ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

İKTİSADİ VE İDARİ BİLİMLER FAKÜLTESİ
FACULTY OF ECONOMIC AND ADMINISTRATIVE SCIENCES
İKTİSAT BÖLÜMÜ
DEPARTMENT OF ECONOMICS

İPM | İSTANBUL POLİTİKALAR MERKEZİ
SABANCI ÜNİVERSİTESİ
STIFTUNG MERCATOR GİRİŞİMİ

WORKSHOP ON

"Türkiye, EU Carbon Border Adjustment Mechanism and Beyond"

10th April 2025 Thurs. 14:00-17:30
METU FEAS F-107

PROGRAM

14:00-15:30 SESSION 1

Johannes Gallé
IPC & Potsdam Institute for Climate Impact Research
"Burden your neighbor? Distributional effects of the EU CBAM on EU trading partners"

Güneş Aşık
TOBB-ETU
"Employment Structure and Labor Market Dynamics in the Coal Mining Sector in Turkey"

Seyit Mümin Cilasun
TED University
"Even announcement matters? The effect of CBAM on Turkish exports and exporters"

15:30-16:00 Coffee Break

16:00-17:30 SESSION 2

Timothé Beaufils
IPC & Potsdam Institute for Climate Impact Research
"The Potential of Carbon Border Adjustments to Foster Climate Cooperation"

Yelda Erden Topal
METU
"Solar Heat for Industrial Processes as a Decarbonization Pathway for Sectors Affected by the CBAM in Türkiye: A Preliminary Inquiry"

Ebru Voyvoda
METU
"On the Dynamic Effects of the EU Carbon Border Adjustment Mechanism and Potential Global Responses"

ABSTRACTS

Johannes Gallé, IPC & Potsdam Institute for Climate Impact Research

Burden your neighbor? Distributional effects of the EU CBAM on EU trading partners

This study examines the distributional impacts of the European Union's Carbon Border Adjustment Mechanism (EU CBAM) on Turkish households. Using a global quantitative trade model linked to micro-level household data, we assess real income changes across various policy scenarios and sectoral labor mobility assumptions. While our findings indicate modest real income losses at the aggregate level, we uncover substantial heterogeneity across households driven by sector-specific income shocks and mediated by labor mobility. In the absence of labor mobility, 20% of Turkish households experience real income losses, while 80% benefit slightly due to price decreases. Removing labor frictions, all households face real income losses, albeit with reduced inter-household disparities. We further explore the effects of a Turkish policy response involving domestic carbon pricing and a Turkish CBAM. We show that public revenues are sufficiently large to offset negative impacts on households in the short run, but not in the long run. The study offers important insights into the feasibility and political constraints of potential policy responses by EU trading partners.

Güneş Aşık, TOBB-ETU

Employment Structure and Labor Market Dynamics in the Coal Mining Sector in Turkey

This research explores the employment and earnings structure in the coal mining sector in Turkey. Coal mining is one of the highest-paying employment sectors in Turkey, leading to considerable local resistance to transitioning away from coal, as alternative job opportunities typically offer lower income potential. At the national level, coal mining may seem dispensable in terms of direct employment, given its relatively small share of total employment. However, this broad perspective conceals considerable heterogeneity at the local level, where coal mining directly and indirectly sustains substantial employment. Local economies reliant on coal mining face significant socio-economic risks and challenges associated with transitioning policies. Policies addressing coal phase-out need to incorporate tailored, location-specific strategies that recognize and mitigate the impacts on local employment dynamics.

Uğur Aytün, METU & Dumlupınar University and Seyit Mümin Cilasun, TED University

Even announcement matters? The effect of CBAM on Turkish exports and exporters

This study examines the impact of the first Carbon Border Adjustment Mechanism (CBAM) announcement on Turkish exports and exporters. Using firm-level data from 2019 to 2023, we analyze the effect of CBAM exposure on export values, product and destination diversification, unit prices, and firms' investment and credit decisions. Employing a difference-in-differences framework, we find that firms with higher CBAM exposure experienced a decline in exports to the EU while increasing their exports to non-EU countries. The number of CBAM-related products and destinations followed a similar pattern, suggesting a trade diversion effect. Additionally, firms responded to CBAM by increasing investment, particularly in machinery and equipment, while the impact on credit uptake remained statistically insignificant. Event study analyses further confirm these findings, showing a gradual adjustment in firms' export behavior following the CBAM announcement. These results highlight that even policy announcements, before actual implementation, can significantly influence firm decisions and international trade patterns.

