

26th Annual Conference of the European Association of Environmental and Resource Economists

23rd June 2021 - 25th June 2021

It is our pleasure to host the 26th Annual Conference of the European Association of Environmental and Resource Economists in Berlin in 2021!

The conference is organized by Technische Universität Berlin (TU Berlin) and Humboldt-Universität zu Berlin (HU Berlin). The conference is supported by the wider Berlin research community in environmental and resource economics, most notably by the German Institute for Economic Research (DIW Berlin), and Mercator Research Institute on Global Commons and Climate Change (MCC). The organization of the conference is also supported by the Berlin Chamber of Commerce and Industry (CCI).

Keynote Speakers

Prof. Stiglitz, Joseph E., Nobel Laureate, Columbia University

Prof. Bosetti, Valentina, Full Professor, Bocconi University

Prof. Battiston, Stefano, Associate Professor in Sustainable Finance and Networks, University of Zurich

Prof. Birère, Marie , Head of Investor Research Center, AMUNDI, Paris Dauphine University

Dr. Buchner, Barbara, Global Managing Director, Climate Policy Initiative

Prof. Heal, Geoffrey, Professor of Economics, Columbia Business School

Prof. Moinas, Sophie , Professor of Finance, IAE Toulouse School of Management

Biodiversity conservation I

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Scenes from a Monopoly: Quickest Detection of Ecological Regimes (PRESENTER: Neha Deopa ; DISCUSSANT: Zijin Xie)
2. Biodiversity Conservation under ICDPs in a Bioeconomic Model: Nonprofit vs For-Profit National Parks (PRESENTER: Zijin Xie ; DISCUSSANT: Yuki Yamamoto)
3. Living under Ecosystem Degradation: Evidence on the Mangrove-Fishery Linkage in Indonesia (PRESENTER: Yuki Yamamoto ; DISCUSSANT: Anders Skonhøft)
4. On the economic loss of predation (PRESENTER: Anders Skonhøft ; DISCUSSANT: Neha Deopa)

Speakers

Ms Deopa, Neha, ,

Ms Xie, Zijin, ,

Dr. Yamamoto, Yuki, ,

Skonhøft, Anders, , Norwegian University of Science and Technology

Presentations

Scenes from a Monopoly: Quickest Detection of Ecological Regimes

Authors

Rinaldo, Daniele, -, Cambridge University

Ms Deopa, Neha, ,

Presenter

Ms Deopa, Neha, ,

Abstract

Decisions under ecological uncertainty are a crucial part of resource management as many ecological systems undergo abrupt regime shifts, frequently triggered by the actions of the resource harvester. We study the stochastic dynamics of a renewable resource harvested by a monopolist where harvesting affects the resource

Biodiversity Conservation under ICDPs in a Bioeconomic Model: Nonprofit vs For-Profit National Parks

Authors

Ms Xie, Zijin, ,

Prof. Onuma, Ayumi, Professor ,

Presenter

Ms Xie, Zijin, ,

Abstract

Integrated conservation development projects (ICDPs) are considered important for enhancing biodiversity conservation and local development in developing countries. These projects usually share benefits with local communities and incorporate locals in biodiversity management. While some studies shed light on the effectiveness of ICDPs in biodiversity conservation, most of them do not consider the employment of locals in biodiversity management. Moreover, existing literature assumes that national parks are for-profit organizations whereas they are generally nonprofit entities. We develop a bioeconomic model to investigate the effect of introducing ICDPs in nonprofit as well as for-profit national parks with the employment of local labor in tourism on biodiversity conservation. We demonstrate that there are conditions for the ICDP to be successful in enhancing biodiversity. Under these conditions, if biodiversity improves or has no impact on agricultural productivity, the nonprofit national parks invariably bring higher utility to locals and improve biodiversity than for-profit national parks. Otherwise, nonprofit national parks do not necessarily bring higher utility to locals or improve biodiversity, as compared to for-profit national parks. Moreover, the ICDP is evaluated in terms of social welfare, and we show that a subsidy/taxation on wage rates will bring the market equilibrium to a social optimum.

Living under Ecosystem Degradation: Evidence on the Mangrove-Fishery Linkage in Indonesia

Author

Dr. Yamamoto, Yuki, ,

Presenter

Dr. Yamamoto, Yuki, ,

Abstract

This paper examines how ecosystem degradation affects social welfare, focusing on the mangrove-fishery linkage in Indonesia. Mangrove ecosystems boost fishery outputs by providing nursery habitat for a range of marine species. Using nationally representative household data and satellite information on mangrove loss, I find that fishery households experienced a decline in income of approximately 5% in response to a 1% increase in mangrove loss in the region. Under the income shock, fishery households increased their labor input and decreased their nonfood consumption but stayed in the fishery industry. I further estimate the potential economic value of mangrove conservation in terms of fishery production at US\$14,589/hectare/year, making conservation substantially more cost-effective than alternative land uses such as aquaculture and oil palm plantations. The important policy implications are that (1) the loss of ecosystem services threatens the livelihoods of households engaging in the primary industry in developing countries and (2) mangrove forest conservation should be a policy priority for achieving sustainable development and ecosystem conservation.

On the economic loss of predation

Author

Skonhøft, Anders, , Norwegian University of Science and Technology

Presenter

Skonhøft, Anders, , Norwegian University of Science and Technology

Abstract

In this paper a simple age-structured model is constructed to analyze how predation influences the biomass and economic loss of a prey population. The model may exemplify moose or deer management in a Scandinavian context exposed for predation by wolf or other big carnivores like lynx, wolverines and brown bear. However, it can also fit to other ecological and institutional settings as in North America and other regions in Europe. Two different management schemes are considered. In a first step, the maximum sustainable yield (MSY) situation is analyzed. Next, browsing damage costs are included, and maximum economic yield (MEY) harvesting is studied. The paper provides several results, but it also demonstrates that these results may be rather sensitive to certain conditions, including the timing of the events (e.g., predation, natural mortality) over the year cycle.

Fisheries and policy

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Riding the Storm: The effect of wind conditions on fuel consumption cost in the Norwegian trawler fleet} (PRESENTER: Irmelin Slettemoen Helgesen ; DISCUSSANT: Pedro Pintassilgo)
2. Coexistence of small and large scale fleets : The mullet fishery game (PRESENTER: Pedro Pintassilgo ; DISCUSSANT: Bjoern Bos)
3. Fishing under the Radar: Illuminating the Compliance Gap of Fishing Bans (PRESENTER: Bjoern Bos ; DISCUSSANT: Tillmann Eymess)
4. Changing Collective Action: Social Information Increases Cooperation of Teams in a Prisoner's Dilemma (PRESENTER: Tillmann Eymess ; DISCUSSANT: Irmelin Slettemoen Helgesen)

Speakers

Ms Helgesen, Irmelin, ,
Pintassilgo, Pedro, , University of the Algarve
Mr. Bos, Björn, ,
Mr. Eymess, Tillmann, ,

Presentations

Riding the Storm: The effect of wind conditions on fuel consumption cost in the Norwegian trawler fleet}

Author

Ms Helgesen, Irmelin, ,

Presenter

Ms Helgesen, Irmelin, ,

Abstract

The weather at sea has a huge effect upon fishing operations. Whether the vessels have to go back to port and wait out the storm, or ride the storm at sea, their behaviour will affect their fuel consumption. Fuel consumption in fisheries is a major concern both in terms of operation costs for the fishermen, and the associated environmental effects of greenhouse gas emissions. Using panel data on individual landings and main harvesting areas in combination with climate reanalysis data, I exploit the exogenous variation in weather at sea to study how wind conditions affect fuel consumption cost in the Norwegian trawler fleet. An increase in mean wind speed, or the number of days with wind above average, will increase fuel consumption per unit of harvest. Specifically, the yearly cost of a 1% increase in wind speed would be 743,900 NOK in fuel cost, and the cost of additional carbon emissions would be 188,916 NOK. An increase in the number of extreme days is surprisingly related to a

reduction in fuel consumption, without any corresponding reduction in harvesting. This suggests that there is excess capacity in the trawler fleet.

Coexistence of small and large scale fleets : The mullet fishery game

Authors

Pintassilgo , Pedro, , University of the Algarve

Mr. Azevedo, Eric, University Lecturer, Santa Catarina State University

Prof. Duara, Fábio, University Professor, Federal University of Santa Catarina

Prof. Dantas, David, University Professor, Santa Catarina State University

Presenter

Pintassilgo , Pedro, , University of the Algarve

Abstract

Fishing systems provide employment, income generation, poverty alleviation, and food security. The coexistence of small-scale fisheries (SSFs) and large-scale fisheries (LSFs) increases management complexity. This paper addresses the interaction between SSFs and LSFs through a bioeconomic game-theoretic model (BGTm), combining behavioral, economic, and biologic characteristics to understand the socio-ecological system of a fishery. We applied a BGTm to the four-gear mullet fishery in southern Brazil. First, we explored whether the current fishing efforts of all gears

Fishing under the Radar: Illuminating the Compliance Gap of Fishing Bans

Author

Mr. Bos, Björn, ,

Presenter

Mr. Bos, Björn, ,

Abstract

Many fisheries worldwide are under severe stress. Although policymakers increase their efforts to ensure a sustainable management of fish stocks, illegal, unreported, and unregulated (IUU) fishing is a major challenge. This paper explores the extent of IUU fishing during the annual Chinese fishing ban and estimates the reduction in fishing activity due to the ban. Starting from a baseline reduction estimated from official vessel broadcast positions, we compare this level with additional estimates using a new measure for fishing activity that is more robust to manipulation. To this end, we exploit a popular fishing practice in Asian fisheries together with a novel dataset from nighttime lights to identify fishing activity. Although we can reject full compliance with data on official vessel broadcast positions, this officially available data suggests an average reduction of fishing activity by 86 percent. When relying on nighttime lights, however, we only find a reduction of half that size, thereby demonstrating a considerable compliance information gap.

Changing Collective Action: Social Information Increases Cooperation of Teams in a Prisoner's Dilemma

Authors

Diekert, Florian, , Heidelberg University

Mr. Eymess, Tillmann, ,

Presenter

Mr. Eymess, Tillmann, ,

Abstract

We test whether social information about the cooperative behavior of others increases cooperation in a prisoner's dilemma. Our novelty is that actors are not individuals, but teams. Teams in our experiment are fishing crews from Lake Victoria, Tanzania. We randomize two decision making mechanisms across a social information treatment: teams either decide through majority voting or the dictatorial choice of one member. Since both mechanisms are present at Lake Victoria, we can identify experience with hierarchical or egalitarian decision structures as a driver of behavioral change. Providing information on the behavior of other teams increases average cooperation by 14 and 17 percentage points for egalitarian and hierarchical team decisions, respectively. Further, participants with experience in hierarchical decision structures are particularly responsive to social information.

Electricity market design

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. How to design reserve markets? The case of the demand function in capacity markets (PRESENTER: Leopold Monjoie ; DISCUSSANT: Marie-Louise Arlt)
2. Automated Bidding in and Welfare Effects of Local Electricity Markets (PRESENTER: Marie-Louise Arlt ; DISCUSSANT: Takaaki Kato)
3. Maximum electricity-saving behavior and practical issues of randomized controlled trial (PRESENTER: Takaaki Kato ; DISCUSSANT: Swantje Sundt)
4. Who is Willing to Choose a Time-of-Use Electricity Tariff? Evidence from Factor Analysis. (PRESENTER: Swantje Sundt ; DISCUSSANT: Leopold Monjoie)

Speakers

Mr. Monjoie, Leopold, ,
Dr. Arlt, Marie-Louise, ,
Prof. Kato, Takaaki, Professor, University of Kitakyushu
Ms Sundt, Swantje, , Kiel University, Institute for Economics

Presentations

How to design reserve markets? The case of the demand function in capacity markets

Author

Mr. Monjoie, Leopold, ,

Presenter

Mr. Monjoie, Leopold, ,

Abstract

This paper studies reserve markets

Automated Bidding in and Welfare Effects of Local Electricity Markets

Authors

Dr. Arlt, Marie-Louise, ,
Dr. Chassin, David, Academia,
Dr. Rivetta, Claudio, Academia,
Dr. Sweeney, James, Academia,

Presenter

Dr. Arlt, Marie-Louise, ,

Abstract

Local electricity markets (LEMs) are a promising approach to integrate flexible appliances into electricity systems and manage system constraints on the distribution level. In this article, we suggest an approach to derive bidding functions for time-interdependent electricity-based services and use our framework to analyze the welfare implications of an LEM. Previous work have left such bidding functions undefined which are, however, an important bridge between customer preferences and technology in a smart grid. Furthermore, while welfare analyses exist for the transmission level, we are not aware of equivalent studies for residential distribution systems. We specify a bidding function for Heating, Ventilation, and Air Conditioning (HVAC) systems -- a major load in residential distribution systems -- and pursue a case study of 437 houses. We find that the introduction of an LEM can realize welfare gains of more than 17,000 USD over a year. These benefits are largely driven by savings in energy procurement costs during a few weeks. Moreover, all houses contribute to this gain and houses which contribute more benefit over-proportionally. Furthermore, LEMs can contribute to the management of constrained systems. We derive the marginal value of investment and show that optimal grid expansion is less than under a fixed retail tariff. Our results demonstrate that LEMs can provide system benefits, however, important design questions are still open, for instance who should incorporate the role of an LEM operator.

Maximum electricity-saving behavior and practical issues of randomized controlled trial

Authors

Prof. Kato, Takaaki, Professor, University of Kitakyushu

Prof. Ushifusa, Yoshiaki, Professor, University of Kitakyushu

Presenter

Prof. Kato, Takaaki, Professor, University of Kitakyushu

Abstract

A relatively small price signal in a critical-peak pricing (CPP) event can make household occupants stop using all available electric appliances rather than incrementally add electricity saving as price increases. The features of this maximum saving behavior were analyzed using a series of CPP experiments. The data were combined in an apartment complex in Japan for the two summers and one winter of our study (2012)

Who is Willing to Choose a Time-of-Use Electricity Tariff? Evidence from Factor Analysis.

Author

Ms Sundt, Swantje, , Kiel University, Institute for Economics

Presenter

Ms Sundt, Swantje, , Kiel University, Institute for Economics

Abstract

Time-of-use (TOU) electricity tariffs are a demand side measure to ease balancing of demand and supply with a rising share of renewables in a country

Water issues in Asia

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Free Power, Irrigation and Groundwater Depletion: Impact of the Farm Electricity Policy of Punjab, India (PRESENTER: Disha Gupta ; DISCUSSANT: Hongzhen Zhang)
2. Transverse eco-compensation mechanism and environmental inequality: Evidence from the pilot of Xin'an River in China (PRESENTER: Hongzhen Zhang ; DISCUSSANT: Archisman Mitra)
3. Can electricity rebates modify groundwater pumping behaviours? Evidence from a pilot study in Punjab (PRESENTER: Archisman Mitra ; DISCUSSANT: Safa Baccour)
4. Hydroeconomic modeling to assess water scarcity and water pollution in the Ebro River Basin, Spain (PRESENTER: Safa Baccour ; DISCUSSANT: Disha Gupta)

Speakers

Ms Gupta, Disha, PhD student, Delhi School of Economics, India
Mr. Zhang, Hong-Zheng, Economist,
Mr. Mitra, Archisman, ,
Ms Baccour, Safa, Agricultural Engineer, CITA-DGA

Presentations

Free Power, Irrigation and Groundwater Depletion: Impact of the Farm Electricity Policy of Punjab, India

Author

Ms Gupta, Disha, PhD student, Delhi School of Economics, India

Presenter

Ms Gupta, Disha, PhD student, Delhi School of Economics, India

Abstract

India is the world's largest user of groundwater with increasing reliance on electric-operated tubewells for irrigation. Power subsidies in the form of flat-rate pricing or free provision of electricity have led to debates on whether such policies contribute to over-extraction of groundwater resources calling into question their sustainable use. In most Indian states, farmers pay a flat rate or fixed charge on the basis of horsepower rating of the water pump as opposed to a unit price for the use of electricity for groundwater pumping. Till date, flat-rate pricing policies govern the electric supply in agriculture in most of the states. This paper quantifies the impact of change in the policy regime from flat-rate to free farm electricity pricing introduced in Punjab, an agriculturally important state of India, in February 1997 using a difference-in-differences framework. The policy of free farm electricity has implications for groundwater use in the state through various channels. Post the policy of free

electricity, electric pumps became cheaper to use in Punjab due to lower operational costs and freed up resources which would incentivize farmers to invest in electric pumps. Moreover, since farmers were now not charged a flat-rate fee based on the horsepower rating of the pump, they had an incentive to invest in pumps with higher horsepower rating. The price of electricity at the margin continued to be zero before and after the policy change. For a given electric-operated tubewell and pump, we would therefore not expect much of a first-order change in pumping. But we would expect a larger number of electric-operated tubewells and higher horsepower, leading to greater overall pumping. This channel would lead to greater extraction of the groundwater resources resulting in deepening of the groundwater depths. This is the first study to quantify the impact of free farm electricity using causal methods. Based on village-level data from the second (1993-94) and the third (2000-01) rounds of the Minor Irrigation Census, the study finds a differential increase in the number of electric-operated tubewells, horsepower load and potential discharge capacity of pumps in Punjab as compared to an agriculturally-similar neighbouring state, Haryana, which is taken as the control group. Through these channels, the study also finds a differential increase in percentage deviation in groundwater depth from its mean in the baseline period by 16 per cent. Nationally-representative data on groundwater levels from Central Ground Water Board shows impact heterogeneity with sharper effect on groundwater depth for farmers who are closer to the cut-off of about 10 meters where a technological shift from centrifugal to submersible is required for groundwater pumping. The results indicate increased pumping of groundwater resulting in greater depletion of groundwater resources post implementation of the free farm electricity policy in Punjab.

