



Book of Abstracts

**WIOD Conference: Industry-Level
Analyses of Globalization and its
Consequences
Vienna, May 26-28, 2010**

Day 3

Session: Session 9A (Parallel)
Date: Friday, May 28
Time: 9:00-10:30
Location: Hall 1

The Influence of Trade with the EU-15 on Wages in the Czech Republic, Hungary, Poland and Slovakia between 1997 and 2005

Konstantin Wacker

Abstract:

I use the STAN database of the OECD and different econometric methods to investigate the effects of exports towards the EU-15 on wages in the Visegrad countries (CEEC-4; Czech Republic, Hungary, Poland, and Slovakia).

The results do not allow to draw any definite statements about this effect. While the impact of exports towards the EU-15 on wages in the countries investigated is likely to be negative in the short run (1-2 years), it seems to be positive in the medium and long run, at least for Hungary and Poland.

Nevertheless, it is clear that the pattern of the CEEC-4 exports towards the EU-15 does not correspond with the predictions of the Heckscher-Ohlin model. Therefore, also the theorems of Stolper and Samuelson (1941) and concerning the equalization of factor prices, which are based on the Heckscher-Ohlin model, do not seem accurate to describe the underlying forces linking trade with factor prices.

I argue that missing regional and related inter-sectoral labor mobility might be a potential factor preventing employees from taking advantage of trade liberalization. To substantiate this suspicion, however, analysis of more disaggregated data is necessary.

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Globalization, International Fragmentation and the Labour Input for German Exports: An Input-Output Analysis

Udo Ludwig & Hans-Ulrich Brautzsch

Abstract:

As a consequence of globalization national production processes are more and more divided into individual sections, in which parts of the products, so-called fragments, are manufactured. The production of fragments is increasingly shifted to abroad. So the production processes once national get penetrated more and more by imports. The loss of production and employment in some sectors face gains in others due to improving competitive capacities.

The production's import penetration has been discussed in Germany, above all in connection with its position as export champion. Due to the growing acquisition of intermediate inputs from abroad for subsequent processing in Germany, the significance of exportation as a motor for production and employment may lose its power. The welfare gains resulting from intensifying exportation would be bought by means of welfare losses owing to the crowding out of domestic production because of importation. According to this development, the national value-added process in the end might consist only of trade activities. The catchword "Germany – a Bazar Economy" properly describes such a tendency.

Our paper deals with the extent of the German export penetration by imports. At first, it analyses by what ways imports are affecting the exports directly and indirectly and shows the consequences of import penetration of exports for the national output and employment. At second, the singularity of these events is asked: Is it only Germany amongst the industrially developed West European countries which is affected by this development, or are other nations also affected? Finally consequences for employment are split in different skill types of labour. These issues are discussed with the standard open static input-output-model. The data base is a time series of official input-output tables. The employment effects for Germany divided by skill types of labor are investigated using skill matrices generated by the authors.

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The Effect of Intangible Investment of Employment in Korea

Hak K. Pyo, Hyunbae Chun & Keun Hee Rhee

Abstract:

The paper deals with the use of Supply and Use Matrix and Input-Output Tables in identifying effects of intangible investment on sectoral employment. We use the employment Input-Output Tables which is based on the establishment survey and, therefore is preferred to household survey data in accounting for sectoral productivity. But the employment I-O table needs to be supplemented by types of labor such as sex, age, and education from wage and employment survey data based on EU KLEMS-Korea data. Following the approach of Corrado, Hulten, and Sichel (2006), we measure economy-wide intangible investment in Korea. We also analyze the effects of narrowly-defined intangible investment such as software and R&D on employment by sector using WIOD-Korea database.

Session: Session 9B (Parallel)
Date: Friday, May 28
Time: 9:00-10:30
Location: Hall 2

Creating a Global Environmental Database for Input-Output Applications

Stephan Lutter

Abstract:

The main objective of the input-output related cluster in the EXIOPOL project is to develop an Environmentally Extended Input-Output (EE I-O) database, i.e. a system of supply and use tables (SUTs) linked through international trade and extended by environmental data on the sectoral level. The database will cover the EU-27 and its most important trade partners (16 additional countries, covering over 90% of the global GDP and over 80% of the imports to the EU). Environmental extensions are divided in the two broad themes Natural resources (inputs into the economy) and Residuals (outputs from the economy) and will cover the following categories: material extraction, land occupation, energy use, water use and emissions to air, soil and water. For all countries considered in the EXIOPOL database, the team will prepare sectoral environmental data, which will be attached either to the corresponding monetary flow data in the SUTs (in the case of products) or as physical extensions to these tables (in the case of primary resources and emissions). This paper presents ongoing work in the development of the database module on environmental extensions. For each category of environmental extensions, we present the number of disaggregated categories and the main data sources used. We discuss the main limitations imposed by availability of primary data and levels of disaggregation, when applying the data in an input-output framework. We discuss how primary data is transformed into a sectoral matrix structure and how data is integrated into the overall EXIOPOL database. Finally, we provide an outlook towards how the created EE I-O database can be applied in the future to calculate environmental indicators in a world-wide context, including, among others, indicators on global warming, acidification, nitrification, and indicators on the use of materials, energy, land and water.

