (+)	3	0.003041 (0.002851)	0.912	0.440	0.767
D23(+)	7	0.002960 (0.001894)	2.072	4.8424**	1.6546*
F(22,3138) = 0.77984		0.7659			

* Significant at the 90% level.

** Significant at the 95% level.

Industry Level

Table 4 presents the industry-level estimations. The first column lists all 19 industries. The second column presents F-Statistics that correspond to the test of the joint explanatory power of all the news, while the third column tests for the additional explanatory power of a SUR regression where we allow the dummy coefficients to be different across firms. The last four rows present the actual coefficients of some event dummies by industry and their standard deviations.

The tests for the joint explanatory power of all the news reject with 95% confidence for the following industries: Paper/Cellulose, Iron/Steel, Electronics, Food/Tobacco, Cement, Telecommunications, Tourism and Financial Groups. For these industries, the NAFTA-related news had a significant impact on the returns of their firms. Also, Nonmetallic Minerals, Building Materials and Banks show relatively strong statistics (even if they are not significant at the 95% level), suggesting that NAFTA-related news also had an impact on these industries. If we look at the coefficients of the event windows for the different industries, we must note that event 23 (the final approval date) had a significant impact on many industries (12 out of 19). In all but two cases (Paper/Cellulose and Tourism), returns after the approval were positive. The negative returns of Paper/Cellulose and Tourism may suggest that investors expected these industries to be negatively affected by NAFTA. Event 12 (conclusion of the side agreements) had a significant effect on 8 industries, and all the signs were all positive with the exception of the textile industry. Events 5 and 7 correspond to news that were unfavorable to NAFTA (differences regarding trade sanctions in the side agreements/ requirement of an Environmental Impact Statement); the overall effect of these two events was very weak. However, the industries that had significant positive abnormal returns on the final approval date tended to have negative returns on these two events, particularly: Paper/Cellulose, Iron/Steel, Electronics, Food/Tobacco, Textiles, Cement, Transportation and Insurance.

Table 4
Industry-level Estimates

Industry	F-Statistics: All news vs. Intercept	F-Statistics: Diff. Coef. vs. Same Coef.	Individual Coefficients: D05 (Std. Dev.)	D07 (Std. Dev.)	D12 (Std. Dev.)	D19 (Std. Dev.)	D22 (Std. Dev.)
CHEMICAL	0.6086	0.8378	-0.0003	-0.0030	0.0033	0.0005	0.0023
			(0.0031)	(0.0031)	(0.0048)	(0.0048)	(0.0031)
PAPER/ CELLULOSE	1.9918**	1.0570**	-0.0004	0.0012	0.0277**	0.0061	-0.0111**
			(0.0035)	(0.0035)	(0.0055)	(0.0055)	(0.0035)
IRON/STEEL	1.8460**	-	-0.0196	-0.0063	0.0223	-0.0114	0.0448**
			(0.0122)	(0.0122)	(0.0191)	(0.0191)	(0.0122)
ELECTRONICS	2.0229**	0.7715	0.0002	-0.0014	0.0054	0.0007	0.0295**
			(0.0041)	(0.0041)	(0.0063)	(0.0063)	(0.0041)
HEAVY EQUIPMENT	0.1849	0.5274	0.0008	0.0000	-0.0006	0.0000	0.0016**
			(0.0008)	(0.0008)	(0.0011)	(0.0013)	(0.0008)
FOOD/ TOBACCO	2.5757**	0.6655	-0.0018	-0.0023	0.0083**	0.0112**	0.0062**
			(0.0024)	(0.0024)	(0.0031)	(0.0038)	(0.0027)
TEXTILES	0.4152	1.1647	-0.0022	-0.0001	-0.010**	-0.0058	0.0094**
			(0.0028)	(0.0031)	(0.0035)	(0.0043)	(0.0028)
MINERALS	1.2147	-	-0.0049	0.0001	0.0436**	0.0020	0.0135
			(0.0089)	(0.0089)	(0.0113)	(0.0138)	(0.0089)
CEMENT	2.2593**	1.35098**	-0.0038	-0.0033	0.0108*	0.0130*	0.0096**
			(0.0044)	(0.0044)	(0.0057)	(0.0069)	(0.0044)
MATERIALS	1.3207	0.8163	-0.0013	-0.0088*	-0.0016	0.0014	0.0057
			(0.0051)	(0.0051)	(0.0079)	(0.0079)	(0.0051)
RETAIL	0.7281	0.8051	-0.0001	0.0005	0.0032**	0.0000	0.0013
			(0.0012)	(0.0010)	(0.0016)	(0.0000)	(0.0012)
TRANSPORTATION	0.8229	0.3671	-0.0008	0.0010	0.0146	0.0292	0.0267**
			(0.0084)	(0.0084)	(0.0107)	(0.0184)	(0.0093)
TELECOMM	2.8154**	0.2528	-0.0027	-0.0081	0.0237**	0.0384**	0.0112
			(0.0079)	(0.0079)	(0.0101)	(0.0174)	(0.0088)
TOURISM	2.6618**	3.18325**	0.0001	-0.0015	0.0017	0.0053	-0.0184**
			(0.0025)	(0.0028)	(0.0032)	(0.0039)	(0.0025)
INSURANCE	0.5736	1.0162	-0.0003	0.0004	0.0010	-0.0006	0.0061**
			(0.0034)	(0.0031)	(0.0034)	(0.0048)	(0.0031)
BANKS	1.3919	0.8601	-0.0034	-0.0071**	0.0011	-0.0007	0.0011
			(0.0036)	(0.0028)	(0.0031)	(0.0043)	(0.0031)
BROKERAGE HOUSES	0.2592	0.5252	-0.0002	-0.0002	-0.0002	-0.0002	-0.0002
			(0.0051)	(0.0046)	(0.0051)	(0.0072)	(0.0046)
FIN. GROUPS	2.3738**	1.03749**	0.0006	0.0002	0.0037*	0.0005	0.0102**
			(0.0038)	(0.0017)	(0.0019)	(0.0027)	(0.0017)
MINING	0.3760	0.1957	-0.0013	0.0071	-0.0098	-0.0018	0.0141*
			(0.0070)	(0.0070)	(0.0109)	(0.0109)	(0.0078)

Figures 39 and 40 show the industry returns for events 7 and 23, and 22 and 23 respectively (the industries with significant returns for event 23 are underlined). In the first case, a "positive" vent is plotted against a "negative" event while in the second case, two "positive" events are plotted together. The relationships are not very strong, but the graphs suggest a negative correlation in the first case (ρ=-0.14) and a positive one in the second case (ρ=+0.14), suggesting that those industries that had positive returns after good news also had negative returns after bad news.

Figure 39
Industry Returns
Events 7 and 23

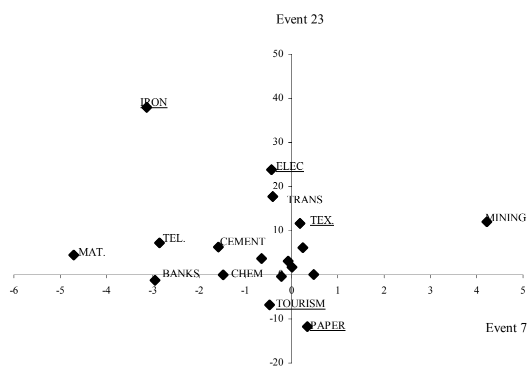
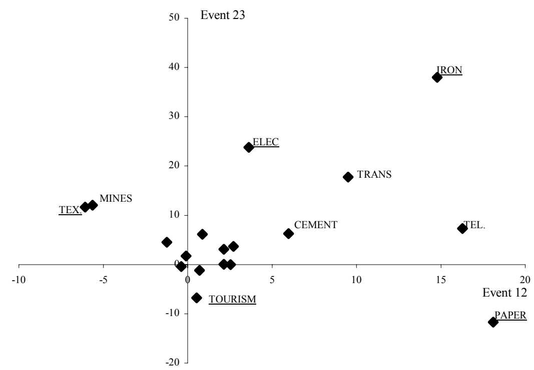


Figure 40
Industry Returns
Events 22 and 23



In Tables 5 and 6, I present some industry data that may help explain the previous findings about the price response to the news for manufacturing firms. In particular, I consider (1) the actual tariff reduction for US imports from Mexico and Mexican imports from the US, as reported by the Office of the President of the United States in a 1997 report on the operation of NAFTA, (2) the evolution of the trade flows between Mexico and the rest of North America, calculations based on the Handbook of North American Industry (which reports data from the US Bureau of the Census for US-Mexico trade and from Statistics Canada for the Canada-Mexico trade), (3) the share of labor in costs and (4) the earnings per worker (obtained by dividing total remunerations by the total value of production and number of workers respectively, based on data from Mexico's National Institute of Statistics, Geography and Informatics), (4) the elasticity of scale, as estimated by Hernandez (1985), (5) the C4 concentration index, (6) the participation of foreign capitals in total investment (6) the advertisement share of costs, all three as computed by Dominguez and Brown (1997). The earnings per worker are included as an indicator of an industry's use of relatively skilled labor (for example, the chemical industry appears as a relatively labor intensive industry, but a look at earnings indicates that its high labor share may be due to its use of highly skilled workers). The C4 index, which is the market share of the four largest firms of each industry, is used here as a proxy of the monopolistic rents that firms earn in each market. Finally the advertisement share of costs are included to indicate the degree of product differentiation: firms in industries where product differentiation is important tend to invest more in advertisement.

Let's first consider the tariff reductions of Mexico and the US in percentage points. In general, Mexico reduced its tariffs by much more than the US, due to the fact that the average pre-NAFTA tariffs were much higher in Mexico than in the US. If we look at Mexico's trade balance with the rest of North America in 1993, we can see that Mexico agreed to larger tariff reductions in the industries in which it had a trade surplus, the only exception being the Heavy Equipment industry. Consider the case of Electronics, Minerals and Textiles. These three industries appeared to have positive returns after favorable news about NAFTA. In all these cases, Mexico had a positive trade balance with North America in 1993, and the US substantially reduced its tariffs under NAFTA. In all three cases, Mexico's initial trade surplus with North America had considerably widened by 1997 (this result is arguably more a consequence of the 150% depreciation in the peso between these dates, than a consequence of NAFTA) . Heavy Equipment and Iron and Steel also had positive responses, but were initially in a trade deficit. However, by 1997 Heavy Equipment already registered a surplus with the rest of North America and Iron/Steel had closed most of its deficit. The Food/Tobacco industry also closed part of its initial deficit, but this is not sufficient to explain the strong positive response of its firms to the NAFTA news. The chemical industry and the Paper/Cellulose industry are special cases as they did not show a significant positive response to favorable news. In the first case, the trade deficit with North America widened considerably, while in the second case, it decreased.

In general, it seems like investors expected that the sectors with initial trade surpluses would expand after NAFTA. In some cases the post-NAFTA performance validates this expectation. However, we cannot deduce from this observation that investors were able to predict the trade performance of the industries after NAFTA, because much of this performance is due to exchange rate depreciation, and by 1993 nobody expected the peso to fall in such a sharp way. This can be seen in Figures 41 and 42, which returns near the final approval date against the initial trade balance of the industries and against the differential rates of growth of exports minus imports. In Figure 41 we can see a very strong positive relation between an industry's net exports in 1993 and the price response after the approval date (Event 23). Figure 42 shows an even stronger positive relationship (corr=0.77) between the returns on approval and the trade balance after four years, in 1997. This result should be taken with caution, however, since there were significant structural changes in between. (for example, the paper industry had a relatively strong export growth in spite of implicit predictions.)

With respect to the variables that could have played a role in determining the comparative advantage of the different industries, the labor share of the costs (see Fig 43) apparently didn't have any effects. However it is interesting to note that two of the sectors with positive returns after the approval were the most labor intensive (Electronics and Textiles) and we are able to see a weak positive relation between labor share and the returns. For the elasticity of scale (Fig. 44) there is a weak negative correlation (-0.18), which supports the theory that NAFTA would negatively affect the sectors with economies of scale. For all other industries, the elasticity of scale seems strongly negatively correlated with the returns near the approval day, as we would expect (the correlation coefficient without Electrical Industry is -0.80). The Concentration index C4 (Figure 45) is positively correlated with the returns, which goes against the predictions of the model. The participation of foreign investment (Figure 46) is very weakly positively correlated with to the returns.