Transverse eco-compensation mechanism and environmental inequality: Evidence from the pilot of Xin'an River in China

Authors

Prof. Zhang, ZhongXiang, , Tianjin University

Mr. Zhang, Hong-Zheng, Economist,

Prof. He, Ling-Yun, Economist,

Presenter

Mr. Zhang, Hong-Zheng, Economist,

Abstract

In a river basin across regions, is environmental improvement in downstream areas based on actions that negatively impact economic development and social welfare in upstream areas? In this paper, we take the most mature pilot of Transverse Eco-compensation Mechanism (TECM) in Xin'an River of China as quasi-natural experiments and use the DID (difference-in-differences) identification strategy to estimate the impact of TECM on environmental inequality. We find that the government

Can electricity rebates modify groundwater pumping behaviours? Evidence from a pilot study in Punjab

Authors

Brouwer, Roy, , University of Waterloo

Mr. Mitra, Archisman, ,

Dr. Balasubramanya, Soumya, Researcher, International Water Management Institute

Presenter

Mr. Mitra, Archisman, ,

Abstract

As groundwater levels steadily decline in India, authorities are concerned about reducing extraction for irrigation purposes. The continued regime of very low or zero prices of electricity and water for agriculture does not incentivize socially optimal extraction decisions. While charging higher prices for electricity or water should, theoretically, change extraction behaviors, it is not a politically feasible solution. In this study, we describe the results of a pilot scheme implemented in the state of Punjab in North-West India, where farmers who enrolled were allocated a monthly quota of electricity units per month and were compensated for unused electricity. The pilot scheme also ensured 8-hour uninterrupted daytime electricity supply for the pilot feeders, instead of the usual mix of daytime and night-time supply. Collecting data from a cross-sectional farm-survey in 2019 and instrumenting for enrollment, we find that self-reported hours of irrigation for enrolled farmers were significantly lower than for non-enrolled ones, with no impact on rice yields. We also analyse the effect of the pilot scheme on electricity consumption at the feeder level, using the synthetic control method on monthly electricity consumption data. We find that the pilot scheme resulted in a reduction in energy consumption in certain months of up to 30% at feeder level. Our results suggest that the combination of daytime electricity provision and financial rebate for unused electricity has the potential to incentivize farmers to reduce electricity consumption and groundwater abstraction.

Hydroeconomic modeling for assessing water scarcity and pollution abatement policies in the Ebro River Basin, Spain

Authors

Albiac, José, , CITA-University of Zaragoza
Dinar, Ariel, , University of California, Riverside
Ms Baccour, Safa, Agricultural Engineer, CITA-DGA
Dr. Kahil, Taher, Researcher, IIASA
Dr. Esteban, Encarna, Economist, University of Zaragoza
Mr. Crespo Estage, Daniel, ,

Presenter

Ms Baccour, Safa, Agricultural Engineer, CITA-DGA

Abstract

Water scarcity and water quality degradation are major problems in many basins across the world, especially in arid and semiarid regions. The gradual intensification of agricultural production systems in recent decades has placed strong pressures on water resources, thus contributing to their degradation. The agricultural sector is the major consumer of water resources, driving the depletion of water systems. Agriculture is also a source of nutrient pollution into water media and greenhouse gas emissions to the atmosphere. Climate change will exacerbate these problems threatening both natural ecosystems and human water security. This study analyzes water allocation and agricultural pollution in the Ebro River Basin, one of the major basins in Southern Europe and the Mediterranean region. The hydroeconomic modeling approach, combining hydrological, economic and water quality aspects is developed, capturing the main spatial and sectoral interactions in the basin. This model is used to analyze water scarcity and agricultural pollution into watercourses and the atmosphere, providing information for jointly evaluating mitigation and adaptation policies. The results highlight the tradeoffs between water quantity and water quality outcomes under drought scenarios. Droughts increase nitrates concentration at the river mouth by around 50%, while farmers

Renewables capacity

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Electricity Generation Failures and the Capacity Remuneration Mechanism in Turkey (PRESENTER: Simay Kizilkaya ; DISCUSSANT: Rodica Loisel)
2. Strategies for short-term intermittency in long-term scenarios in the French power system (PRESENTER: Rodica Loisel ; DISCUSSANT: Erik Hille)
3. International expansion of renewable energy capacities: The role of innovation and choice of policy instruments (PRESENTER: Erik Hille ; DISCUSSANT: Anna Genave)
4. Estimating electricity consumption in Mauritius: an ARDL bounds test approach to cointegration (PRESENTER: Anna Genave ; DISCUSSANT: Simay Kizilkaya)

Speakers

Ms Kizilkaya, Simay, ,
Dr. LOISEL, Rodica, ,
Dr. Hille, Erik, ,
Ms Genave, Anna, ,

Presentations

Electricity Generation Failures and the Capacity Remuneration Mechanism in Turkey

Authors

Ms Kizilkaya, Simay, ,
Dr. Durmaz, Tunc, Economics, Yildiz Technical University
Dr. Acar, Sevil, Economics , Bosphorus University

Presenter

Ms Kizilkaya, Simay, ,

Abstract

The deregulation of significant parts of electricity markets in many countries worldwide led operators to strategically withhold some of their generating capacity to increase electricity prices and revenues. Nevertheless, such actions potentially have harmful effects on economic welfare. This study investigates whether strategic capacity withholding exists in the form of failures in the Turkish electricity market. Secondly, it examines whether the Turkish capacity remuneration mechanism, which aims at establishing sufficient installed capacity in the market, contributes to the total failure durations. The empirical results show strong support for the hypothesis that there is strategic capacity withholding. Moreover, the Turkish capacity remuneration mechanism adds to the duration of the failures in the

market. To the best of our knowledge, this is the first study investigating capacity withholding by explicitly considering the presence of a capacity remuneration mechanism. Moreover, it is the first study to focus on the durations of failures rather than the number of failures. Our analysis conveys core messages for the policymakers. Firstly, strategic capacity withholding suggests that a verification mechanism may be required to verify the failures. Secondly, the positive effect of the capacity payments on the number of failures indicates that the mechanism may need to be redesigned.

Strategies for short-term intermittency in long-term scenarios in the French power system

Authors

Dr. Mima, Silvana, , CNRS - GAEL

Dr. LOISEL, Rodica, ,

Dr. Lemiale, Lionel, Associate Professor, University of Nantes

Dr. Bidaud, Adrien, Associate Professor, University of Grenoble Alpes

Presenter

Dr. LOISEL, Rodica, ,

Abstract

This paper depicts the flexibility provision with nuclear power in French energy scenarios. The long-term energy model POLES is coupled with a power market module, EcoNUK, to assess the interaction between nuclear and renewables. The paper addresses the issue of optimal shares of nuclear and renewables that best regulate the system adequacy with concern to nuclear ramping, minimum reactor stable power, and the share of the fleet needed to operate load-following instead of baseload. Results show that depicting flexibility at half-hour with EcoNUK results in more nuclear and gas power flows than in POLES, due mainly to ramping constraints. Nuclear load-following is accounted in terms of cycling, with an annual seasonality of cycles assessed by frequency and amplitude, and shows that by 2050 there are more deep cycles than currently allowed by reactor

International expansion of renewable energy capacities: The role of innovation and choice of policy instruments

Authors

Dr. Hille, Erik, ,

Mr. Oelker, Thomas, PhD student,

Presenter

Dr. Hille, Erik, ,

Abstract

There is little consensus on the most important determinants of renewable energy (RE) growth. In this paper, we investigate the role of various policy instruments and RE innovation for the international expansion of wind and solar photovoltaic capacities between 2004 and 2017. We consider rich policy and patent data for 189 countries and territories. This allows us, firstly, to contribute to the limited evidence on the interrelated influence of RE innovation and RE support policies on RE diffusion, and, secondly, to tackle the prior inherent tradeoff between the considered number of countries and policies. Thirdly, we control for the inherent endogeneity of policy instruments and innovation. We find that RE innovation is among the most promising ways to increase RE capacities. Regarding the policy instruments, the

implementation of quotas with certificate trading, tendering, and fiscal instruments that provide specific investment support, i.e. investment tax credits and capital subsidies, tends to be most effective. This indicates that a policy mix of RE support policies may be helpful to foster energy transition. However, less tangible and projectable measures, such as sales tax reductions and emission targets, which are most commonly implemented, are least effective and even estimated to slow down RE capacity growth.

Estimating electricity consumption in Mauritius: an ARDL bounds test approach to cointegration

Author

Ms Genave, Anna, ,

Presenter

Ms Genave, Anna, ,

Abstract

This paper empirically investigates the short-run dynamics and long-run relationships between electricity consumption and other economic variables in Mauritius over 1978-2019. The autoregressive distributed lag (ARDL) bounds test approach to cointegration provides evidence of a long-run equilibrium relationship among electricity consumption, real GDP per capita, real electricity price and real exports of goods and services per capita. Electricity consumption is inelastic to price and income both in the short- and long-run. Furthermore, the Toda-Yamamoto causality test supports the neutrality hypothesis between electricity consumption and real GDP on the one hand, and electricity consumption and exports on the other hand. There is a unidirectional causality running from electricity consumption to real electricity price and real electricity prices to real exports. Mauritius being a signatory of the Paris Agreement, the implementation of electricity conservation through reduction targets, does not impede economic growth, nor does it offset trade benefits acquired through exports.

Fossil energy in Asia

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Market segmentation and energy efficiency: Evidence from China's regional economies (PRESENTER: Liang Nie ; DISCUSSANT: Junfeng Wang)
2. Diminishing effect of winter heating on air quality in northern China (PRESENTER: Junfeng Wang ; DISCUSSANT: Yin Chu)
3. Air Pollution and Health Costs of Coal Production: Evidence from Coalmine Accidents in China (PRESENTER: Yin Chu ; DISCUSSANT: Inmaculada Martinez-Zarzoso)
4. Pollution Reduction by Rationalization in Indian Firms (PRESENTER: Inmaculada Martinez-Zarzoso ; DISCUSSANT: Liang Nie)

Speakers

Mr. Nie, Liang, Economist,
Prof. Wang, Junfeng, Professor, Nankai University
Prof. Chu, Yin, ,
Prof. Martinez-Zarzoso, Inma, ,

Presentations

Market segmentation and energy efficiency: Evidence from China's regional economies

Authors

Prof. Zhang, ZhongXiang, , Tianjin University
Mr. Nie, Liang, Economist,

Presenter

Mr. Nie, Liang, Economist,

Abstract

Existing studies have focused on the negative impact of inefficient resource allocation on energy performance in China

Diminishing effect of winter heating on air quality in northern China

Authors

Prof. Wang, Junfeng, Professor, Nankai University
Prof. Qiao, yuanbo, environment,
Ms xu, xiaoya, Environmental Economics , College of Environmental Science and Engineering, Nankai University, Tianjin 300500, China

Ms Wang, Shimeng, Environmental Economics , College of Environmental Science and Engineering, Nankai University, Tianjin 300500, China

Dr. Li, Xiao, , School of the Environment, Yale University

Ms he, pan, Earth and Environmental Sciences, School of Earth and Environmental Sciences, Cardiff University, Cardiff, CF10 3AT, UK

Mr. Chen, ying, Environmental Sciences, Lancaster Environment Centre, Lancaster University, LA1 4YX, Bailrigg, Lancashire, United Kingdom

Presenter

Prof. Wang, Junfeng, Professor, Nankai University

Abstract

China has made substantial efforts, with

Air Pollution and Health Costs of Coal Production: Evidence from Coalmine Accidents in China

Authors

Prof. Chu, Yin, ,

Prof. Holladay, James Scott, Economics, University of Tennessee, Knoxville

Prof. Qiu, Yun, Economics, Jinan University

Prof. Tian, Xian-Liang, Economics, Zhongnan University of Economics and Law

Dr. Zhou, Maigeng, Health, Chinese Center for Disease Control and Prevention

Presenter

Prof. Chu, Yin, ,

Abstract

The impacts of burning coal on pollution and human health have been widely studied, but little is known about the impacts of mining coal. We fill this gap in the literature examining air pollution and mortality impacts of coal mining activities in China, the world

Pollution Reduction by Rationalization in Indian Firms

Authors

Mr. Semrau, Finn Ole, Doctoral Student, Kiel Institute for the World Economy

Prof. Martinez-Zarzoso, Inma, ,

Dr. Roy-Mukherjee, Shampa, Economist, University of East London

Prof. Voicu, Anca, Economist, Rollings College

Presenter

Prof. Martinez-Zarzoso, Inma, ,

Abstract

This paper uses data for Indian firms over the period 1987 to 2016 to estimate a panel data model that considers firm heterogeneity to estimate the relationship between energy intensity and internationalization strategies of the firm. Both, the extensive and intensive margins of exports are considered as explanatory factors of energy intensity together with a number of control variables including estimated total factor productivity, foreign ownership, size and innovation activities. The main results indicate that exporters are more energy efficient than non-exporters and that there is heterogeneity between industries. More energy-intensity industries present a higher reduction in energy intensity for exporters in comparison to non-exporters.

Energy: weather and disruptions

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The effect of monthly weather patterns on fuel demand and energy expenditure (PRESENTER: Edward Manderson ; DISCUSSANT: Katrin Rehdanz)
2. The Effect of Temperature on Energy Use and CO2 Emissions in the German Industry (PRESENTER: Katrin Rehdanz ; DISCUSSANT: Javier Lopez Prol)
3. No alarms and no surprises: dynamics of renewable energy curtailment in California (PRESENTER: Javier Lopez Prol ; DISCUSSANT: Guojun He)
4. Energy Saving May Kill: Evidence from the Fukushima Nuclear Accident (PRESENTER: Guojun He ; DISCUSSANT: Edward Manderson)

Speakers

Manderson, Edward, , University of Manchester, UK
Rehdanz, Katrin, , Department of Economics, Kiel University
Dr. López-Prol, Javier, Researcher,
Prof. He, Guojun, ,

Presentations

The effect of monthly weather patterns on fuel demand and energy expenditure

Authors

Manderson, Edward, , University of Manchester, UK
Prof. Considine, Tim, Economics,

Presenter

Manderson, Edward, , University of Manchester, UK

Abstract

Using random variation in weather, we document the relationship between daily temperatures and monthly fuel consumption. We find the relationships exhibit nonlinearities that vary markedly by fuel type and by sector. For the residential and commercial sectors, there are significant increases in electricity demand at both extremes of the temperature distribution, while there is significantly less natural gas use during high temperature periods. In contrast, there is less evidence of significant impacts of the weather on electricity and natural gas demand in the industrial sector. We also find that propane use exhibits

significant weather sensitivity, while other petroleum products do not. We use our estimates to simulate the effect of changes in temperature from long-run weather patterns on energy expenditures during the 2010s and find the impacts are relatively small.