Timothé Beaufils, IPC & Potsdam Institute for Climate Impact Research

The Potential of Carbon Border Adjustments to Foster Climate Cooperation

The European Union (EU) is implementing a Carbon Border Adjustment Mechanism (CBAM) at its borders, which will require exporters of basic materials to surrender emission permits when exporting to the EU market. Since it makes foreign producers compete under a carbon price, the EU CBAM may motivate some trade partners to implement their own carbon pricing mechanisms, thereby encouraging the creation of a coalition of countries with ambitious carbon pricing policies protected by a joint CBAM. Such geostrategic potential of the EU CBAM has been identified in previous literature, but the conditions under which it could be realised remain largely unknown. Here, we present a modelling framework to simulate the potential of CBAMs to motivate the creation of climate coalitions. We use a fully interlinked New Quantitative Trade model to evaluate the pay-offs of a dynamic club negotiation model. Compared to previous research, our approach allows for a more granular definition of climate policies and requires relatively little input data and numerical power. This allows us to explore the formation and stability of climate coalitions under a broader range of CBAM implementation options. Our results highlight that the potential of a CBAM-based climate coalition strongly depends on the exact CBAM design. In its current version, the EU CBAM would only trigger the formation of a modest coalition. Future extensions of the EU CBAM could motivate the adoption of carbon pricing in all countries except China, India and Russia. Meanwhile, export rebates shrink its coalition-building potential."

Yelda Erden Topal, METU

Solar Heat for Industrial Processes as a Decarbonization Pathway for Sectors Affected by the CBAM in Türkiye: A Preliminary Inquiry

Solar Heat for Industrial Processes (SHIP) refers to integrating solar thermal technologies into industrial applications to provide process heat required for manufacturing and production activities. SHIP systems utilize solar collectors to capture and convert solar radiation into thermal energy, which is then used to meet the heat demands of industrial processes, typically in the temperature range of 60°C to 400°C. Implementing SHIP offers significant advantages, including reducing fossil fuel consumption, lowering greenhouse gas emissions, and enhanced energy security. It is particularly well-suited for industries with substantial thermal energy demands such as food & beverage (9% of Türkiye's manufacturing export in 2025), textile & leather (13%) chemical & pharmaceutical (8%), pulp & paper industry (2%), metal & machinery industry (%30), ceramic & glass industry. The effectiveness of SHIP depends on factors such as solar resource availability, industrial heat demand profiles, and system integration with existing energy infrastructure. SHIP has great potential to contribute to sustainable industrial decarbonization, aligning with global efforts to transition towards renewable energy sources and improve energy efficiency in industrial sectors. In this study, where we aim to conduct a preliminary assessment of sectors expected to be affected by CBAM due to Türkiye's high export potential and to identify sectors where SHIP applications could be proposed as a solution, we will examine the "Potential Impact of the Carbon Border Adjustment Mechanism on the Turkish Economy" study completed in 2023, the "2024-2030 Climate Change Mitigation Strategy and Action Plan" published in March 2024, and the "Green Growth Technology Roadmap" which has been developed for the iron and steel, aluminum, cement, chemicals, plastics, and fertilizer sectors—critical to the Turkish economy, serving as key input providers in the early stages of production chains, and standing out in terms of carbon emissions. A preliminary evaluation will be conducted on which sectors SHIP applications may be suitable for and what benefits they could offer in terms of CBAM outcomes.

Jean Mercenier, Université Panthéon-Assas (Paris 2) & CIRED; Ebru Voyvoda, METU and A. Erinç Yeldan, Kadir Has University

On the Dynamic Effects of the EU *Carbon Border Adjustment Mechanism* and Potential Global Responses: An Intertemporal General Equilibrium Exploration

The European Union has recently embarked upon a *Carbon Border Adjustment Mechanism* (CBAM) to combat carbon leakage and align its ambitious climate goals with the patterns of global trade. Covering only 3% of the EU imports, the CBAM in isolation is argued to have little impact on the global patterns of trade. Yet, due to its potential threat of triggering retaliatory measures and reformation of distortionary trade clubs, it may have over lasting effects inhibiting the potential success of global efforts against climate change. Utilizing a multi-regional model that accommodate inter-temporal reallocation effects by forward-looking agents under infinite horizon and decentralized inter-temporal optimization, we study four policy scenarios: first, we invigorate the future pathway of the Emissions Trading System in EU with a projected cap on ETS sectorial emissions extending to 2050. Second, the CBAM is implemented, and its potential macroeconomic and social welfare effects are tabulated. We envisage two opposing responses from the non-EU global economy: (i) instrumentalization of a *retaliation tariff rate* across the trade partners, to maintain their individual (regional) social welfare against the EU CBAM; and (ii) a scenario of cooperation via full alignment with the EU's ETS carbon price, accepting the economic rationale of CBAM as a *sanctioning instrument*.