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An econometric analysis of trade diversion under NAFTA

Kyoji Fukao [a], Toshihiro Okubo [a], Robert M. Stern [b,*]

[a] *Hitotsubashi University, Tokoyo, Japan*
[b] *Gerald R. Ford School of Public Policy, University of Michigan, Ann Arbor, MI 48109, USA*

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Abstract

We provide an econometric analysis of whether or not the tariff preferences extended to Canada and Mexico under the North American Free Trade Agreement (NAFTA) may have resulted in trade diversion. A review of previous studies, both descriptive and econometric, suggests that trade diversion has occurred especially as evidenced by Mexico's increased shares of US imports apparently at the expense of several Asian countries. We use a conceptual framework based on a partial-equilibrium model of differentiated product industries under monopolistic competition for many countries. The model is implemented empirically using a fixed-effect panel analysis of US imports at the Harmonized System (HS) 2-digit level for the period, 1992–1998. Of the 70 sets of regressions that were run, the coefficients of the tariff rates were statistically significant in 15 cases. The strongest evidence of trade diversion was found mainly for US imports of textile and apparel products. We also estimated regressions for selected commodities at the HS 4-digit level. The results suggest trade diversion for textiles, apparel, and some footwear products but not for trade in motor cars and vehicles and television receivers, which may have been more influenced by changes in foreign direct investment and outsourcing rather than tariff preferences.

JEL classification: F10; F13; F15

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1. Introduction

Prior to and since the inception of the North American Free Trade Agreement (NAFTA) in January 1994, there has been a great deal of interest in policy and academic circles in the

* Corresponding author. Tel.: +1-734-764-2373; fax: +1-810-277-4102.
E-mail address: rmstern@umich.edu (R.M. Stern).
URL: http://www.umich.edu/~rmstern/

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impact that NAFTA might have on the trade and economic welfare of members—Canada, Mexico, and the United States—and non-members. In this paper, we investigate the effects of NAFTA on trade diversion at a highly disaggregated level of commodity detail. The rationale for this approach is that the creation of a preferential trading arrangement like NAFTA involves the interplay of the removal of the differential structure of tariffs between member countries and the maintenance of these national tariffs with respect to non-members. In addition, we know that rules-of-origin (ROO) were designed to provide special preferences for selected sectors in the NAFTA to the possible detriment of non-members.

We begin in Section 2 with a brief review of the complexities of distinguishing the effects of NAFTA from the myriad of other forces at work before and following the inception of NAFTA. We also discuss the approaches and conclusions of some pertinent studies of the effects of NAFTA. In Section 3, we discuss the conceptual framework that provides the basis for our analysis and, in Section 4, we implement our econometric investigation. Our empirical results are reported in Section 5. Conclusions and implications for further research are presented in Section 6.

2. NAFTA in context and a review of the literature

If we were able to do a controlled experiment, we would want to compare the economic situation before and after NAFTA was created. Unfortunately, in the social sciences, the ability to construct a controlled experiment is typically hampered because other things are happening that will serve to confound the design and interpretation of the experiment. Thus, for example, as Krueger (2000, pp. 762–765) has noted, there are a number of difficulties that arise in evaluating the effects of NAFTA. These include: (1) anticipation beginning in 1990 that negotiations would lead to creation of NAFTA; (2) the phasing out of NAFTA tariffs over a 10–15-year time period beginning in 1994; (3) trade liberalization taking place elsewhere at the same time that NAFTA was being implemented; (4) continuing responses to Mexico's unilateral trade liberalization initiated in the late 1980s; and (5) the real appreciation of the Mexican peso from 1987 to 1994 and subsequent depreciation in the course of Mexico's financial crisis in late 1994.[1] Given all of the foregoing currents of change, it is by no means an easy matter to isolate the effects of NAFTA. Nonetheless, some efforts have been made that are worthy of attention.

Gould (1998) used a gravity-model approach in determining how NAFTA may have affected the growth of North American trade. The model is estimated in log first differences with aggregated bilateral trade flows on a quarterly basis for 1980–1996 and measures of real GDP, GDP price deflators, real exchange rates, and dummy variables to represent changes in the trade regimes during the period involved. His empirical results suggest that, in its first 3 years: (1) NAFTA may have stimulated the growth of US aggregate exports to Mexico but not US imports from Mexico; (2) US bilateral trade into Canada and Canadian–Mexican trade were not affected by NAFTA; and (3) trade diversion was probably negligible.

Krueger (1999b, 2000) examined the changing patterns of trade flows and noted that the trade relationships among the NAFTA countries intensified considerably in the 1990s.

[1] See Lustig (2001) for a review of Mexico's economic performance and policies since 1980.