The Effect of Temperature on Energy Use and CO2 Emissions in the German Industry

Authors

Rehdanz, Katrin, , Department of Economics, Kiel University
Mr. Lehr, Jakob, ,

Presenter

Rehdanz, Katrin, , Department of Economics, Kiel University

Abstract

This paper adds to the scarce empirical evidence related to the impact of climate change on the manufacturing sector. To study the effect of temperature on energy use and CO2 emissions daily temperature information from 11.000 German municipalities are combined with the census of the manufacturing industry. The census data covers the universe of German manufacturing plants with more than 20 employees, close to 40.000 plants annually, and spans across more than two decades from 1995 to 2017. We find large and significant effects on CO2 emissions from cold days reflecting heating demand, while higher emissions from electricity consumption result from cooling needs. The increase in electricity related emissions from hot days is approximately twice as high among labor-intensive plants as it is among less labor-intensive plants. The response of direct emissions to cold days is roughly one third larger for old plants compared to new plants. When our estimates are combined with climate projections, direct emissions would decrease by about 12% by the end of the century due to rising temperatures under a business-as-usual scenario. The respective changes under the emission reduction scenario are about one-third of the changes under the business-as-usual scenario.

No alarms and no surprises: dynamics of renewable energy curtailment in California

Author

Dr. López-Prol, Javier, Researcher,

Presenter

Dr. López-Prol, Javier, Researcher,

Abstract

As variable renewable energy (VRE) sources like wind and solar increase their penetration in electricity markets, their production has to be curtailed more often to deal with circumstances of overproduction, system inflexibility or local grid congestion. Curtailment entails higher levelized cost per unit of usable electricity and could therefore hamper the further diffusion of VRE. I study the effects of VRE and nuclear penetration and demand on hourly VRE curtailment in California between May 2014 and December 2020. All the methods used (OLS, FGLS Prais-Winsten, Beta regression and Generalized Additive Models) show robust results. Increasing VRE and nuclear penetration increase VRE curtailment rates, and rising electricity demand reduces curtailment rates up to around 60% of peak load where it stabilizes. I present VRE unit costs depending on curtailment rates and installation costs and

conclude that curtailment is unlikely to present a barrier to further VRE diffusion given their expected cost evolution.

Energy Saving May Kill: Evidence from the Fukushima Nuclear Accident

Authors

Prof. He, Guojun, ,

Mr. Tanaka, Takanao, Researcher, Hong Kong University of Science and Technology

Presenter

Prof. He, Guojun, ,

Abstract

Following the Fukushima nuclear accident, Japan gradually shut down all its nuclear power plants, causing a countrywide power shortage. In response, the government launched large-scale energy-saving campaigns to reduce summer electricity consumption. Exploiting the electricity-saving targets across regions and over time, we show that the campaigns significantly increased heat-related mortality, particularly during extremely hot days. The impact is primarily driven by people using less air conditioning, as encouraged by the government. Nonpecuniary incentive explains around 80% of the reduction in electricity consumption, which eventually causes more deaths. Our findings suggest there exists a trade-off between energy saving and climate adaptation.

Air pollution

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Fetal exposure to fine particulate matter and students' cognitive performance: Evidence from agricultural fires in Brazil (PRESENTER: Juliana Carneiro ; DISCUSSANT: Tejendra Pratap Singh)
2. Beyond The Haze: Air Pollution and Student Absenteeism - Evidence from India (PRESENTER: Tejendra Pratap Singh ; DISCUSSANT: Yuanxiaoyue Yang)
3. Detecting Impact of Allowance Trading Behaviors on Distribution of NO_x Emission Reductions Under the Clean Air Interstate Rule (CAIR) (PRESENTER: Yuanxiaoyue Yang ; DISCUSSANT: Anthony Higney)
4. The Lead-Crime Hypothesis: A Meta-Analysis (PRESENTER: Anthony Higney ; DISCUSSANT: Juliana Carneiro)

Speakers

Dr. Carneiro, Juliana, , University of Bern

Mr. Pratap Singh, Tejendra, ,

Ms Yang, Yuanxiaoyue, ,

Mr. Higney, Anthony, ,

Presentations

Fetal exposure to fine particulate matter and students' cognitive performance: Evidence from agricultural fires in Brazil

Authors

Dr. Carneiro, Juliana, , University of Bern

Prof. Cole, Matthew, Professor of Environmental Economics, University of Birmingham

Prof. Strobl, Eric, Professor of Environmental Economics, University of Bern

Presenter

Dr. Carneiro, Juliana, , University of Bern

Abstract

We estimate the causal effects of acute fine particulate matter (PM_{2.5}) fetal exposure on Brazilian students' scores in the fifth grade using the interaction between wind direction and agricultural fires as instrument for air pollution. Our reveals find that an increase of 10% of intrauterine exposure to PM_{2.5} leads to a decrease of 4.6% in students' scores in Portuguese and 2.8% Mathematics. Back-of-the-envelope calculations demonstrate that a reduction of 10% of PM_{2.5} has the potential to increase later life wages by 2.3%.

Beyond The Haze: Air Pollution and Student Absenteeism - Evidence from India

Author

Mr. Pratap Singh, Tejendra, ,

Presenter

Mr. Pratap Singh, Tejendra, ,

Abstract

Air pollution remains one of the most challenging environmental phenomena. Despite its importance in impacting various facets of everyday life, there is a paucity of well-identified air pollution estimates on short-term outcomes for developing countries. Using novel data, I provide detailed empirical evidence on the direct effect of air pollution on student absenteeism in India by linking local exposure to fine particulate matter (PM_{2.5}) to school attendance. I find a large negative effect of increased air pollution on school attendance. My results are robust to a host of specifications and a battery of robustness checks. Consistent with other works, I find that the effect is more pronounced for younger students and find evidence for differential impacts of air pollution on absenteeism by gender. Exploring the mechanisms behind increased absenteeism, I show that reduced school attendance might be resulting from adverse health shocks to these students.

Detecting Impact of Allowance Trading Behaviors on Distribution of NO_x Emission Reductions Under the Clean Air Interstate Rule (CAIR)

Author

Ms Yang, Yuanxiaoyue, ,

Presenter

Ms Yang, Yuanxiaoyue, ,

Abstract

Emissions trading, or

The Lead-Crime Hypothesis: A Meta-Analysis

Authors

Hanley, Nick, , University of St Andrews

Mr. Higney, Anthony, ,

Dr. Moro, Mirko, Professor, University of Stirling

Presenter

Mr. Higney, Anthony, ,

Abstract

Does lead pollution increase crime? We perform the first meta-analysis of the effect of lead on crime by pooling 529 estimates from 24 studies. We find evidence of publication bias across a range of tests. This publication bias means that the effect of lead is overstated in the literature. We perform over 1 million meta-regression specifications, controlling for this bias, and conditioning on observable between-study heterogeneity. When we restrict our analysis to only high-quality studies that address endogeneity the estimated mean effect size is close to zero. When we use the full sample, the mean effect size is a partial correlation coefficient of 0.11, over ten times larger than the high-quality sample. We calculate a plausible elasticity

range of 0.22-0.02 for the full sample and 0.03-0.00 for the high-quality sample. Back-of-envelope calculations suggest that the fall in lead over recent decades is responsible for between 36%-0% of the fall in homicide in the US. Our results suggest lead does not explain the majority of the large fall in crime observed in some countries, and additional explanations are needed.

Renewables demand: behavioral aspects

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The effect of descriptive information provision on electricity consumption: experimental evidence from Lithuania (PRESENTER: Fisssha Marye ; DISCUSSANT: Aviv Steren)
2. Energy efficiency policies targeting consumers may not save energy at all: The case of green-tax reform in the Israeli private car market (PRESENTER: Aviv Steren ; DISCUSSANT: Hideki Shimada)
3. Heterogeneous Treatment Effects of Nudge and Rebate: Causal Machine Learning in a Field Experiment on Electricity Conservation (PRESENTER: Hideki Shimada ; DISCUSSANT: Elisa Dienesch)
4. Air pollution in an urban world: A global view on density, cities and greenhouse-gas emissions (PRESENTER: Elisa Dienesch ; DISCUSSANT: Fisssha Marye)

Speakers

Mr. Asmare, Fisssha, ,
Ms Steren, Aviv, ,
Mr. Shimada, Hideki, ,
Dr. Dienesch, Elisa, ,

Presentations

The effect of descriptive information provision on electricity consumption: experimental evidence from Lithuania

Authors

Mr. Asmare, Fisssha, ,
Dr. Jaraite, Jurate, Researcher, Vilnius University
Dr. Kazukauskas, Andrius, Researcher, Vilnius University

Presenter

Mr. Asmare, Fisssha, ,

Abstract

Studies on the effects of information provision on residential energy use conclude that such information can promote households

Energy efficiency policies targeting consumers may not save energy at all: The case of green-tax reform in the Israeli private car market

Authors

Ms Steren, Aviv, ,
Dr. Rosenzweig, Stav, Academic, Ben-Gurion University of the Negev

Dr. Rubin, Ofir, Academic, Ben-Gurion University of the Negev

Presenter

Ms Steren, Aviv, ,

Abstract

Regulating the production and incentivizing the purchase of energy-efficient cars has continuously been a primary policy recommendation to curb the world

Heterogeneous Treatment Effects of Nudge and Rebate: Causal Machine Learning in a Field Experiment on Electricity Conservation

Authors

Prof. Ushifusa, Yoshiaki, Professor, University of Kitakyushu

Mr. Shimada, Hideki, ,

Dr. Murakami, Kayo, JSPS Post-Doctoral Research Fellow, Kyoto University

Prof. Ida, Takanori, Professor, Kyoto University

Presenter

Mr. Shimada, Hideki, ,

Abstract

This study investigates the different impacts of monetary and nonmonetary incentives on energy-saving behaviors using a field experiment conducted in Japan. We find that the average reduction in electricity consumption from rebate is 4%, while that from nudge is not significantly different from zero. Applying a novel machine learning method for causal inference (causal forest) to estimate heterogeneous treatment effects at the household level, we demonstrate that the nudge intervention

Air pollution in an urban world: A global view on density, cities and greenhouse-gas emissions

Authors

Dr. Dienesch, Elisa, ,

Dr. Krause, Melanie, Junior Professor, Hambourg University

Dr. Castells-Quintana, David, Lecturer Professor, Universidad Autónoma de Barcelona (UAB)

Presenter

Dr. Dienesch, Elisa, ,

Abstract

In this paper, we take a global view at air pollution looking at countries and cities worldwide. In doing so, we pay special attention at the spatial distribution of population and its relationship with the evolution of greenhouse-gas emissions, using i) a large panel of countries with data from 1960 to 2010, and ii) a unique and large sample of more than 1200 (big) cities around the world, combining pollution data with satellite data on built-up areas, population and light intensity at night at the grid-cell level for the last two decades. At the country level, we find that higher density in urban areas is associated with lower CO₂ and PM_{2.5} emissions per capita. This result is supported at the city level; denser cities show lower emissions per capita. Our findings are robust to several controls and different specifications and estimation techniques, as well as different identification strategies. In our city level analysis, we also investigate the role of various characteristics of cities, in particular their average income, size and spatial structure (indicating within-city differences in density). We find evidence that city structure interacts with city size, with polycentricity being

associated with lower pollution in the largest urban areas, while monocentricity being more beneficial for smaller cities.

Weather and extreme events

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Effect of extreme weather events on child health in rural Uganda (PRESENTER: Emily Injete Amondo ; DISCUSSANT: Barbora Sedova)
2. Global food prices, local weather and migration in Sub-Saharan Africa (PRESENTER: Barbora Sedova ; DISCUSSANT: Judith Regner)
3. Climate Risks, Agriculture and the Value of Weather Index Insurance (PRESENTER: Judith Regner ; DISCUSSANT: Hardeep Singh)
4. Uncertain Monsoon, Irrigation and Crop Yields: Implications for Pricing of Insurance Products (PRESENTER: Hardeep Singh ; DISCUSSANT: Emily Injete Amondo)

Speakers

Ms Amondo, Emily Injete, ,
Mr. Sedova, Barbora, Researcher, Potsdam Institute for Climate Impact Research
- Regner, Judith, PhD Student, Helmut-Schmidt University
Singh, Hardeep, -, Research Scholar

Presentations

Effect of extreme weather events on child health in rural Uganda

Authors

Ms Amondo, Emily Injete, ,
Dr. Mirzabaev, Alisher, Senior Researcher, Center for Development Research (ZEF)
Dr. Rukundo, Emmanuel, Senior Researcher, University of Bonn

Presenter

Ms Amondo, Emily Injete, ,

Abstract

Children in rural farming households across the developing countries are often vulnerable to a multitude of risks, including health risks associated with climate change and variability. This study empirically traced the effect of extreme weather events on nutritional health outcomes among rural children in Uganda, while accounting for households

The findings provide evidence of the significant and negative effect of droughts and heat waves on children anthropometrics, particularly children chronic undernutrition. Exposure to drought led to significantly lower height-for-age scores (HAZ) of up to -0.57 standard deviations in both boys and girls. Heat waves were significantly associated with lower HAZ scores and the other anthropometrics, even though the magnitude of the effect was lower.

The main causal transmission channels for these impacts were lowered crop production and increased frequency of child diseases, such as diarrhea and fever. The results further demonstrated that children in households that engaged in ex-ante or anticipatory risk reducing strategies such as, savings, water harvesting and improved seed technologies had better health outcomes and crop production as opposed to those engaged in ex-post coping such as, involuntary change of diet. These results highlight the importance of ex ante resilience building against extreme weather events particularly when compared to ex post and often costlier relief actions.

Global food prices, local weather and migration in Sub-Saharan Africa

Authors

Mr. Sedova, Barbora, Researcher, Potsdam Institute for Climate Impact Research

Mr. Ludolph, Lars, PhD student, London School of Economics and Political Science

Presenter

Mr. Sedova, Barbora, Researcher, Potsdam Institute for Climate Impact Research

Abstract

In this paper, we study the effect of exogenous global crop price changes on migration from agricultural and non-agricultural households in Sub-Saharan Africa. We show that, similar to the effect of positive local weather shocks, the effect of a locally-relevant global crop price increase on household out-migration depends on the initial household wealth. Higher international producer prices relax the budget constraint of poor agricultural households and facilitate migration at an order of magnitude of around 37% of the net effect of positive local weather shocks. Unlike positive weather shocks, which mostly facilitate internal rural-urban migration, positive income shocks through rising producer prices only increase migration to neighboring African countries, likely due to the simultaneous decrease in real income in nearby urban areas. Finally, we show that while higher producer prices induce conflict, conflict does not play a role for the household decision to send a member as a labor migrant.

Climate Risks, Agriculture and the Value of Weather Index Insurance

Authors

Dr. Hott, Christian, ,

- Regner, Judith, PhD Student, Helmut-Schmidt University

Presenter

- Regner, Judith, PhD Student, Helmut-Schmidt University

Abstract

This paper evaluates the potential value of a weather index insurance for the agriculture sector in an high income country (Germany). In our theoretical analysis we model an index insurance as well as a traditional loss based insurance market and compare the resulting expected utility of a risk averse crop farmer. Our results indicate that the (relative) performance of the index insurance strongly depends on the used weather index and the concrete trigger point for the index insurance (i.e. the definition of a NatCat). We therefore conduct a panel estimation in order to see which weather variables have the strongest link to losses of crop farmers in Germany. Following our estimation, mean temperatures in summer have the highest potential for an valuable index insurance. Finally, we simulate the theoretical model using the results from the estimation and using different thresholds for the definition of a NatCat. According to this simulation, an index insurance which pays if the

mean temperature in summer is more than about 1.1 degrees Celsius above its trend, would lead to the highest expected utility.