Table 5
Industry Trade

Industry	Tariff Red. 92-96 [1] US %	Tariff Red. 92-96 [1] Mexico %	N. America Imp. from Mex. [2] 1993 M. US$	N. America Imp. from Mex. [2] 1997 M. US$	N. America Imp. from Mex. [2] Growth %	Mex. Imp. From N. America [2] 1993 M. US$	Mex. Imp. From N. America [2] 1997 M. US$	Mex. Imp. From N. America [2] Growth %	Trade Balance 1993 M. US$	Trade Balance 1997 M. US$
CHEMICAL	0.75	6	1,177	2,563	117.8	4,682	8,845	88.9	-3,505	-6,282
PAPER/ CELLULOSE	0.5	4.9	75	223	198.1	264	329	24.9	-189	-106
IRON/ STEEL	-	-	1,276	3,181	149.2	1,946	3,264	67.7	-670	-83
ELECTRONICS	2.2	9	11,600	22,680	95.5	8,261	16,368	98.1	3,339	6,312
HEAVY EQUIPMENT	1.1	10.2	10,198	26,668	161.5	10,494	18,127	72.7	-296	8,541
FOOD/ TOBACCO	1.4	5.6	939	1,751	86.5	2,057	2,454	19.3	-1,118	-703
TEXTILES	5.8	14.4	2,612	7,113	172.3	1,810	3,814	110.6	802	3,299
MINERALS	1.8	9.7	635	1,161	82.9	368	563	52.9	267	598

Sources: 1. Clinton (1997)
2. Creamans (1999)

Table 6
Industry Characteristics

Industry	Labor Share [3] %	Avg. Year Earnings [3] US$	Scale Elast. [4]	C4 Index [5] 1993, %	Foreign Part. [5] 1993, %	Adv. Costs [5] 1993, %
CHEMICAL	17.3	14,958	0.47	51	45	2.0
PAPER/ CELLULOSE	15.3	10,585	0.61	58	6	0.6
IRON/ STEEL	9.6	14,607	0.20	76	11	0.0
ELECTRONICS	25.6	8,876	0.82	-	-	-
HEAVY EQUIPMENT	10.2	13,079	0.52	69*	44*	0.7*
FOOD/ TOBACCO	9.9	9,482	0.18	65	17	3.5
TEXTILES	25.5	6,786	0.28	58	18	0.9
MINERALS	16.5	14,360	0.33	53	9	0.4

* Includes electronics

Sources: 3. Computed from INEGI (1993)
4. Hernandez (1985)
5. Dominguez and Brown (1997)

Figures 41-46
Industry Characteristics and
Response on Approval Day

Figure 41: Trade Balance in 1993

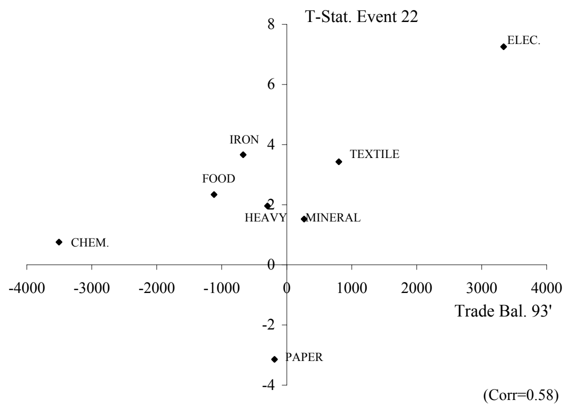


Figure 42: Trade Performance 1993-1997

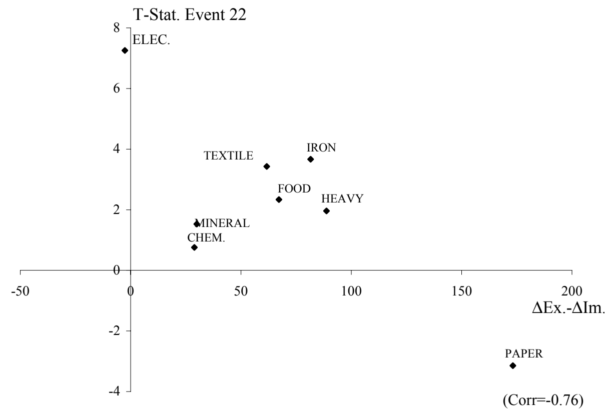


Figure 43: Labor Share in Value

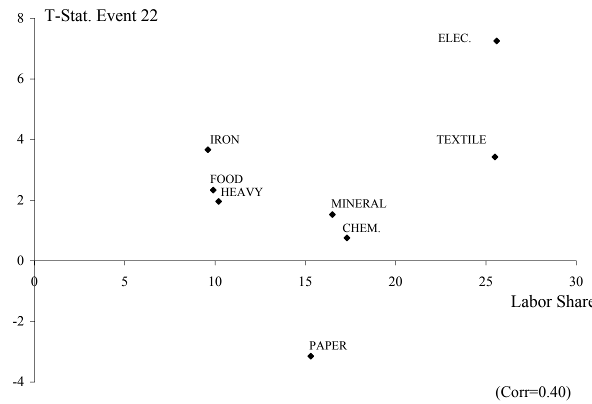


Figure 41: Scale Elasticity

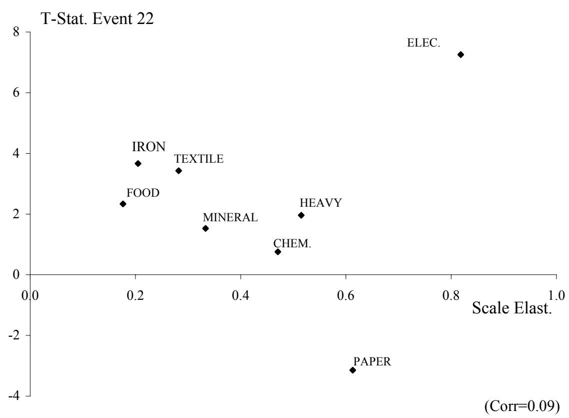


Figure 41: C4 Concentration Index

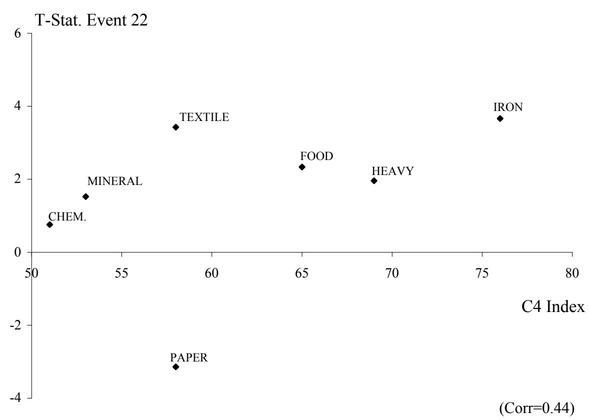
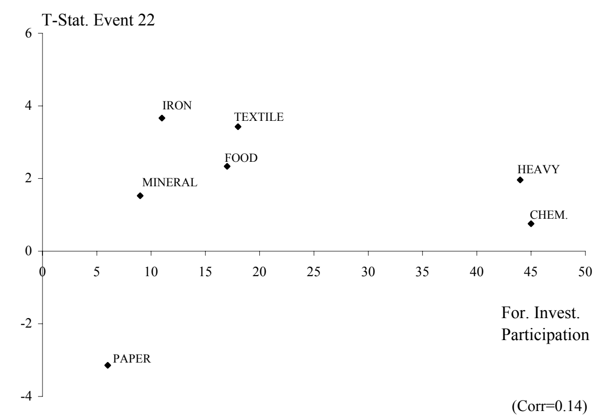


Figure 41: Foreign Investment Participation



Finally, the second set of F-tests in Table 4 measures the additional explanatory power the unrestricted model where we let the coefficients vary across firms. A rejection value for this test may be due to firm-specific characteristics, product differentiation or the aggregation of different types of goods into broad categories. The industries where the unrestricted alternative had significant additional explanatory power are: Paper/Cellulose, Cement, Tourism and Financial Groups. For the first two cases, the result seems puzzling if we consider that these are not sectors where product differentiation seems to play an important role (the cost share of advertisement for Paper/Cellulose is only 0.6). The heterogeneity of the coefficients seems to be more related to firm characteristics and the product subtypes within different industrial categories than to product differentiation. The Financial Group sector is a special case, as it is not really a service industry, it is comprised of big family conglomerates which have investments in a variety of industries.

Firm Level

Figures 48 and 49 show scatter plots of the t-statistics of the returns within selected event windows for all the individual securities. Neither scatter diagram shows a strong positive or negative correlation. We can note, however, that a lot of the securities are clustered in the lower right quadrant in both cases. This suggests that a lot of the stocks were affected positively by events 19 and 22 and negatively by events 5 and 7.

Figure 48
Test Statistics
Firm Level, events 7 and 22

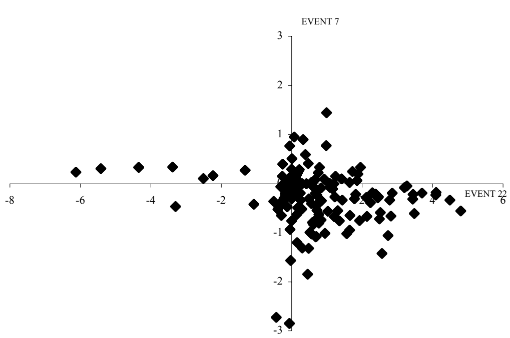
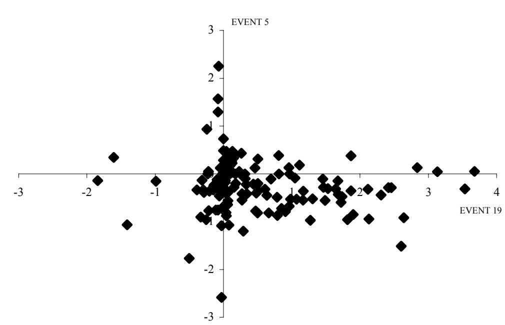


Figure 49
Test Statistics
Firm Level, events 5 and 19



Tables A4-A6 of Appendix A present the t-statistics of the coefficients of the dummy variables from regression (14) on all the individual securities. For the Chemical industry, all the firms had nonsignificant returns on the final approval date, except *CELANES*, and the only security that rejected the joint test for the significance of all the event dummies is *REGIOE2*; this is mainly due to its return on event *D02*, which is highly atypical and probably due to a shock to this particular security.

For the Paper/Cellulose industry, *KIMBER2* (Kimberly Clark de México) had strong returns after the conclusion of the side agreements, while three other securities had significant negative returns after the approval date. This pattern is atypical for this industry, and confirms the previous claim that the Paper/Cellulose sector would have negative benefits from NAFTA. However, the case of *KIMBER2* also tells that the response varied widely across securities, confirming the previous result that a regression with different dummy coefficients for each firm had significantly more explanatory power than the basic estimation for the Paper/Cellulose industry.

The Iron/Steel industry is composed of a single firm, *TAMSA* (producer and exporter of seamless steel pipes), which rejects the F test for the joint explanatory power of all the dummies and had very strong positive returns after the conclusion of the side agreements and the approval date, and strong negative returns after the bad news *D05* and *D07*. (differences about the sanctions mechanism for the side agreements and the Environmental Impact Standard requirement).

For the Electronics industry, most firms showed strong, significant returns on the approval date, but not on the conclusion of the side agreements. The Food/Tobacco industry includes mostly firms in the processed foodstuffs sector, and two bottlers of soft drinks and beers (*ARGOS*, *FEMSA* and *GGEMEX*), as well as a tobacco and biotechnology firm: *MODERNA*. There seems to be considerable heterogeneity across returns. In particular, the soft drink bottlers show particularly strong positive returns after the good news (12 and 22) and negative returns after the bad news (5 and 7). For the textile industry, only one firm had significantly positive returns after the approvcl date (*PARRAS*). For the cement industry, most firms had strong positive returns after the good news, and negative returns after the bad news, with the exception of GCC, which had a negative return on the approval date.

The firms from the nontradeable services industries show a great level of heterogeneity. For example, the large supermarket-discount store chain *GIGANTE* showed a strong negative return after the approval date, while the department stores *LIVEPOL* (El Puerto de Liverpool) and *SANBORN* (Sanborn's) had strong positive returns. The case of the tourism industry is worth mentioning. In the previous tests, this industry appeared as strongly negatively affected by favorable news to NAFTA. If we look at the effect by firm, however, we can see that most of this effect can be attributed to a single event (22) and a single firm, the hotel chain *ARISTOS*, whose price decreased dramatically after the approval date, maybe not in connection with the NAFTA.

Conclusions

The empirical evidence supports the hypothesis that the news about NAFTA had a significant impact on the Mexican Stock Market. Testing for the joint explanatory power of all the event dummy variables on the market portfolio fails to reject the null hypothesis at the 95 % confidence level. However, the strong positive response of the market on the approval date (Event 22) and on the day the side agreement negotiation was concluded (Event 12) suggests that on average, Mexican stocks tended have positive returns after news that were favorable to NAFTA.

The news that had t6he strongest impacts on the market were: a serious blow to NAFTA when a federal judge required an environmental impact statement (07/01, negative), the conclusion of the negotiation of the side agreements (08/13, positive), the TV debate between Al Gore and Ross Perot (11/11, positive) and the final approval of the agreement (11/18, positive). The two last events were very close in time and jointly accounted for an almost 3% increase in the value of the market portfolio. The signs of the effects of particular news on the market strongly suggest that stock prices increased after favorable news and decreased after unfavorable news. There are very few exceptions and those occur when the news have an ambiguous meaning.

In general, most securities had positive abnormal returns after favorable news about NAFTA. The only industries which seem to expect losses from the agreement are: Print/Edition and Tourism. Some industries clearly had a stronger response than others. This differentiation may be due to the expected industry benefits from free trade. The industries where NAFTA news had a significant impact are: Paper/Cellulose, Iron/Steel, Electronics, Food/ Tobacco, Cement, Telecommunications, Tourism and Financial Groups. Also Textiles, Building Materials and Banks show evidence of strong effects. The industries where the response was weakest were: Insurance, Brokerage Houses, Chemicals, Transportation, Retail and Mining. Even though most manufacturing sectors seemed to be affected by the news, the result that stock prices tended to increase after favorable news applies to the nontradeable industries as well as to the tradable industries.

The returns of manufacturing industries after the news about the final approval of the agreement seem strongly positively correlated with the initial trade surplus with the US and Canada, and with the surplus after four years. This suggests that, in general, investors expected that the sectors which originally had a trade surplus would do even better under the NAFTA, and this was confirmed to some extent after the first four years of the agreement. These same returns were weakly positively correlated with the share of labor in costs, negatively correlated with the elasticity of scale, very weakly positively correlated with the C4 concentration index, and uncorrelated with the participation of foreign investment in the different industries.

