between all countries rises—both members and non-members of the RIA. However, some substitution of trading partners is a predictable effect of an RIA; these shifts do not necessarily result in trade diversion.

Three studies exist which attempt to control for the impact of the trade agreement through detailed comparisons of the sectors for which NAFTA resulted in significant trade liberalization as measured by tariff reductions in comparison with other sectors in which trade was already liberalized or, for practical purposes, barrier free. They also look at trade with non-NAFTA partners as another set of benchmarks. The first study was by Schwanen (1997) and the second by Clausing (2001). Schwanen (1997) looks at Canada-US trade from 1985 to 1995 with a focus on total bilateral trade across 18 product groups. Schwanen found that in those sectors in which the FTA liberalized trade, Canada-US bilateral trade volumes grew by 139 percent versus 64.5 percent for those not liberalized. He excluded autos and crude oil trade in these calculations because both of these sectors were not significantly impacted by the FTA. This calculation strongly suggests that the growth in trade (total trade creation) between Canada and the United States was strongly linked to the FTA. To check on this explanation, he then examines Canada's non-US trade. Bilateral trade with countries other than the US, in the FTA liberalized sectors, grew by 34.7 percent compared to growth of 53.6 percent in those sectors not liberalized by the FTA. The comparison suggests that the FTA worked in those sectors in which liberalization was significant. Note the latter numbers do not provide conclusive evidence on the trade diversion effects of the FTA since they only show that trade with all countries grew, although the fact that the liberalized sectors grew faster for the FTA members, but slower for non-members may indicate some trade diversionary effects. Schwanen also does a comparison of pre- and post-FTA data using 1981-88 as the pre-period. He finds that there was a greater acceleration in the FTA liberalized group than the non-liberalized group. This was true for both exports and imports, but the effect was greater for exports.

Clausing (2001) takes a similar approach but used much more detailed US trade data. She examines US imports in approximately 8000 10-digit commodity groups as classified by the Harmonized Classification System using US census data from 1989 to 1994. She constructs a partial equilibrium supply and demand model and derives a reduced form expression for the change in US imports from Canada as a function of the initial Canadian import share in the US market, the level of US tariffs against Canadian imports, and time dummies to control for cyclical, exchange rate and other macroeconomic factors. Her results were quite striking. She found that the elimination of US tariffs had a statistically significant, positive, and large effect on imports from Canada. Each one percentage point reduction in tariffs is associated with a 9.6 percent increase in imports from Canada. For the United States, her estimates imply that total imports from Canada were 26 percent higher owing to FTA than they would have been otherwise. In terms of the growth of US imports from Canada between 1989 and 1994, this implies that over half (54 percent) of the $42 billion increase in US imports from Canada was due to the FTA.

The Clausing (2001) study is also notable in that it is the only one available which used detailed product line comparisons to explicitly check for