Uncertain Monsoon, Irrigation and Crop Yields: Implications for Pricing of Insurance Products

Authors

Singh, Hardeep, -, Research Scholar

Dr. Negi, Digvijay S., Assistant Professor, Indira Gandhi Institute of Development Research

Prof. Birthal, Pratap S., National Professor, ICAR-National Institute of Agricultural Economics and Policy Research

Presenter

Singh, Hardeep, -, Research Scholar

Abstract

A significant body of literature interested in studying the impact of weather risks on agricultural performance has modeled crop yields as a function of either levels or deviations in seasonal rainfall. However, an aspect that has received little attention in the literature relates to the impact of timing of the arrival of the monsoon on agricultural performance. In this paper, using a pan-India district-level panel dataset for a period of 50 years, we investigate three interrelated issues that are critical for managing the weather-induced agricultural risks. One, we examine the impact of timing of the arrival of the monsoon on crop yields. Two, we assess the mitigation benefits of irrigation against a delayed monsoon. And three, by simulating optimal demand and fair premium rates for an area yield insurance product at varying levels of irrigation coverage, we argue for differential pricing of insurance products for irrigated and rainfed crops or regions.

Technology and farming

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Fuel for Food: The relationship between access to clean cooking fuel and nutrition in India (PRESENTER: Dalia Fadly ; DISCUSSANT: Marie Lassalas)
2. Environmental labelling and product quality: an application to French wheat production (PRESENTER: Marie Lassalas ; DISCUSSANT: Manuela Coromaldi)
3. The Adoption Determinants of Climate-smart Production Practices and their impacts on Farm Outcome in Uganda (PRESENTER: Manuela Coromaldi ; DISCUSSANT: Rahim Ouedraogo)
4. When psychosocial factors hinder the adoption of a profitable innovation: An econometric analysis (PRESENTER: Rahim Ouedraogo ; DISCUSSANT: Dalia Fadly)

Speakers

Dr. Fadly, Dalia, ,
Ms Lassalas, Marie, ,
Dr. Coromaldi, Manuela, ,
Mr. OUEDRAOGO, RAHIM, ,

Presentations

Fuel for Food: The relationship between access to clean cooking fuel and nutrition in India

Authors

Dr. Fadly, Dalia, ,
Dr. Fontes, Francisco, Economist, Food and Agricultural Organization of the United Nations
Prof. Maertens, Miet, Professor, KU Leuven

Presenter

Dr. Fadly, Dalia, ,

Abstract

While the adverse impacts of traditional cooking fuels such as fuelwood and dung cakes (hereinafter referred to as dirty fuels) are well-established in the literature, there is little empirical evidence on their impacts on household food security outcomes. In this paper, we assess the impact of using dirty fuels on the number of meals consumed in India using a household level dataset covering 8500 households in 2015 and 2018 . We find that using a dirty fuel as a primary cooking fuel has a negative impact on the frequency of meals consumed per household, with results being robust to alternative models. We then test three channels that could explain this relationship, namely the amount of time it takes to cook a meal, the frequency of fuelwood collection and satisfaction with the cooking arrangement.

We find that dirty fuels are associated with a lower satisfaction with the cooking arrangement and increase cooking duration and lead to an increase in fuelwood collection frequency. All of these factors are expected to negatively affect the number of meals consumed by the household.

Environmental labelling and product quality: an application to French wheat production

Authors

Ms Lassalas, Marie, ,
Ms Duvaléix, Sabine, Associate Professor,
Ms Latruffe, Laure, Research director,

Presenter

Ms Lassalas, Marie, ,

Abstract

Many environmental standards were developed over the past three decades and the agricultural sector is not an exception. Environmental standards differ by their stringency. This paper aims at understanding whether farmers have incentives to adopt an intermediate environmental standard to limit the negative impact of their agricultural practices without changing all their farming system. As intermediate standards have various levels of environmental restrictions, we investigate and compare two environmental standards that differ by their stringency levels. We assess their impacts on pesticides use on yield, product quality and sales revenue at the plot level. We focus on two quality attributes, specific weight and protein content, which are used in marketing contracts for milling activities and bakers. To control for the possible selection bias in the decision to adopt the most stringent environmental standard, we use an endogenous switching regression method. We show that there is a selection bias on the adoption of the most stringent environmental standard regarding quality attributes. Our results highlight that banning most toxic pesticides at the plot level to limit the negative impact of agricultural practices on biodiversity has mixed effects on technical results. It decreases yield by 1.4%, decreases specific weight by 0.3kg/hl, and increases protein content by 0.02 point of percentage. It increases sales revenue by 13

The Adoption Determinants of Climate-smart Production Practices and their impacts on Farm Outcome in Uganda

Authors

Castellucci, Laura, , University of Rome Tor Vergata
Dr. Coromaldi, Manuela, ,
Prof. Auci, Sabrina, Researcher, University of Palermo

Presenter

Dr. Coromaldi, Manuela, ,

Abstract

Recent evidence suggests that global climate change (CC) is likely to increase the variability of rainfall, temperature, and the frequency of extreme weather events (IPCC 2014).

Climate change effects represent a

Adoption of modern technologies is relevant for the adaptive capacity of a household (Barrett et al., 2004; Dercon, 1996; Dercon and Christiaensen, 2011). Ex ante mechanisms such as adaptation strategies might help rural households to maintain their productivity and reduce the risk of poverty trap (Barrett 2005).

Despite several empirical studies, using a range of regression models, have already analyzed technology adoption and its impacts on farms

This study identifies the determinants that affect farmers

To address endogeneity the instrumental variable methodology is not appropriate when the endogenous selection variable (adoption choice) is binary. The methodology proposed by Wooldridge (2010) to solve this issue is the control function approach (CF), which generally, requires fewer assumptions than an instrumental variable methodology and is computationally simpler. Following Murtazashvili and Wooldridge (2016), we apply a control function approach based on a two-stage procedure. In the first stage, a selection equation is estimated by using a binary variable estimator such as a probit correlated random effects model. In the second stage, the outcome equation, conditional on the treatment (the adoption of climate-smart practices) is estimated by applying a correlated random effect model.

Using the Uganda National Panel Survey spanning from 2009-2014, our findings suggest that climate variability increases the likelihood of adopting climate-smart practices. The findings also show that farmers who adopted climate-smart practices would have gained lower net crop income and would have increased

When psychosocial factors hinder the adoption of a profitable innovation: An econometric analysis

Authors

Mr. OUEDRAOGO, RAHIM, ,

Dr. Montginoul, Marielle, Economist, INRAE

Dr. Barbier, Bruno, Agro-Economist, CIRAD

Presenter

Mr. OUEDRAOGO, RAHIM, ,

Abstract

Supplemental irrigation using farm ponds is an innovation to cope with rainfall variability in Sahelian countries. The technique consists in digging a farm pond, harvesting run-off water, and irrigating crops during the dry spells of the rainy season. Despite the involvement of development actors, the innovation still has a low adoption rate. This article analyzes, using an econometric model, the factors that hinder the decision of farmers to adopt the innovation, by focusing on farmers

Key words: Adoption of Innovations, Farmers, Farm ponds, Psychosocial factors, Supplemental irrigation.

Environment, trade and firm incentives

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Porter Hypothesis and Pollution Haven Effect: Is firm heterogeneity a driver for environmental tax, eco-innovation and export relationship? (PRESENTER: Chiara Lodi ; DISCUSSANT: Christophe Charlier)
2. Countervailing measures when the environment matters (PRESENTER: Christophe Charlier ; DISCUSSANT: Jan Schneider)
3. The Incidence of CO2 Pricing Under Alternative International Market Responses -- A Computable General Equilibrium Analysis for Germany (PRESENTER: Jan Schneider ; DISCUSSANT: Finn Ole Semrau)
4. On the drivers of clean production: Firms' Global Value Chain positioning (PRESENTER: Finn Ole Semrau ; DISCUSSANT: Chiara Lodi)

Speakers

Dr. Lodi, Chiara, ,

Mr. Charlier, Christophe, Professor, Université Côte d'Azur, and CNRS, GREDEG

Schneider, Jan, , ETH Zurich

Mr. Semrau, Finn Ole, Doctoral Student, Kiel Institute for the World Economy

Presentations

Porter Hypothesis and Pollution Haven Effect: Is firm heterogeneity a driver for environmental tax, eco-innovation and export relationship?

Authors

Dr. Lodi, Chiara, ,

Prof. Bertarelli, Silvia, Associate Professor, University of Ferrara

Presenter

Dr. Lodi, Chiara, ,

Abstract

The effect of environmental policies on innovation and trade performance is widely studied and controversial results are provided. This paper sheds light on this relationship by investigating the role of productivity heterogeneity at firm level. By considering an international trade model with monopolistic competition, we can identify whether a firm export or not and which technology it adopts. Theoretical predictions are tested on CIS data and results show that a new regulation can generate either a detrimental or a positive direct effect on exports, and a positive effect on green innovation. The overall effect on firm performance is ambiguous, depending upon emission intensity and size.

Countervailing measures when the environment matters

Authors

Mr. Charlier, Christophe, Professor, Université Côte d'Azur, and CNRS, GREDEG

Mr. Bougette, Patrice, Associate Professor, Université Côte d'Azur and CNRS, GREDEG

Presenter

Mr. Charlier, Christophe, Professor, Université Côte d'Azur, and CNRS, GREDEG

Abstract

The ongoing energy transition has led to a procession of trade disputes due to public policies promoting the development of renewable energy. An important part of these disputes has been raised by dumping practices enabled by subsidy program of one party for its industry producing GHG abatement technology. The injured party, may choose to respond with countervailing measures such as antidumping or anti-subsidy duties. While such duties protect the domestic market and R&D in the green energy sector, this trade defense policy may interfere with environmental preservation. We investigate this issue using an international duopoly model for horizontally differentiated green goods, the consumption of which allows reducing an environmental externality. We discuss the economic rationale of countervailing measures in this context. We show that the larger the size of the domestic market, the higher the optimal countervailing duty. Second, trade policies are less necessary when firms become more cost-efficient. Third, the sensitivity of the countervailing measure to environmental characteristics (e.g. the marginal external cost and the green good environmental efficiency) is ambiguous and depends on the degree of product differentiation.

The Incidence of CO2 Pricing Under Alternative International Market Responses -- A Computable General Equilibrium Analysis for Germany

Authors

Schneider, Jan, , ETH Zurich

Prof. Böhringer, Christoph, Researcher, University of Oldenburg

Presenter

Schneider, Jan, , ETH Zurich

Abstract

We investigate the economic impacts of CO2 emission pricing for Germany in the context of the Paris Agreement where we highlight the role of international market responses for the incidence across heterogeneous households. We consider three settings for international spillover effects: (i) a small open economy framework where international prices remain constant, (ii) a multi-region trade framework with endogenous terms of trade where only Germany undertakes emission pricing, and (iii) a multi-region trade framework where all other regions also price CO2 emissions. In all three settings Germany complies to a given domestic emission reduction target through economy-wide uniform CO2 prices. CO2 revenues

are recycled lump-sum to households on an equal-per-household basis. We find that the small open economy setting in the case of Germany not only overstates overall adjustment costs to CO2 emission pricing, but also understates the degree of progressiveness of CO2 revenue recycling.

On the drivers of clean production: Firms' Global Value Chain positioning

Author

Mr. Semrau, Finn Ole, Doctoral Student, Kiel Institute for the World Economy

Presenter

Mr. Semrau, Finn Ole, Doctoral Student, Kiel Institute for the World Economy

Abstract

While the overall effect of trade on the environment is ambiguous, industries occupying Global Value Chain (GVC) upstream position emit proportionately more CO₂. But firms are heterogeneous even in narrowly defined industries - for instance firms may operate under different productivity conditions or differ in their product-mix. Accordingly, I investigate empirically if upstreamness negatively affects a firm's clean production once controlled for different firm idiosyncrasies. Employing rich and highly granular data for Indian manufacturing firms enables to reveal drivers of clean production, including GVC positioning. The results show that upstreamness is a strong determinant of dirty production - the latter variously measured as absolute energy costs, energy consumption and CO₂ emissions as well as the respective environmental outcome per unit of sales. Overall, these findings are robust to alternative specifications and use of a 2-SLS instrumental variable approach.

Experiments and risks

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Adapting to Climate Change: Threat Experience, Cognition and Protection Motivation (PRESENTER: Adloff Susann ; DISCUSSANT: Doruk Iris)
2. Representation, Peer Pressure, and Punishment in a Public Goods Game Experiment (PRESENTER: Doruk Iris ; DISCUSSANT: Jere Lehtomaa)
3. Climate Impact Assessments and Economic Growth: The Case of Tropical Cyclones (PRESENTER: Jere Lehtomaa ; DISCUSSANT: Marco Cassari)
4. Governing climate geoengineering: Side-payments are not enough (PRESENTER: Marco Cassari ; DISCUSSANT: Adloff Susann)

Speakers

Ms. Adloff, Susann, , Kiel Institute for the World Economy/ Kiel University

Dr. Iris, Doruk, , Sogang University

Mr. Lehtomaa, Jere, ,

Prof. Casari, Marco, professor, University of Bologna

Presentations

Adapting to Climate Change: Threat Experience, Cognition and Protection Motivation

Author

Ms. Adloff, Susann, , Kiel Institute for the World Economy/ Kiel University

Presenter

Ms. Adloff, Susann, , Kiel Institute for the World Economy/ Kiel University

Abstract

Climatic changes largely unfold by means of two types of events: extreme events and gradual long-term changes. This paper highlights how the difference in occurrence probability and (marginal) impact between the two event types lead to structural differences in cognitive processing

of event experiences. Building upon insights on imperfect memory and from the variety of approaches to rationalizing optimization under (inter-temporal) uncertainty it is theoretically argued how differences are likely to occur at the level of event awareness, expectation

formation and adaptation motivation. This postulation is empirically corroborated using data on the willingness to protect against coastal hazards from a sample population

that is simultaneously exposed to sea level rise and coastal flooding. For both events heterogeneities in event awareness are identified. With regard to sea level rise, differences in event awareness affect expectation formation and mitigate protection motivation. In case of coastal flooding, hazard expectations are unresponsive to heterogeneities in event perception, but essential for protection motivation stimulation. These findings outline two structurally different cognitive routes underlying protection motivation. This indicates that the effectiveness of policy approaches to overcome climate change adaptation thresholds is likely to depend on the particulars of the threat type and calls for more nuanced future research.

Representation, Peer Pressure, and Punishment in a Public Goods Game Experiment

Authors

Tavoni, Alessandro, , University of Bologna

Dr. Iris, Doruk, , Sogang University

Dr. Lee, Jinkwon, Associate Professor, Sogang University

Mr. Kim, Hyoyoung, Graduate Student, Sogang University

Presenter

Dr. Iris, Doruk, , Sogang University

Abstract

The possibility to costly punish others has been one of the best institutions that sustained cooperation at high levels in public goods experiments. However, in many of the public goods (e.g., environmental protection, international security, pandemic diseases) the decisions are not taken at the individual level (i.e., citizens), but we rely on a

Climate Impact Assessments and Economic Growth: The Case of Tropical Cyclones

Authors

Mr. Renoir, Clément, ,

Mr. Lehtomaa, Jere, ,

Presenter

Mr. Lehtomaa, Jere, ,

Abstract

The economic literature suggests that countries' exposure to natural catastrophes partially explains their economic development. The integration of damages from natural disasters in economic models, however, may be improved. We propose a new methodology that combines a numerical general equilibrium model of economic growth with a probabilistic disaster impact model. We focus on the impact of tropical cyclones on the United States, the Caribbean islands, Japan, China, and the Philippines. We first analyze the consequences of a single year of cyclone activity to illustrate the main economic mechanisms. We find a reconstruction boom and a long-run recovery path that can take up to several decades. We then study the cumulative effect on the economic growth of years of exposure to cyclones. Results vary a lot across regions. They are also sensitive to the assumption of the engine of growth (neoclassical or endogenous growth). Finally, we quantify how climate change may change our current estimates by 2100. The model mechanisms are easily tractable, and our

methodology may generalize beyond the scope of tropical cyclones to estimate the impact of other natural disasters on economic growth.

