NAFTA and the Realignment of Textile and Apparel Trade: Trade Creation or Trade Diversion?

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January 2008

Abstract

A modified version of the partial equilibrium gravity model, originally proposed by Fukao et al. (2003), is employed to investigate the changing patterns of U.S. textile trade. We use the data on US Bilateral Manufacturing Imports and Exports by SIC4, which cover the period 1989 to 2001, to assess the impact of labor wages, tariffs, and exchange rates on the composition of U.S. textile imports before and after the creation of NAFTA. Unlike many previous studies, we also consider the effect of tariff removals under NAFTA on U.S. trade with non-NAFTA nations. The analysis is performed at the 2-digit industry level as well as the more disaggregated 4-digit sector level. We conclude that there is little evidence of trade diversion in textiles frequently attributed to NAFTA, while trade creation is clearly present. Furthermore, lower wages in some textile-exporting countries (e.g., countries in Asia) do not appear to significantly increase these countries' share of U.S. textile imports at the expense of other trading partners. Variations in currency exchange rates and tariffs, on the other hand, have substantial effects on the composition of U.S. imports.

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1. Introduction

The passage of the North American Free Trade Agreement (NAFTA) in 1994 between the U.S., Canada and Mexico, has had a significant impact on trade not just within the region, but also on regions outside of North America. In the case of the textile and apparel industries, NAFTA is reconfiguring the structure of production and trade, as US firms increasingly redirect their attention to Mexico, as a low wage country with a well-developed production base and geographical proximity. Overall, Mexico quickly became the second largest trading partner of the U.S. after Canada, accounting for 11.5 percent of US imports in 2001 and 13.9 percent of US exports relative to 6.9 and 9 percent in 1993 (Romalis, 2002). During the same period, U.S. textile and apparel exports to Mexico increased by 210 percent, while imports from Mexico increased by 283 percent between 1993 and 2001 (Villareal 2003). As the U.S. moves closer to passing the Central American Free Trade Agreement (CAFTA) it becomes relevant to examine more closely U.S.'s experience with NAFTA.

There is much debate in international trade literature about the merits of regional trade agreements. Krugman (1991) and Summers (1991) independently suggest that preferential trading arrangements (PTAs) between neighbors are likely to be beneficial, as neighbors are "natural" trading partners. Others such as Bhagwati (1994) fear that PTAs may serve to divert trade from low-cost third countries to preferred partners, and therefore may be welfare reducing. Empirical evidence on the effects of PTAs on trade flows is mixed.

There has been a large number of econometric studies on the impact of NAFTA on trade flows among the partner countries – U.S., Mexico, and Canada. Use of gravity

models, which consider the effects of various factors such as each country's per capita GDP, official language, distance vis-à-vis the trading partner, and membership in a PTA on imports and exports, is common (see, for example, Krueger 1999 and 2000, Gould 1998, Agama and McDanial 2002, and Clausing 2001, which examines the effects of the Canada-U.S. agreement, CUSFTA). While these papers differ in their approaches, they agree on the main results: the volume of trade within North America is higher than before NAFTA, but little to no evidence of trade diversion can be found.

A sharply contrasting set of results is obtained by Romalis (2002). To distinguish the trade-creating or trade-diverting effects of NAFTA and CUSFTA from changes in trade patterns due to other factors, Romalis considers trade between the U.S. and a set of countries, with which tariff preference has remained relatively stable throughout the period, and trade between the European Union (EU) and the same set of countries as control. The study concludes, that NAFTA was primarily trade diverting: most of the increased trade with Canada, and especially that with Mexico, came at the expense of trade with other countries; no evidence of trade creation is found.

Finally, we summarize the approach used by Fukao, Okubo, and Stern (2003) to investigate the effects of NAFTA. Much of the present research is motivated by and builds upon the findings in that paper. Fukao et al. use a version of their gravity model to estimate the impacts of wages, tariffs and the inception of NAFTA on the change of different countries' shares of U.S.'s imports. The analysis is performed for all U.S. manufactured imports at the Harmonized System (HS) 2-digit level and for select industries, such as textiles and apparels, TV receivers and Motor Vehicles, at the HS 4-digit level, for the period 1992-98. The study does not control for changes in exchange

rates, the significance of which is discussed below. Their results suggest, most interestingly, that some trade diversion in U.S. imports from Mexico, especially in textiles and apparels, can be attributed to NAFTA, and some of this diversion may be at the expense of trade with Asian countries, although no evidence or tests are conducted to support this thesis. They find little evidence of trade diversion in other industries. While tariffs were almost negligible for many other industries, even before 1994, this indicates that the textile and apparel sectors are quite different from other manufacturing sectors.

The above brief survey of the existing literature suggests that there is some disagreement on empirical grounds about the likely impact of NAFTA on trade creation and trade diversion. Furthermore, most of these studies are limited to the examination of the effects of NAFTA on trade flows within North America, and tend to ignore its impact on trade with non-NAFTA countries. Finally, the vast majority of empirical studies cover all manufacturing industries, for some of which tariff changes even over long periods of time are modest.

This paper extends the literature and especially the approach suggested by Fukao et al. (2003) in two major ways. First, we consider the effects of *exchange rate* changes on countries' shares of U.S. imports. It has been argued that one of the reasons why U.S. imports from a country like China are high is because of China's artificially low currency values, rather than the low wages; also, higher productivity of U.S. workers offset some of the advantages from low wages. Thus omitting exchange rates from the model is likely to incorrectly ascribe a large a part of the change in import shares to wages. With respect to trade in textiles, Chmura (1987) has shown that exchange rates play a crucial role. Second, and more importantly, we go beyond examining NAFTA's impact on U.S.-

Mexico and U.S.-Canada bilateral trade flows and assess the differential effect the trade pact has on non-North American textile and apparel exporters. This allows us to draw more definitive conclusions about the "trade diverting" property of NAFTA.

Our study focuses on two sectors, namely textile and apparel manufacturing, and a brief justification for this choice is in order. Unlike other industries, where tariff rates were negligible to start with, the textile and apparel sectors saw the most pronounced changes in tariffs following NAFTA. While the two industries are closely related, there are striking differences in the way they operate. The apparel sector tends to be low-tech and labor-intensive, which gives developing countries with lower wages a competitive edge in the apparel trade. The textile sector on the other hand, has become increasingly capital intensive, resulting in increased productivity and lower employment. The results from this study reflect these differences. For instance, wage differentials between countries explain almost all of the variation in the shares of apparel imports. Surprisingly, while tariffs and exchange rates were significant in explaining textile trade, wages turn out to be either insignificant or have a positive relationship with imports.

The results from our study indicate little evidence of trade diversion in textiles frequently attributed to NAFTA, while trade creation is clearly present. Furthermore, lower wages in some textile-exporting countries (e.g., countries in Asia) do not appear to significantly increase these countries' share of U.S. textile imports at the expense of other trading partners. Variations in currency exchange rates and tariffs, on the other hand, have substantial effects on the composition of U.S. imports. Several caveats are, however, in order. First, there were other events that might have affected U.S.-Mexico trade during this period: expansion of the U.S. economy, liberalization of the Mexican

economy, and the Mexican peso devaluation that preceded NAFTA. Second, during this period, a significant move towards "lean retailing" and "quick turn-around" production structures by U.S. firms, especially in the apparel sector, is likely to favor trade with geographically close locations such as Mexico. While our use of import shares as the dependent variable in the study helps take care of the first issue, it is not possible to determine how much of the change in trade patterns might be the effect of the other factors.