Session: Session 9B (Parallel)
Date: Friday, May 28
Time: 9:00-10:30
Location: Hall 2

Underestimation of the Performance of the EU Carbon Dioxide Emission Reductions via External Trade

Jose Manuel Rueda-Cantucho

Abstract:

This paper deals with the identification of appropriate measures of the performance of the European Union in reducing its carbon dioxide emissions via external trade, both at the aggregate and at the industry levels. We have found that standard measures based on the Leontief quantity model and profusely used by input-output practitioners and industrial ecologists will result in underestimation of the actual performance of the EU in reducing its carbon dioxide emissions via external trade. Briefly, standard measures currently available in the literature seem to assign the EU less amounts of exported air emissions (carbon dioxide) than it should be. However, this rule does not hold for all industries individually. From a methodological viewpoint, the conclusions are justified by a new approach to estimate unbiased and statistically consistent emission multipliers. This approach has three important advantages: (a) it improves the accuracy of the environmental impacts assessed by industrial ecologists; (b) it finds a way to compute unbiased and consistent input-output multipliers for input-output analysts; and (c) the use of the Leontief inverse is no longer necessary; only the supply and use matrices are required. In addition, another advantage of this approach is that all the data needed to make the calculations are ready to use worldwide at many countries' statistical offices.

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CO2 Embodied in International Trade – Evidence for Carbon Leakage between 1995 and 2005

Martin Bruckner, Kirsten Svenja Wiebe, Christian Lutz & Stefan Giljum

Abstract:

The emission of greenhouse gases (GHG) by human activities is a major cause of climate change. National policy measures addressing the reduction of domestic CO₂ emissions may increase emissions of other countries and therefore counteract the global fight against climate change. This phenomenon is generally known as carbon leakage. This term describes the relocation of production processes and therefore carbon emissions as a result of national policy measures which undermines emission reduction efforts and may even offset them.

In order to assess global impacts of a policy, international trade has to be considered. The territorial approach of emission accounting (emissions of the domestic production), that is used by the UNFCCC, is not suited to deal with leakage processes. GHG emissions have to be accounted for on a consumption base (worldwide CO₂ emissions associated with domestic consumption).

This paper presents the results generated with a global multidirectional multi-regional input-output (MRIO) model (the Global Resource Accounting Model, GRAM) that distinguishes 53 countries and two regions and differentiates 48 sectors. It is based on the 2009 edition of the OECD's IO tables and bilateral trade data and covers the time series of 1995 to 2005.

The results confirm a global shift of carbon emissions. While in 1995 Annex B countries were net-importers of about 1.5 billion tonnes of CO₂ emissions, these net-imports nearly doubled to more than 2.8 billion tonnes in 2005. The biggest increase took place for the United States who tripled its carbon net-imports to 1.3 billion tonnes or about one third of global carbon net-imports. The EU27 holds at 1.2 billion tonnes. At the other end of the spectrum developing countries account for 55% of all net-exports of carbon emissions, followed by the emerging countries China (23%) and the Russian Federation (8%).

Session: Session 10 (Plenary)
Date: Friday, May 28
Time: 11:00-12:30
Location: Main Hall

Beyond Growth, Beyond Boundaries: A Panacea

Joyashree Roy

Abstract:

Can sustainable development be achieved unilaterally? Can nation states plan their development pathway, organize activities with national perspectives and maintain policy and institutional autonomy? May be these are very pertinent questions at this juncture in a globally networked world. There can be no ready made easy answer to these frequently asked questions. Global externality is posing newer challenges, complex problems. But if we assume risks to sustainability are manageable then it is important to derive at least the necessary conditions. What is needed is out of the box thinking at theoretical level and practical solutions. If goal is human wellbeing not defined by golden rule of non declining consumption alone supported by per capita income then natural resource footprint of consumption is important to understand and needs to be managed appropriately. National identity through physical location is lost in globally networked world. National autonomy which emerged out of administrative flexibility and management of economic production and out of many other socio-political and cultural factors needs to be revisited. It is important to understand that there are activities which are globally connected and activities (consumption and production) that are local. It is important to identify those and consider the issues separately. For globally connected issues it is important to understand that there should be some global collective action which may appear to be in conflict with national autonomy but theoretical underpinning needs clear understanding and discussions. This may lead to outcomes where global cooperation can only resolve conflicts which may change status quo. To understand the empirical implication of theoretical understanding is harder as data needs are demanding and needs international cooperation and agreement.

Session: Session 10 (Plenary)
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Econometric Modeling of Technical Change

Dale W. Jorgenson

Abstract:

The purpose of this paper is to present a new approach to econometric modeling of substitution and technical change. Substitution is determined by observable variables, such as prices of output and inputs and shares of inputs in the value of output. Our principal innovation is to represent the rate and biases of technical change by unobservable or latent variables. This representation is considerably more flexible than the constant time trends employed in the previous literature. An added advantage of the new representation is that the latent variables can be projected into the future, so that the rate and bias of technical change can be incorporated into econometric projections.