Governing climate geoengineering: Side-payments are not enough

Authors

Abatayo, Anna Lou, , Bocconi University

Prof. Bosetti, Valentina, Full Professor, Bocconi University

Prof. Tavoni, Massimo, Professor,

Prof. Casari, Marco, professor, University of Bologna

Dr. Ghidoni, Riccardo, Assistant Professor, University of Milano-Bicocca

Presenter

Prof. Casari, Marco, professor, University of Bologna

Abstract

Climate geoengineering strategies can help reduce the economic and ecological impacts of global warming. However, governing geoengineering is challenging: since climate preferences

vary across countries, excessive deployment relative to the socially optimal level is likely. Through a laboratory experiment on a public good-or-bad game, we study whether side-payments can address this governance problem. While theoretically effective, our experimental

results show only a modest impact of side-payments on outcomes, especially in a multilateral setup. Replacing unstructured bilateral exchanges with a treaty framework simplifies the action space and performs moderately better.

Political economy, wealth and industry

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Trade Wars and Trade Talks Revisited: An extension of the Grossman-Helpman Model (1995)
(PRESENTER: Gaurav Bhattacharya ; DISCUSSANT: Aude Pommeret)
2. Economic growth under bribery: the effect of severe pollution (PRESENTER: Aude Pommeret ; DISCUSSANT: Nguyen Thang Dao)
3. Climate policy and wealth distribution (PRESENTER: Nguyen Thang Dao ; DISCUSSANT: Achim Hagen)
4. Contested compromise: Climate policy reforms as share contests (PRESENTER: Achim Hagen ; DISCUSSANT: Gaurav Bhattacharya)

Speakers

Mr. Bhattacharya, Gaurav, ,
Pommeret, Aude, , IREGE USMB
Dr. Dao, Thang, Assistant Professor, Osaka University
Dr. Hagen, Achim, ,

Presentations

Trade Wars and Trade Talks Revisited: An extension of the Grossman-Helpman Model (1995)

Authors

Keswani Mehra, Meeta, , Jawaharlal Nehru University
Mr. Bhattacharya, Gaurav, ,

Presenter

Mr. Bhattacharya, Gaurav, ,

Abstract

This paper extends the Grossman and Helpman (1995) model to include environmental regulations, assuming perfectly competitive markets. The politically motivated government uses trade and environmental policies to regulate trade flows (either non-cooperatively through trade wars or through cooperative bargaining as in case of trade talks) and the use of the sector specific environmental resource in the production of the traded good, respectively. Results show that trade wars can be more pronounced when the polluting good traded is subject to environmental regulations in the country of origin. Despite being politically inclined, policy makers may also face a trade-off from trade policies chosen that have several implications on welfare gains/losses from environmental taxes vis-

Furthermore, there arises an additional layer of distortion in trade policy when political action groups cannot directly observe the true type of the regulator, i.e., whether he/she is highly corrupt or not. Incomplete knowledge about the degree of benevolence of the regulator causes an upward distortion in trade policy compared to the former case, except for a scenario where the regulator is purely benevolent.

Economic growth under bribery: the effect of severe pollution

Authors

Pommeret, Aude, , IREGES USMB

Dr. Zhang, Lin, Academics, City University of Hong Kong

Presenter

Pommeret, Aude, , IREGES USMB

Abstract

How does a local regulator respond to the bribery from polluting industries? We build a theoretical model with uncertainty on pollution-induced catastrophes to investigate the decision-making of a local regulator. We argue there exists a threshold level of pollution triggering a reduction in bribery. Bribery from polluting firms can be successful in persuading local regulators to make non-environmental policies. However, severe pollution exceeding the threshold can significantly change the regulator

Climate policy and wealth distribution

Author

Dr. Dao, Thang, Assistant Professor, Osaka University

Presenter

Dr. Dao, Thang, Assistant Professor, Osaka University

Abstract

We set up a model with inter-generational bequest transfers and a climate damage on the wealth of heterogeneous households. We show that, under the imperfections of credit markets and depending on the wealth distribution across households, a balanced budget climate policy may widen the wealth inequality between the rich and the poor class. A climate policy may create positive effects on the wealth of households but these effects are asymmetric across households in terms of both magnitudes and the transmissions of the gains from climate policy within households. The poor's gains from the climate policy are mainly transmitted into improving the living standard and then to invest in human capital because of the higher marginal return to education investment. In contrary, the rich's gains from the climate policy are transmitted biasedly into physical capital accumulation and enhance their monopoly position in producing intermediate inputs. We show that, for any climate policy, there exists a corresponding threshold of aggregate physical capital. When the aggregate physical capital of the economy exceeds this threshold then the corresponding climate policy may widen the inter-generational bequest transfers among heterogeneous households, therefore, contributing enlarge the wealth gap between the rich and the poor class in the long run.

Contested compromise: Climate policy reforms as share contests

Author

Dr. Hagen, Achim, ,

Presenter

Dr. Hagen, Achim, ,

Abstract

Public policy reforms usually benefit certain societal groups and are costly for others. This is clearly the case for climate policies. Both supporters and opponents of such policies may form lobby groups to influence the policy outcome in their preferred direction. This paper presents a simple two-stage model of climate policy-making, that results from the partial implementation of a policy proposal. The compromise is depicted as a share contest. I analyze the influence of industrial and environmental lobby groups on equilibrium policies and how governments' preferences for rent-seeking activities influence the policy proposal. I show that in regimes where these are regarded as harmful, lobby efforts lead to modest policy proposals and equilibrium climate policies, whereas in regimes where politicians favor lobbying activities

the levels of reform proposal and resulting policy are higher. Industrial lobby groups are always better off in economies that regard lobbying as harmful, whereas environmental groups can be better off with politicians that favour lobby contributions.

Health and pollution I

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Air Pollution, Health, and Racial Disparities: Evidence from Ports (PRESENTER: Pei Huang ; DISCUSSANT: Pushkar Maitra)
2. Coal Plants, Air Pollution and Anemia: Evidence from India (PRESENTER: Pushkar Maitra ; DISCUSSANT: Olexiy Kyrychenko)
3. Environmental regulations, air pollution, and infant mortality in India: A reexamination (PRESENTER: Olexiy Kyrychenko ; DISCUSSANT: Sangeeta Bansal)
4. Health Effects of Sustained Exposure to Fine Particulate Matter: Evidence from India (PRESENTER: Sangeeta Bansal ; DISCUSSANT: Pei Huang)

Speakers

Dr. Huang, Pei, Researcher, ZEW
Prof. Maitra, Pushkar, ,
Kyrychenko, Olexiy, -, CERGE-EI
Prof. Bansal, Sangeeta, Professor, Jawaharlal Nehru University

Presentations

Air Pollution, Health, and Racial Disparities: Evidence from Ports

Authors

Dr. Huang, Pei, Researcher, ZEW
Dr. Gillingham, Kenneth, Associate Professor, Yale University

Presenter

Dr. Huang, Pei, Researcher, ZEW

Abstract

Air pollution is well known for causing human health problems, and the impacts are unlikely to be evenly distributed across individuals. We examine the effect of air pollution on human physical and mental health in port areas using a quasi-experimental setting, where air pollution is driven by vessel tonnage in ports that is predicted by oceanic weather events far out in the ocean. Our findings indicate that one additional vessel in a port over a year leads to 2,900 hospital visits per million Black residents in California, while only 980 hospital visits per million whites. We then investigate a port-related environmental policy in California, finding that this policy can reduce pollutant concentrations and alleviate racial inequalities in health outcomes in port areas.

Coal Plants, Air Pollution and Anemia: Evidence from India

Authors

Prof. Maitra, Pushkar, ,

Prof. Menon, Nidhiya, Professor of Economics,

Prof. Datt, Gaurav, Associate Professor of Development Economics,

Prof. Ray, Ranjan, Professor of Economics,

Presenter

Prof. Maitra, Pushkar, ,

Abstract

This paper examines the impact of pollution from coal-fired power units on the anemic status of children and women in India. While the number of coal units in the district at the time of birth significantly increases the incidence of anemia in young children, it has weaker effects on anemia among women. In utero exposure also matters for child anemia. Impacts are driven by the increase in PM2.5 pollution from coal-fired units. Anemia is established as a significant health cost of coal-fired power generation in rapidly growing economies that use this fuel source to meet increasing energy demands.

Environmental regulations, air pollution, and infant mortality in India: A reexamination

Author

Kyrychenko, Olexiy, -, CERGE-EI

Presenter

Kyrychenko, Olexiy, -, CERGE-EI

Abstract

This paper reexamines empirical evidence on the effectiveness of environmental regulations in India from a recent study by Greenstone and Hanna (GH, 2014). GH report that air pollution control policies in India have been effective in improving air quality but had a modest and statistically insignificant effect on infant mortality. These somewhat counterintuitive findings are likely to stem from the limited availability of air pollution data and the impact of critical confounders. I leverage recent advances in satellite technology and GH

Health Effects of Sustained Exposure to Fine Particulate Matter: Evidence from India

Authors

Prof. Bansal, Sangeeta, Professor, Jawaharlal Nehru University

Ms Saraswat, Yashaswini, Indian Economic Service,

Presenter

Prof. Bansal, Sangeeta, Professor, Jawaharlal Nehru University

Abstract

India suffers from severe air pollution. Nine out of the ten most polluted cities in the world lie here. Evidence is lacking on the effect of air pollution on health outcomes in India. The objective of this study is to estimate the causal effect of long-term exposure to PM2.5 on health outcomes in India, viz., early life mortality (neo-natal, infant, under-five) and life expectancy at birth. We utilise the

Thematic Session: Distributional issues and fairness in the design of carbon pricing

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Supporting carbon taxes: The role of fairness
2. Understanding the resistance to carbon taxes
3. When standards have better distributional consequences than carbon taxes

Speakers

Dr. Sommer, Stephan, ,

Prof. Sterner, Thomas, Professor of Environmental Economics, EfD Environment for Development initiative, University of Gothenburg

Mr. Zhao, Jiaxin, ,

Presentations

Supporting carbon taxes: The role of fairness

Authors

Mattauch, Linus, , University of Oxford

Pahle, Michael, , Potsdam Institute for Climate Impact Research

Dr. Sommer, Stephan, ,

Presenter

Dr. Sommer, Stephan, ,

Abstract

We conduct an experiment to examine how fairness preferences influence the support for carbon taxes and revenue-recycling options. Overall, we find that carbon taxes are unpopular and thus building public support for them remains a relevant question. Moreover, green spending is popular in general, but it is significantly more popular among respondents who are pro-environment and trust the government. Our sample prefers lump-sum payments over directing payments to the most affected, but these preferences depend both on genuinely different fairness conceptions and respondents

Understanding the resistance to carbon taxes

Authors

Prof. Sterner, Thomas, Professor of Environmental Economics, EfD Environment for Development initiative, University of Gothenburg

Mr. Ewald, Jens, PhD Student, University of Gothenburg

Dr. Sterner, Erik, Researcher and pedagogical developer, University of Gothenburg

Presenter

Prof. Sterner, Thomas, Professor of Environmental Economics, EfD Environment for Development initiative, University of Gothenburg

Abstract

Although carbon taxes are generally well accepted in Sweden, there is resistance and we study members of a protest organization with over half a million supporters on their social media platform. They are predominantly male and live in rural areas. They do want climate policy but disapprove of current policies: not only fuel taxes but also subsidies for electric vehicles. They would prefer subsidized domestic biofuels for IC vehicles. They focus on fairness vis-

When standards have better distributional consequences than carbon taxes

Authors

Mattauch, Linus, , University of Oxford

Mr. Zhao, Jiaxin, ,

Presenter

Mr. Zhao, Jiaxin, ,

Abstract

Carbon pricing is the efficient instrument to reduce emissions. However, the geographical and sectoral coverage of substantial carbon pricing is low, often due to concerns that pricing may increase economic inequality. Regulatory standards such as fuel economy standards are more popular. But do they have an equity advantage over carbon pricing? We develop two new formal models to identify economic situations, in which standards could be preferred over carbon pricing. First, we prove that an efficiency standard can be more equitable than carbon pricing when consumers exhibit a preference for high-carbon technology attributes. Evidence from the US vehicle market confirms this finding. Second, we show theoretically, and by means of a numerical application to the Chinese transport sector, that intensity standards are preferable when richer households consume more goods with higher carbon intensity. Our results hold when the revenue from carbon pricing is not very progressively redistributed. These insights can help advance decarbonisation when pricing remains unpopular.

Thematic Session: Advances in the macroeconomic assessment of climate change impacts

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Macroeconomic Implications of Extreme Sea Level Rise and Coastal Migration: A Global Assessment
2. Economic analysis of selected climate impacts under 1.5, 2 and 3C global warming scenarios.
3. Macroeconomic implications of climate change in the EU: a country and sub national assessment
4. Evaluation of Macroeconomic Impacts of Climate Change in Blue Economy Sectors of European Islands with Computable General Equilibrium and Macro-Econometric Models

Speakers

Dr. Bachner, Gabriel, Scientist, Wegener Center for Climate and Global Change, University of Graz, Austria

Mr. Szewczyk, Wojtek, ,

Dr. Bosello, Francesco, Professor, Foundation Euro-Mediterranean Centre on Climate Change (CMCC)

Dr. Vrontisi, Zoi, Professor,

Presentations

Macroeconomic implications of climate change in the EU: a country and sub national assessment

Authors

Dr. Bosello, Francesco, Professor, Foundation Euro-Mediterranean Centre on Climate Change (CMCC)

Dr. Parrado, Ramiro, ,

Dr. Standardi, Gabriele, Researcher,

Presenter

Dr. Bosello, Francesco, Professor, Foundation Euro-Mediterranean Centre on Climate Change (CMCC)

Abstract

This paper investigates the macroeconomic implications of climate change in the EU applying a global computable general equilibrium modeling approach. The exercise considers the economic consequences associated to 9 different climate-related impact sources: agriculture,

To better capturing uncertainty and highlighting the role of climate and social economic forces in impact determination, 9 different combinations of social economic development pathways and climate scenarios are examined together with a

Economic analysis of selected climate impacts under 1.5, 2 and 3C global warming scenarios.

Authors

Dr. Mulholland, Eamonn, , Joint Research Centre
Dr. Ciscar, Juan-Carlos, , JRC, European Commission
Mr. Szewczyk, Wojtek, ,
Dr. Feyen, Luc, -, JRC-EC
Dr. Matei, Anca, -, JRC-EC
Dr. Soria, Antonio, -, JRC-EC

Presenter

Mr. Szewczyk, Wojtek, ,

Abstract

The study pursues economic analysis of six climate impacts: river floods, coastal floods, droughts, agriculture, energy supply, and windstorms. Analysis of global climate spillovers affecting Europe and an exploratory work on risk perspective of climate agricultural impacts are also presented. The analysis employs a CGE model to integrate the climate impact channels, which are economically interpreted as damage to capital, sectoral productivity reduction, and change in consumption. The results are presented in three perspectives: individual results of each of the impact categories, ranking of the impacts according to their relative magnitudes, and the regional pattern of climate impacts across Europe.

Macroeconomic Implications of Extreme Sea Level Rise and Coastal Migration: A Global Assessment

Authors

Dr. Bachner, Gabriel, Scientist, Wegener Center for Climate and Global Change, University of Graz, Austria
Dr. Lincke, Daniel, Post-Doc Researcher, Global Climate Forum, Berlin
Dr. Hinkel, Jochen, Senior Researcher, Global Climate Forum, Berlin

Presenter

Dr. Bachner, Gabriel, Scientist, Wegener Center for Climate and Global Change, University of Graz, Austria

Abstract

Sea levels are projected to rise substantially, which will trigger different human responses including planned adaptation through increasing protection and/or autonomous adaptation through retreating from the coastline. Yet, for the latter no comprehensive estimates on the macroeconomic costs are available. In this contribution we fill this research gap by providing a global assessment on the macroeconomic effects of coastal retreat induced by high end sea level rise. We find that simultaneous implementation of planned and autonomous adaptation is superior to purely planned adaptation. For some developing regions autonomous adaptation is more efficient than planned adaptation, as planned adaptation needs large investments into infrastructure, binding otherwise productive capital.