It is also important to point out that our study does not account for the role of quotas on textile and apparel trade. The Agreement on Textiles and Clothing (ATC) negotiated under the Uruguay round of the GATT, provided for the gradual reduction of bilateral country quotas starting in 1995, and their complete phase-out by January, 2005. However, the literature (e.g. Jonquières, 2002) suggests that most of the WTO guidelines were not followed under various "safeguard" provisions and other pretexts, until the point of final elimination in December 2005. The elimination of quotas would be a significant factor to consider, in a post-2005 study.

The remainder of the paper is organized as follows: Section 2 provides an overview of NAFTA and its provision for textile and apparel industries and briefly describes the approach of this study; Section 3 discusses our theoretical and empirical models; Section 4 details the variables constructed and the sources of the data; Sections 5 and 6 discuss the estimation techniques employed and the results for industry- and sector-level analysis, respectively; Section 7 explores a particular issue with our wage measure, and Section 8 concludes.

2. Background

The textile and apparel industries have long been protected in the U.S., as evidenced by the long-lasting import quota structure of the Multi-Fiber Arrangement (MFA)[1] and its predecessors. Traditionally, this sector has been very important to the U.S economy, accounting for a signifcant percentage of manufacturing output and employment. Together the two industries employed 1.4 million people and shipped about $128 billion of output in 1990 (Hufbauer and Schott 1992).

The North American Free Trade Agreement negotiated between the governments of the U.S., Mexico, and Canada, removed traditional barriers to trade and investment in the member countries. To qualify for tariff concessions under NAFTA, goods had to be produced within the NAFTA region, incorporate only those non-NAFTA materials that are sufficiently processed in North America and meet minimum content requirements (Wise 1998). This was especially significant for the textile and apparel sectors in the U.S.

Textile and apparel tariffs and quotas were traditionally subject to special rules-of-origin (ROO) requirements. While import quotas on items that met the ROO requirements were to be removed immediately, tariffs for similar items were to be phased out over a period of 10 years. NAFTA additionally provided for a special ROO for textiles and apparels, namely the “yarn forward rule," which specifies that only garments produced from yarn originating in North America qualify to receive concessions under NAFTA. Thus, the yarn forward ROO is particularly beneficial to U.S. textile firms. Also, under the “fabric forward" scheme, quota-free and duty-free status is granted to garments assembled in Mexico from U.S.-cut and U.S.-formed fabrics. This was expected

[1] Import quotas, which have protected the world’s two biggest markets - U.S. and the European Union, since 1974 were poised for elimination by the end of 2004, as agreed upon at the Uruguay round of the WTO.

to encourage Mexican exporters to source their inputs from U.S. or Canada, rather than from East Asian producers. It was anticipated that under these provisions U.S. exports in unfinished goods to Mexico would increase, and in turn U.S. would import more finished products from Mexico, taking advantage of lower labor costs (Hufbauer and Schott 1992 and USITC 1991).

It is important to examine the extent to which an increase in trade among the NAFTA partners reflects trade creation versus trade diversion. *Trade creation* occurs if lowering of trade barriers, due to a PTA, induces a country to replace high-cost domestic products with cheaper imports from partner countries (i.e., create trade in previously untraded commodities). *Trade diversion*, on the other hand, would occur if lowering of trade barriers causes goods previously imported from a third country to be diverted to a partner country. An analysis of import shares held by different countries usually helps uncover trade diversion: as Krueger (1999) points out, a decline in the share of U.S. imports held by a given country or region and a concurrent increase in the import share of NAFTA countries would lead one to conclude that trade diversion has occurred.

However, if the volume of trade with both the NAFTA partners and other countries, say, in Asia, increases substantially in *absolute* terms during the sample period, it is possible that trade diversion may go undetected. The logic is fairly straightforward: when the U.S.-China and U.S.-Mexico trade volumes both increase, trade diversion may still be present as some of the new growth in imports from Mexico would have come from China in the absence of NAFTA. Figure 1 displays weighted shares of textile and apparel imports held by countries in several major regions. While NAFTA countries' share in U.S. textile imports has grown significantly since 1993, share of Asian countries

do not appear to decline appreciably. Instead, share of Western European nations shows the largest decline. The import shares for apparel, from the same regions, show a somewhat different picture: the share of Asian countries in apparel exports to the U.S. shows a declining trend, while the NAFTA region and the Caribbean Basin countries register a clear gain. To better discern the extent of trade creation and diversion we employ data at a more disaggregated level as well.

[Figure 1: Import Shares by Region]

This study examines the effect of labor wages, tariffs, real exchange rates, and NAFTA on import shares of countries from different regions, in U.S. textile and apparel trade, at the 2-digit and 4-digit SIC levels. Dummy variables are used to capture the effects of NAFTA on the rest of the world.

Labor wages usually factor prominently in any discussion of trade effects on manufacturing industries, especially textiles and apparels as their production is largely labor intensive. Labor costs have typically accounted for between 30 and 50 percent of total production costs for U.S. textiles and apparel (Datta and Christoffersen, 2005). Intuitively, this gives producers in low-wage countries a significant competitive edge, making labor wages in the exporting country a particularly important factor in explaining the sources of U.S. imports.

[Figure 2: Tariff Rates and Import Shares]

Variations in the U.S. exchange rate, which determines the relative price of foreign goods, and tariff rates should also influence imports. Figure 2 reports the tariffs rate by region for the 1989 to 2001 period. Most textile tariffs have declined worldwide,

with the exception of those applied to Asian nations. Apparel tariffs on the other hand register a sizeable decrease only for NAFTA and Caribbean countries.

3 Theoretical Framework and Empirical Approach

We follow the framework of the partial-equilibrium gravity model, originally put forth by Fukao et al. (2003), for our study. We modify their theoretical model to include the impact of currency exchange rate fluctuations and limit our study to the textile and apparel sectors.

Equation (1) below approximates the conceptual model from Fukao et al. (2003) that becomes the basis for empirical estimation. [2]

$$\begin{aligned}\ln(s_{z,n,1}(t)) = \lambda_{z,n} &- \lambda_{z,1}\left(\ln(w_n(t)) - \sum_{i=2}^{N} s_{z,i,1}\ln(w_i(t))\right) \\ &- \lambda_{z,2}\left(\ln(e_{n,1}(t)) - \sum_{i=2}^{N} s_{z,i,1}\ln(e_{i,1}(t))\right) \\ &- \lambda_{z,3}\left(\ln(T_{n,1}(t)) - \sum_{i=2}^{N} s_{z,i,1}\ln(T_{z,i,1}(t))\right) \\ &+ \varepsilon_{z,n}(t) \qquad (1)\end{aligned}$$

where $s_{z,n,1}$ is the share of imports from country n in U.S. total imports of industry z's output; w_n is the average production wage rate in country n; $e_{n,1}$ is U.S. real exchange rate vis-à-vis country n's currency; $T_{z,n,1}$ is one plus the effective tariff on U.S. imports from country n of the output of industry z. The intercept $\lambda_{z,n}$ captures the effects of country-

[2] See Fukao et al. (2003) for a detailed description of the model.

and sector-specific factors, and $\lambda_{z,1}$, $\lambda_{z,2}$, and $\lambda_{z,3}$ are functions of the structural parameters of the model.

