

## **Towards input-output based measurements of trade creation and trade diversion**

Topic: Trade in Value Added and "œservicification" of the Global Value Chains

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Trade creation and trade diversion are popular notions to explain the effects of trade agreements. Although these were proposed by Jacob Viner nearly 70 years ago and motivated a large body of research literature, estimating trade creation and trade diversion is still not an easy task. Most studies have so far employed the gravity model and econometrically estimated the relevant changes in trade flows.

This paper discusses a new approach to quantify trade creation and trade diversion that relies on the structural decomposition analysis in an inter-country input-output framework. In a country pair, trade creation is defined as a substitution of domestic intermediate inputs and final products by those imported from the partner country. Trade diversion, respectively, is a replacement of third country products by the partner country products in domestic intermediate or final use. For an exhaustive accounting of changes in the country of origin of inputs and final products, the paper introduces a third effect where domestic products replace partner country products. This effect may be recognised as import substitution and is called here trade contraction. Creation, diversion or contraction of trade flows are intrinsic to any pair of countries that may or may not be linked by a trade agreement.

The proposed method decomposes the GDP change into changes in the country of origin of products for intermediate and final demand, splitting these into trade creation, diversion and contraction, and four other factors. For each country pair, the said trade effects are captured with respect to the home country, partner country and rest of world, but can be easily aggregated.

The new method is put to test using the 2016 edition of the OECD Inter-Country Input-Output (ICIO) tables, aggregated to 32 countries. The period under study spans 2000 to 2011.

The calculation uncovers a great deal of detail on trade creation, trade diversion and trade contraction at the bilateral country level. Together, the three effects tend to neutralise each other, and their joint contribution to the GDP growth is far from significant. It is also shown that net trade creation (diversion, contraction) for the world as a whole is zero in monetary terms. The analysis of time series reveals a surge of trade contraction in 2008-2009 that coincides with the great trade collapse and a surge of trade creation in the following year. Trade in final rather than intermediate products was largely responsible for these fluctuations. This paper did not find evidence that the rise of free trade agreements in 2000s had been associated with higher magnitude of trade substitution effects for an average country pair in terms of GDP growth.

This study is thought to lay ground for a wider use of input-output techniques for the analysis of trade creation and related effects. Feasible extensions include, but are not limited to, estimation of the re-distribution of income at the sectoral level and ex-ante modelling exercises.