a function of the price change by taking the derivative of the relative import demand, which gives $-\sigma \dfrac{\partial \ln p_{ct}}{\partial t}$. Solving for the optimal price response, we find that the earlier price change $\Delta t/(1+t)$ is adjusted by a factor $(1+\sigma/\omega)^{-1}$. A higher supply elasticity (ω) will lead to a larger price response as marginal costs are almost constant. A higher demand elasticity (σ) will lead to a smaller price decrease for any positive supply elasticity, because it leads to larger cost increases as quantity is very responsive.

When we perform the counterfactual simulations taking supply effects into account, the import effects are much smaller, not surprisingly given the low supply elasticities estimated in the previous section. In the first line of Table 4.14 we use the average demand and supply estimates and the low initial tariff rates. In the next line, we use the high tariff rates instead. In the third line, we calculate the most optimistic FTA effect if supply effects are taken into account. We take the maximum estimate for the demand elasticity (which makes quantity very responsive to price declines), the maximum estimate for the supply elasticity (to minimize the increase in marginal cost), and we take the high initial tariffs. Even under this scenario, the estimated impact is reduced by a factor of more than 3 in each country, relative to the upper range of the predictions in Table 4.13. As before compositional effects are important. Even though the tariff reduction is almost twice as high in Korea compared to Europe, the composition of Canadian exports leads to a comparable percentage effect in both countries/regions.

A final caveat is that these calculations assume that the impact of a free trade agreement is proportional to the decline in tariff rates. There are some indications that non-tariff barriers are important. While this is particularly true for final vehicles, it probably affects parts and accessories as well[56]. Unfortunately, there is no clear way to quantify this.

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[56] Even though the Japanese and Korean market shares in the U.S. and Canada vehicle markets are sizeable by now, they have not been able to