The model yields the following estimable relationship between country *i*'s share of imports in U.S. total imports and wages, trade costs, and currency exchange rates:

$$ln\ s_{it} = \alpha_t + \nu_t + \beta_1 ln\ w_{it} + \beta_2\ ln\ T_{it} + \beta_3\ ln\ e_{it} + \varepsilon_{it} \qquad (2)$$

where *i* indexes countries; *t* indexes time; α_i captures the country fixed effects; ν_t the unobserved time-effects and ε_{it} is the random error. The country dummies α_i control for country-specific factors not included in the model, such as distance, language, production and political characteristics. Macroeconomic shocks that affect U.S. trade with all countries, such as a recession in the U.S., changes in average worldwide GDP are captured by time dummies.

The basic model outlined above is modified in various ways to consider the impact of NAFTA. To estimate the effects of tariff reductions due to NAFTA on U.S.-Mexico and U.S.-Canada trade, a NAFTA dummy is included in equation (3). The dummy variable takes the value of one for Canada and Mexico for the years 1994 and thereafter and zero elsewhere:

$$ln\ s_{it} = \alpha_t + \nu_t + \beta_1 ln\ w_{it} + \beta_2\ ln\ T_{it} + \beta_3\ ln\ e_{it} + \delta_1\ NAFTA + \varepsilon_{it} \qquad (3)$$

A positive coefficient of the NAFTA dummy would indicate an increase in trade between the U.S. and its North American partners, attributable to NAFTA.

Beyond examining NAFTA's impact on bilateral trade flows between the U.S. and Mexico and U.S. and Canada, we seek to obtain more definitive conclusions about the trade-creating and trade-diverting effects of NAFTA. We create region dummies to

estimate the effects of NAFTA on the non-NAFTA countries. Each region dummy takes the value of one for the countries in that region in 1994 and thereafter and zero otherwise. Equation (4) outlines the model.

$$ln\, s_{it} = \alpha + \nu_t + \beta_1 ln\, w_i + \beta_2 ln\, T_{it} + \beta_3 ln\, e_{it} + \sum_{j=1}^{8} \delta_j\, NAF\_Region_j + \varepsilon_{it} \quad (4)$$

If trade diversion is present the import share of region *j* (say Asia) should decline, thus we would expect the coefficient for region *j*'s dummy (δ_j) to be negative. Similarly, a positive δ_j would indicate an increase in that region's share of trade with the U.S.

4 Data

The data on trade in textiles and apparel are extracted from the US Bilateral Manufacturing Imports and Exports by SIC4 (1987 revision), 1989 to 2001 dataset provided by Peter Schott. That data in turn use Robert Feenstra's import and export data as a source.[3] Our dependent variable, log of import share of country *n* in U.S. total imports of textiles in year *t* is computed as a natural log of the ratio of customs value of general imports to the total customs value of general imports from all countries for that year. The tariff series is calculated as follows: the implied tariff rate for each 4-digit sector country and year equals the ratio of duties collected to the dutiable value of imports. We use the natural log of one plus this implied rate in our empirical analysis.[4]

Data on real GDP per capita, used to proxy the effect of labor wages, come from the most recent version of the Penn World Table (PWT) (Heston et al. 2002). The real

[3] See Feenstra, Romalis and Schott (2002) for a detailed description. The US Bilateral Manufacturing Trade data are available for download on Peter Schott's website at http://www.som.yale.edu/faculty/pks4/sub international.htm.

[4] See Bernard et al. (2004) for a detailed discussion of trade costs and an application of this technique.

exchange rate series is constructed using the nominal exchange rate values (also from PWT) and data on countries' Consumer Price Indices (CPI), obtained from the International Monetary Fund's International Financial Statistics. Table 1 displays the descriptive statistics for these variables.[5]

[Tables 1: Descriptive Statistics]

5 Industry Level Estimation Results and Discussion

Estimation results for textiles are presented in Table 2. The dependent variable in each regression is $ln\ s_{it}$, the natural log of country *i*'s share in U.S. textile imports in year *t*. Model 1 is similar to that estimated by Fukao et al. (2003) for the manufacturing sector.[6] The right hand side variables are log of real GDP per capita (to proxy wages), log of the real exchange rate, log of one plus the effective tariff rate, and the NAFTA dummy. The presence of both TARIFF and NAFTA is designed to separate the effects of independent changes in tariff rates from the systematic reductions in tariffs among North American countries due to NAFTA. The model is estimated as a two-way fixed-effects model — i.e., with a full set of country-specific and period-specific dummies.

[Table 2: Textile Industry (2-digit) Estimation Results]

The results for the textile industry are reported in Table 2. The tariff and exchange rate measures are significant and have the expected signs: a depreciation of country *i*'s currency against the U.S. dollar is associated with an increase in *i*'s share of U.S. textile

[5] Since we are dealing with panel data, the overall mean and other descriptive statistics are rather meaningless. However, we include them to provide the reader with a sense of the relative magnitude of the regressors we use.

[6] Fukao et al. attempt to include the $v_{z,\,n,1}\ ln\ (T_{n,1}(t))$ term — that is, the share of country *n*'s industry *z*'s output in total exports from that country to the U.S. multiplied by the tariff — in their regression equations. This variable essentially gauges how important a given industry's exports are to that country's economy. In their initial estimations, this variable proved to not be significant and is dropped from subsequent specifications. We omit this measure from our model because data necessary to construct the variable were not available to us.

imports,[7] while an increase in the effective tariff rate against country *i*'s textile output lowers that country's share. The coefficient on NAFTA is positive and significant, indicating that the shares of Canada and Mexico increased after 1994.

The somewhat surprising result is the positive coefficient of real GDP per capita: one would expect a negative relationship between the country's prevailing wage rate and its importance in exporting textiles (a relatively labor-intensive good) to the U.S. A few caveats are in order. First, it is likely that the use of GDP per capita as a proxy for textile wages may not be appropriate if the wages in this sector are not close to the overall average wage rate in some countries[8]. Second, it may be that the usual presumption about the role of low wages is not true for textiles. Our results suggest that richer countries tend to make better trading partners (due perhaps to better infrastructure, property rights, and law enforcement). In any event, we find that the conventional (and convenient) "cheap labor" argument frequently cited by U.S. textile manufacturers as the main cause of their woes, is not supported by evidence in this specification (although as we show below, the argument holds true for apparel). In Section 7 we attempt to investigate this issue further.