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Table A1
Industry Level Estimates
Test Statistics

Industry	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22
CHEMICAL	-0.016	-3.595	0.120	-0.020	-0.097	0.143	-0.986	-0.022	-0.038	1.251	-0.016	0.682	0.735	-0.011	-0.020	-0.011	-1.044	-0.016	0.095	0.153	-1.747	0.755
PAPER/ CELLULOSE	2.208	0.408	-0.476	0.233	-0.118	0.578	0.348	-0.526	0.129	0.675	-1.684	5.031	1.090	0.602	0.460	-0.174	0.210	0.288	1.100	2.124	3.331	-3.142
IRON/STEEL	-1.477	3.156	0.191	2.219	-1.605	-0.175	-0.518	0.165	-0.561	0.658	0.548	1.168	0.135	1.418	0.312	0.096	0.395	0.227	-0.598	0.007	1.560	3.664
ELECTRONICS	-3.533	-0.155	-0.127	-0.265	0.039	-0.305	-0.339	1.117	-0.070	-0.459	-0.265	0.856	1.676	-0.155	-0.265	-0.155	-0.218	0.000	0.105	0.765	0.009	7.257
HEAVY EQUIPMENT	0.175	0.121	0.211	-0.301	0.915	-0.898	0.018	-0.122	-1.701	0.200	0.014	-0.571	-0.542	0.008	0.014	0.000	0.012	0.012	0.012	0.014	-1.393	1.960
FOOD/ TOBACCO	0.545	1.428	0.407	-1.042	-0.744	-0.008	-0.952	0.366	-0.341	1.035	1.883	2.721	-0.529	0.331	-0.446	0.000	-0.023	0.886	2.990	1.018	-1.280	2.337
TEXTILES	-0.739	-0.056	-0.659	-0.475	-0.804	-0.232	-0.028	-0.472	-0.195	-0.096	-0.096	-2.885	0.116	-7.741	-0.361	0.000	1.177	1.544	-1.347	0.845	-0.079	3.426
MINERALS	0.394	0.583	0.077	-0.274	-0.548	0.363	0.015	1.414	-1.467	0.128	0.398	3.850	-0.669	-0.744	-1.152	0.000	-0.170	0.845	0.148	-0.559	-0.534	1.526
CEMENT	1.568	-0.157	2.655	0.129	-0.850	0.629	-0.750	2.940	-0.298	0.332	-0.605	1.918	1.035	-1.338	-0.628	0.000	-1.201	1.085	1.880	0.111	0.864	2.181
MATERIALS	-0.063	-0.006	0.209	-0.076	-0.250	0.262	-1.746	-0.088	-0.115	2.145	-0.063	-0.203	-0.063	-0.045	-0.076	-0.045	2.308	-0.063	0.172	0.289	-4.000	1.119
RETAIL	0.910	-2.073	0.001	0.002	-0.064	0.583	0.515	0.234	0.708	-0.594	-0.542	2.000	1.096	0.093	-0.630	-0.533	0.669	0.000	0.000	-3.260	0.000	1.089
TRANSPORTATION	2.870	0.137	0.439	0.140	-0.094	0.986	0.120	0.302	-0.692	0.779	1.611	1.360	0.840	0.118	-0.720	-1.991	0.794	0.000	1.587	-0.669	0.000	2.865
TELECOMM	0.426	-0.739	0.546	0.631	-0.339	1.232	-1.019	0.790	-1.044	2.977	0.181	2.342	0.240	-0.220	-0.893	-0.499	0.503	0.000	2.208	0.092	0.000	1.273
TOURISM	0.201	0.104	0.572	-0.104	0.049	0.169	-0.532	-6.915	-0.388	-0.680	0.322	0.533	0.409	0.402	-0.579	-0.135	-0.081	0.000	1.359	-0.085	0.298	-7.327
INSURANCE	0.795	-0.123	-0.159	0.030	-0.075	-0.171	0.129	-0.149	-0.265	-0.935	0.809	0.287	-2.163	-0.533	0.102	-0.087	1.861	0.000	-0.123	4.400	-1.084	1.997
BANKS	-0.102	0.883	0.253	-0.635	-0.953	0.503	-2.551	-0.758	0.939	0.900	0.617	0.369	1.080	1.737	0.964	-0.379	0.360	0.000	-0.161	-0.691	-0.100	0.342
BROKERAGE HOUSES	-0.039	2.374	-0.050	-0.045	-0.045	-0.045	-0.050	-0.039	-0.039	-0.039	-0.039	-0.045	-0.039	-0.032	-6.664	-0.023	-0.039	0.000	-0.032	-0.039	6.639	-0.050
FIN. GROUPS	0.251	-2.230	0.810	0.234	0.152	-0.618	0.110	0.414	-0.972	0.645	0.091	1.949	1.466	1.144	-0.378	-0.227	-0.004	0.000	0.190	-0.009	-0.820	5.920
MINING	-0.026	0.000	-0.148	-0.058	-0.191	-1.029	1.020	1.680	1.058	1.036	0.039	-0.902	0.136	-0.003	-0.487	-1.027	-0.157	0.000	-0.166	-2.003	-0.112	1.815

Table A2
Nonparametric Sign Tests
Test Statistics

Industry	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22
CHEMICAL	1.000	0.333	1.667	1.000	1.000	1.667	1.667	1.000	1.000	1.667	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.667	1.667	0.333	1.667
PAPER/ CELLULOSE	0.000	0.707	0.000	0.707	-0.707	0.707	0.707	0.707	0.707	1.414	0.707	1.414	0.707	0.707	0.707	0.000	0.707	0.000	1.414	1.414	0.000	0.000
IRON/STEEL	-1.000	1.000	-1.000	1.000	-1.000	-1.000	-1.000	-1.000	-1.000	1.000	1.000	1.000	-1.000	1.000	1.000	-1.000	1.000	1.000	-1.000	-1.000	1.000	1.000
ELECTRONICS	-1.342	-0.447	-0.447	-0.447	-1.342	-0.447	-0.447	0.447	-0.447	-1.342	-0.447	0.447	-0.447	-0.447	-0.447	-0.447	-0.447	-1.342	-0.447	0.447	-0.447	2.236
HEAVY EQUIPMENT	-0.378	-0.378	-0.378	-1.134	0.378	-1.134	-0.378	-1.134	-1.134	0.378	-0.378	-1.134	-1.134	-0.378	-0.378	-2.646	-0.378	-0.378	-0.378	-0.378	-1.134	0.378
FOOD/ TOBACCO	-0.277	-0.277	-1.387	-2.496	-3.051	-0.277	-1.941	-0.832	-1.941	0.832	0.832	1.941	-0.277	-1.387	-1.941	-3.606	-1.941	0.277	3.051	0.832	-1.941	2.496
TEXTILES	-0.577	0.577	-0.577	-0.577	-0.577	-0.577	0.577	-0.577	-0.577	0.577	0.577	-1.732	0.577	-0.577	-0.577	-1.732	1.732	1.732	-0.577	0.577	0.577	1.732
MINERALS	1.000	1.000	-1.000	-1.000	-1.000	1.000	-1.000	1.000	-1.000	1.000	1.000	1.000	-1.000	-1.000	-1.000	-1.000	-1.000	1.000	1.000	-1.000	-1.000	1.000
CEMENT	2.828	-0.707	0.707	-0.707	-1.414	2.121	-2.828	2.828	-2.121	0.707	-0.707	2.121	0.000	0.000	-2.121	-2.828	-0.707	2.828	2.828	-0.707	1.414	2.828
MATERIALS	0.000	1.000	1.000	0.000	0.000	1.000	1.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	1.000	-1.000	1.000
RETAIL	0.471	-0.471	0.471	-0.471	0.000	1.414	0.000	0.943	0.943	0.471	0.000	1.414	0.471	0.471	0.000	0.000	0.471	0.943	0.943	0.000	0.000	0.471
TRANSPORTATION	2.000	0.000	1.000	0.000	0.000	1.000	0.000	1.000	-1.000	2.000	2.000	2.000	1.000	-1.000	-1.000	-1.000	0.000	-1.000	1.000	-1.000	-1.000	2.000
TELECOMM	0.577	-1.732	1.732	0.577	-1.732	1.732	-1.732	1.732	-1.732	1.732	1.732	1.732	0.577	-0.577	-1.732	-1.732	1.732	0.577	1.732	-0.577	-1.732	1.732
TOURISM	1.134	-0.378	1.134	-0.378	-0.378	1.134	-1.134	-1.134	0.378	0.378	0.378	1.890	1.134	0.378	-1.134	-1.134	-0.378	-2.646	1.134	-1.134	1.134	0.378
INSURANCE	-0.447	-1.342	-0.447	-0.447	0.447	-1.342	-1.342	-0.447	-1.342	-0.447	-0.447	-0.447	-1.342	-0.447	-1.342	-1.342	0.447	-2.236	-0.447	1.342	-0.447	0.447
BANKS	0.000	1.265	0.632	-1.265	-1.265	0.632	-1.265	-1.265	0.632	0.632	0.000	1.265	1.265	1.265	0.632	-1.265	0.632	-3.162	0.000	-1.897	0.000	1.897
BROKERAGE HOUSES	0.577	0.577	0.577	0.577	0.577	0.577	0.577	0.577	0.577	0.577	0.577	0.577	0.577	0.577	-0.577	0.577	0.577	-1.732	0.577	0.577	0.577	0.577
FIN. GROUPS	-1.213	0.243	0.243	-1.698	-1.698	-1.698	-1.213	1.213	-1.213	-0.728	-0.243	2.183	0.243	-0.243	-2.183	-1.698	-1.698	-4.123	-0.243	-1.213	-1.213	1.698
MINING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.000	1.000	1.000	-1.000	0.000	-1.000	-1.000	-1.000	-2.000	-1.000	-2.000	0.000	-2.000	0.000	1.000
TOTAL	0.786	-0.087	0.961	-2.184	-2.883	1.311	-2.359	1.485	-1.660	2.359	0.961	4.106	0.612	-0.262	-2.883	-4.980	-0.262	-2.708	3.233	-0.612	-1.311	5.330

Table A3
Nonparametric Rank Tests
Test Statistics

Industry	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22
CHEMICAL	-2.147	-1.784	-0.192	-0.814	-1.046	1.273	-0.059	0.331	-0.496	1.735	0.761	0.996	1.643	1.199	1.347	1.256	1.473	1.183	1.969	2.450	1.366	3.908
PAPER/ CELLULOSE	0.666	-0.155	0.311	0.518	-0.914	2.147	1.236	0.093	0.256	1.410	-0.602	0.369	0.481	0.792	0.866	-0.419	-0.192	-0.670	1.429	2.284	1.928	-0.340
IRON/STEEL	-1.784	0.659	-0.298	1.554	-2.390	0.844	-0.999	0.483	-1.991	1.629	0.609	0.476	0.600	1.244	0.866	0.128	0.093	-0.094	0.155	0.033	2.121	1.806
ELECTRONICS	-2.161	0.096	-0.298	0.866	-1.397	0.555	-1.014	1.172	-0.444	-0.040	0.205	0.179	0.207	0.718	0.496	-0.162	-0.365	-0.293	1.562	0.986	1.511	3.148
HEAVY EQUIPMENT	0.407	0.637	0.569	-0.733	-0.073	-0.799	-1.088	-0.172	-0.658	0.192	-0.053	-0.901	-1.473	0.377	0.222	-0.376	-0.551	-0.450	1.110	0.609	-0.012	2.438
FOOD/ TOBACCO	1.147	0.385	-0.205	-1.562	-1.854	1.236	-0.555	0.225	-0.462	0.271	1.609	1.539	-0.377	0.363	-1.606	-0.376	0.199	1.193	1.695	0.801	0.151	2.107
TEXTILES	-2.369	0.533	-1.470	-1.584	-1.927	0.888	0.237	-0.622	-0.590	0.410	1.377	-0.705	1.073	-0.370	-1.473	-0.068	-1.460	1.256	0.015	1.165	0.568	1.125
MINERALS	-0.266	0.681	0.391	-0.607	-0.814	0.289	0.836	1.688	-2.470	0.503	0.503	1.751	-1.429	-0.229	-1.495	-0.017	-0.007	1.298	0.348	-0.033	0.508	1.367
CEMENT	-0.644	0.629	1.139	-0.807	-1.317	1.510	0.496	0.986	-2.205	1.754	0.073	0.168	-1.488	-0.429	-1.495	-0.350	0.538	0.837	0.377	1.966	-0.006	2.043
MATERIALS	0.326	0.407	0.331	-1.258	-1.185	2.561	-0.740	0.689	-0.735	0.761	-0.099	0.498	1.347	-1.325	-1.414	-0.513	-0.033	0.974	1.014	1.966	-0.900	2.038
RETAIL	0.792	-0.859	-0.013	-1.295	-0.874	1.939	-0.348	1.046	0.829	-0.622	0.079	2.076	1.858	-1.288	-1.429	-0.453	0.856	1.319	0.814	1.192	0.369	1.500
TRANSPORTATION	1.791	-0.703	0.960	-0.081	-1.198	1.421	-0.163	0.391	-0.872	0.497	0.933	1.080	0.984	0.340	-1.658	-0.709	1.115	0.974	-0.296	0.457	0.326	1.184
TELECOMM	0.266	-1.636	0.695	-0.081	-1.251	1.495	-1.288	1.364	-2.051	0.735	0.834	1.063	0.259	0.459	-1.614	-0.556	-0.013	1.361	0.977	0.503	-0.755	0.790
TOURISM	-0.437	0.052	2.615	-1.288	-0.351	1.998	-1.436	-0.185	0.137	-0.953	0.093	1.007	0.052	1.466	-1.606	-0.504	0.372	0.659	1.932	-1.006	1.191	-2.364
INSURANCE	-0.740	-0.178	1.059	0.007	0.675	1.414	-1.362	-0.364	-1.282	-0.265	0.755	0.543	-2.065	-1.295	-1.606	-0.615	1.261	0.461	1.266	0.728	-0.157	0.740
BANKS	-0.718	1.665	0.073	-1.399	-1.278	1.199	-1.584	-1.576	1.017	1.437	0.212	1.393	1.155	1.717	0.526	-0.675	0.398	0.523	-0.007	-1.549	0.266	0.834
BROKERAGE HOUSES	-0.725	1.998	0.026	-1.310	-1.231	1.110	-1.488	-1.516	0.915	1.331	0.205	1.337	1.029	1.599	-2.213	-0.632	0.372	0.523	0.007	-1.483	1.650	0.790
FIN. GROUPS	-1.540	0.170	0.993	-1.132	0.530	-1.066	-0.207	0.629	-0.513	0.377	0.424	2.009	1.828	0.489	-1.169	-0.479	-0.319	0.628	1.147	-0.397	0.187	3.035
MINING	-0.133	0.289	0.907	-0.259	-0.371	0.762	0.355	2.688	1.205	-0.007	1.231	-0.274	0.540	1.310	-1.606	-1.675	-0.425	0.628	1.206	-1.986	-0.520	1.998
TOTAL	-0.370	-0.096	0.828	-0.770	-0.933	1.229	-0.822	0.364	-1.402	0.477	0.894	1.841	1.199	0.111	-1.702	-1.188	0.471	1.403	2.213	0.867	-0.127	2.151