Evaluation of Macroeconomic Impacts of Climate Change in Blue Economy Sectors of European Islands with Computable General Equilibrium and Macro-Econometric Models

Authors

Prof. Leon, Carmelo J., ,
Dr. Vrontisi, Zoi, Professor,
Dr. Lutz, Christian, Senior Researcher,
Dr. Charalampidis, Ioannis, Researcher,

Dr. Meyer, Mark, Senior Researcher,
Dr. Gonzalez, Matias, Professor,
Prof. Paroussos, Leonidas, Professor,
Prof. Manrique, Casiano, Professor,

Presenter

Dr. Vrontisi, Zoi, Professor,

Abstract

Islands are vulnerable to climate change because of their rich ecosystems services, large coastal areas and dependence on blue economy sectors. This paper presents an evaluation of the macroeconomic impacts of climate change on the blue economy of European Islands, comparing results of downscaled general equilibrium (GEM-E3-ISL) and macro-econometric (GINFORS-E) models. Valuations of blue economic sectors climate change impact chains are considered with assessment of market and non-market economic benefits and costs. The results of impacts on GDP, consumption, investment, and sectorial outcomes for valued added and employment, show strong effects across islands due to their vulnerabilities and economic structures.

Policy Session: Carbon border adjustment and the EU ETS: challenges and solutions

23rd June 2021, 10:00 AM - 12:00 PM

Description

The 2030 Climate Target Plan has remarkably increased the ambition of the European emission reduction target setting Europe on the path to becoming climate neutral by 2050. To that end, the European Commission is preparing detailed legislative proposals on how this target can be achieved. A review of some key features of the EU ETS as well as of the EU's climate policy at large is planned in 2021.

The EU is considering to extend the EU ETS to further sectors which are now not covered by the system. In particular, action is needed in two sectors, maritime transport and aviation, in which EU international emissions have grown by more than 50% since 1990. In July 2020, the European Council invited the Commission to put forward a proposal on a revised emission trading system, possibly extending it to maritime and reducing the allowances allocated for free to airlines. The regulatory framework needs to be strengthened also in other sectors, such as building and road transport which are currently responsible for about 36% and 20% of EU's greenhouse gas emissions, respectively, and have an unexploited cost-effective potential to reduce emissions. Different options are currently under consideration in light of possible expansion of emissions trading to all fossil fuel use. While waiting for this process to take place at the EU level, Germany has decided to proceed unilaterally and introduce a national ETS for transport and heating sectors in 2021.

At the same time, to prevent carbon leakage risks deriving from the increasing ambition of its climate policy, the EU is working on the introduction of a 'Carbon Border Adjustment Mechanism' (CBAM) as of 2023. Even in this case, many options are currently available to set up such a mechanism. How the CBAM would work and which sectors should it apply remains to be defined. One possible approach (and probably the most feasible one) would be to start from the EU ETS itself. Indeed, the CBAM would impose a liability upon certain categories of highly polluting goods imported into the EU based on their embodied carbon emissions, and liabilities could be settled using European Union Allowances. The CBAM might require to partially re-design some features of the EU ETS and to gradually phase-out free allowance allocation to sectors deemed at risk of carbon leakage.

The possible extension of the EU ETS to additional sectors as well as the proposed application of a CBAM are likely to have deep implications on the functioning of the EU climate policy and on its relationship with its international partners. This raises the questions that we intend to address in the session: (i) Which additional sectors should be included under the EU ETS?; (ii) Which other reforms of the EU ETS might be desirable to achieve climate neutrality by 2050?; (iii) Should the CBAM be applied to all sectors or to selected sectors only?; (iv) How should the EU use revenues arising from a CBAM?; (v) Would the CBAM favor or hinder the creation of a Climate Ambition Coalition between like-minded countries?

The session organized by the EAERE POC, in collaboration with the European University Institute under the ongoing LIFE DICET (Deepening International Cooperation on Emissions Trading) project, intends to discuss the challenges posed by the possible reforms described above. In line with the aim of the EAERE POC (i.e. providing advice and support to EU policy makers and institutions in designing policy interventions), particular attention will be devoted to the most suitable policies that should be implemented to make these reforms feasible and effective.

The event intends to continue the series of policy dialogues carried out by the Policy Outreach Committee since 2019 in collaboration with the European University Institute at the State of the Union in Florence and at the 24th and 25th

EAERE Annual Conferences.

Organizers and Chair:

Simone Borghesi

Jos Delbeke

Panelists:

Susanne Dröge

Cameron Hepburn

Phoebe Koundouri

Hermann Vollebergh

Ottmar Edenhofer

Speakers

Borghesi, Simone, , European University Institute

Prof. Edenhofer, Ottmar , Director , PIK, MCC

Prof. Hepburn, Cameron, Professor , Director of the Smith School of Enterprise and the Environment, University of Oxford

Prof. Koundouri, Phoebe , Professor , Athens University of Economics and Business

Prof. Vollebergh, Herman, Professor, Tilburg School of Economics and Management

Dr. Droege, Susanne, Senior Fellow, German Institute for International and Security Affairs

Presentation

Policy Session: Food provision in the 21st century

23rd June 2021, 10:00 AM - 12:00 PM

Description

Following the awarding of the Nobel Peace Prize to the UN's World Food Organization, we are reminded again that the provision of food supplies to a growing world population, under deteriorating environment due to, especially, climate change affecting – among others – fresh water supplies in many regions of the world, is becoming a paramount issue facing decision-makers all over the globe.

The water-food-ecosystem nexus is thus becoming a prime topic for scientific investigations, in order to yield rational options, which should be presented to those who need to make decisions concerning the allocation of scarce resources (human, man-made and natural capital) to deal with the acute choices facing humanity in the ensuing century.

In the proposed session, we propose to present the working of an international consortium dealing with these issues in the Mediterranean region, i.e., countries around the Mediterranean Sea (southern Europe, north Africa, and the Middle-East). The study is coordinated by Italian scientists from the Milano Polytechnic.

Organizer and Chair:

Prof. Mordechai (Moti) Shechter

Panelists:

Dr. Iman Haqiqi

Dr. Claudia Ringler

Dr. Dieter Gerten

Dr. Ana Iglesias

Dr. Marta Messa

Dr. Ruslana Rachel Palatnik

Yael Pantzer

Speakers

Prof. Shechter, Mordechai, Professor (tenured), University of Haifa

Prof. Iglesias, Ana, Professor, Department of Agricultural Economics Technical University of Madrid

Prof. Gerten, Dieter, Earth Modelling Coordinator, Potsdam Institute for Climate Impact Research (PIK)

Dr. Ringler, Claudia, Deputy Director of Environment and Production Technology Division, International Food Policy Institute

Ms. Pantzer, Yael, -, Slow food

Presentation

Egg-Timer: Pollution

23rd June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Gains from linking the EU and Chinese ETS under different assumptions on restrictions, transfer payments, and international trade
2. Gone with the COVID-19? An empirical study on trans-boundary air pollution between China and South Korea
3. Distributional effects of a post-pandemic green fiscal stimulus: skills, employment and wage of low-skilled manual workers
4. Is the transition to zero carbon power economically feasible? The case of a 70% variable renewables power system
5. Money does grow on trees: The catalytic effect of green bond issuance on foreign direct investment
6. Projections of plastics use, waste and policy scenarios to 2060
7. Does it matter where it comes from? Happiness and urban air pollution

Speakers

Mr. Winkler, Malte, ,
Dr. Du, Yimeng, ,
Prof. Marin, Giovanni, ,
Ms Stanley, Sarah, ,
Ms. Skellington, Amanda, Economist, PwC
Ms Mavroeidi, Eleonora, , OECD
Ms Vienne, Veronica, ,

Presentations

Gains from linking the EU and Chinese ETS under different assumptions on restrictions, transfer payments, and international trade

Authors

Peterson , Sonja, , Kiel Institute for the World Economy
Mr. Winkler, Malte, ,
Ms Thube, Sneha, Doctoral candidate, Kiel Institute for the World economy

Presenter

Mr. Winkler, Malte, ,

Abstract

Linking the EU and Chinese Emission Trading Systems (ETS) increases the efficiency of reaching greenhouse gas mitigation targets, but both partners will benefit - if at all - to different degrees. Using the global computable-general equilibrium (CGE) model DART Kiel, we evaluate effects of ETS linking in combination with 1) restricted allowances trading, 2) transfer payments compensating China, and 3) altered Armington elasticities, when NDC and NDC-2C targets are met. We find that the EU prefers full linking, while China prefers

restricted allowance trading. Transfer payments cannot compensate China sufficiently to make a full link as attractive as restricted trading. Linking can avoid losses from international trade restrictions in the ETS sectors in the sense that gains from linking increase with higher Armington elasticities for China, but decrease for the EU. Welfare losses for China only materialize in one scenario. Overall, the EU and China favor differing options of linking ETS. Moreover, dissimilar impacts on inner-European regions could cause dissent among EU regions which could further increase difficulties in finding a linking solution favorable for all trading partners.

[Gone with the COVID-19? An empirical study on trans-boundary air pollution between China and South Korea](#)

[Authors](#)

Dr. MA, Teng, ,

Dr. Du, Yimeng, ,

Dr. Xu, Tao, Lecturer, Business School, Huan Normal University

[Presenter](#)

Dr. Du, Yimeng, ,

[Abstract](#)

In this study, we empirically estimated the trans-boundary impact of China

[Distributional effects of a post-pandemic green fiscal stimulus: skills, employment and wage of low-skilled manual workers](#)

[Authors](#)

Prof. Marin, Giovanni, ,

Popp, David, , Syracuse University

Vona, Francesco, , OFCE Sciences-Po

Dr. Chen, Ziqiao, ,

[Presenter](#)

Prof. Marin, Giovanni, ,

[Abstract](#)

A green fiscal stimulus is prominent in the policy debate over government investments to aid the recovery from the Covid-19 pandemic. Supporters argue green stimuli would boost GDP, create jobs and, at the same time, help redirect economic systems towards the strategic long-term goal of tackling the climatic crisis. In this paper we provide new evidence on the distance in worker skill sets between occupations displaced by Covid-19 and other structural shocks and the subset of green-manual occupations that are expected to be in high-demand as a consequence of a green stimulus. We show that skill distance and other barriers could limit a transition of displaced workers to green-manual jobs. However, our ex-post assessment of the green component of the American Recovery and Reinvestment Act of 2009 suggests that training programs may help. We show that areas equipped with green training facilities gain the most in terms of employment and wages for green-manual jobs after a green fiscal stimulus.

[Is the transition to zero carbon power economically feasible? The case of a 70% variable renewables power system](#)

Authors

Ms Stanley, Sarah, ,

Dr. Lahon, Rinalini, Postdoc, University College Dublin

Dr. O'Dwyer, Ciara, Senior Power Systems Researcher, University College Dublin

Ryan, Lisa, , UCD

Dr. Flynn, Damian, Associate Professor, Power System Operation and Control, University College Dublin

Presenter

Ms Stanley, Sarah, ,

Abstract

Ambitious national renewable electricity targets in Europe have resulted in countries without significant hydro resources, such as Denmark, Ireland and Spain, aiming to source over 70% of their annual electricity consumption from variable renewables by as early as 2030. A high share of wind and solar power in the electricity system introduces numerous technical and operational issues, as well as raising questions about the financial viability of generators in the current electricity market. The objective of this paper is to examine whether such high shares of renewable electricity are economically feasible, under the current electricity market design and technical constraints, and the policy implications. We model system security, renewables curtailment, market prices and net present values of different technology types in 2030 under various renewable generation and electricity load profiles and scenarios. We find that high shares of renewable electricity in isolated systems such as Ireland could lead to curtailment of up to 15% but that additional interconnection, battery storage and dynamic load behaviour reduce this. Marginal prices fall to near zero in periods of high generation of renewable electricity. We estimate that this, combined with curtailment, may lead to insufficient revenues from the electricity price alone in existing electricity markets to cover the costs of generation for many renewable and conventional power plants. Changes to the design of electricity markets are needed to provide additional revenue streams from capacity markets and tariffs designed for system services and make future decarbonised electricity systems economically feasible.

Money does grow on trees: The catalytic effect of green bond issuance on foreign direct investment

Authors

Aravena-Novelli, Claudia, , Heriot Watt University

Ms. Skellington, Amanda, Economist, PwC

Presenter

Ms. Skellington, Amanda, Economist, PwC

Abstract

In recent years, sustainability has emerged as a pillar of society. However, analyses of key macroeconomic variables, such as foreign direct investment (FDI), have not yet incorporated sustainability measures among the variables of interest. Using green bond issuance as a proxy for sustainability-focused policies, we investigate: (1) What impact does green bond issuance have on the issuing country

Projections of plastics use, waste and policy scenarios to 2060

Authors

Dellink, Rob, , OECD, Paris

Dr. Lanzi, Elisa, , OECD
Ms Mavroeidi, Eleonora, , OECD
Dr. Bibas, Ruben, 1, OECD

Presenter

Ms Mavroeidi, Eleonora, , OECD

Abstract

Plastics are one of the most commonplace materials on the planet. Mounting evidence shows that plastics production, use and waste generation will continue to rise to unprecedented levels in the coming decades, which in turn will increase the leakage into the environment, both terrestrial and marine. The objective of the paper is to improve knowledge and projections of the economic drivers of the production and use of plastic to support better policymaking that aims at sustaining economic growth while improving environmental quality. This report includes projections of plastics production and plastics waste, under different scenarios, about future global socio-economic trends. It also examines the environmental and macroeconomic impacts of policy scenarios designed to reduce plastic leakage to the environment. The results suggest that taxing all plastics or only single use plastics, have very limited impacts on GDP (below 0.2% in 2030) and are efficient in reducing plastic use with total plastics production decreasing by more than 10% and by 6% respectively, and total plastics waste by 8 to 10%.

Does it matter where it comes from? Happiness and urban air pollution

Author

Ms Vienne, Veronica, ,

Presenter

Ms Vienne, Veronica, ,

Abstract

The adverse effects of air pollution on human health are well documented in the clinical, epidemiological and toxicological literatures. People in their everyday lives and industrial activity contribute to the creation of air pollution, but overall air pollution affects people regardless of how it is produced, unless the pollutant agent differs. However, does it affect people

In this paper I study whether changes in air pollution from different sources have a heterogeneous impact on people's life satisfaction, and I analyse the incentives individuals face to abate emissions.

To do this I propose a model of household's choices of avoidance behaviours and use to analyse how differently-targeted policies affect households choices regarding air pollution. Later I perform an empirical study in a developing economy context.

For the empirical work I use subjective well-being (SWB) measures to estimate the willingness to pay for reductions of air pollution, procedure known as the Life Satisfaction Approach (LSA). This research is the first to use LSA to estimate heterogeneous effects and WTP of air pollution depending on its different sources. I use data from the Chilean Pollutant Release and Transfer Register, which appoints air pollution to different sources, and merge it with individual-level socio-demographic information from the Chilean household survey. Preliminary results show that life satisfaction is negatively related to air pollution generated by transport, but that the externalities they receive from generating air pollution in a household outweigh its negative health consequences. Geography plays an important role in

the estimations: when not taken into account life satisfaction is negatively related to household-generated air pollution.

Results of this research provide a framework that can be used to inform policy makers on people's preferred ways to abate air pollution based on their well-being, which can help design targeted policies to abate air pollution.

