

Measurement of Export Diversification Indices

Theil Index

We calculate the overall, intensive (within), and extensive (between) Theil indices following the definitions and methods used in Cadot et al. (2011). We first create dummy variables to define each product as "Traditional," "New," or "Non-traded." Traditional products are goods that were exported at the beginning of the sample, and non-traded goods have zero exports for the entire sample. Thus, for each country and product, the dummy values for traditional and non-traded remain constant across all years of our sample. For each country/year/product group, products classified as "new" must have been non-traded in at least the two previous years and then exported in the two following years. Thus, the dummy values for new products may change over time.

The overall Theil index is the sum of the intensive and extensive components. The extensive Theil index is calculated for each country/year pair as:

$$T_B = \sum_k (N_k/N) (\mu_k/\mu) \ln(\mu_k/\mu),$$

where k represents each group (traditional, new, and non-traded), N_k is the total number of products exported in each group, and μ_k/μ is the relative mean of exports in each group.

The intensive Theil index for each country/year pair is:

$$T_W = \sum_k (N_k/N) (\mu_k/\mu) \left\{ (1/N_k) \sum_{i \in k} (x_i/\mu_k) \ln(x_i/\mu_k) \right\}.$$

where x represents export value.