Table A4
Firm Level Estimates
Test Statistics

Firm	R^2	F	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22
CHEMICAL																								
CELANES	0.05	0.36	-0.050	0.046	0.562	-0.061	-0.395	0.661	0.297	-0.070	-0.142	-0.061	-0.050	-0.344	-0.050	-0.036	-0.061	-0.036	0.019	-0.036	0.439	0.702	0.131	2.465
LINDE	0.20	1.53	0.009	0.007	0.015	0.011	0.015	0.013	0.015	0.013	0.011	0.011	0.011	0.009	0.009	0.007	0.011	0.007	0.011	0.007	0.009	0.011	-5.778	0.015
LINDE2	0.20	1.55**	0.017	0.012	0.026	0.021	0.026	0.024	0.026	0.024	0.021	0.021	0.021	0.017	0.017	0.012	0.021	0.012	0.021	0.012	0.017	0.021	-5.806	0.026
NALCO	0.12	0.84	-0.094	-0.067	-0.146	-0.114	-0.146	-0.131	-2.810	-0.131	-0.114	3.123	-0.114	-0.094	-0.094	-0.067	-0.114	-0.067	-0.114	-0.067	-0.094	-0.114	-0.094	-0.146
OXY	0.13	0.92	0.226	0.161	0.353	0.276	0.353	0.317	0.353	0.317	0.276	0.276	0.276	3.160	3.107	0.161	0.276	0.161	0.276	0.161	0.226	0.276	0.226	1.144
REGIOEM	0.13	0.96	-0.007	-0.005	-0.011	-0.009	-0.011	-0.010	-0.011	-0.010	-0.009	-0.009	-0.009	-0.007	-0.007	-0.005	-0.009	-0.005	4.568	-0.005	-0.007	-0.009	-0.007	-0.011
REGIOE2	0.39	4.06**	0.194	-9.121	0.302	0.236	0.302	0.271	0.302	0.271	0.236	0.236	0.236	0.194	0.194	0.138	0.236	0.138	2.018	0.138	0.194	0.236	0.194	0.302
UCARBON	0.00	0.02	0.147	0.104	0.228	0.179	0.228	0.205	0.228	0.205	0.179	0.179	0.179	0.147	0.147	0.104	0.179	0.104	0.179	0.104	0.147	0.179	0.147	0.228
UCARBO2	0.00	0.02	0.140	0.099	0.218	0.170	0.218	0.196	0.218	0.196	0.170	0.170	0.170	0.140	0.140	0.099	0.170	0.099	0.170	0.099	0.140	0.170	0.140	0.218
PAPER/ CELLULOSE																								
AATENSA	0.19	1.48	0.141	0.100	0.219	0.171	0.219	0.197	0.219	0.197	0.171	0.171	0.171	0.141	0.141	0.100	0.171	0.100	0.640	0.100	0.141	3.140	3.255	-3.260
CRISOBA	0.17	1.28	3.924	0.018	0.039	0.030	0.039	0.035	0.039	0.035	0.030	0.030	-3.309	-1.081	0.025	0.018	0.030	0.018	0.030	0.018	0.025	0.030	0.025	0.039
CRISOB2	0.00	0.00	0.071	0.051	0.111	0.087	0.111	0.100	0.111	0.100	0.087	0.087	0.087	0.071	0.071	0.051	0.087	0.051	0.087	0.051	0.071	0.087	0.071	0.111
EMPAQ	0.14	1.02	-1.377	-0.134	-2.239	-0.229	-0.293	-0.263	0.125	-0.224	0.287	-0.095	0.150	0.447	-0.188	1.974	1.368	-0.134	-0.075	1.329	-1.473	0.317	-1.219	-1.877
KIMBER	0.20	1.51	-0.219	1.009	-0.312	1.035	-0.220	0.613	0.174	-0.389	-0.302	1.071	1.953	3.584	-0.289	-0.063	-0.602	-0.579	-0.274	0.303	2.685	2.132	-0.175	1.148
KIMBER2	0.39	3.96**	-0.057	-0.040	-0.089	-0.523	-0.169	-0.080	-0.089	1.096	-0.069	-0.069	-0.069	7.116	1.976	-0.315	-0.069	-0.040	-0.366	-0.040	0.992	-0.069	5.535	0.686
PONDER	0.19	1.50	1.532	0.199	1.628	0.341	-0.023	1.939	0.770	0.341	0.341	1.295	0.351	4.658	1.366	0.199	0.750	0.199	0.341	-0.793	0.333	0.298	-0.097	0.022
DIANA	0.16	1.22	0.135	0.096	0.211	0.165	0.211	0.190	0.211	-2.108	0.165	0.165	0.165	0.135	0.135	0.096	0.165	0.096	0.165	0.096	0.135	0.165	0.135	-4.614
IRON/ STEEL																								
TAMSA	0.23	1.83**	-1.491	3.143	0.168	2.200	-1.627	-0.196	-0.541	0.147	-0.579	0.639	0.533	1.152	0.121	1.406	0.293	0.086	-0.080	0.086	-0.612	-0.011	1.544	3.639
ELECTRONICS																								
ERICSON	0.24	1.94**	-0.147	-0.104	-0.228	-0.179	-0.228	-0.205	-0.228	-0.179	-0.179	-0.179	-0.179	-0.147	-0.104	-0.104	-0.179	-0.104	-0.179	-0.104	-0.147	-0.179	-0.147	6.372
ERICSO2	0.17	1.27	-1.991	-0.123	0.812	-0.211	-0.269	-0.242	-0.269	-0.211	-0.211	-0.211	-0.211	-0.173	-0.173	-0.123	-0.211	-0.123	-0.211	-0.123	-0.173	-0.211	-0.173	4.623
IEM	0.13	0.97	-0.249	-0.177	-0.388	-0.303	1.047	-0.348	-0.388	2.642	-0.303	-0.303	-0.303	1.525	2.495	-0.177	-0.303	-0.177	-0.303	-0.177	-0.249	1.495	-0.249	1.079
LATINCA	0.21	1.63**	-5.204	0.030	-0.200	0.052	-0.223	0.059	0.066	0.052	0.428	-0.320	0.052	0.506	-0.416	0.030	0.052	0.030	-0.136	0.000	0.488	0.410	0.478	2.530
LATINC2	0.00	0.05	0.120	0.085	0.187	0.146	-0.656	0.168	0.187	0.146	0.146	0.146	0.146	0.120	0.120	0.085	0.146	0.085	0.146	0.085	0.649	0.146	0.120	0.187
HEAVY EQUIPMENT																								
ACMEX	0.19	1.52	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.728
JDEERE	0.25	2.14**	-0.125	-0.073	-0.159	-0.143	0.693	-0.143	-0.159	-0.125	-0.125	-0.125	-0.125	-0.125	-0.125	-0.073	-0.125	0.000	-0.125	-0.073	-0.102	-0.125	-0.102	1.537
SPICER	0.14	1.01	1.298	0.327	0.526	-1.244	-0.148	-3.332	-0.148	-0.591	-0.116	-0.116	-0.116	-2.162	-2.060	-0.068	-0.116	0.000	-0.116	-0.068	-0.095	-0.116	-5.007	-0.148
SUDISA	0.04	0.29	-0.184	-0.107	-0.235	-0.211	-4.718	-0.211	-0.235	-0.184	-0.184	-0.184	-0.184	-0.184	-0.184	-0.107	-0.184	0.000	-0.184	-0.107	-0.151	-0.184	-0.151	-0.235
TREMEC	0.22	1.85**	-0.040	-0.023	-0.051	-0.046	2.181	-0.046	-0.051	-0.040	0.604	1.192	-0.040	-0.040	-0.040	-0.023	-0.040	0.000	-0.040	-0.023	-0.033	-0.040	-0.033	-0.051
TREMEC2	0.22	1.85**	0.034	0.020	0.044	0.039	0.044	0.039	0.044	0.034	-6.338	0.034	0.034	0.034	0.034	0.020	0.034	0.000	0.034	0.020	0.028	0.034	0.028	0.044
FOOD/ TOBACCO																								
ARGOS	0.22	1.80**	1.646	0.802	0.369	0.011	-0.898	1.343	-0.492	0.079	-0.397	1.816	2.816	3.260	0.459	0.673	-0.213	0.000	0.106	3.187	0.645	0.289	-0.807	1.392
ARGOS2	0.16	1.20	0.806	1.327	0.043	-0.015	-0.016	0.124	0.328	-0.454	0.580	1.202	2.218	1.875	0.458	-0.007	0.132	0.000	-0.044	3.312	1.052	1.713	-0.572	0.590
BIMBO	0.27	2.41**	-0.039	-0.145	-0.170	-0.285	-0.318	-1.174	-0.623	0.660	-0.248	-0.150	2.970	5.135	-1.238	-0.658	-1.804	0.000	-0.318	-0.145	2.894	-0.016	-0.416	-0.355
BIMBO2	0.28	2.57**	-0.421	0.057	0.254	-0.633	-0.797	-0.273	-1.797	1.031	-0.237	0.574	2.040	5.079	-0.754	0.385	-0.386	0.000	0.208	-0.138	4.193	0.819	-0.561	0.840
FEMSA	0.14	1.03	1.144	0.183	0.203	0.002	-0.289	0.651	-0.411	0.717	-0.356	0.888	0.681	2.971	0.658	0.490	-0.757	0.000	-0.293	1.478	1.793	-0.879	0.679	1.831
GEUPEC	0.10	0.58	1.951	-2.067	0.023	0.021	0.023	-0.306	-0.600	0.018	0.018	0.018	-0.405	0.701	1.259	0.011	0.018	0.000	0.018	0.011	1.502	0.777	0.015	1.168
GEUPEC2	0.26	2.22**	0.678	-0.037	-0.082	-0.074	-0.082	-0.074	-0.082	-0.064	-0.064	-0.064	-0.064	-0.064	-0.064	-0.037	-0.064	0.000	-0.064	-6.167	2.218	1.396	-0.053	1.667
GGEMEX	0.08	0.57	-0.045	0.891	-0.198	0.174	-0.078	0.439	0.184	0.023	0.229	-0.174	0.053	0.991	0.028	-0.154	0.188	0.000	0.743	2.613	0.756	1.186	-0.910	0.875
MASECA	0.10	0.72	0.947	0.169	-0.719	-0.298	-0.609	2.041	-0.330	0.421	0.052	2.278	1.516	1.070	-0.035	-0.148	-0.829	0.000	-0.037	-0.021	-0.030	-0.037	-0.030	-0.047
MASECA2	0.06	0.44	-0.110	-0.322	-0.288	-0.185	-0.629	0.901	-0.328	-0.052	-0.056	1.309	0.971	0.322	-0.114	-0.319	-0.549	0.000	-0.656	0.484	1.173	-0.883	1.195	0.753
MODERNA	0.09	0.67	-0.624	1.081	0.160	-1.268	-0.342	-0.434	-0.293	-0.096	-0.229	0.497	-0.358	-1.457	-0.229	-0.134	-0.263	0.000	-0.297	-0.134	2.226	-0.057	-0.188	1.730
TABLEX	0.09	0.65	-0.157	0.018	-0.652	0.035	-0.291	0.540	0.039	0.458	0.031	0.415	0.122	0.259	1.218	-0.129	0.287	0.000	-0.053	0.786	3.240	0.654	-0.348	0.232
UNIVASA	0.00	0.00	0.122	0.071	0.156	0.140	0.156	0.140	0.156	0.122	0.122	0.122	0.122	0.122	0.122	0.071	0.122	0.000	0.122	0.071	0.100	0.122	0.100	0.156

