

WP 8 Applications of the database: Socio-economic aspects

Work package number	WP 8			Start date or starting events:	Month 7		
Work package title	Applications of the database: socio-economic aspects						
Activity Type	RTD						
Beneficiary number	1	3	5				
Person-months per beneficiary	10	26	22				

Objectives

The central focus in this WP is the analysis of trade structures (trade in intermediate products in particular) and the effects of increasing trade integration with developing countries on labor markets. This topic has attracted more attention in the last decade when the effects of outsourcing to low-wage countries on labor markets and relative labor demand in the advanced countries have been discussed. It was argued that outsourcing of low-skilled intensive fragments of the production process to low wage countries has negative effects on relative demand and wages of the unskilled workers in advanced economies and thus lead to higher wage dispersion and inequality. In most of the studies outsourcing was measured either by using a benchmark IO table or SUT for one year or by using detailed trade data. Due to data availability most of the studies have been pursued for developed countries only (mostly the US). Studies analyzing the effect of outsourcing on the target countries are very rare.

The availability of the WIOD database allows to widen the focus of the outsourcing phenomenon into various directions: First, a set of harmonized IO tables across a larger number of countries – including important developing countries – together with trade flows in intermediate input goods will be available. This is complemented by socio-economic satellite accounts for all countries, thus extending the country coverage of studying the effects of outsourcing also to some of the developing countries. Second, this dataset also has a time dimension which allows to study this phenomenon in a dynamic setting. Third, the inclusion of trade in services allows for an analysis of a broader concept of international integration in a consistent manner.

Description of work

Task 8.1: studies of factor contents of trade (partners 1 and 3 are responsible)

1. The first task will be to study the “factor content of trade” allowing for trade in intermediate inputs using the WIOD-database. Each traded good can be seen as including a certain amount of the primary factors of production like labor (distinguished by skill type), capital, land, etc. These factor contents are measured by use of IO tables, because one has to account for the indirect inputs as accounted for in the IO framework. When trade in intermediate inputs is an important phenomenon, one however has to consider the factor services contained in a final good traded across borders as well. These also contain primary factors from other countries. Here we thus calculate factor contents of trade allowing for trade in intermediate inputs and also taking differences in technology levels into account, in trying to assess the validity of alternative theories of international trade.

Task 8.2: analyses of effects of trade in intermediates on labor markets (partners 1, 3 and 5 are involved)

In the second task, the effects of trade in intermediates on labor markets will be studied in great detail. Changes over time, the effects of inclusion of services trade and a more detailed regional aspect will be addressed.

2. Based on the WIOD-database the first effort is to analyze the structure of trade in intermediates and trade in final goods for the whole set of countries covered (as provided by WP2). This will also extend research within the EU KLEMS project by allowing for geographical differentiation of the origins of imported intermediates. The expected result will be interesting from a descriptive point of view but even more from an analytical perspective: trade in intermediates among developed countries might have quite different effects on relative labor demand compared to trade between developed and developing countries.
3. Based on the results of the previous step an econometric approach can be adopted to study the effects of outsourcing on labor market outcomes for a large set of countries using up-to-date methodologies. In this analysis, a large set of other variables can be controlled for (mostly taken from the EU KLEMS database and WP5). The expected results will not only be of interest from an empirical point of view (i.e. the importance of outsourcing on labor demand) but also from a policy point of view regarding trade and labor market policies.

Task 8.3: (partners 3 and 5 carry out this task)

The third task will entail an extensive modeling effort with full usage of the time-series dimension of the WIOD database.

4. Most simulation models so far are built on a benchmark table, mainly dictated by the availability of respective data. Based on an existing model – which can be characterized as a multi-country econometric IO model – already allowing for trade in intermediates across countries or regions, the first task is the full implementation of a dynamic trade matrix into the model based on the WIOD-database. This in particular means that trade coefficients will be estimated as functions of other variables that might influence them. Relative prices are a prime candidate,

but quality indicators could also play a role. A stepwise approach will allow for a careful analysis of the effects of the dynamization of intermediate inputs trade in such models. So far, such efforts aimed at improvements of interindustry econometric models have been restricted severely by lack of data availability.

5. The modeling and simulation strategy taken in the next step will allow to study the relative importance of various phenomena (in particular the effects of outsourcing) on labor market outcomes and output specialization. The intended step-by-step approach will not only yield important insights in the sensitivity of this kind of modeling strategy, but will also allow for studying the effects of various economic and social policies. As opposed to widely used computable general equilibrium models, which explicitly focus on long-run equilibria, this model will mainly be designed for medium-term scenario analysis as it explicitly allows for remaining disequilibria and imbalances. This makes the model to be developed quite useful to study scenarios for developing countries as well, since these are often characterized by market imbalances and price distortions.

Deliverables

- D8.1 (month of delivery: 9): Report containing a literature review of studies on the factor contents of trade
- D8.2 (month of delivery: 16): Report on a pilot study on factor contents of trade, based on preliminary data made available in WPs 1,2,3 and 5
- D8.3 (month of delivery: 36): Final report on the analysis of the factor contents of trade
- D8.4 (month of delivery: 18): Report with descriptive analyses of disentangling trade in intermediate inputs and trade in final goods
- D8.5 (month of delivery: 24): Report with estimation results of the effects of outsourcing on labor markets and international specialization, based on preliminary data from WPs 1,2,3 and 5
- D8.6 (month of delivery: 36): Final report with estimation results of the effects of outsourcing on labor markets and international specialization
- D8.7 (month of delivery: 30): Report on construction of new international interindustry econometric model with flexible and dynamic trade structures;
- D8.8 (month of delivery: 36): Report on medium-run scenario studies using the new model, with a focus on the effects of increased trade openness and outsourcing on developing countries and a report on focus on developed countries.