Biodiversity conservation II

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Assessing cost-effectiveness advantages of state-dependent agri-environment schemes (PRESENTER: Lutz Philip Hecker ; DISCUSSANT: Frank Wätzold)
2. A quantitative approach for the design of robust and cost-effective conservation policies under uncertain climate change: the case of grasshopper conservation in Schleswig-Holstein (PRESENTER: Frank Wätzold ; DISCUSSANT: Nonka Markova-Nenova)
3. Distributional Impacts of Cost-effective Spatially Homogeneous and Regionalized Agri-Environment Payments. A case study of a Grassland Scheme in Saxony, Germany (PRESENTER: Nonka Markova-Nenova ; DISCUSSANT: Charlotte Gerling)
4. Modelling the cost-effective spatio-temporal allocation of conservation measures in agricultural landscapes facing climate change (PRESENTER: Charlotte Gerling ; DISCUSSANT: Lutz Philip Hecker)

Speakers

Dr. Hecker, Lutz, ,

Prof. Wätzold, Frank, Chair of Environmental Economics, Brandenburg University of Technology Cottbus-Senftenberg

Ms Markova-Nenova, Nonka, ,

Ms Gerling, Charlotte, ,

Presentations

Assessing cost-effectiveness advantages of state-dependent agri-environment schemes

Authors

Dr. Sturm, Astrid, Senior scienties, Brandenburg University of Technology Cottbus-Senftenberg

Prof. Wätzold, Frank, Chair of Environmental Economics, Brandenburg University of Technology Cottbus-Senftenberg

Dr. Hecker, Lutz, ,

Ms Querhammer, Lisa, Research associate, BTU Cottbus-Senftenberg

Presenter

Dr. Hecker, Lutz, ,

Abstract

Agri-environment schemes (AES) that perform state-dependent conservation measures are commonly associated with higher ecological impact, but also with higher monitoring costs than AES that perform state-independent conservation measures. As a result, it is unclear whether state-dependent or state independent AES are more cost-effective. In this paper, we investigate whether adjusting payments to farmers for differences in the impact of state dependent and independent conservation measures on harvest yields leads to cost-

effectiveness advantages of state-dependent AES. To analyse this aspect we apply ecological-economic modelling to the case of endangered meadow birds

A quantitative approach for the design of robust and cost-effective conservation policies under uncertain climate change: the case of grasshopper conservation in Schleswig-Holstein

Authors

Ms Gerling, Charlotte, ,

Prof. Drechsler, Martin, ,

Mr. Leins, Johannes, PhD student, Helmholtz Centre for Environmental Research - UFZ

Dr. Keuler, Klaus, Senior scientist, Brandenburg University of Technology Cottbus-Senftenberg

Dr. Sturm, Astrid, Senior scientist, Brandenburg University of Technology Cottbus-Senftenberg

Prof. Wätzold, Frank, Chair of Environmental Economics, Brandenburg University of Technology Cottbus-Senftenberg

Presenter

Prof. Wätzold, Frank, Chair of Environmental Economics, Brandenburg University of Technology Cottbus-Senftenberg

Abstract

Climate is a major determinant of the world

Distributional Impacts of Cost-effective Spatially Homogeneous and Regionalized Agri-Environment Payments. A case study of a Grassland Scheme in Saxony, Germany

Authors

Prof. Wätzold, Frank, Chair of Environmental Economics, Brandenburg University of Technology Cottbus-Senftenberg

Ms Markova-Nenova, Nonka, ,

Dr. Sturm, Astrid, Researcher, Brandenburg University of Technology Cottbus

Presenter

Ms Markova-Nenova, Nonka, ,

Abstract

Economic analysis of agri-environment schemes (AES) has focused mainly on improving their cost-effectiveness. In contrast, the distributional impacts of AES have received less attention in the economic literature, even though the implementation of cost-effective policies can receive much more support, if their distributional impacts are desirable. We combine cost-effectiveness and distributional considerations and investigate empirically for a case study (a grassland program in Saxony, Germany), if trade-offs or synergies exist between improving the cost-effectiveness of an AES and its distributional impacts. We apply an ecological-economic modelling procedure to design two cost-effective AES - one scheme with spatially homogeneous payments and one with regionally differentiated payments. To compare the distributional impacts of the schemes we use the criteria of equality, equity and Rawls

Modelling the cost-effective spatio-temporal allocation of conservation measures in agricultural landscapes facing climate change

Authors

Ms Gerling, Charlotte, ,

Prof. Drechsler, Martin, ,

Mr. Leins, Johannes, PhD student, Helmholtz Centre for Environmental Research - UFZ
Dr. Keuler, Klaus, Senior scientist, Brandenburg University of Technology Cottbus-Senftenberg
Prof. Wätzold, Frank, Chair of Environmental Economics, Brandenburg University of Technology Cottbus-Senftenberg
Dr. Sturm, Astrid, Researcher, Brandenburg University of Technology Cottbus
Mr. Radtke, Kai, Scientist,
Mr. Schulz, Björn, conservation scientist,

Presenter

Ms Gerling, Charlotte, ,

Abstract

In agricultural landscapes, climate change has profound impacts on species that society aims to conserve. In response to climate change, species may adapt spatially (with range shifts) and temporally (with phenological adaptations), which may make formerly effective conservation sites and measures less effective. As climate change also has an impact on yields, opportunity costs of land use-based conservation measures may also change spatially and with respect to the timing of conservation measures. Due to these spatio-temporal modifications of the costs of conservation measures and their impacts on species, formerly cost-effective conservation sites and measures may no longer be so in a changing climate. We combine ecological-economic modelling with climate science to investigate climate change-induced modifications of the timing and spatial allocation of cost-effective conservation measures. We apply our model to the case study of conserving the large marsh grasshopper on agricultural grasslands in the German federal state of Schleswig-Holstein. Comparing the periods 2020-2039 and 2060-2079, our model indeed indicates that climate change induces modifications in the cost-effective spatial allocation of conservation measures and that measures which are adapted to phenological changes remain cost-effective under climate change.

Fisheries and risks

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Common pool resource management and risk perceptions (PRESENTER: Nicolas Querou ; DISCUSSANT: Mads Greaker)
2. R&D in natural resource based industries: Governments should prioritize innovation which reduces environmental hazards (PRESENTER: Mads Greaker ; DISCUSSANT: Haendel Philipp)
3. The Effects of Social Information and Luck on Risk Behavior of Small-Scale Fishers (PRESENTER: Haendel Philipp ; DISCUSSANT: Florian Diekert)
4. Does nature shape risk- and social preferences? Evidence from Chile, Norway and Tanzania (PRESENTER: Florian Diekert ; DISCUSSANT: Nicolas Querou)

Speakers

Mr. QUEROU, Nicolas, ,
Greaker, Mads, , OsloMet University
Mr. Händel, Philipp, , University of Kassel
Dr. Diekert, Florian, ,

Presentations

Common pool resource management and risk perceptions

Authors

Dr. Mavi, Can, ,
Mr. QUEROU, Nicolas, ,

Presenter

Mr. QUEROU, Nicolas, ,

Abstract

Motivated by recent discussions about the issue of risk perceptions for climate change-related events,

we introduce a non-cooperative game setting where agents manage a common pool resource under a potential risk, and agents exhibit different risk perception biases. Focusing on the effect of the polarization

level and other population features, we show that the type of bias (overestimation versus underestimation

biases) and the resource quality level before and after the occurrence of the shift have first-order importance

on the qualitative nature of behavioral adjustments and on the pattern of resource conservation.

When there are non-uniform biases within the population, the intra-group structure of the population

qualitatively affects the degree of resource conservation. Moreover, unbiased agents may react in non-monotone ways to changes in the polarization level when faced with agents exhibiting different types of

bias. The size of the unbiased agents

the polarization level impacts individual behavioral adjustments, even though it affects the magnitude

of this change. Finally, it is shown how perception biases affect the comparison between centralized and

decentralized management.

R&D in natural resource based industries: Governments should prioritize innovation which reduces environmental hazards

Author

Greaker, Mads, , OsloMet University

Presenter

Greaker, Mads, , OsloMet University

Abstract

Sustainable yield from a natural resource fluctuates in response to both natural conditions and harvesting practices. On the one hand, research and development (R&D) may reduce the fluctuations through more

knowledge of ecosystem functioning. On the other hand, R&D may also increase the fluctuations if it results in more efficient harvesting operations with increased impact on the environment. We analyze the incentives for innovation in a natural resource based industry. The direction of technical change can either be towards profitability enhancing innovations or environmental hazard reducing innovations. We then pose the following research questions: Is the market's ranking of profitability enhancing and environmental hazard reducing innovation projects in line with the ranking of the social planner? In order to investigate our research question, we develop a theoretical model of innovation in a natural resource based industry, which we also calibrate to the Norwegian aquaculture industry. Two key results emerge; First, the government should subsidize the adoption of environmental hazard reducing technology. Second, the private incentive for profitability enhancing innovation is likely to outperform the private incentives for environmental hazard reducing innovation. In fact, the optimal R&D subsidy to the former type of R&D is negative, while the optimal R&D subsidy to the latter type of R&D is positive and larger the more serious the environmental hazard.

The Effects of Social Information and Luck on Risk Behavior of Small-Scale Fishers

Authors

Dannenberg, Astrid, , University of Kassel

Diekert, Florian, , Heidelberg University

Mr. Händel, Philipp, , University of Kassel

Presenter

Mr. Händel, Philipp, , University of Kassel

Abstract

We use a lab-in-the-field experiment to examine how personal experience of good or bad luck and information about the behavior of others influence the risk taking behavior of small-scale fishers in Tanzania. These fishers make many risky decisions in their daily lives, and a better understanding of the factors influencing risky decisions is important from both a policy and scientific perspective. Our results show a slight tendency for fishers to take more risk in a lottery if they have been unlucky in another game shortly before. Risk taking is significantly enhanced by social information when fishers learn that others have taken more risk. This is true although risks are independent and the fishers do not know whether the risk taking of others has ultimately paid off.

Does nature shape risk- and social preferences? Evidence from Chile, Norway and Tanzania

Authors

Dr. Diekert, Florian, ,

Dr. Schaap, Robbert, University, Heidelberg University

Presenter

Dr. Diekert, Florian, ,

Abstract

We combine survey data and administrative data from selected fisheries in Chile, Norway, and Tanzania to study whether exposure to a more risky and a more social work environment has an effect on risk- and social preferences. Our approach bridges a gap between existing case-study evidence and global estimates from historical data. While we do not find strong evidence for endogenous social preferences, we do find evidence for endogenous risk preferences, especially in Chile, where the differences in risk exposure are most pronounced. A one standard deviation increase in risk exposure is associated with a 0.08 standard deviations increase in risk tolerance globally and 0.16 standard deviations for Chile specifically. Making use of the fact that we have repeated observations from some fishers, we make a first pass at disentangling selection from adaptation (cultural learning) as potential mechanisms that make preferences endogenous. For Chile, we find suggestive evidence for an adaptation process within fishers, while for Tanzania, the data speaks more towards a selection process that changes the composition of the population in line with risk exposure.

Forests and policy

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Non-monetary incentives for sustainable biomass harvest: An experimental approach (PRESENTER: May Attallah ; DISCUSSANT: Qi Liu)
2. Analysis on Effectiveness of National Forest Protection Program (NFPP) by Regression Discontinuity Design in China (PRESENTER: Qi Liu ; DISCUSSANT: Matti Laukkanen)
3. Market-level, age-structured forestry model with wood product differentiation (PRESENTER: Matti Laukkanen ; DISCUSSANT: May Attallah)

Speakers

Dr. Attallah, May, ,
Ms Liu, Qi, ,
Mr. Laukkanen, Matti, ,

Presentations

Non-monetary incentives for sustainable biomass harvest: An experimental approach

Authors

Dr. Attallah, May, ,
Dr. Abildtrup, Jens, Researcher, INRAE
Dr. Stenger, Anne, Research Director, INRAE

Presenter

Dr. Attallah, May, ,

Abstract

In this article, we use an experimental approach to test the effect of non-monetary incentives that can guide harvest professionals into adopting new sustainable harvesting practices. First, we test the effect of signing a declaration that commits wood buyers who voluntarily sign it to act in a sustainable manner. Second, we test the effect of priming by activating a concept of sustainability on subjects. A declaration is more effective than priming in inducing subjects to act in a sustainable manner when personal and collective interests are not aligned and there are financial incentives to make decisions that are against environmental sustainability. From a public policy point of view, a declaration is an effective tool and easy to implement by institutions aiming at fostering pro-environmental behaviour.

Analysis on Effectiveness of National Forest Protection Program (NFPP) by Regression Discontinuity Design in China

Authors

Kontoleon, Andreas, , University of Cambridge

Xu, Jintao, , Peking University

Ms Liu, Qi, ,

Dr. Liu, Zhaoyang, Lecturer, University of Cambridge

Dr. Liu, Shilei, , Peking university

Presenter

Ms Liu, Qi, ,

Abstract

To address deforestation-caused flooding in the upper Yangtze River, China launched the Natural Forest Protection Program (NFPP) with the intention of reducing deforestation and promoting forest restoration. There is evidence that, these kinds of forest protection programs, such as Protected areas (PA) or paper parks, have reduced the rates of deforestation (Abman, 2018; Robalino, 2008; Blackman, 2015; Joppa & Pfaff, 2011;).

However, their impact varies greatly depending on the context, such as forest ownership, locations, forest types or enforcement (Nelson, 2011; Andam, 2008). The findings from such studies, however, have not addressed the case context within China, the possible roles of payment for ecosystem service (PES) mechanisms along with the implementation and net impacts of criminal punishment and law enforcement, which remain an open question. Therefore, the complex and context-specific relationship lead to a more tailored and nuanced analysis towards designing and implementation of forest preserved PES program in developing-country contexts.

Therefore, we estimate the average effect of NFPP on forest cover, using the Calonico, Cattaneo and

Titunik (2014) nonparametric spatial regression discontinuity model (RD), which estimates of forest-

cover change could be considered as measures of effectiveness. Using Canay and Kamat (2017)

permutation test of continuous distribution of covariates, we hold the key assumption that baseline

characteristics are distributed normally across these borders. We further assess the role of payment mechanism by estimating the heterogeneous effects of NFPP covered areas by forestland ownership, state forest and collective forest. Then we explore the role of law enforcement and criminal punishment by estimating the effect of forest types, commercial or non-commercial forest and proximity to human settlements.

Market-level, age-structured forestry model with wood product differentiation

Authors

Tahvonen, Olli, , University of Helsinki

Mr. Laukkanen, Matti, ,

Presenter

Mr. Laukkanen, Matti, ,

Abstract

We expand the existing market-level, age-structured forestry model to include various age-dependent wood products, such as sawn timber and pulpwood. The model extension is yet unknown in the existing literature and is essential in forest and climate change policy analysis. It is shown that, with numerous wood products and under certain conditions, the optimal steady state solution diverges from a normal forest state by introducing numerous simultaneous rotation periods. We use analytical tools and two age-classes, two wood products -model simplification to prove that the steady state is a local saddle point. Later, we extend the model to include any number of age classes and wood products. Numerical examples show that, in the optimal steady state, the number of simultaneous rotations may equal the number of different, age-dependent wood products.

Firms

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Does the market reward corporate social responsibility in the medium-term? An international event study (PRESENTER: Andreas Ziegler ; DISCUSSANT: Mario Lorenzo Janiri)
2. The effects of publicly supported environmental innovations on firm growth in the European Union (PRESENTER: Mario Lorenzo Janiri ; DISCUSSANT: Ara Jo)
3. Complementarity between labor and energy: A Firm-level Analysis (PRESENTER: Ara Jo ; DISCUSSANT: Bernard Sinclair Desgagne)
4. Climate Change and Human Resource Management (PRESENTER: Bernard Sinclair Desgagne ; DISCUSSANT: Andreas Ziegler)

Speakers

Ziegler, Andreas, , University of Kassel

Mr. Janiri, Mario, Policy Officer,

Dr. Jo, Ara, ,

Sinclair-Desgagné, Bernard, , HEC Montreal

Presentations

Does the market reward corporate social responsibility in the medium-term? An international event study

Authors

Ziegler, Andreas, , University of Kassel

Dr. Gutsche, Gunnar, ,

Mr. König, Moritz, Research associate,

Presenter

Ziegler, Andreas, , University of Kassel

Abstract

This paper empirically analyzes the medium-term effect of reconstitutions of the Dow Jones Sustainability Index World (DJSI World) on the stock performance of affected companies. Based on the calendar-time portfolio approach, we reveal statistically and economically significant positive monthly abnormal returns following the inclusion in the DJSI World for the entire sample period from 2001 to 2017. In contrast, we find no substantial stock market reactions following exclusions from the DJSI World. We thus find evidence for a positive relationship between corporate sustainability and corporate financial performance, i.e. for the so-called

The effects of publicly supported environmental innovations on firm growth in the European Union

Authors

Dr. Flachenecker, Florian, ,
Mr. Janiri, Mario, Policy Officer,
Mr. Kornejew, Martin, Researcher,

Presenter

Mr. Janiri, Mario, Policy Officer,

Abstract

Enabling innovations with environmental benefits is crucial to align economic and environmental objectives. We estimate the economic effects of publicly supported environmental innovations for the business economy of 13 Member States of the European Union. Using an instrumental variable approach to address the inherent endogeneity problem, we find that the average publicly supported environmental innovation increases firm employment by 9%, turnover by 12% and market share by 12% over a two-year period. Notwithstanding country and sector heterogeneity, essentially all countries and sectors show positive effects. Moreover, the results are not driven by highly innovative firms but are based on small and medium-sized enterprises with limited innovation activity. Thus, this paper provides evidence that public financial support for environmental innovations can align economic and environmental objectives. Public policy supporting environmental innovations might therefore facilitate the transition to a more sustainable economy, including as part of the recovery process from the COVID-19 crisis.