Table A5
Firm Level Estimates
Test Statistics

Firm	R^2	F	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22
TEXTILES																								
LUXOR	0.84	33.44**	1.884	0.077	0.169	0.152	0.169	0.152	0.169	0.132	0.132	0.132	0.132	-6.995	0.132	-26.076	0.132	0.000	0.132	0.077	0.108	0.132	0.108	0.169
TEXEL	0.12	0.87	-2.000	-0.069	-0.988	-0.705	-1.215	-0.326	-0.007	-0.705	-0.271	-0.118	-0.118	-0.895	0.213	1.060	-0.753	0.000	-1.127	-0.069	-2.076	1.352	-0.097	1.428
PARRAS	0.13	0.95	-0.164	-0.096	-0.210	-0.188	-0.210	-0.188	-0.210	-0.164	-0.164	-0.164	-0.164	-0.164	-0.164	-0.096	0.030	0.000	-0.164	3.053	-0.135	-0.164	-0.135	3.257
MINERALS																								
VITRO			0.405	0.591	0.093	-0.261	-0.534	0.377	0.030	1.429	-1.459	0.140	0.411	3.871	-0.659	-0.739	-1.143	0.000	0.241	1.176	0.158	-0.549	-0.526	1.545
CEMENT																								
APASCO2	0.19	1.46	-0.170	-0.099	4.424	0.541	-0.218	-0.196	-0.218	3.102	-0.170	-0.170	-0.170	-0.066	0.457	-0.099	-0.170	0.000	-0.170	-0.099	1.066	-0.170	-0.140	1.172
CEMEX	0.21	1.67**	1.880	0.101	-0.567	-0.090	-0.603	1.100	-0.499	0.897	-0.614	0.583	0.191	2.905	0.067	0.341	-0.700	0.000	0.330	1.890	2.949	-0.914	0.263	2.893
CEMEX2	0.21	1.71**	1.985	-0.061	-0.727	-0.114	-0.711	1.128	-0.592	0.871	-0.221	0.758	-0.218	3.411	-0.047	0.389	-0.903	0.000	0.261	2.213	3.286	0.106	1.104	1.102
CEMEX3	0.23	1.96**	2.623	-0.022	-0.613	-0.153	-0.711	1.386	-0.694	1.111	-0.287	0.612	0.456	3.251	0.027	0.171	-0.795	0.000	0.408	2.016	2.890	-1.203	0.886	2.573
GCC	0.27	2.31**	0.514	-0.054	0.068	-0.160	0.331	0.419	-0.564	0.418	-0.595	-0.649	-0.509	3.750	-0.813	0.070	-1.056	0.000	0.120	0.454	2.793	0.054	-0.728	-4.748
MAYA	0.07	0.54	0.365	0.098	0.900	0.193	-0.460	0.193	-0.145	0.995	0.168	0.172	-0.865	0.170	1.598	-2.443	0.168	0.000	0.168	0.098	0.138	0.168	0.138	0.215
MAYA2	0.24	2.01**	0.355	-0.594	1.281	-0.213	0.639	0.000	0.090	0.975	-0.627	0.094	-0.203	0.074	0.144	-0.088	0.071	0.000	0.071	3.565	-2.222	3.174	1.357	3.481
TTOLMEX	0.19	1.50	1.450	2.767	-0.756	-0.499	-0.587	1.175	-0.560	0.550	-0.376	1.513	0.349	3.222	1.005	-0.263	-0.910	0.000	0.113	1.271	1.445	-0.947	-0.113	1.081
BUILDING MATERIALS																								
CERAMIC	0.05	0.30	0.029	0.092	0.611	0.035	-0.235	0.687	0.377	0.041	-0.036	0.035	0.029	-0.231	0.029	0.021	0.035	0.021	0.106	0.021	0.462	0.710	0.189	2.293
CERAMI2	0.20	1.52	0.009	0.007	0.015	0.011	0.015	0.013	0.015	0.013	0.011	0.011	0.011	0.009	0.009	0.007	0.011	0.007	0.011	0.007	0.009	0.011	-5.756	0.015
CERAMI3	0.20	1.54	0.017	0.012	0.026	0.021	0.026	0.024	0.026	0.024	0.021	0.021	0.021	0.017	0.017	0.012	0.021	0.012	0.021	0.012	0.017	0.021	-5.806	0.026
CMOCTEZ	0.11	1.84**	-0.094	-0.067	-0.146	-0.114	-0.146	-0.131	-2.810	-0.131	-0.114	3.123	-0.114	-0.094	-0.094	-0.067	-0.114	-0.067	-0.114	-0.067	-0.094	-0.114	-0.094	-0.146
RETAIL																								
ALMACO	0.13	0.92	0.226	0.161	0.353	0.276	0.353	0.317	0.353	0.317	0.276	0.276	0.276	3.160	3.107	0.161	0.276	0.161	0.276	0.161	0.226	0.276	0.226	1.144
BEVIDES	0.26	2.17**	0.000	0.000	0.000	0.000	0.000	-1.765	4.165	0.000	0.000	5.167	0.000	0.000	0.000	0.000	-0.379	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CIFRA	0.13	0.96	-0.007	-0.005	-0.011	-0.009	-0.011	-0.010	-0.011	-0.010	-0.009	-0.009	-0.009	-0.007	-0.007	-0.005	-0.009	-0.005	4.568	-0.005	-0.007	-0.009	-0.007	-0.011
CIFRA2	0.39	4.09**	0.233	-9.123	0.362	0.283	0.362	0.326	0.362	0.326	0.283	0.283	0.283	0.233	0.233	0.165	0.283	0.165	2.071	0.165	0.233	0.283	0.233	0.362
CIFRA3	0.00	0.01	0.147	0.104	0.228	0.179	0.228	0.205	0.228	0.205	0.179	0.179	0.179	0.147	0.147	0.104	0.179	0.104	0.179	0.104	0.147	0.179	0.147	0.228
COMERCI	0.00	0.02	0.140	0.099	0.218	0.170	0.218	0.196	0.218	0.196	0.170	0.170	0.170	0.140	0.140	0.099	0.170	0.099	0.170	0.099	0.140	0.170	0.140	0.218
GIGANTE	0.16	1.22	0.202	0.144	0.315	0.246	0.315	0.283	0.315	0.283	0.246	0.246	0.246	0.202	0.202	0.144	0.246	0.144	0.668	0.144	0.202	2.914	3.001	-2.811
GPH	0.17	1.27	3.928	0.025	0.054	0.042	0.054	0.049	0.054	0.049	0.042	0.042	-3.291	-1.070	0.035	0.025	0.042	0.025	0.042	0.025	0.035	0.042	0.035	0.054
GPH2	0.00	0.00	0.071	0.051	0.111	0.087	0.111	0.100	0.111	0.100	0.087	0.087	0.087	0.071	0.071	0.051	0.087	0.051	0.087	0.051	0.071	0.087	0.071	0.111
GSYR	0.20	1.58**	-0.175	-0.175	-0.201	-0.175	-0.201	-1.420	-0.223	-0.175	-0.175	-0.143	-0.175	0.394	-0.175	-0.175	-0.175	-0.102	-0.175	-0.102	-0.102	-0.143	-5.737	-0.201
GSYR2	0.32	3.00**	-0.588	-0.185	0.403	-0.471	-0.289	0.701	-0.015	-0.482	1.293	-1.181	-1.423	5.245	2.122	-0.637	-1.838	-1.836	0.032	1.996	2.007	-1.743	-2.722	-0.326
LIVEPOL	0.23	1.87**	0.494	-0.806	-0.786	-1.397	-0.408	-0.048	-0.263	0.793	-0.130	-0.478	0.408	4.249	-0.277	-1.075	-0.287	-0.168	0.984	0.416	-0.024	1.433	-0.508	3.594
LIVEPO2	0.19	1.42	-0.246	-0.420	-1.397	-1.655	-0.515	-0.630	-0.203	0.577	-0.424	-0.665	-0.119	3.382	-0.119	-0.791	-0.050	-0.069	0.528	0.679	-0.192	1.501	-0.973	2.766
NADRO	0.01	0.09	0.154	0.154	0.177	0.154	0.197	1.086	0.246	0.154	0.260	0.469	0.659	0.154	0.154	0.154	0.094	0.090	0.154	0.090	0.090	0.126	0.126	-0.264
NADRO2	0.13	0.91	-0.364	-0.364	-0.419	-0.364	-0.466	1.778	-0.632	-0.364	-0.364	-3.519	-0.251	-0.364	-0.364	-0.364	-0.364	-0.213	-0.364	-0.213	-0.213	-0.299	-0.299	-1.781
NADRO3	0.31	2.71**	-0.109	0.117	-0.215	-0.187	-0.135	4.856	-0.139	-0.187	0.229	0.691	2.108	-0.886	-0.433	0.432	-0.187	-0.109	-0.553	0.000	0.000	-1.259	-2.166	4.762
SANBORN	0.26	2.27**	0.189	0.189	0.884	-0.065	0.641	0.218	-0.538	1.722	1.673	-1.639	-0.057	0.189	0.189	0.189	0.189	0.110	-4.790	0.110	0.110	2.743	0.943	2.756
VIRREA2	0.02	1.15	-1.789	-0.092	-0.092	-0.092	-0.118	-0.106	-0.118	-0.092	-0.092	-0.076	-0.092	-0.092	-0.092	-0.092	-0.092	-0.054	-0.092	-0.054	-0.054	-0.076	-0.076	-0.106
TRANSPORTATION																								
AEROMEX	0.20	1.54	1.552	0.420	-0.536	0.277	0.354	-0.581	0.354	0.277	0.277	0.227	0.227	0.277	0.277	0.277	0.277	-4.776	2.101	0.951	0.162	0.227	0.227	1.269
AEROME2	0.16	1.24	3.251	-0.351	1.111	-0.309	-0.940	0.744	0.158	0.015	-0.195	0.291	1.249	0.702	0.013	0.022	-1.111	0.923	-1.091	-0.270	-0.864	-0.099	-0.793	2.575
TMM	0.10	0.67	0.717	0.149	0.226	0.236	0.314	1.701	-0.345	0.223	-1.468	0.949	0.899	1.601	1.241	-0.135	-0.626	0.085	0.334	0.000	0.000	-0.658	0.000	1.638
TMM2	0.02	0.10	0.327	-0.319	0.174	-0.003	-0.064	0.342	-0.249	0.113	-0.595	0.081	0.167	0.325	0.692	-0.008	-0.372	-0.423	0.177	0.000	0.000	-0.105	0.000	0.702
TELECOMMUNICATIONS																								
TELMEX	0.16	1.23	0.603	-0.813	0.483	0.894	-0.490	1.084	-0.967	0.689	-1.124	2.653	0.370	1.703	0.377	-0.266	-0.997	-0.338	-0.364	1.529	1.488	-0.101	-1.825	1.104
TELMEX2	0.17	1.33	0.548	-0.804	0.519	0.837	-0.318	1.220	-0.958	0.725	-1.023	2.614	0.599	1.849	0.404	-0.390	-0.847	-0.463	-0.194	1.563	1.390	-0.172	-2.361	1.148
TLEVISA	0.14	0.98	-0.710	-0.172	0.100	-1.027	-0.299	0.386	-0.913	0.387	-0.565	2.466	0.715	3.031	-0.870	0.331	-0.567	-0.618	0.260	0.000	0.000	0.043	0.000	0.811