To account for the effects of anticipation of the passage of NAFTA, Model 2 replaces NAFTA with its one-year lagged variant, NAFTA_93. While the magnitude of this variable's coefficient is slightly larger than in Model 1, other results are qualitatively and quantitatively the same. In light of this, we replicate this specification for the apparel

[7] Exchange rates are in terms of units of country *i*'s currency for one U.S. dollar.

[8] We attempted to collect data on textile and apparel wages from the International Labor Organization (ILO), but inconsistency due to missing values for many years rendered these data unusable.

industry below to maintain consistency, but then drop Model 2 from our sector analysis in the following section.

We investigate the impact of tariff reductions under NAFTA on countries in different regions by constructing a full set of dummy variables similar to NAFTA for each of the eight major regions: Africa, Asia, the Caribbean Basin, Latin America, Eastern Europe, Western Europe, Middle East and North Africa, and Oceania[9]. Each dummy takes the value of one for all countries in that region in 1994 and thereafter and zero everywhere else. The rightmost column in Table 2 reports these results; Eastern Europe is omitted to avoid perfect collinearity[10]. The explanatory variables have the same signs and similar magnitudes as in the simpler models discussed above, which provides some reassurance of robustness of our approach. All but three of the constructed dummies are statistically insignificant. The NAFTA variable is still significantly positive confirming the boost in Canadian and Mexican import shares, while NAF-LATIN has a significant negative coefficient indicating that countries of Latin America saw a decrease in their shares of U.S. textile imports after 1994. The coefficient on Oceania's dummy, is also negative, but is only marginally significant. The main result of interest in this model is the insignificance of the NAF-ASIA's coefficient. It appears that NAFTA did not increase the shares of Mexico and Canada *at the expense* of Asian countries. In other words, we find no significant evidence of trade diversion from Asia attributable to NAFTA.

[9] A list of countries included in each region is available from the authors upon request.

[10] The model is estimated using a two-way random effects approach because the regional NAFTA dummies are collinear with fixed intercepts in the corresponding FEM specification. See Wooldridge (2002) for more on this issue.

The results for the apparel industry are presented in Table 3. In contrast with the textile industry, we find that our wage measure has the most explanatory power of all of the right-hand-side variables in the simpler models. It appears that differences (and changes) in wages explain all of the variation in the shares of apparel imports. Adding the regional NAFTA indicators leaves all other variables, including RGDPPC insignificant. The positive coefficients on NAF-AFRICA, NAF-CARIBB, NAF-MENA, and NAFTA suggest that countries in these regions saw their shares of U.S. apparel imports increase after 1994. The results also show that the only region that registered a loss in trade share after 1994 is Latin America. However, the insignificance of the other regressors indicates that sector analysis may reveal some within-industry differences at the more disaggregated level.

[Table 3: Apparel Industry (2-digit) Estimation Results]

6 Analysis at the Sector Level:

6.1 4-Digit SIC Level Textile Sectors

We estimate our simplest model for each of the 15 4-digit SIC sectors in our sample. The results are reported in Table 5.[11] The results are rather encouraging in that the signs and magnitudes of our estimates mirror those we obtain for the industry as a whole. The coefficient on TARIFF is negative for all sectors and statistically significant for all but three. These are Broadwovens – manmade fiber and silk, Thread Mills, and Textile Goods not elsewhere classified (n.e.c.). The magnitudes of these estimates vary considerably from a low (in absolute value) of 5.149 for Broadwovens – wool to a high of 34.03 for Broadwovens – cotton, suggesting that a one percent reduction in applicable

[11] Only results for selected sectors that we find most interesting are included in Table 5 to save space. A table of complete results is available from the authors upon request.

tariff facing country *i* is associated with an up to 34 percent increase in that country's share of total U.S. imports of that sector's output.

The real exchange rate has a significantly positive effect on country *i*'s share of imports into the U.S. for all but four of the sectors. These are Carpets and Rugs, Thread Mills, Coated Fabrics, not rubberized, and Tire and Cord fabrics. This result is consistent with the relatively low volume of trade in these sectors (relative to others); for example, carpets and rugs are rarely imported into the U.S. because shipping such bulky items over long distances is very costly. Our estimates of the effect of labor wages are consistent with our industry results, as well as those reported by Fukao et al. (2003) for a similar model estimated for many manufacturing sectors. The coefficient on real GDP per capita is only significant for four of the 15 sectors, and it is only negative for one of them. Ironically, this sector is Carpets and Rugs, which is relatively capital intensive and with which, as mentioned above, there is little trade; in other words, cross-country wage differences should matter relatively little here. This suggests that tariffs and exchange rates, rather than wages, remain significant factors in explaining textile imports of all goods.

An interesting result is the apparent impact of NAFTA. Only three sectors saw any significant gain in the shares of Mexico and Canada after 1994: Hosiery – n.e.c., Thread Mills, and Tire Cord and fabrics. Interestingly, Thread Mills and Tire Cord sectors are both characterized as relatively capital intensive and experiencing fast growth in the 1990s (Marlow-Ferguson, 2001). The discussion of our results above suggests that there is a handful of sectors in which changes in the pattern of trade are not easily explained within our model. These – for example, Thread Mills – are sectors, whose

contribution to the overall industry's output is rather small and which employ relatively few workers. Addition of the other NAFTA regional dummies (Model 2) reveals that little diversion from outside of North America can be attributed to NAFTA. In particular, we find only a handful of significant region coefficients among all of our sector regressions. Asian countries saw their shares decline in two sectors: Broadwovens – wool and Hoisery, n.e.c., while for countries of Latin America shares of U.S. imports fell in three sectors: Broadwovens – manmade silk and wool, and Weft Knit fabric mills. Additionally, imports from Western Europe fell for a handful of sectors as well, particularly Hosiery, n.e.c. and Weft Knits. Overall, we conclude that there are substantial differences within the industry: the response of the composition of U.S. imports is not uniform across sectors. However, we do not see any convincing evidence of trade diversion from Asia at either the industry or the sector level.

6.2 4-Digit SIC Level Apparel Sectors

We estimate the same two models for each of the 27 4-digit apparel sectors. The results are reported in Table 6.[12] The effects of tariffs and exchange rates are consistent with our theoretical predictions: higher values of real exchange rates (i.e., stronger U.S. dollar) are generally associated with higher shares of imports, while higher effective tariffs correlate with lower import shares. Wages (proxied by real GDP per capita) have a significantly negative effect for eight sectors in our parsimonious specification, but this effect goes away for most sectors when regional NAFTA controls are added to the model. We are nevertheless able to conclude two things. First, the effect of wages in our models

[12] The same estimation issue arises here as in our discussion of results for the textile industry and sectors: the simple model can be estimated using the fixed-effects approach with country- and time-specific intercepts, while the full specification requires a switch to random effects because of the interference caused by regional NAFTA dummies and group and time effects.
Several sectors are omitted to save space, but a full set of results is available from the authors upon request.

is stronger than our similar estimates for textiles; this result appears in line with the stylized fact that apparel production is more labor-intensive. Second, there is substantial variation across sectors of the apparel industry, indicating that wages have significantly different impacts on imports of various apparel commodities. For example, we find that low wages along with high exchange rates and low tariffs explain most of the variation in import shares of Men's and Boy's Shirts, while for Women's, Misses' and Juniors' Suits, Shirts, and Coats all of the explanatory power rests with TARIFF.[13] Neither wages nor fluctuations in exchange rates appear to play a significant role.

