Identifying true trade patterns: correcting bilateral trade flows for re-exports

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A substantial and increasing part of the trade in goods are re-exports. Re-exported goods are treated in the National Accounts as being imported in and exported from a ‘ transit country’. This country only has short-term ownership of the goods, that are traded between two other countries. Data on bilateral trade flows used to estimate models of international trade are not usually corrected for re-exports. This implies that a re-exporting country is mistakenly taken as the origin of the trade flow (on the export side). Similarly, the re-exporting country is also treated as a final destination of a trade flow (on the import side). Re-exports in trade statistics may produce the following three main consequences: (1) the distance decay of trade is wrongly estimated, (2) a country’s main trading partners are wrongly identified, and (3) the volume of total world trade is overestimated. Most studies of international trade are based on the gravity model (see, e.g., Deardorff, 1998, and Anderson and van Wincoop, 2003). The gravity model postulates that bilateral trade depends on the economic size of the trade partners, which reflects market size and purchasing power, and a variety of measures of distance (or proximity) between the countries to reflect trade costs. A wrongly estimated distance decay of trade may affect the main conclusions from these studies. The misidentification of main trading partners may lead to wrongly targeted export promotion policies. The overestimation of the volume of trade may put too much (policy) emphasis on trade as an important factor in economic development. The recent literature on global value chains will also be affected, since not only the total value-added incorporated in export flows is of importance when identifying a country’s important trading partners, but also the actual destination of exports.

The World Input-output database (WIOD) provides information on bilateral trade flows between countries that are consistent with the National Accounts. The data includes estimates of the size of re-exports, which makes it possible to correctly estimate the volume of world trade. However, the trade flows between origin and destination are not corrected for re-exports. This paper estimates bilateral trade flows that are cleaned from re-exports. Using a constrained non-linear optimization procedure we estimate the complete re-export matrix. Assuming that trade patterns of re-exports are the same as the average trade patterns, we adjust the WIOD trade table by changing the origin of the re-exported imports and cleaning these re-exports from the import flows of the ‘transit country’. In doing so, this paper thus addresses consequences 1) and 2) above.

We find that the change in the average trade distance of countries in the period 2000–2010 due to the correction for re-exports is 5 percent on average. We also find that on average typical re-exporting countries like The Netherlands are ranked 1.5 higher as an export destination by other countries, while other countries are ranked up to a factor 2 lower than their actual importance. The results may not seem impressive, but it should be noted that they are based on total trade flows. Further analysis at the level of product groups (59) reveals much stronger differences in the distance decay of trade and the importance of trading partners.