Table A6
Firm Level Estimates
Test Statistics

Firm	R^2	F	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22
TOURISM																								
ARISTOS	0.54	7.25**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-7.562	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-10.179
ARISTO2	0.40	4.26**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.168	7.507	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GVIDEO	0.13	0.93	0.039	-1.989	-0.926	-1.062	-1.004	0.530	-0.448	0.128	-1.249	-1.613	-0.808	1.809	-1.358	-1.144	-0.578	-0.404	0.244	0.000	-0.461	-1.468	-0.229	0.623
POSADAS	0.21	1.73**	0.628	-0.223	1.643	0.315	0.361	0.557	-0.817	-0.037	-0.037	-0.030	0.693	1.770	1.159	1.257	-2.612	-0.022	-0.548	0.000	4.309	-0.222	1.123	0.997
POSADA2	0.20	1.50	-0.177	0.573	1.901	-0.305	-0.156	-0.020	-2.756	-0.192	0.065	-2.341	-0.192	1.819	0.704	1.400	-1.327	-0.112	-0.190	0.000	2.417	-0.757	0.692	-0.596
REALTU2	0.00	0.02	0.204	0.204	0.168	0.204	0.261	0.235	0.261	0.204	0.204	0.168	0.204	0.204	0.204	0.204	0.204	0.119	0.204	0.000	0.168	0.168	0.168	0.261
SITUR	0.18	1.37	1.060	-0.034	2.367	-0.990	-0.060	0.781	-0.783	0.058	-0.690	0.179	1.790	0.687	0.978	0.131	-0.762	-0.985	0.044	0.000	3.616	0.063	0.386	1.486
INSURANCE																								
ALSA	0.25	2.16	2.117	-0.003	-0.004	-0.003	-0.003	-0.003	-0.004	-0.003	-0.003	-0.003	-0.003	-0.003	-4.522	-0.002	-0.003	-0.002	-0.003	0.000	-0.002	-0.003	-0.002	4.584
AMERICA	0.39	4.25**	0.060	0.060	-0.058	0.068	0.068	0.068	0.076	0.060	-0.120	-1.926	1.986	0.068	0.060	0.049	0.060	0.035	0.060	0.000	0.049	9.201	0.049	0.076
SEGCOM	0.07	0.47	-0.610	-0.610	-0.308	0.043	-0.235	-0.701	-0.780	-0.610	-0.736	-0.610	-0.610	-0.701	-0.610	-2.480	-0.943	-0.356	-0.610	0.000	-0.501	-0.610	-0.501	-0.780
SEGUMEX	0.08	0.62	-0.114	-0.094	-0.146	-0.131	-0.131	-0.131	-0.146	-0.114	-0.114	-0.114	-0.114	-0.131	-0.114	-0.094	-0.114	-0.067	3.205	0.000	-0.094	-0.114	-1.680	-0.146
VAMSA2	0.03	0.18	0.197	0.197	0.252	0.226	0.226	0.226	1.022	0.197	0.197	0.685	0.197	1.331	0.197	0.162	0.968	0.115	0.197	0.000	0.162	0.197	0.162	0.598
BANKS																								
ATLANTI	0.04	0.26	0.380	-0.108	-0.138	-0.830	-1.064	-0.124	-0.938	-0.108	-0.108	-0.108	0.256	-0.124	-0.108	-0.088	1.564	-0.063	-0.108	0.000	-0.379	-0.108	-0.063	-0.138
BANCEN	0.07	0.49	-1.196	1.054	-0.063	0.978	-0.049	-0.056	-0.063	-0.049	-0.647	-0.049	-0.049	-2.501	-0.309	0.305	-0.049	-0.029	-0.049	0.000	0.385	-0.049	-0.040	0.199
BANORIE	0.26	2.28**	0.034	0.034	0.044	0.039	0.039	0.039	-4.899	-1.567	2.526	-0.258	1.251	2.068	2.108	1.911	0.040	0.020	0.407	0.000	0.028	-0.601	0.840	0.531
BANORO	0.04	0.25	0.019	-0.609	0.550	0.022	0.503	0.605	0.531	0.114	-0.569	0.019	-0.240	1.271	0.072	-0.181	0.064	-1.313	0.019	0.000	0.390	0.019	0.016	0.069
BANORTE	0.08	0.59	0.085	0.300	-0.895	-0.483	-0.893	0.864	-1.273	-0.330	0.258	1.223	0.419	1.080	0.211	1.121	-1.396	-0.078	-0.466	0.000	0.666	-0.438	-0.868	0.660
COMRMEX	0.17	1.36	-1.713	2.939	0.083	-0.887	-0.297	-0.411	-0.783	-0.161	0.115	-0.012	-0.693	-1.883	1.805	-0.132	-0.651	-0.328	0.353	0.000	-2.737	-1.078	-0.064	0.036
CREMI	0.01	0.07	0.343	0.343	0.438	0.394	0.394	0.394	0.438	0.343	0.343	0.343	0.343	0.394	0.343	0.281	0.343	0.200	0.343	0.000	0.281	0.343	0.281	0.438
INTENAL	0.09	0.60	-0.590	0.542	0.795	-1.081	-0.821	0.721	-0.475	-0.822	0.138	0.624	-0.486	0.238	0.479	1.790	0.193	-1.437	0.496	0.000	-0.157	-1.303	0.374	0.204
PROMEX	0.00	0.00	0.048	0.048	0.062	0.055	0.055	0.055	0.062	0.048	0.048	0.048	0.048	0.055	0.048	0.206	0.048	0.028	0.048	0.000	0.040	0.048	0.040	0.062
SERFIN	0.17	1.37	1.172	0.125	0.217	-1.264	-0.234	0.393	-4.443	-0.409	-0.246	1.886	-0.596	0.869	-0.699	0.286	0.522	0.321	0.026	0.000	-0.202	-0.197	-0.430	-0.211
BROKERAGE HOUSES																								
CBARKA	0.00	0.03	0.209	0.209	0.268	0.240	0.240	0.240	0.268	0.209	0.209	0.209	0.209	0.240	0.209	0.172	0.209	0.122	0.209	0.000	0.172	0.209	0.172	0.268
CBBURS2	0.07	0.49	-0.289	2.965	-0.369	-0.332	-0.332	-0.332	-0.369	-0.289	-0.289	-0.289	-0.289	-0.332	-0.289	-0.237	-0.289	-0.168	-0.289	0.000	-0.237	-0.289	-0.237	-0.369
CBESTRA	0.55	8.10**	0.162	0.162	0.207	0.186	0.186	0.186	0.207	0.162	0.162	0.162	0.162	0.186	0.162	0.133	-9.135	0.094	0.162	0.000	0.133	0.162	9.491	0.207
FINANCIAL GROUPS																								
ABACOGF	0.18	1.41	-0.259	-4.929	-0.403	-0.362	1.252	-2.027	-0.403	-0.315	-0.315	-0.315	-0.736	0.260	0.196	0.194	-0.269	-0.264	-0.315	0.000	-0.259	-0.315	-0.119	0.098
ABACOG2	0.07	0.58	0.052	-0.087	-2.026	0.060	0.031	0.060	0.747	0.130	-0.025	-0.798	-0.151	1.684	1.175	0.375	0.052	0.031	0.052	0.000	0.043	0.052	0.977	1.327
BANACC2	0.18	1.50	0.016	-0.287	-0.481	-0.644	-0.952	1.327	-0.586	0.800	-0.466	1.405	1.132	1.657	-0.755	-0.512	-0.579	-1.530	0.480	0.000	-0.428	-0.991	-1.187	3.884
BANACC3	0.35	3.51**	0.420	0.356	-0.051	-0.253	-0.010	1.244	-0.349	1.063	-0.112	1.493	0.237	1.778	-0.013	0.057	-1.056	-1.112	0.065	0.000	0.470	-0.424	-2.880	7.540
GBMATLA	0.07	0.47	-1.948	0.093	0.312	-1.394	0.175	-0.072	-0.614	0.223	0.345	-0.060	0.004	0.791	-0.191	-0.052	0.066	-0.037	-0.063	0.000	0.107	1.050	-0.927	0.945
GBMATL3	0.08	0.58	-1.998	-0.018	0.983	-1.141	-0.021	-0.021	-0.698	0.687	-0.355	1.343	-0.018	1.382	-0.015	-0.015	0.604	-0.011	-0.172	0.000	-0.015	0.583	-0.015	0.804
GFCREM2	0.15	1.18	-0.031	0.001	0.206	-0.035	-0.035	-0.035	-0.039	-0.031	-0.031	-0.031	-0.031	-0.035	-0.031	-0.025	-0.031	-0.018	-0.031	0.000	-0.025	-0.031	-0.025	5.045
GFCREM3	0.00	0.00	0.119	0.097	0.136	0.136	0.136	0.136	0.152	0.119	0.119	0.119	0.119	0.136	0.119	0.097	0.119	0.069	0.119	0.000	0.097	0.119	0.097	0.152
GFFINA	0.02	0.11	1.220	0.246	0.344	0.344	0.344	0.344	0.383	0.299	0.299	0.299	0.299	0.344	0.299	0.246	0.299	0.175	0.299	0.000	0.246	0.299	0.246	0.383
GFINLAT	0.05	0.36	0.061	1.306	-0.322	0.069	-0.818	0.069	0.590	0.452	0.060	-0.325	0.450	0.069	0.739	-0.176	-0.457	0.035	-0.290	0.000	0.912	0.060	-1.567	0.527
GFINLA2	0.07	0.55	0.368	1.400	0.638	0.222	-0.093	-0.184	0.592	0.194	0.194	-0.170	0.754	0.541	2.685	0.983	-0.402	0.113	0.194	0.000	0.079	-0.462	0.102	0.798
GFINLA3	0.11	0.80	0.252	0.252	0.323	0.290	-1.228	-0.541	0.468	0.011	0.623	-0.111	1.232	0.290	1.580	0.319	-0.156	0.147	0.252	0.000	0.207	0.252	-1.890	2.670
GFINVER	0.06	0.43	-1.056	0.990	0.315	-0.168	-0.165	-0.168	-0.187	0.265	-0.146	0.262	-0.146	2.319	0.157	0.989	-0.146	-0.085	-0.576	0.000	0.232	-0.004	0.229	-0.187
GFINVE2	0.04	0.32	-0.548	1.040	0.304	-0.105	0.497	-0.105	-0.116	0.256	-0.091	0.253	-0.091	1.979	0.164	1.016	-0.091	-0.053	-0.453	0.000	0.223	-0.091	0.219	-0.116
GFINVE3	0.11	0.79	-0.141	1.280	2.130	-0.162	-0.158	-0.382	-0.180	0.374	-0.141	0.370	-0.141	2.929	0.238	1.271	-0.141	-0.082	-0.678	0.000	0.325	-0.141	0.321	-0.180
GFMULTI	0.16	1.27	-0.165	-0.165	-0.211	-0.190	-0.190	-0.190	-0.211	-0.165	-5.286	-0.165	-0.165	-0.190	-0.165	-0.135	-0.165	-0.096	-0.165	0.000	-0.135	-0.165	-0.135	-0.211
GFMULT2	0.00	0.00	-0.040	-0.040	-0.051	-0.045	-0.045	-0.045	-0.051	-0.040	-1.030	-0.040	-0.040	-0.045	-0.040	-0.032	-0.040	-0.023	-0.040	0.000	-0.032	-0.032	-0.032	-0.051
MINING																								
FRISCO	0.13	0.97	0.013	0.009	0.020	0.016	0.020	0.018	-0.068	1.218	0.986	0.119	0.511	-2.125	0.538	0.191	0.016	-1.295	0.016	0.000	0.306	-3.318	0.157	0.734
PENOLE2	0.01	0.06	-0.187	0.000	-0.291	-0.228	-0.358	-0.262	-0.291	0.611	-0.228	-0.228	-0.228	-0.187	-0.187	-0.133	-0.228	-0.187	-0.228	0.000	-0.187	-0.506	0.192	-0.291
PENOLE3	0.00	0.42	0.000	0.000	0.001	0.000	0.001	-1.230	1.483	0.896	0.812	1.392	-0.093	0.364	0.000	0.000	0.000	0.000	0.000	0.000	-0.336	0.000	0.000	1.505
PENOLE4	0.03	0.19	0.313	0.064	0.141	0.295	0.079	0.308	0.354	0.703	0.245	0.177	0.015	0.154	-0.041	-0.030	-1.079	-0.722	-0.021	0.000	0.211	-0.074	-0.646	1.019

Appendix B

Derivation of the Model

Consider a two country world where each good is produced by several firms in the home country (Mexico) and the foreign country (here comprised of the US and Canada), with a Cobb-Douglas production function that uses capital (*K*), unskilled labor (*L*), and z other inputs (x_j) which can be thought of as comprising intermediate goods and services, different varieties of skilled labor, blueprints, natural resources, etc. Economies of scale occur in some industries. This extremely general framework allows me to consider a wide variety of factors that affect comparative advantage in a standard way.

$$Q_{it} = K_{i,t}^{\alpha_i^K} L_{i,t}^{\alpha_i^L} \prod_{j=1}^{z} x_{ji,t}^{\alpha_i^j} \tag{B1}$$

I make the standard assumption that capital is mobile between countries and industries, while labor is only mobile between industries. Instead of assuming perfect competition, I prefer to consider a world where different market structures may be observed across industries (perfect competition, monopolistic competition, oligopolies). Typically, some markets in Mexico are oligopolies with natural or regulatory barriers to entry. This is particularly the case for the heavier industries, like basic metals, industrial machinery and transportation equipment. In those industries where Mexican firms earn monopolistic rents, trade liberalization is likely to decrease their value as they face more competition from North American firms.

The stock value of the capital of firm *i* is given by the present value of its future cash flows:

$$V_{i,t} = \sum_{s=t+1}^{+\infty} \left(\frac{1}{1+r^*} \right)^{s-t} E_t \left(CF_{i,s} \right) \tag{B2}$$

where:

$$CF_{i,t} = P_{i,t} Q_{i,t} - L_{i,t} w_{L,t} - \sum_{1}^{z} x_{ji,t} w_{j,t} - \Delta K_{i,t}$$

At time T, the House of representatives votes on NAFTA. The expected cash flows to the firms after this date depend on the event of free trade. If NAFTA is approved, the producers of good *i* will receive $CF_{i,s}^{TA}$. If NAFTA is not approved, they will receive $CF_{i,s}^{\sim TA}$. Let ρ_t be the public's perceived probability that at time T the NAFTA will be approved. Then we can write the value of firms as:

$$V_{i,t} = \sum_{s=t+1}^{T} \left(\frac{1}{1+r^*} \right)^{s-t} E_t\left(CF_{i,s}\right) + \sum_{s=T+1}^{+\infty} \left[\rho_t E_t\left(CF_{i,s}^{TA}\right) + \left(1-\rho_t\right) E_t\left(CF_{i,s}^{\sim TA}\right) \right] \qquad \text{(B3)}$$

Expressing this last equation in differences, sorting out the terms that are affected by NAFTA and making the expectation of other things equal to zero, we have…

$$dV_{i,t} = d\rho_t \left[\sum_{s=T+1}^{+\infty} \left(\frac{1}{1+r*} \right)^{s-t} E_t\left(\Delta CF_{i,s}^{TA}\right) \right] + \xi_{i,t} \qquad \text{(B4)}$$

$$E_t\left(\xi_{i,t}\right) = 0$$

Where $\Delta CF_{i,t}^{TA} = CF_{i,t}^{TA} - CF_{i,t}^{\sim TA}$ is the variation in cash flows that's due to the Free Trade Agreement. Assuming that all quantities are constant (because of fixed capacity), the change in cash flow that occurs on the period immediately after the approval of NAFTA is:

$$\Delta CF_{i,T+1}^{TA} = Q_{i,T+1} \Delta P_{i,T+1}^{TA} - \sum_{j=1}^{z} x_{ij,T+1} \gamma_j \Delta w_{j,T+1}^{US-M} \qquad \text{(B5)}$$

Where:

$$\Delta w_{j,T+1}^{US-M} = \left(w_{j,T+1}\right)^{US} - \left(w_{j,T+1}\right)^{M}$$

$\Delta w_{j,T+1}^{US-M}$ is the difference between the price of factor j in the US and in Mexico. The change in industry i' s cash flow immediately at the moment NAFTA is enforced depends on the direction of the price change for good i. This is straightforward: industries that produce goods that will become expensive after free trade expect an increase in their immediate post-trade earnings. Additionally, the prices of some intermediate inputs are also affected as their tariffs are reduced. This is a second channel through which NAFTA affects the earnings of firms: industries that use as intermediate inputs goods that benefit from a reduction in tariffs will receive a bonus in their cash flow, because their inputs will suddenly become cheaper. The profits of firms in industry i in the long run are given by:

$$\Pi_i = P_i(Q_i)Q_i - r^* K_i - w_L L_i - \sum_{j=1}^{z} w_j x_{ji} \qquad \text{(B6)}$$

In the long run, firms set their optimal factor demands to maximize their profit stream. Therefore, the time subscript is not necessary in the previous relation. Note that the price depends on the quantity as the market is not perfectly competitive. By substituting the production function for Q_i and maximizing (B4) with respect to each factor, then solving for the price in equilibrium, I obtain:

$$P_i = A\left[\frac{\varepsilon_i}{\varepsilon_i - 1}\right]\left(r^*\right)^{\theta_i^K}\left(w_L\right)^{\theta_i^L}\left[\prod_{j=1}^{z}\left(w_j\right)^{\theta_i^j}\right]\left(Q_i\right)^{\theta_i^s} \tag{B7}$$

where:

$$\theta_i^L = \frac{\alpha_i^L}{\alpha_i^L + \alpha_i^K + \sum_{j=1}^{z}\alpha_i^j}, \quad \theta_i^j = \frac{\alpha_i^j}{\alpha_i^L + \alpha_i^K + \sum_{j=1}^{z}\alpha_i^j}, \quad \theta_i^s = \frac{\eta_i^s - 1}{\eta_i^s},$$

$$\eta_i^s = \alpha_i^L + \alpha_i^K + \sum_{j=1}^{z}\alpha_i^j, \quad \varepsilon_i = -\frac{dQ_i}{dP_i}\frac{P_i}{Q_i}, \quad A = \left(\alpha_i^K\right)^{\theta_i^K}\left(\alpha_i^L\right)^{\theta_i^L}\left[\prod_{j=1}^{z}\left(\alpha_i^j\right)^{\theta_i^j}\right]$$

The θ's are the distributive shares of the factors in equilibrium, η_i^s is the elasticity of scale for industry *i*. ε_i is the price-elasticity of demand that each individual firm faces in industry *i*. The markup of price over average cost is:

$$\left(1 + m_i\right) = \left[\frac{\varepsilon_i}{\varepsilon_i - 1}\right] \tag{B8}$$

