wide spectrum of varieties. Although countries without substantial cost differences are not specialized at the industry level in international trade, they are, nonetheless, specialized at the product level within the same industry, which results in intra-industry trade.

With the opening of trade, each country increases its exports of varieties to other countries; at the same time, each faces increased competition from foreign varieties produced from abroad. As a result, a country undergoing free trade is expected to produce fewer domestic varieties due to foreign competition, but will receive a broader range of available varieties via imports. Moreover, there is a price effect associated with trade liberalization and increased competition, which lowers the price for each variety. Consequently, the sum of the varieties under freer trade would exceed the number of varieties available before the opening of trade (Feenstra, 2003).

Hillberry and McDaniel (2002) used detailed U.S. trade data to examine the extent to which the increase in NAFTA trade was associated with trade in new varieties. Their study decomposed the growth in U.S. trade with its NAFTA partners over the period 1992-2002 into price, volume, and variety effects. The variety effects are measured by the change in trade values due to trade in more or fewer goods using the Harmonized Tariff (HS) Schedule. During the 1993-2001 period, they found a 35-percent increase in U.S. exports to Canada and a 69-percent increase in Canadian exports to the United States. Of the measured 35 percentage point increase in U.S. exports to Canada, only 3.4 points represented trade in new goods. In other words, Canadian imports from the United States would have risen by 3.4 percentage points holding the prices and quantities of other pre-existing trade constant, due to new varieties. This represents a gain to consumers in Canada.

Chen (2006) used data on trademarks to quantitatively estimate the impact of the CUSFTA on the variety of goods available. He found that not only did the annual variety of products available to Canadians increase by 60 percent, but because of the size difference and positive relation between the size of the market and the number of varieties available in that market, Canada benefited more than the United States in terms of the number of new products available as a result of trade. The smaller Canadian economy gained access to some three times as many new U.S. varieties than U.S. consumers received from Canada.

Price effects

A number of studies have examined the effect of foreign competition on pricing decisions by firms and concluded that trade liberalization has indeed reduced mark-ups of price over costs, although disentangling the price effect from other relevant factors has proven difficult. Badinger (2007) examined the effects on price-over-cost mark-ups using data across 18 sectors in 10 EU member states in relation to the creation of the European Union (EU) single market. After taking cyclical and technological factors into account, the study found that mark-ups in manufacturing declined by 31 per cent following integration while services mark-ups increased slightly. Badinger argued that the comparatively weak state of the single market for services and the persistence of anti-competitive strategies in certain services sectors might explain why services mark-ups did not behave as expected.