

FIW-Workshop

Trade and Environment – Interrelations between climate & trade policy: impacts on international trade flows and carbon emissions

Time: **20th of February, 2018**
8:30 – 12:30

Location: **Austrian Institute of Economic Research (WIFO)**
Arsenal, Object 20
1030 Vienna

Programme

8:30 Registration, coffee

9:00 Opening Remarks:
Margit Schratzenstaller (WIFO), Manfred Schekulin (BMDW)

9:15 Session I – Chair: Harald Oberhofer (WIFO, WU)

- 9:15-10:00: Gabriel Felbermayr (Ifo Institute, University of Munich)
The Carbon Content of International Trade: Effects of the Kyoto Protocol
- 10:00-10:45: Inmaculada Martínez-Zarzoso (University of Göttingen)
Are RTA Agreements with Environmental Provisions reducing Emissions?

10:45 Coffee break

11:00 Session II – Chair: Yvonne Wolfmayr (WIFO)

- 11:00-11:45: Mario Larch (University of Bayreuth)
International Trade, Uni- and Multilateral Climate Policy, and Carbon Leakage
- 11:45-12:30: Joseph Francois (World Trade Institute Bern)
Value Chains, Carbon Accounting, and Carbon Accountability

12:30 End of Workshop

Registration is necessary – please register until 15th of February, 2018
on <https://www.fiw.ac.at/index.php?id=1071>

Invited Speakers



Gabriel Felbermayr

Prof. Dr. Gabriel Felbermayr is Director of the Ifo Center for International Economics at the Ifo Institute for Economic Research in Munich. Simultaneously, he holds a chair in Economics at the Ludwig Maximilians University Munich. His research deals with international trade agreements, trade and labor market outcomes, trade and environment.

For details, see <http://www.cesifo-group.de/felbermayr-g>

The Carbon Content of International Trade: Effects of the Kyoto Protocol

Has the Kyoto Protocol induced carbon leakage? We conduct the first empirical ex post evaluation of the protocol. We derive a theoretical gravity equation for the carbon dioxide content of trade, which accounts for intermediate inputs, both domestic and imported. The structure of our new panel database of the carbon content of sectoral bilateral trade flows allows controlling for the endogenous selection of countries into the Kyoto Protocol. Binding commitments under Kyoto have increased committed countries' embodied carbon imports from noncommitted countries by around 8% and the emission intensity of their imports by about 3%. Hence, Kyoto has indeed led to leakage.



Inmaculada Martínez-Zarzoso

Prof. Inmaculada Martínez-Zarzoso, PhD is full professor of Economics at the University Jaume I (Spain) since 2012 and member of the Institute of International Economics (Spain) since 1995. Currently, she is Apl. Professor at the University of Göttingen and chair of the U4 Network on Social Sciences Economics and Law. Her current research interests are in the areas of environmental provisions in trade agreements, on migration and remittances, networks and trade and on sustainable global value chains.

For details, see <https://www.uni-goettingen.de/de/64787.html>

Are RTA Agreements with Environmental Provisions reducing Emissions?

This paper investigates whether RTAs with environmental provisions affect relative and absolute pollution levels. In order to do so, the determinants of carbon dioxide emissions convergence are estimated for a cross-section of 182 countries over the period 1980 to 2008. A propensity score matching approach is combined with difference-in-differences techniques to effectively isolate the effect of the Regional Trade Agreement (RTA) variable. The usual controls for scale, composition and technique

effects are added to the estimated model and the endogeneity of income and trade variables is modelled using instruments. The main results indicate that the CO₂ emissions of the pairs of countries that belong to an RTA with environmental provisions tend to converge and are lower in absolute terms, whereas this is not the case for RTAs without environmental provisions. As regards specific agreements, we find that emissions converge more rapidly for NAFTA than for EU-27 and Euro-Med countries. We find consistent evidence that only RTAs with environmental harmonization policies affect relative and absolute pollution levels.



Mario Larch

Prof. Dr. Mario Larch is an expert in theoretical and empirical international trade and econometrics. He is a professor of empirical economics at the University of Bayreuth, Germany. He is also a research professor of the Ifo Center for International Economics at the Ifo Institute - Leibniz Institute for Economic Research at the University of Munich, Scientific Advisor at CEPII, Paris and CESifo Research Network Fellow, among others. He has published extensively in the field of international trade and conducted research in this area for several organizations. His research deals with theoretical and empirical international trade, microeconometrics and spatial econometrics.

For details, see <http://www.ewf.uni-bayreuth.de/de/team/Larch-Mario/index.php>

International Trade, Uni- and Multilateral Climate Policy, and Carbon Leakage

The potential of carbon tariffs to restore competitiveness, avoid carbon leakage, and reduce global carbon emissions has been prominently discussed. To analyze the effects of carbon tariffs on trade, welfare, and carbon emissions, we develop a multi-sector, multi-factor structural gravity model that allows an analytical and quantitative decomposition of the emission changes into scale, composition, and technique effects. Our analysis shows that carbon tariffs are able to reduce world emissions, mainly via altering the production composition within and across countries, hence reducing carbon leakage. This reduction comes at the cost of lower world trade flows and lower welfare, especially for developing countries. Applying our framework to investigate the effects of the emission reduction pledges made by the Annex I countries in the Copenhagen Accord, we find that combining national emission targets with carbon tariffs would increase the Accord's effectiveness by lowering the leakage rate from 13.4% to 4.1% (with bootstrapped 95% confidence intervals of [11.5, 15.8] and [3.3, 4.9], respectively).



Joseph Francois

Prof. Dr. Joseph Francois is professor of international economics at the University of Bern and managing director of the World Trade Institute. He is also a fellow of the Centre for Economic Policy Research (London), fellow of CESifo (Munich), director of the European Trade Study Group, director of the Institute for International and Development Economics, research fellow with the Vienna Institute for International Economic Studies, and a board member of the Global Trade Analysis Project. He has authored standard reference texts and studies on computer modeling of trade and investment policy, and has published extensively on international economic policy and the impact of integration on economic performance, inequality, and sustainability.

For details, see <https://www.wti.org/institute/people/432/francois-joseph/>

Value Chains, Carbon Accounting, and Carbon Accountability

Working with a new dataset on comparable global CO₂ production and consumption inventories spanning the 1997–2011 period, we investigate the relationship between real gross domestic product (GDP) per capita and CO₂ emissions per capita associated with both production and consumption activities. By including linkages between production-based emissions in one country and final consumption in another (via cross-border value chains), we focus on the entire carbon chain. We estimate polynomial and threshold models, accounting for reverse causality and identification problems. We find that the income-elasticity for both inventories is regime-dependent and reflects small carbon efficiency gains from economic development. Carbon footprints show larger income-elasticities, while national policy instruments targeting production can clearly be circumvented by carbon embodied in intermediate trade. This implies problems of environmental sustainability that may require consumption-based policy instruments.