Our primary variable of interest, NAFTA, behaves as expected: it is significant for 16 sectors and is positive for all of them, suggesting that Mexico and Canada saw their shares of U.S. imports of these goods increase after 1993. The sectors for which NAFTA appears to have no effect are generally the labor-intensive sectors exhibiting slow growth and low levels of R&D spending: Men's and Boy's clothing, Women's underwear and nightwear products, Waterproof Outerwear, Leather and Sheep-lined clothing, and Accessories. In other words, it appears that sectors in which labor costs comprise a significant portion of total production costs exhibit less sensitivity to tariff removals than do sectors where wages play a less central role.

The coefficient on NAF_ASIA in Model 2 is only significantly negative for one sector and is actually positive for a handful of others suggesting that Asian countries did not see their shares of U.S. imports decline with the enactment of NAFTA. By contrast,

[13] A referee suggested that for some apparel sectors that may be characterized as "fashion forward" – such as women's apparel – and having a relatively short shelf life (due to rapidly changing fashion trends), TARIFF may be capturing the importance of abbreviated turnaround time for suppliers, a significant factor for the suppliers of apparel goods. We believe that, if anything, our variable NAFTA captured some of this effect: the tendency to source fashion-related products from nearby Mexico rather than countries located farther away from the U.S. to take advantage of quicker deliveries. We thank the reviewer for directing our attention to this issue.

shares of countries in the Caribbean Basin showed some change in many sectors, but were equally likely to benefit or lose from NAFTA, so no overall pattern is apparent. We find that Western European countries saw their share of imports decline in at least nine sectors, mostly the relatively capital intensive goods, such as Canvas and related products, Automotive Trimmings, but also some labor-using sectors such as Men's and Boy's clothing.

The other region showing a substantial response to NAFTA is Middle East and North Africa (MENA): the coefficient is significant for 16 sectors and positive for 12 of those. Therefore, countries in this region exported more apparel goods to the U.S. relative to other countries in our sample after 1993.

Based on our results, we conclude that in general there is no evidence of trade diversion from Asia to NAFTA countries. In fact, in some sectors of the apparel industry, Asian countries as a group saw their shares of U.S. imports increase in 1994 and thereafter. On the other hand, some trade it appears was diverted from Western Europe as we found these countries' shares declined for many sectors. The obvious explanation for both observations is growth in trade: expanding trade volumes tend to offset any trade diversion. However, since U.S. trade with Asia has grown substantially faster than trade between U.S. and Europe in recent years, the diverted component of Asian imports is dwarfed by this expansion, while diversion from Europe is not.

7 A Closer Look at the Effect of Wages

We also wish to investigate further the impact of cross-country wage differences on their shares of U.S. textile and apparel imports. We use the World Bank classification to divide our sample into four categories by the countries' GDP per capita: Low Income,

Low-Middle Income, High-Middle Income, and High-Income.[14] To create income slope measures, we define four dummy variables — one for each of the four categories — and interact them with RGDPPC, our measure of the prevailing wages. As a result, we have four slope variables, each with the values of real GDP per capita for all countries and all years in that category and zeros everywhere else.

The following regression is estimated separately for textiles and for the apparel industry at the 2-digit level:

$$\ln s_{it} = \alpha_i + \nu_t + \beta_1 \ln e_{it} + \beta_2 \ln T_{it} + \sum_{j=1}^{4} \gamma_j YC_j * w_{it} + \delta_1 NAFTA + \varepsilon_{it} \qquad (4)$$

where income class *YCj* indicates the income category of each country. Table 4 shows the results of 2-way fixed effects estimation.

[Table 4: Industry (2-digit) level estimates with income classes]

The results indicate that within-category variation in wages is significant in explaining patterns of textile and apparel imports, albeit for apparel the effect appears stronger. For apparel imports, we find that three out of the four slope coefficients are significantly negative, suggesting that low-wage countries do make up a larger share of U.S. imports. For textiles, lower relative wages within the high-income category matter significantly, while among low-income countries, this variation is not important. Note also that the magnitude of the effect is larger for apparel — a more labor intensive industry — than for

[14] Source: Income class data is obtained from The World Bank Group, 2005, Data and Statistics. http://www.worldbank.org/data/countryclass/classgroups.htm. *Income group:* Economies are divided according to 2004 GNI per capita, calculated using the World Bank Atlas method. The groups are: *low income*, $825 or less; *lower middle income*, $826 - $3,255; *upper middle income*, $3,256 - $10,065; and *high income*, $10,066 or more.

textiles. In fact, in the apparel regression, wage differences across categories appear to explain most of the variation in the dependent variable.

On the whole, such results are encouraging: wages do play a role, and real GDP per capita appears adequately correlated with differences in these wages across countries and over time. We conclude that the reason we found surprising results in our earlier specifications is that the wage effect is not smooth across countries in our sample; forcing it to detect the "average" impact on imports from all countries neglects this fact.

8 Concluding Remarks

In this paper we attempt to explain the observed changes in the pattern of textile and apparel trade between the U.S. and a large sample of other countries as a function of several factors, such as prevailing wages, currency exchange rates, and trade barriers.

The textile and apparel industries present a particularly interesting case study for a number of reasons. First, within the manufacturing sector, the textile and apparel industries are arguably the most profoundly affected by international trade. Second, recent studies have found textile and apparel industries to behave differently from many other sectors when it comes to adapting to rapidly changing conditions. Third, several of those studies, as mentioned above, have concluded that a substantial amount of trade diversion is observed in textiles but not in the manufacturing sector in general, while others maintain that no evidence of trade diversion is apparent.

Using a modified model of bilateral trade, we find little support for the conclusion that NAFTA is trade diverting — shares of Asian countries, for example, do not exhibit large declines accompanied by corresponding increases in Mexican and Canadian shares,

which would indicate trade diversion. We qualify this finding, however, by noting that rapidly expanding trade with non-NAFTA countries (such as the Asian countries) in the 1990s may mask some trade diversion, which in this case would not be easily detectable.

We also find that low wages (approximated by real GDP per capita) in general do not appear to play a significant role in determining the source of textile imports into the U.S., although this popular claim is somewhat true for apparel. At the more disaggregated sector level, we find that wages do matter in some apparel sectors and in a handful of textile sectors, but the effect on apparel trade is more pronounced. In addition, lower wages among relatively rich countries explain larger shares of these countries in U.S. imports of textile and apparel goods, but the poorest countries do not have a clear advantage due to low labor costs alone.

A key implication of the results is that as the U.S. moves forward with a free trade agreement with the countries of Central America, the effects of NAFTA will provide policymakers some indication on how the initiative might affect U.S. industries and the overall U.S. economy.