Note that this last expression needs to be equal or larger than $\alpha_i^L + \alpha_i^K + \sum_{j=1}^{z}\alpha_i^j$, for the firm to have nonnegative profits. Proportionally differentiating equation (B5) to solve for the period *T* proportional difference between US and Mexican prices yields

$$\frac{\Delta P_{i,T}^{US-M}}{P_{i,T}^{M}} = \widehat{P_{i,T}^{US-M}} = \theta_i^L\,\widehat{w_{L,T}^{US-M}} + \sum_{j=1}^{z}\theta_i^j\,\widehat{w_{j,T}^{US-M}} - \theta_i^s\,\widehat{Q_{i,T}^{US-M}} + \widehat{\mu_i^{US-M}} \tag{B9}$$

where:

$$\widehat{\mu_i^{US-M}} = \frac{m_i^{US} - m_i^M}{1 + m_i^M}$$

The difference in the price of good *i* between the US and Mexico is driven by the differences in the costs of the factors used in producing good *i*, adjusted for the difference in monopolistic markups charged in each country. Immediately after NAFTA, some portion γ_i of this prevailing price discrepancy disappears, as industry *i*'s tariffs are reduced. γ_i can be interpreted as the speed at which industry *i* is liberalized. Industries with a faster tariff reduction schedule have higher γ_i.

$$\Delta P_{i,T+1}^{TA} = P_{i,T}^{M}\gamma_i \left[\theta_j^L \widehat{w_{L,T}^{US-M}} + \sum_{j=1}^{z} \theta_i^j \widehat{w_{j,T}^{US-M}} - \theta_i^s \widehat{Q_{i,T}^{US-M}} + \widehat{\mu_i^{US-M}} \right] \tag{B10}$$

Where $P_{i,T}^{M}$ is the price of good i that prevailed in Mexico before free trade, and $\Delta P_{i,T+1}^{TA} = P_{i,T+1}^{M} - P_{i,T}^{M}$ is the change in the domestic price of good i resulting from trade liberalization. I have implicitly assumed that Mexico prices fully adjust towards the prices prevailing in the US, as we can view Mexico and Canada as small countries relative to the US.

Substituting (B8) into (B3), I obtain an expression for the immediate effect of NAFTA on the cash flow of the firms that produce good *i*.

$$\Delta CF_{i,T+1}^{TA} = Q_{i,T+1} P_{i,T}^{M}\gamma_i \left[\theta_i^L \widehat{w_{L,T}^{US-M}} + \sum_{j=1}^{z} \theta_i^j \left(1 - \frac{\gamma_j}{\gamma_i}\right) \widehat{w_{j,T}^{US-M}} - \theta_i^s \widehat{Q_{i,T}^{US-M}} + \widehat{\mu_i^{US-M}} \right] \tag{B11}$$

Now that we have determined the cash flow of industry *i* immediately after trade, we need to know what happens in subsequent periods. Equation (B9) implies that the industries that are intensive in the relatively cheap factors will benefit more from free trade, as their price is likely to go up. However, the Stolper Samuelson theorem, generalized to many goods and factors, predicts that the prices of the relatively abundant factors will also tend to increase after free trade. In the long run, as labor and capital are mobile and firms are allowed to change their productive capacity and input mix, the expansion of the industries that are intensive in the relatively cheap factors will push their price up, making them not so cheap anymore. This tendency tends to revert the initial impact of NAFTA. To capture this feature while keeping the model simple, I decide to model the behavior of cash flows after trade as a simple mean reverting process.

$$\Delta CF_{i,T+s}^{TA} = \delta^{s-1} \Delta CF_{i,T+1}^{TA} \tag{B12}$$

The above process is mean-reverting as long as $\delta < 1$. Note that this is not required for a solution. Indeed, this framework allows us the freedom to model cash flows as constant or increasing, as long as their rate of growth does nor exceed the international interest rate.

Plugging in this process into equation (B2) and allowing the expected probability of NAFTA approval to depend on the current news D_t , I obtain the final expression for the change in the value of the firms of industry *i*:

$$dV_{i,t} = d\rho_t(D_t)\left[\left(\frac{1}{1+r^*}\right)^{T-t}\left(\frac{1}{(1+r^*)-\delta}\right)Q_{i,T+1}P_{i,T+1}\gamma_i\Theta_{i,T+1}\right]+\xi_{i,t} \tag{B13}$$

Where:

$$\Theta_{i,T+1} = \theta_i^L \widehat{w_{L,T+1}^{US-M}} + \sum_{j=1}^{z}\theta_i^j\left(1-\frac{\gamma_j}{\gamma_i}\right)\widehat{w_{j,T+1}^{US-M}} - \theta_i^s \widehat{Q_{i,T+1}^{US-M}} + \widehat{\mu_i^{US-M}}$$

and:

$$\widehat{w_{L,T+1}^{US-M}} > 0, \quad \widehat{w_{ji,T+1}^{US-M}} < 0, \quad \widehat{Q_{i,T+1}^{US-M}} > 0, \quad \widehat{\mu_i^{US-M}} < 0$$

The value of the firms is affected by the probability that NAFTA will be approved, ρ_t , which depends on the recent news D_t . The direction of this change is related to the firm's comparative advantage under NAFTA. Industries whose production process is intensive in unskilled labor have relatively large values for θ_i^L . Assuming that unskilled labor is relatively cheap in Mexico before trade, the firms producing goods that are intensive in unskilled labor are likely to benefit from the higher prices that result after the lifting of US and Canada tariffs on these goods. Likewise, Mexican firms producing goods where economies of scale are an important factor (positive significant θ_i^s) are likely to face losses as a result of competition from US firms that have traditionally produced for a much larger market. With respect to the intermediate goods *j*, the firms which use as inputs the goods that were relatively cheaper before trade will tend to benefit, but this effect is partially offset if these intermediates themselves belong to industries with tariff reductions under NAFTA. Also, due to trade barriers that existed before NAFTA, many industries earned monopolistic rents in Mexico. If trade liberalization also cover these industries, the value of their firms is expected to decrease because more competition from the US and Canada will tend to erode these rents.

Appendix C

Variable Event Windows

About two thirds of the 290 stocks considered in the study trade infrequently, which means that the prices are only observed at intervals. This tends to delay the response of the stock prices to news. To address this issue I consider a more flexible framework where the actual event dates are uncertain, as in Ball and Torous (1988), and we estimate the probability that the event occurred in a given date in addition to the abnormal return of this date. To adapt this setting to the Mexican stock market, I divide the stocks in two groups: group a consisting of the more frequently traded securities and group b consisting of the less frequently traded securities. I allow the estimated probabilities to be different for these two groups, in other words I let the actual event dates be different for infrequently traded securities. If the problem of infrequent trading causes a delay in the price response to information, for the infrequently traded stocks, then one would expect these stocks to have higher probability weights for the days that occur after the actual publication of the news, while the more frequently traded stocks will have a higher probability weight for the publication day.

As a first step I standardize all the series. The standardized return of security *i* on date t is:

$$x_{it} = \left(r_{it} - \widehat{\mu_i}\right) \Big/ \widehat{\sigma_i} \tag{C1}$$

Let's focus on the period that starts with the publication date (that I call 0) and includes c periods into the future:

$$t = 0, \ldots, c \tag{C2}$$

Let θ_{it} be a binary variable that is equal to 1 on the date that the price of security i actually reflected the information of the event. This date could be anywhere between 0 and c. We should expect θ_{i0} to be 1 for the more frequently traded securities. Then, on the date when θ_{it} is equal to 1, the distribution of the standardized return should reflect the change in information:

$$\left.\begin{aligned} x_{it} \middle| \theta_{it} = 0 \sim N(0,1) \\ x_{it} \middle| \theta_{it} = 1 \sim N(A_i,1) \end{aligned}\right\} \tag{C3}$$

In another departure from the original Ball and Torous (1988) model, I also let A_i differ among securities according to the industry they belong to. That is $A_i = A_I$ for every security *i* that belongs to industry *I*. Let $\mathbf{x}_i$ be a row vector consisting of the c standardized returns of security i for the event window, that is $\mathbf{x}_i = (x_{i0},...,x_{ic})$. Let's call $g_t(\mathbf{x}_i) = f(\mathbf{x}_i | \theta_{it} = 1)$ the probability of observing the returns $\mathbf{x}_i$ given that $\theta_{it} = 1$. Then:

$$g_t(\mathbf{x}_i) = \frac{1}{\sqrt{2\pi}} \exp\left[-\frac{\left(x_{it} - A_I\right)^2}{2} \right] \prod_{\substack{s=0 \\ s \neq t}}^{c} \frac{1}{\sqrt{2\pi}} \exp\left[-\frac{x_{is}^{\ 2}}{2} \right] \tag{C4}$$

Let's define $p_{it} = \Pr(\theta_{it} = 1)$. As I have classified the securities in two groups according to the frequency of their trades, p_{it} will take two values p_t^a and p_t^b for frequently and infrequently traded securities respectively. The probability of observing $\mathbf{x}_i$, or the likelihood of $\mathbf{x}_i$ is defined as:

$$f(\mathbf{x}_i) = \sum_{s=0}^{c} \Pr(\theta_{is} = 1) f(\mathbf{x}_i | \theta_{is} = 1) = \sum_{s=0}^{c} p_{is} g_s(\mathbf{x}_\mathbf{i}) \tag{C5}$$

All the n securities' vectors of standardized returns can be stacked into a matrix that we call $\mathbf{x}$.

$$\mathbf{x} = \begin{bmatrix} \mathbf{x}_1 \\ \mathbf{x}_2 \\ \vdots \\ \mathbf{x}_n \end{bmatrix} \tag{C6}$$

Then the likelihood function to maximize is:

$$L(\mathbf{x}) = \prod_{i=1}^{n} f(\mathbf{x}_i) = \prod_{i=1}^{n} \sum_{s=0}^{c} p_{is} g_s(\mathbf{x}_i) \tag{C7}$$

Similarly, let's call $\mathbf{p}$ the matrix consisting of the stacked vectors of probabilities for the two types of securities, and $\mathbf{A}$ the row vector of abnormal returns for the *J* different industries considered.

$$\mathbf{p} = \begin{bmatrix} p_0^a & p_1^a & \cdots & p_c^a \\ p_0^b & p_1^b & \cdots & p_c^b \end{bmatrix} \tag{C8}$$

$$\mathbf{A} = \begin{bmatrix} A_1 & A_2 & \ldots & A_J \end{bmatrix} \tag{C9}$$

Then the maximization problem is defined as:

$$\max_{\mathbf{p},\mathbf{A}} \ln\left(L(\mathbf{x})\right) \tag{C10}$$

As with Ball and Torous (1988), we will use Dempster, Lair and Rubin's (1977) EM optimization algorithm. This algorithm consists in starting from an initial guess $\widehat{\mathbf{p}_0}$ and $\widehat{\mathbf{A}_0}$, and computing the forward probability:

$$\Pr(\theta_{it} = 1 | \mathbf{x}_i) = \frac{f(\mathbf{x}_i, \theta_{it} = 1)}{f(\mathbf{x}_i)} = \frac{p_{it} g_t(\mathbf{x}_i)}{\sum_{s=0}^{c} p_{is} g_s(\mathbf{x}_i)} \tag{C11}$$

Then obtaining new estimates $\widehat{\mathbf{p}_1}$ $\widehat{\mathbf{A}_1}$ via the following relations:

$$\widehat{p_t^a} = \frac{1}{n^a} \sum_{\substack{i=1 \\ i \in a}}^{n^a} \Pr(\theta_{it} = 1 | \mathbf{x}_i) \tag{C12}$$

$$\widehat{p_t^b} = \frac{1}{n^b} \sum_{\substack{i=1 \\ i \in b}}^{n^b} \Pr(\theta_{it} = 1 | \mathbf{x}_i) \tag{C13}$$

$$\widehat{A_I} = \frac{1}{n^I} \sum_{\substack{i=1 \\ i \in I}}^{n^I} \sum_{s=0}^{c} \Pr(\theta_{it} = 1 | \mathbf{x}_i) x_{is} \tag{C14}$$

The new estimates are then used again to compute (17) and the process is repeated until a convergence criterion is met.

$$(\widehat{\mathbf{p}_0}, \widehat{\mathbf{A}_0}) \rightarrow (\widehat{\mathbf{p}_1}, \widehat{\mathbf{A}_1}) \rightarrow \cdots \rightarrow (\widehat{\mathbf{p}_k}, \widehat{\mathbf{A}_k}) \tag{C15}$$

Results for event 22

Table A1 below shows the Maximum likelihood estimates for a 4 period event window starting with the approval date 11/18. The first four columns correspond to the probabilities that the price response occurs in each day, for both frequently and infrequently traded securities. As we expected , the less frequently traded securities tend to have more probability weight towards the last periods. The last column presents the estimates for the abnormal returns for each industry. These are different to the coefficients for event 22 in that we are only considering the last bit of this event window. This coefficients represent accurately the variations in the indexes at the very end of the periods in graphs 1-6. Some of the industries show a reversion of the previous tendency, most notably Food and Tobacco.

