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Potential Static Benefits: Methodology

In an ideal analysis, we would have calculated the benefits of price convergence using a CGE model that linked all product markets and all countries. We lacked the resources for such an exercise. Instead, using elementary supply and demand analysis, we calculated the partial equilibrium changes in consumer surplus and producer surplus resulting from the specified degree of price convergence. The positions of demand and supply schedules in each country are assumed to remain unchanged in this analysis. For this reason, among others, the calculations are static rather than dynamic. Based on changes in consumer and producer surplus, we calculated the potential net gain or static efficiency benefits on a partial equilibrium basis. It must be emphasized that these calculations do not capture the interactions among markets in a single country, nor the interactions among markets across countries.

We should also note that our calculated benefits are conservative. To begin with, we excluded nontradable services and highly taxed items, even though evidence suggests that these items are subject to the same convergence forces as tradable goods. In the second place, we assumed that prices converge only to the edge, not the center of the broad world price band.[1] Third, we assumed that local demand and supply schedules are fixed in their respective positions. This means, among other things, that we ruled out dynamic gains when local firms become more efficient in response to import competition. Finally, we assumed low demand and

1. Table A.3 in appendix A presents static benefits calculated assuming that prices converge to the edge of a one-standard-deviation price band (the narrow world price band). Benefits are substantially larger than those calculated using the broad world price band.

supply elasticities (the assumed sum of the absolute value of demand and supply elasticities is 1.0 for all products). Changing the elasticity assumption alone would alter the calculated benefits in a linear manner. For example, if the sum of the absolute value of demand and supply elasticities were doubled to 2.0, the potential benefits shown in our calculations would also be doubled.

In partial equilibrium analysis, with fixed demand and supply schedules, when price convergence lowers the price for product *i* in city *n*, the net gain equals the difference between the positive change in consumer surplus and the negative change in producer surplus. When price convergence raises the price for product *i* in city *n*, the net gain equals the difference between the positive change in producer surplus and the negative change in consumer surplus.

Figure B.1 in appendix B illustrates potential benefits when the original price of product *i* in city *n*, shown by *b*, is higher than the upper limit of the broad world price band shown by *d*. Following liberalization, the price of product *i* is assumed to drop to *d*. Accordingly, the consumer surplus in city *n* increases from area *abc* to area *adf*, while the producer surplus in city *n* decreases from area *boc* to area *doe*. Hence the net gain is the triangle *cef*. This triangle *cef* represents the static benefits of price convergence calculated using partial equilibrium analysis.

Figure B.2 in appendix B illustrates the case when the price of product *i* in city *n*, shown by *b*, is lower than the lower limit of the BWPB, shown by *d*. Following liberalization, the price of product *i* is assumed to rise to *d*. Accordingly, the consumer surplus in city *n* decreases from area *abc* to area *ade*, while the producer surplus increases from area *boc* to area *dof*. The net gain is shown by the shaded triangle *ecf*.

In other words, whether convergence causes the local price to rise or fall, the country enjoys net static benefits in a partial equilibrium framework.

An additional point should be noted. The demand and supply schedules in figures B.1 and B.2 are drawn to incorporate existing imports and exports of product *i* by city *n*. The point of the diagrams is to illustrate additional imports or exports, as the case may be. The linear distance *ef* in figure B.1 represents additional imports; the linear distance *ef* in figure B.2 represents additional exports.