A variety of extensions of this research is possible; we limit ourselves to one potential future direction here. A novel approach to measuring the extent of trade creation and trade diversion is suggested in Magee (2004), where trade expansion is taken to be the difference between actual trade after a PTA is signed and the simulated (counterfactual) volume of trade between the same pair of countries that would take place but for the PTA. This measure of trade expansion can then be decomposed into trade creation and trade diversion.

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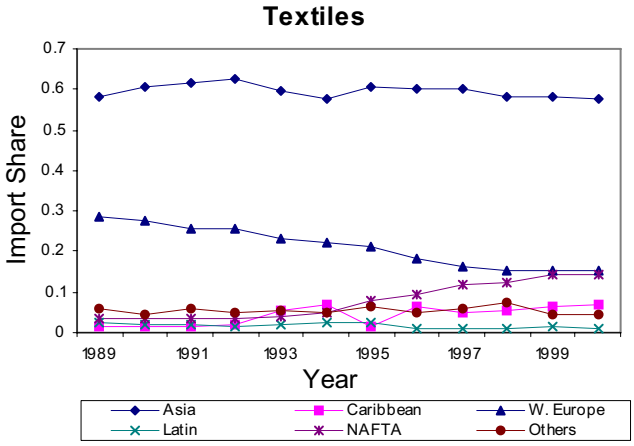
Figure 1: Import Shares by Region



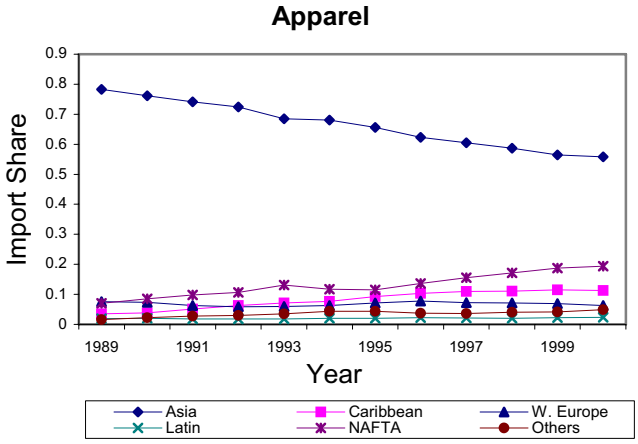
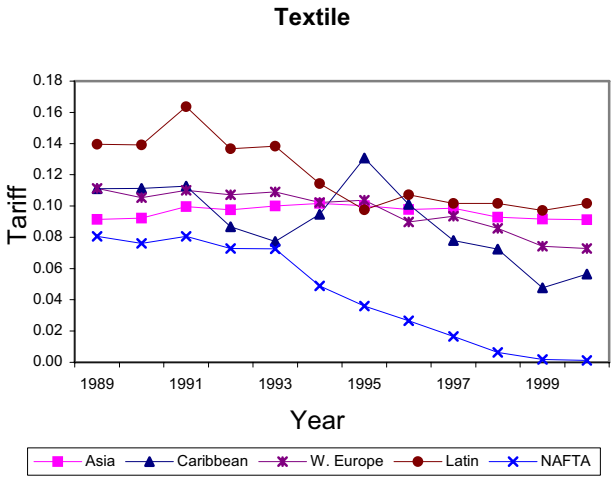


Figure 2: Tariff Rates by Region



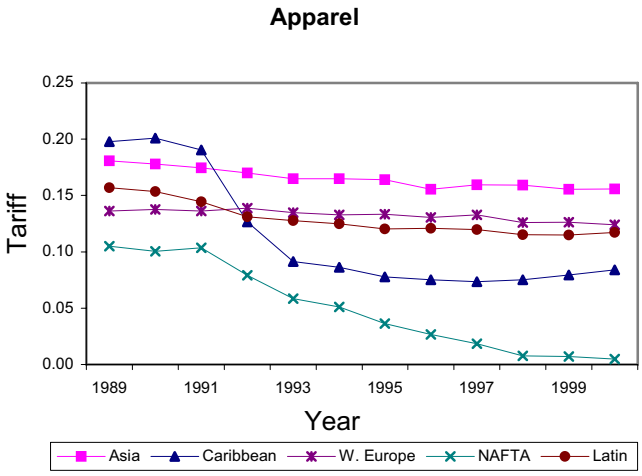


Table 1: Descriptive Statistics

TEXTILE

Variable	Mean	Std. Dev.	Min.	Max.
IMPSHARE	0.0159	0.0264	0.2214×10^{-6}	0.1409
RGDPPC	10364.2260	8795.21	681.07	43989.44
RXRATE	22862.8370	399831.126	0.01433	9876193.62
TARIFF	0.09530	0.0484	0.2451×10^{-3}	0.4471

APPAREL

Variable	Mean	Std. Dev.	Min.	Max.
IMPSHARE	0.0152580	0.02971975	0.515854×10^{-7}	0.1892
RGDPPC	9787.64097	8763.24604	491.5900	43989.44
RXRATE	21823.2297	390475.086	0.01433	9876193.62
TARIFF	0.14260	0.066955	0.000	0.90040

Notes: IMPSHARE is a country's share in U.S.'s textile imports (the dependent variable), RGDPPC is real GDP per capita, RXRATE is real exchange rate, TARIFF is the effective tariff rate. All variables enter the regression equation as natural logs.

Table 2: Textile Industry (2-digit) Estimation Results

	Model 1 2-way FEM	Model 2 2-way FEM	Model 3 2-way FEM
Constant	-8.0379*** (8.513)	-8.1039*** (8.6)	-8.4762*** (8.165)
RGDPPC	0.2277** (2.247)	0.2345** (2.319)	0.2667** (2.495)
RXRATE	0.0907*** (2.891)	0.0912*** (2.915)	0.0955*** (3.069)
TARIFF	-2.5867** (1.974)	-2.5467*** (1.95)	-2.6432** (2.027)
NAFTA	0.9958*** (2.655)		0.9033** (2.376)
NAFTA_93		1.0649*** (3.095)	
NAF_AFRICA			-0.3354 (1.613)
NAF_ASIA			-0.0145 (0.085)
NAF_CARIBB			0.0654 (0.251)
NAF_LATIN			-0.5203** (2.503)
NAF_WEUR			-0.1696 (1.054)
NAF_MENA			0.1429 (0.573)
NAF_OCEANIA			-0.8971* (1.729)
Adj R^2 = 0.8867	Adj R^2 = 0.8871		

Absolute value t-statistics in parentheses
N = 735 * significant at the 0.1 level, ** significant at the 0.05 level, *** significant at the 0.01 level.

