

auto products became much more competitive compared to the pre-Auto Pact era and exports of Canadian auto products to the United States surged. Moreover, a few years after the inception of the Auto Pact, Canada's productivity gap with U.S. auto industry had virtually disappeared (Wonnacott and Wonnacott 1982).

Other examples of gains in efficiency arising from increased intra-industry trade include empirical research into the effects arising from the implementation of the CUSFTA conducted by Baldwin, Beckstead and Caves (2001), Baldwin, Caves, and Gu (2005), and Baldwin and Gu (2006), who documented a dramatic reduction in the number of manufacturing products produced in Canada following the implementation of the CUSFTA in 1989. In particular, Baldwin, Caves, and Gu (2005) report that the decrease in the number of products produced in Canada was accompanied by substantial increases in production runs for individual products.

Moreover, because of productivity differences between firms, when trade barriers are removed (or reduced), more productive firms tend to thrive and expand, while less productive firms contract or possibly exit. This generates another type of allocative efficiency gain known as the "reallocation" effect. In essence, market share is reallocated from less efficient firms to more efficient firms—with the result that overall efficiency in the industry improves.

Using firm-level data, Lileeva and Trefler (2010) examined the significance of this "reallocation" effect in raising Canada's overall manufacturing productivity in the wake of the Canada-U.S. FTA. Analysing plant-level exports between 1984 and 1996, they found that as the United States lowered its

tariffs against imports from Canada under the CUSFTA, Canadian exporters grew by exporting to the U.S., thereby raising overall productivity. A market share-shift analysis showed that this raised average manufacturing productivity by 4.1 percent.

At the same time, corresponding Canadian tariff cuts pressured some Canadian firms to contract and even exit in the face of foreign competition. This selection effect also generated overall productivity gains in the Canadian manufacturing sector since the contracting and exiting plants were substantially less efficient than the average Canadian firms. Trefler (2004) estimated that this selection effect increased overall Canadian manufacturing productivity by an estimated 4.3 percent.

Thus, the allocative efficiency gains via reallocation and the selection effects induced by the CUSFTA combined to generate a productivity gain of 8.4 percent (i.e. 4.3 percent plus 4.1 percent) for Canadian manufacturing.

Beyond those gains associated with differences in efficiency between firms, gains also arise from within individual firms themselves. As exporting firms become larger because of open trade, it becomes attractive for some firms to invest in innovation and technology, skills and knowledge, thereby raising their profits and productivity. The development of new products and processes, and adapting these to foreign markets, also involves substantial fixed costs, so only the larger, integrated markets can support the sales volumes needed to justify incurring the high fixed costs of innovation and investment. While adapting to local conditions in foreign markets is often a dynamic and time-consuming learning process, it is by learning through exporting that many exporting firms improve their productivity.