Table B1
Maximum Likelihood Estimates for the approval date.
Abnormal Returns and Probabilities

Securities	Abnormal Return	Pr. 11/18	Pr. 11/19	Pr. 11/23	Pr. 11/24
By Type					
Frequently Traded		.3705	0	.4754	0
Infrequently Traded		.1910	.0180	..0601	.44315
By Industry:					
Chemical	-1.3052				
Paper/ Cellulose	-1.2243				
Iron/ Steel	1.2094				
Metal Products	1.7803				
Electronics	2.0519				
Heavy Machinery	1.1731				
Food/ Tobacco.	-.0837				
Textiles/ Apparel	.9561				
Cement	.4701				
Retail	-1.0764				

Appendix D

Stocks included in the study (two digit SIC codes) :

†=eliminated

Ticker	Series	Mod. Name

Manufactures

Ticker	Series	Mod. Name
CHEMICAL (28, 30)		***DCHEM***
CELANES	*A	*CELANES*
LINDE	B1	*LINDE*
LINDE	B2	*LINDE2*
NALCO	*ACP	*NALCO*
NARSA†	*B2	*NARSA*
NEROMEX†	*A1	*NEROMEX*
NEROMEX†	*B1	*NEROMEX2*
NHUMO†	A2	*NHUMO*
OXY	*A	*OXY*
PENWALT†	*A	*PENWALT*
PROLAR†	*1	*PROLAR*
QBINDUS†	*A	*QBINDUS*
REGIOEM	*A	*REGIOEM*
REGIOEM	*B	*REGIOEM2*
UCARBON	*B1	*UCARBON*
UCARBON	*B2	*UCARBON2*
PAPER & CELLULOSE (26)		***DPAPER***
AATENSA	*A2	*AATENSA*
AATENSA†	*B2	*AATENSA2*
CRISOBA	*A	*CRISOBA*
CRISOBA	*B	*CRISOBA2*
EMPAQ	*B	*EMPAQ*
KIMBER	*A	*KIMBER*
KIMBER	*B	*KIMBER2*
PONDER	*B	*PONDER*
PONDER†	*A	*PONDER2*
PRINT AND EDITION (27)		***DPRINT***
DIANA	*A	*DIANA*
DIANA†	*B	*DIANA2*
IRON AND STEEL (33)		***DSIDE***
TAMSA	*	*TAMSA*
ALMEXA†	ANVO	*ALMEXA*
ALUM †	*A	*ALUM*
ALUM†	*B	*ALUM2*
SIMEC†	B	*SIMEC*
METAL PRODUCTS (34)		***DMETAL***
METAVER†	*	*METAVER*
NACOBRE†	*A	*NACOBRE*
NACOBRE†	*B	*NACOBRE2*
ICH†	A	*ICH*
ICH†	B	*ICH2*
ELECTRONICS (36)		***DELEC***
ERICSON	*A	*ERICSON*
ERICSON	*B	*ERICSON2*
IEM	*A	*IEM*
INDETEL†	*B	*INDETEL*
LATINCA	*A	*LATINCA*
LATINCA	*B	*LATINCA2*
QUADRUM†	*A	*QUADRUM*
QUADRUM †	*B	*QUADRUM2*
QTEL†	A	*QTEL*
QTEL†	B	*QTEL2*
HEAVY EQUIPMENT (35,37)		***DEQPT***
ACMEX	*A1	*ACMEX*
CISAMEX†	*A	*CISAMEX*
EATON†	*A	*EATON*
JDEERE	*A	*JDEERE*
JDEERE†	*B	*JDEERE2*
MORESA†	*AF	*MORESA*
PERKINS†	*A	*PERKINS*
PERKINS†	*B	*PERKINS2*
SPICER	*A1	*SPICER*
SPICER†	*B1	*SPICER2*
SUDISA	*B	*SUDISA*
TREMEC	*A1	*TREMEC*
TREMEC	*B2	*TREMEC2*
FOOD, DRINKS, TCCO. (20,21)		***DFOOD***
ACCO†	*1-2 R	*ACCO*
ARGOS	ACP	*ARGOS*
ARGOS	BCP	*ARGOS2*
BIMBO	*1	*BIMBO*
BIMBO	*2	*BIMBO2*
CAMPUS†	*A	*CAMPUS*
EMVASA†	BCP	*EMVASA*
FEMSA	*B	*FEMSA*
GEUPEC	*A2 CP	*GEUPEC*
GEUPEC	*B2 CP	*GEUPEC2*
GGEMEX	BCP	*GGEMEX*
GRUPHER†	ACP	*GRUPHER*
GRUPHER†	BCP	*GRUPHER2*
HERDEZ†	ACP	*HERDEZ*
HERDEZ†	BCP	*HERDEZ2*
MASECA†	A2	*MASECA*
MASECA	B2	*MASECA2*
MODERNA	*A	*MODERNA*
TABLEX	*2	*TABLEX*
UNIVASA	*A2	*UNIVASA*
UNIVASA†	*B2	*UNIVASA2*
TEXTILES (22,23)		*DTEX*
CIERRES†	*B1 CR	*CIERRES*
GEASA†	*2	*GEASA*
LUXOR	*A1	*LUXOR*
MARTIN†	*A	*MARTIN*
PARRAS	*1	*PARRAS*
TEXEL	*1	*TEXEL*
POPO†	*A	*POPO*
NON-METALLIC MIN. (32)		***DNOMET***
VITRO	*CP	*VITRO*
OTHER MANUF. IND. (NA)		***DOMAN***
BEROL†	*1	*BEROL*
ECKO†	CP	*ECKO*

Construction- Related

Ticker	Series	Mod. Name
CEMENT (17)		***DCEME***
APASCO	A	*APASCO*
APASCO	B	*APASCO2*
CEMEX	*A	*CEMEX*
CEMEX	*B	*CEMEX2*
CEMEX	CPO	*CEMEX3*
GCC	B	*GCC*
MAYA	*A	*MAYA*
MAYA	*B	*MAYA2*
TTOLMEX	B2	*TTOLMEX*
BUILDNG. MATERIALS (15)		***DMAT***
CERAMIC	A	*CERAMIC*
CERAMIC	B	*CERAMIC2*
CERAMIC	C	*CERAMIC3*
CMOCTEZ	B2	*CMOCTEZ*
ICA†	*	*ICA*
LAMOSA†	*	*LAMOSA*
PORCE†	A	*PORCE*
TRIBASA†	CP	*TRIBASA*

Retail

Ticker	Series	Mod. Name
RETAIL (50,51)		***DRETL***
ALMACO	*2	*ALMACO*
BEVIDES	B	*BEVIDES*
BLANES†	ACP	*BLANES*
BLANES†	BCP	*BLANES2*
CIFRA	A	*CIFRA*
CIFRA	B	*CIFRA2*
CIFRA	C	*CIFRA3*
COMERCI	B	*COMERCI*
GIGANTE	BCP	*GIGANTE*
GMARTI†	CP	*GMARTI*
GPH	1	*GPH*
GPH	2	*GPH2*
GSYR	BCP	*GSYR*
GSYR	LCP	*GSYR2*
LIVEPOL	1	*LIVEPOL*
LIVEPOL	C1	*LIVEPOL2*
NADRO	ACP	*NADRO*
NADRO	BCP	*NADRO2*
NADRO	LCP	*NADRO3*
SANBOR	*	*SANBORN*
SEARS†	*B1	*SEARS*
SORIANA †	A2	*SORIANA*
SORIMEX†	A2	*SORIMEX*
VIRREAL†	A	*VIRREAL*
VIRREAL	B	*VIRREAL2*

Transportation and Telecomm.

Ticker	Series	Mod. Name
TRANSPORTATION (NA)		***DTRANS***
AEROMEX	A	*AEROMEX*
AEROMEX	CPO	*AEROMEX2*
TMM	A	*TMM*
TMM	L	*TMM2*
TELECOMM.(NA)		***DTELE***
RCENTRO†	CPO	*RCENTRO*
TELMEX	*A	*TELMEX*
TELMEX	*L	*TELMEX2*
TLEVISA	L	*TLEVISA*
OTHER SERVICES (NA)		***DOSER***
ARISTOS	*ACP	*ARISTOS*
ARISTOS	*BCP	*ARISTOS2*
BRISAS†	B	*BRISAS*
GCALIND†	B	*GCALIND*
GVIDEO	B	*GVIDEO*
POSADAS	A	*POSADAS*
POSADAS	L	*POSADAS2*
REALTUR†	*A1	*REALTUR*
REALTUR	*A2	*REALTUR2*
SFQ†	A	*SFQ*
SITUR	BCP	*SITUR*

Miscellaneous

Ticker	Series	Mod. Name
HOLDINGS (NA)		***DCTRL***
ACCELSA†	A1	*ACCELSA*
ALFA†	*A	*ALFA*
CAMESA†	*A	*CAMESA*
CMA†	3	*CMA*
CODUMEX†	*A	*CODUMEX*
CODUMEX†	*B	*CODUMEX2*
CONTAL†	ACP	*CONTAL*
CONTAL†	BCP	*CONTAL2*
CYDSASA†	*A	*CYDSASA*
EPN†	*B2	*EPN*
FIASA†	1	*FIASA*
GCARSO†	A1	*GCARSO*
GISSA†	*A	*GISSA*
GISSA†	*B	*GISSA2*
GMEXICO†	*A1	*GMEXICO*
GMEXICO†	*A2	*GMEXICO2*
SANLUIS†	*A-1	*SANLUIS*
SANLUIS†	*A-2	*SANLUIS2*
SELMEC†	*A	*SELMEC*
SIDEK †	*A	*SIDEK*
SIDEK†	*B	*SIDEK2*
SYNKRO†	BCP	*SYNKRO*
UNICA†	A*B	*UNICA*
VISA†	*	*VISA*
OTHER (NA)		***DOFIN***
DESC†	A	*DESC*
DESC†	B	*DESC2*
DESC†	C	*DESC3*
OPCION†	A	*OPCION*
OPCION†	B	*OPCION2*

Financial Services

Ticker	Series	Mod. Name
INSURANCE (NA)		***DINS***
ALSA	*NVO	*ALSA*
AMERICA	*	*AMERICA*
CAFSA†	CP	*CAFSA*
OLMECA†	CP	*OLMECA*
SEGCOM	*A	*SEGCOM*
SEGCOM	*B	*SEGCOM2*
SEGUCEN	*CP	*SEGUCEN*
SEGUMEX	*	*SEGUMEX*
SERMONT†	B	*SERMONT*
VAMSA†	A	*VAMSA*
VAMSA	B	*VAMSA2*

Ticker	Series	Mod. Name
BANKS (NA)		***DBANK***
ATLANTI	B	*ATLANTI*
BACOMER†	BCP	*BACOMER*
BANAMEX†	BCP	*BANAMEX*
BANCEN	BCP	*BANCEN*
BANMEXI†	BCP	*BANMEXI*
BANORIE	B	*BANORIE*
BANORO	BCP	*BANORO*
BANORTE	BCP	*BANORTE*
COMRMEX	B	*COMRMEX*
CONFIA†	B	*CONFIA*
CREMI	BCP	*CREMI*
INTENAL	BCP	*INTENAL*
PROMEX	BCP	*PROMEX*
SERFIN	B	*SERFIN*

Ticker	Series	Mod. Name
STOCK TRADERS (NA)		***DBUR***
CBABACO†	*ACP	*CBABACO*
CBACCI†	A	*CBACCI*
CBAFIN†	*A	*CBAFIN*
CBARKA	*ACP	*ABARKA*
CBB†	*A	*CBB*
CBBURSA	A1	*CBBURSA*
CBBURSA†	B2	*CBBURSA2*
CBESTRA	1	*CBESTRA*
CBFIMSA†	ACP	*CBFIMSA*
CBI†	*ACP	*CBI*
CBI†	*BCP	*CBI2*
CBINBUR†	*A1	*CBINBUR*
CBINTER†	*ACP	*CBINTER*
CBOBSA†	ACP	*CBOBSA*
CBAFIN †	*A1	*CBAFIN*
CBVALUE†	CPN	*CBVALUE*
CBVCTOR†	*ACP	*CBVCTOR*

Ticker	Series	Mod. Name
FINANCIAL CONGLOMERATES(NA)		***DCONS***
ABACOGF	A	*ABACOGF*
ABACOGF	B	*ABACOGF2*
BANACCI†	A	*BANACCI*
BANACCI	B	*BANACCI2*
BANACCI	C	*BANACCI3*
GBMATLA	ACP	*GBMATLA*
GBMATLA†	BCP	*GBMATLA2*
GBMATLA	CCP	*GBMATLA3*
GBF†	A	*GBF*
GBF†	B	*GBF2*
GBF†	C	*GBF3*
GFAFIN†	A	*GFAFIN*
GFAFIN†	B	*GFAFIN2*
GFCRECE†	A	*GFCRECE*
GFCRECE†	B	*GFCRECE2*
GFCREMI†	ACP	*GFCREMI*
GFCREMI	BCP	*GFCREMI2*
GFCREMI	CCP	*GFCREMI3*
GFFINA	A	*GFFINA*
GFFINA†	B	*GFFINA2*
GFFINA†	C	*GFFINA3*
GFINBUR †	A	*GFINBUR*
GFINBUR †	B	*GFINBUR2*
GFINLAT	A	*GFINLAT*
GFINLAT	B	*GFINLAT2*
GFINLAT	C	*GFINLAT3*
GFINTER†	A	*GFINTER*
GFINVER	ACP	*GFINVER*
GFINVER	BCP	*GFINVER2*
GFINVER	CCP	*GFINVER3*
GFMEXI†	ACP	*GFMEXI*
GFMEXI†	BCP	*GFMEXI2*
GFMULT I	ACP	*GFMULTI*
GFMULT I	BCP	*GFMULTI2*
GFNORTE†	C	*GFNORTE*
GFPROBU†	A	*GFPROBU*
GFPROBU†	B	*GFPROBU2*
GFPROBU†	C	*GFPROBU3*
GFPROBIN†	B	*GFPROBIN*
GPROFIN†	A	*GPROFIN*
GPROFIN†	B	*GPROFIN2*
GFSERFIN†	ACP	*GFSERFIN*
GFSERFIN†	BCP	*GFSERFIN2*
PRIMEIN†	A	*PRIMEIN*
PRIMEIN†	B	*PRIMEIN2*
PRIMEIN†	C	*PRIMEIN3*
SURESTE †	ACP	*SURESTE*
SURESTE †	BCP	*SURESTE2*

Ticker	Series	Mod. Name
MINING (10,14)		***DIMIN***
FRISCO	*1	*FRISCO*
PENOLES†	*A2	*PENOLES*
PENOLES	*B1	*PENOLES2*
PENOLES	B2	*PENOLES3*
PENOLES	A1	*PENOLES4*

Appendix E

Returns by Industry

Appendix F

Ranked Returns by Industry

Appendix G

News from the Wall Street Journal