Table 3: Apparel Industry (2-digit) Estimation Results

	Model 1 2-way FEM	Model 2 2-way FEM	Model 3 2-way FEM
Constant	7.3114**	7.4336**	-8.5503***
	(2.337)	(2.376)	(3.302)
RGDPPC	-1.5828***	-1.5964***	0.2329
	(4.379)	(4.416)	(0.796)
RXRATE	-0.0372	-0.035	-0.0399
	(1.064)	(1.000)	(1.138)
TARIFF	-0.0579	-0.1234	-0.031
	(0.068)	(0.145)	(0.035)
NAFTA	0.3642		0.5931*
	(1.125)		(1.694)
NAFTA_93		0.1582	
		(0.531)	
NAF_AFRICA			0.4133**
			(2.017)
NAF_ASIA			-0.0802
			(0.378)
NAF_CARIBB			0.5525**
			(2.225)
NAF_LATIN			-0.1903**
			(0.730)
NAF_WEUR			-0.1771
			(0.895)
NAF_MENA			0.4842*
			(1.874)
NAF_OCEANIA			0.5997
			(1.273)
Adj R^2 = 0.9464	Adj R^2 = 0.9463	N = 771	

Absolute value t-statistics in parentheses

* significant at the 0.1 level, ** significant at the 0.05 level, *** significant at the 0.01 level.

Table 4: Industry (2-digit) level estimates

	Textiles	Apparel
Constant	-5.1038***	-5.0295***
	(16.214)	(13.895)
LOWGDP	0.00003	0.00095*
	(1.595)	(1.839)
LOWMIDGDP	-0.00006	0.00017
	(1.514)	(1.233)
HIMIDGDP	-0.00032***	-0.00041**
	(3.586)	(4.777)
HIGDP	-0.0006*	-0.00011***
	(1.927)	(4.292)
RXRATE	0.061**	-0.0835**
	(2.403)	(2.283)
TARIFF	-3.0742**	0.2354
	(2.359)	(0.279)
NAFTA	1.0034***	0.5247
	(2.7000	(1.638)
Adj. R^2	0.8889	0.948
F	72.48	169.89
N	734	771

Absolute value t-statistics in parentheses

* significant at the 0.1 level, ** significant at the 0.05 level, *** significant at the 0.01 level.

Table 5: Textile Sector Estimates

	Broadwoven fabric mills, cotton		Broadwoven fabrics mills, manmade fiber and silk		Broadwoven fabrics mills, wool		Hosiery, n.e.c.		Carpets and Rugs		Thread mills		Coated fabrics, not rubberized		Tire cord and fabrics	
	2211		2221		2231		2252		2273		2284		2295		2296	
	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)
Constant	2.656	-11.185***	-15.911**	-23.426***	-8.936	-18.67018***	-2.809	-19.9343***	7.032	-13.0986***	-7.986		-31.734***	-23.497***	-18.529	
	(0.409)	(3.28)	(2.151)	(7.438)	(0.996)	(4.898)	(0.322)	(5.888)	(1.229)	(3.826)	(0.615)		(3.029)	(6.187)	(0.898)	
RGDPC	-0.862	0.6905*	0.945	1.7336***	0.360	1.3403***	-0.418	1.4031***	-1.543**	0.630	0.252		2.711**	1.844***	1.413	
	(1.155)	(1.798)	(1.144)	(4.908)	(0.372)	(3.126)	(0.435)	(3.776)	(2.41)	(1.635)	(0.178)		(2.423)	(4.47)	(0.656)	
RXRAT	0.295***	0.2344***	0.217***	0.2127***	0.125*	0.15082**	0.181**	0.2608***	-0.063	-0.044	0.093		0.154	0.099	0.180	
	(4.288)	(3.579)	(3.088)	(3.301)	(1.664)	(2.181)	(2.15)	(3.533)	(1.1)	(0.779)	(0.627)		(1.335)	(1.051)	(1.449)	
Tariff	-32.433***	-34.038***	-1.807	-2.000	-5.149***	-5.049***	-7.727**	-5.284	-6.468***	-6.242***	-3.738		-7.297*	-8.983**	-25.204*	
	(9.29)	(9.498)	(1.188)	(1.372)	(3.946)	(4.089)	(2.144)	(1.531)	(3.384)	(3.31)	(0.823)		(1.878)	(2.285)	(1.945)	
NAFTA	-0.734	-0.086	0.965	1.1107*	0.757	0.605	1.169*	-0.285	0.212	0.239	2.086**		0.399	0.202	1.745**	
	(1.184)	(0.129)	(1.608)	(1.837)	(1.227)	(0.957)	(1.749)	(0.334)	(0.45)	(0.49)	(2.529)		(0.592)	(0.296)	(2.344)	
NAF_AFRICA		0.8293*		-0.485		-2.01395*		-0.822		0.243				-0.575		
		(1.919)		(0.986)		(1.712)		(0.815)		(0.655)				(0.555)		
NAF_ASIA		0.886**		0.139		-0.8877**		-0.7545*		-0.383				0.140		
		(2.088)		(0.6655)		(2.216)		(1.869)		(1.526)				(0.387)		
NAF_CAR		0.830		-0.729		2.345126**		1.7524***		0.441				0.188		
		(1.561)		(1.481)		(2.301)		(3.273)		(0.953)				(0.216)		
NAF_LAT		-0.113		-1.18502***		-0.9338**		-0.714		-0.366				-0.979		
		(0.215)		(2.713)		(2.002)		(1.363)		(1.072)				(1.415)		
NAF_EW		0.655		0.075		-0.080		-0.8871**		-0.314				-0.5684*		
		(1.629)		(0.249)		(0.239)		(2.357)		(1.361)				(1.854)		
NAF_MENA		0.044		1.8317***		0.822		-0.750		0.393				-1.028		
		(0.087)		(4.127)		(1.266)		(1.312)		(1.186)				(1.215)		
NA_AUST		1.112		0.375		0.118		-0.285		0.698				-0.415		
		(1.271)		(0.462)		(0.141)		(0.334)		(1.047)				(0.459)		
N	658		585		432		504		601		399		409		189	
Adj. R2	0.841		0.862		0.828		0.828		0.905		0.659		0.808		0.819	
F	45.410		49.020		31.440		36.700		73.710		13.040		27.350		19.860	

Table 6: Apparel Sector Results

	Men's and boy's suits, coats, and overcoats		Men's and boy's shirts		Men's and boy's underwear and nightwear		Women's, misses', and juniors' blouses and shirts		Women's, misses', and juniors' suits, skirts, and coats		Women's, misses', children's, and infants' underwear and		Girl's, children's, and infants' outerwear, not elsewhere classified		Dress and work gloves, except knit and all-leather	
	2311		2321		2322		2331		2337		2341		2369		2381	
	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)
Constant	0.432	-9.958***	14.721***	-3.010014	-10.450	-1.534	0.963235023	-16.166***	-3.029	-13.432***	10.5095965	-4.318662	2.5125826	-13.703***	-6.842	-1.323
	(0.085)	(3.192)	(3.091)	(0.914)	(1.542)	(1.559)	(0.245)	(13.749)	(0.682)	(4.61)	(1.602)	(1.15)	(0.71)	(5.154)	(1.067)	(0.344)
RGDPC	-0.780	0.332	-2.226***	-0.197	0.348	-0.537***	-0.812*	1.091***	-0.420	0.728**	-1.834**	-0.262	-1.069***	0.737**	-0.024	-0.736*
	(1.357)	(0.941)	(4.066)	(0.529)	(0.461)	(5.04)	(1.805)	(8.311)	(0.827)	(2.193)	(2.503)	(0.623)	(2.632)	(2.446)	(0.034)	(1.746)
RXRAT	0.035	0.027	0.082*	0.0877*	0.211***	0.003	-0.045	-0.051	0.055	0.043	0.060	0.037	-0.030	-0.048	-0.142**	-0.181***
	(0.708)	(0.567)	(1.669)	(1.834)	(3.457)	(0.103)	(1.091)	(1.537)	(1.191)	(0.928)	(0.984)	(0.654)	(0.805)	(1.278)	(2.264)	(2.929)
Tariff	-1.809	-1.145	-15.107***	-18.162***	-4.421***	-6.092***	-6.053***	-4.716***	-2.362**	-2.617**	-7.270***	-6.475***	-1.143	-1.864	4.047***	3.583**
	(1.562)	(1.015)	(8.208)	(10.015)	(3.504)	(5.478)	(6.758)	(5.658)	(2.083)	(2.269)	(3.009)	(2.744)	(0.962)	(1.55)	(3.001)	(2.436)
NAFTA	0.567	0.670	0.063	-0.068	1.502***	2.440***	0.889**	1.013***	0.874*	0.847*	-0.167	0.346	1.091***	1.377***	2.475***	3.286***
	(1.218)	(1.468)	(0.128)	(0.134)	(2.767)	(5.45)	(2.262)	(2.706)	(1.992)	(1.849)	(0.294)	(0.599)	(3.045)	(3.7)	(5.48)	(6.57)
NAF_AFR		-1.541***		1.0188***		-5.787***		-0.774***		-0.183		-0.789		0.646***		-0.670
		(4.436)		(3.695)		(14.795)		(4.12)		(0.69)		(1.186)		(3.054)		(0.586)
NAF_ASIA		-0.146		0.030		0.929***		0.023		0.010		0.152		0.262		0.998***
		(0.669)		(0.117)		(5.006)		(0.153)		(0.042)		(0.479)		(1.256)		(3.48)
NAF_CAR		1.245***		-0.617*		1.519***		-0.398*		-0.042		0.470		-0.018		0.612
		(3.751)		(1.892)		(4.819)		(1.704)		(0.131)		(1.120)		(0.069)		(1.512)
NAF_LAT		-0.322		-1.404***		-0.264		-0.504**		-0.670**		0.619		-0.378		1.450***
		(1.065)		(4.258)		(0.852)		(2.162)		(2.114)		(1.423)		(1.429)		(3.488)
NAF_EW		-0.365*		0.054		-1.349***		-0.885***		-0.206		-0.397		-0.141		0.571**
		(1.814)		(0.231)		(7.306)		(6.382)		(0.918)		(1.310)		(0.727)		(2.071)
NAF_MENA		1.128***		0.925***		-0.907***		0.500**		0.270		2.620***		0.884***		1.315**
		(3.791)		(2.859)		(3.065)		(2.155)		(0.852)		(6.372)		(3.405)		(2.527)
NA_AUST		-0.693		1.210*		-2.834***		0.758		0.186		-0.207		1.121**		1.640*
		(1.138)		(1.926)		(4.552)		(1.508)		(0.304)		(0.277)		(2.278)		(1.852)
N	673		730		609		739		727		628		755		506	
Adj. R2	0.886		0.914		0.859		0.935		0.909		0.833		0.946		0.908	
F	67.530		97.130		51.010		128.200		88.650		42.220		157.310		74.720	

Table 6: Apparel Sector Results

	Waterproof outerwear		Leather and sheep-lined clothing		Apparel and accessories, not elsewhere classified		Curtain and draperies		Canvas and related products		Automotive trimmings, apparel findings, and related products	
	2385		2386		2389		2391		2394		2396	
	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)	Model 1 (FEM)	Model 2 (REM)
Constant	-1.474	-5.662*	-8.111	-14.063***	-18.294***	-16.628***	-14.06424115	-13.288***	-18.771*	-11.089***	-34.297***	-16.695***
	(0.205)	(1.681)	(1.191)	(4.072)	(3.572)	(6.461)	(1.605)	(3.54)	(1.793)	(3.113)	(4.463)	(8.767)
RGDPC	-0.541	-0.130	0.015	0.637*	1.236**	1.043***	0.648	0.593	1.237	0.363	2.959***	1.052***
	(0.68)	(0.346)	(0.02)	(1.661)	(2.148)	(3.574)	(0.685)	(1.479)	(1.086)	(0.939)	(3.534)	(5.093)
RXRAT	-0.073	-0.095*	0.137**	0.154***	0.090*	0.042	0.230***	0.158**	0.033	-0.060	0.315***	0.132**
	(1.163)	(1.659)	(2.343)	(2.769)	(1.746)	(0.844)	(3.037)	(2.247)	(0.243)	(0.626)	(3.831)	(2.554)
Tariff	-2.068	-1.846	-8.530***	-7.890**	-2.523**	-2.623**	10.943*	3.049	-0.816	-4.754	3.405	7.169**
	(1.059)	(0.988)	(2.621)	(2.494)	(2.144)	(2.31)	(1.722)	(0.49)	(0.252)	(1.487)	(1.001)	(2.488)
NAFTA	-0.012	0.094	0.552	0.265	0.155	0.124	2.127***	1.851**	0.258	0.581	1.378***	1.187***
	(0.021)	(0.167)	(1.031)	(0.494)	(0.364)	(0.284)	(3.065)	(2.486)	(0.393)	(0.924)	(2.833)	(2.764)
NAF_AFR		-3.408**		-2.419***		-0.894**		0.872		-3.120**		-2.701***
		(2.508)		(3.174)		(2.492)		(0.713)		(2.183)		(3.195)
NAF_ASIA		0.716**		-0.318		0.352		0.605		1.254***		-0.136
		(2.286)		(1.162)		(1.486)		(1.433)		(3.947)		(0.671)
NAF_CAR		0.711*		-0.441		-0.265		-2.786***		0.746		-1.990***
		(1.715)		(0.848)		(0.824)		(3.794)		(1.021)		(5.512)
NAF_LAT		-1.461***		-0.979***		0.025		0.173		-0.618		-2.197***
		(2.998)		(2.632)		(0.078)		(0.253)		(1.009)		(5.611)
NAF_EW		-0.462		-0.161		-0.390*		-0.176		-0.654**		-0.462**
		(1.551)		(0.643)		(1.786)		(0.463)		(2.097)		(2.420)
NAF_MENA		0.426		-1.650***		-0.834**		0.706		-0.446		0.936**
		(0.908)		4.00		2.55		(1.181)		(0.766)		(2.180)
NA_AUST		-2.084***		0.572		-0.586		2.288***		2.647***		-1.679***
		(2.779)		(0.785)		(0.981)		(2.833)		(3.068)		(2.831)
N	582		576		655		477		445		439	
Adj. R2	0.826		0.861		0.902		0.758		0.780		0.846	
F	37.170		51.170		76.240		22.330		23.450		35.480	