Complementarity between labor and energy: A Firm-level Analysis

Authors

Bretschger, Lucas, , ETH Zurich
Dr. Jo, Ara, ,

Presenter

Dr. Jo, Ara, ,

Abstract

This paper adds a fresh angle to the on-going debate on the potential negative employment effect of environmental policy by bringing to the fore a key factor that directly regulates its magnitude: the elasticity of substitution between labor and energy. Using firm-level data from the French manufacturing sector, we provide rigorous micro estimates of this parameter that point to the complementarity between labor and energy. We then provide clear evidence for the empirical, as well as theoretical, relevance of the elasticity of substitution in studying how firms adjust their input choices in response to rising energy prices.

Climate Change and Human Resource Management

Author

Sinclair-Desgagné, Bernard, , HEC Montreal

Presenter

Sinclair-Desgagné, Bernard, , HEC Montreal

Abstract

The Stern-Stiglitz Report on carbon pricing emphasizes that climate policy must not only cope with market failures, but also with government and organizational failures. Focusing on the latter, this paper investigates how several human resource management devices - incentive compensation, performance appraisal, employee empowerment, organizational structure, outsourcing and training - can be jointly deployed to direct managerial attention adequately. Our static principal-agent model delivers predictions/prescriptions on how these devices should adjust as the business stakes in climate change increase, with some qualifications concerning notably the procurement of environmental tasks and employee training.

Water I

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Technology vs information to promote conservation: Evidence from water audits (PRESENTER: Erik Ansink ; DISCUSSANT: Gbandi Tchapo)
2. Nature's Law and Water Treaties (PRESENTER: Gbandi Tchapo ; DISCUSSANT: Iivo Vehviläinen)
3. The equilibrium impacts of environmental regulation (PRESENTER: Iivo Vehviläinen ; DISCUSSANT: Xiao Hu)
4. Water conservation and the common pool problem: Can pricing address free-riding in residential water consumption?* (PRESENTER: Xiao Hu ; DISCUSSANT: Erik Ansink)

Speakers

Ansink, Erik, , VU University Amsterdam
Dr. GBANDI, Tchapo, ,
Dr. Vehviläinen, Iivo, ,
Ms Hu, Xiao, ,

Presentations

Technology vs information to promote conservation: Evidence from water audits

Authors

Ansink, Erik, , VU University Amsterdam
Dr. Ornaghi, Carmine, Professor of Economics, University of Southampton
Dr. Tonin, Mirco, Professor of Economic Policy, Free University of Bozen-Bolzano

Presenter

Ansink, Erik, , VU University Amsterdam

Abstract

We study the impact of audits on water conservation, distinguishing between the information and technological components. We observe water consumption for up to 18 months for 10,000 households in the South East of England who received the visit of a so-called Green Doctor. We find that devices decrease consumption by 2-4%, with an effect that is persistent over 18 months. Devices reducing water pressure are particularly effective, while shower timers are ineffective. Information has a large initial impact, but this gradually fades to a drop in consumption of 2% after 12 months. Technology seems to be more cost effective than information provision and this can help in the design of policy interventions.

Nature's Law and Water Treaties

Authors

Dr. GBANDI, Tchapo, ,

Prof. CANDAU, Fabien, Professor of Economics, Université de Pau et des Pays de l'Adour (CATT-UPPA)

Presenter

Dr. GBANDI, Tchapo, ,

Abstract

Does climate change lead governments to enforce international treaty to manage a common resource? This article answers this question by analyzing how weather conditions have affected the implementation of Water Treaties (WT) on common basins and rivers. We find that climatic conditions such as an increase in temperature and precipitations directly foster WTs in the short run, and even more in the long run. We conclude that WTs are climate policies representing an adaptation strategy of governments that cooperate more and more over time. We also find that few political and economic variables really matter (e.g., common democracy, asymmetrical power, the level of development). Only conflicts and economic dependency between countries significantly explain WTs.

The equilibrium impacts of environmental regulation

Author

Dr. Vehviläinen, Iivo, ,

Presenter

Dr. Vehviläinen, Iivo, ,

Abstract

Who bears the costs of regulation? Any regulation that changes supply at the margin affects market prices and quantities, and the allocation of surpluses. Depending on the market primitives, the producers at large can gain from tighter regulation leaving the consumers to carry the costs; opening a new channel of leverage to the regulator. This article presents a novel empirical approach for establishing the cost incidence when bid data is available. An application to hydropower in the Nordic electricity market uses a dataset of 108.7 million bids to quantify the impact of more stringent environmental regulation hour-by-hour for the years 2011

Water conservation and the common pool problem: Can pricing address free-riding in residential water consumption?*

Authors

Ms Hu, Xiao, ,

Prof. Elinder, Mikael, Associate professor, Department of Economics, Uppsala University

Prof. Liang, Che-Yuan, Associate professor, Institute for Housing and Urban Research, Uppsala University

Presenter

Ms Hu, Xiao, ,

Abstract

Water is becoming an increasingly scarce resource around the world. Yet, it is often distributed such that consumers do not fully face the social marginal cost creating a common pool problem. For instance, apartments in multi-family buildings often split the warm water bill. We analyze how the introduction of apartment-level metering and debiting (IMD) affect consumption. Previously, effects of non-monetary policy interventions, such as provision of social norms, have been studied. In contrast, IMD introduces a price on additional units of consumption. We find that IMD decreases consumption by 25%. Hence, monetary incentives

can curb free-riding behavior and help the conservation of even cheap resources. We also find that heavy water users in the top consumption quartile account for most of the reduction.

Energy-carbon policy nexus

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Carbon Pricing and Emissions: Causal Effects of Britain's Carbon Tax (PRESENTER: Adhurim Haxhimusa ; DISCUSSANT: Yuting Yang)
2. Unilateral carbon policies and electricity trade (PRESENTER: Yuting Yang ; DISCUSSANT: Jan Abrell)
3. The impact of carbon prices on renewable energy support (PRESENTER: Jan Abrell ; DISCUSSANT: Samuel Jovan Okullo)
4. Cutting carbon through fuel-switching in the EU ETS (PRESENTER: Samuel Jovan Okullo ; DISCUSSANT: Adhurim Haxhimusa)

Speakers

Dr. Haxhimusa, Adhurim, Economist, University of Applied Sciences of the Grisons

Dr. Yang, Yuting, ,

Dr. Abrell, Jan, Senior Researcher, ZEW – Leibniz Centre for European Economic Research

Dr. Samuel, Okullo, , Potsdam Institute for Climate Impact Research

Presentations

Carbon Pricing and Emissions: Causal Effects of Britain's Carbon Tax

Authors

Dr. Liebensteiner, Mario, ,

Prof. Gugler, Klaus, Economist, WU Vienna

Dr. Haxhimusa, Adhurim, Economist, University of Applied Sciences of the Grisons

Presenter

Dr. Haxhimusa, Adhurim, Economist, University of Applied Sciences of the Grisons

Abstract

We estimate that the introduction of a carbon tax in the British power sector and its two subsequent elevations led to a substantial emissions reduction. Using regression discontinuities in time, we find robust and causal evidence that the carbon tax explains around

60% of a total emissions reduction by around 40% during 2012/04/01
the substantial increase in the carbon price pushed

should be viewed as a viable policy option to abate emissions at moderate costs.

Unilateral carbon policies and electricity trade

Authors

Dr. Yang, Yuting, ,
Prof. Ambec, Stefan, Professor,

Presenter

Dr. Yang, Yuting, ,

Abstract

The lack of coordinated international climate policies raises carbon leakage concerns in the design of energy transition policies. We investigate the optimal unilateral carbon policy design for electricity trade with intermittent renewable energy. We consider policy instruments including a carbon tax, border adjustment tax, and renewable subsidies. In turn, we analyze the effect of such policies on market equilibrium prices, renewable investment, and global emissions. Using a two-country model of electricity trade, we characterize the conditions under which different combinations of policy instruments implement the optimal energy mix. We find that a combination of market-based instruments can sufficiently implement the domestic optimal energy mix. The policy combination depends on the level of the social cost of carbon and the available capacity for electricity transmission. We find that the carbon leakage of unilateral climate policies increases (decreases) with more transmission capacity when the carbon damage is low (high).

The impact of carbon prices on renewable energy support

Authors

Dr. Kosch, Mirjam, ,
Dr. Abrell, Jan, Senior Researcher, ZEW – Leibniz Centre for European Economic Research

Presenter

Dr. Abrell, Jan, Senior Researcher, ZEW – Leibniz Centre for European Economic Research

Abstract

This paper examines how optimal renewable energy (RE) support (RES) policies need to be adjusted to account for carbon prices. We show theoretically and empirically that changing carbon prices require adjusting RE production subsidies due to two different motives: First, RE premiums need to be reduced to reflect the carbon value embedded in the market price. Second, RE premiums and feed-in tariffs need to be adjusted once a fuel switch away from coal towards gas power occurs. This adjustment is necessary to account for changes in the marginal external benefit of RE. For the case of the UK, we estimate the optimal RE subsidies and their adjustments due to a fuel switch. Furthermore, we use a numerical simulation to analyze the impact of varying carbon prices on optimal RES. We show that the necessary adjustment due to a fuel switch is empirically rather small, whereas RE premiums must be phased out with increasing carbon prices due to the increasing reflection of the carbon cost in the electricity market price. Finally, a fuel switch increases solar-induced abatement, whereas it wind-induced abatement is rather invariant to a fuel switch. Yet, the differentiation of RE subsidies between wind and solar power is modest.

Cutting carbon through fuel-switching in the EU ETS

Authors

Dr. Samuel, Okullo, , Potsdam Institute for Climate Impact Research
Dr. Bai, Yiyi, Academic,

Presenter

Dr. Samuel, Okullo, , Potsdam Institute for Climate Impact Research

Abstract

This paper documents that power generators respond largely in line with theory to the European Union (EU) Emission Trading System (ETS). Indeed, between 2008 and 2018: (i) the qualitative response of the EU ETS allowance price to variations in the pre-eminent drivers of short-term fuel-switching, both the gas and coal price, is as economic theory prescribes, (ii) allowance price returns feature a positive risk premium, such that generators who bank allowances expect to smooth and thereby partially reduce their compliance costs, and (iii) the response of the electricity price to variations in the allowance price is, for several EU ETS countries, inline with (more than) complete pass-through to wholesale power markets.

Game Theory

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The Global Climate Game (PRESENTER: R.J.R.K. Heijmans ; DISCUSSANT: Gilbert Kollenbach)
2. Environmental Agreements, R&D and Technological Spillovers (PRESENTER: Gilbert Kollenbach ; DISCUSSANT: Aimilia Pattakou)
3. Auctioning wind farms (PRESENTER: Aimilia Pattakou ; DISCUSSANT: Stuenzi Anna)
4. Announcing a Green New Deal: The Role of Policy Signals for Stimulating Entrepreneurship. (PRESENTER: Stuenzi Anna ; DISCUSSANT: R.J.R.K. Heijmans)

Speakers

Mr. Heijmans, R.J.R.K., ,
Kollenbach, Gilbert, , University of Hagen
Dr. Pattakou, Aimilia, ,
Dr. Stünzi, Anna, ,

Presentations

The Global Climate Game

Author

Mr. Heijmans, R.J.R.K., ,

Presenter

Mr. Heijmans, R.J.R.K., ,

Abstract

The present paper studies emissions abatement in a game of technological investments. Players invest in competing technologies. One technology is cheap and dirty, the other expensive but green. Technological investments are strategic complements. While such games typically have multiple equilibria, I show how uncertainty about the green technology's true potential leads to selection of a unique equilibrium. Applied to international environmental agreements, the model yields sharp predictions on when a treaty targeting abatement technologies gets ratified. Under well-identified conditions, countries adopt the dirty technology even though that is inefficient. In a two-stage version of the game, I study the incentive to cooperate on green R&D prior to signing an international agreement. When used to inform domestic policy, the model suggests a novel policy of network subsidies. A network subsidy virtually guarantees efficient adoption of the green technology but is not, in equilibrium, paid out.

Environmental Agreements, R&D and Technological Spillovers

Authors

Eichner, Thomas, , FernUniversität Hagen
Kollenbach, Gilbert, , University of Hagen

Presenter

Kollenbach, Gilbert, , University of Hagen

Abstract

In this paper we analyze the depth and length of international environmental agreement in a dynamic game in which countries choose emissions, R&D investments and investments in renewable energy generation capacity. R&D investments cause technological spillovers. If contracts are complete, technological spillovers within the coalition are opposing free-riding incentives. The larger the technological spillovers the larger the stable coalition and even the grand coalition is attainable. If investments in capacity are non-contractible, there emerges a hold-up problem that is opposed to free-riding incentives. It turns out that an incomplete contract over emissions and R&D yields larger stable coalitions than the complete contract, and for a large subset of economies the incomplete contract over emissions and R&D yields larger stable coalitions than the incomplete contract over emissions only.

Auctioning wind farms

Author

Dr. Pattakou, Aimilia, ,

Presenter

Dr. Pattakou, Aimilia, ,

Abstract

This paper examines under what conditions auctions incentivize firms to invest in acquiring information regarding their own potential electricity production and revenue when building a wind farm. Auctions are used in many countries as a policy measure to promote variable renewable energy in electricity production, while allowing regulators to be better informed about firms' production levels and improve the planning of the electricity system. I use a first-price sealed bid auction model with two bidders to assess the effect of auctions on information acquisition, when procuring wind energy capacity demanded by the regulator. Results show that when each of the firms can cover the demand, their choice can be steered towards acquiring information through the demand for wind capacity, but not through the cap on bids. The regulator can then deduce this information from the bidding behaviour of the firms.

Announcing a Green New Deal: The Role of Policy Signals for Stimulating Entrepreneurship.

Authors

Dr. Stünzi, Anna, ,
Dr. Schaefer, Andreas, Professor, University of Bath

Presenter

Dr. Stünzi, Anna, ,

Abstract

Policymakers increasingly recognize the potential of creating local industries and jobs around carbon-neutral technologies. In this paper we discuss whether policymakers can use

information related to their energy policies as a signal to stimulate the foundation of new companies. We develop a stylized model in order to inform our empirical hypothesis. The commitment to regulations and laws, for example subsidies, is core to the credibility of environmental policies as well as to protect environmental targets against discretionary actions by myopic governments. Our model comprises strong and weak governments. The latter are unable to commit to their environmental policy. We show that a weak government has no incentive to mimic the environmental policy of a strong government such that the public has clarity about the government

Norms and risk preferences

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The Demand for Punishment to Promote Cooperation Among Like-Minded People (PRESENTER: Astrid Dannenberg ; DISCUSSANT: Renan-Ulrich Goetz)
2. On the Social Organization of the Commons - An Analytical Framework (PRESENTER: Renan-Ulrich Goetz ; DISCUSSANT: Stelio Del Campo)
3. Inequality aversion for climate policy (PRESENTER: Stelio Del Campo ; DISCUSSANT: Stergios Athanasoglou)
4. On the existence of efficient, individually rational, and fair environmental agreements (PRESENTER: Stergios Athanasoglou ; DISCUSSANT: Astrid Dannenberg)

Speakers

Dannenberg, Astrid, , University of Kassel
Goetz, Renan-Ulrich, , Universitat de Girona
Del Campo, Stelio, , MCC Berlin
Mr. Athanasoglou, Stergios, ,

Presentations

The Demand for Punishment to Promote Cooperation Among Like-Minded People

Authors

Dannenberg, Astrid, , University of Kassel
Dr. Bühren, Christoph, Researcher, University of Kassel

Presenter

Dannenberg, Astrid, , University of Kassel

Abstract

We use an experiment to test the hypothesis that groups consisting of like-minded cooperators are able to cooperate irrespective of punishment and therefore have a lower demand for a costly punishment institution than groups of like-minded free riders, who are unable to cooperate without punishment. We also predict that the difference in the demand for punishment is particularly large when members know about the composition of their group. The experimental results confirm these hypotheses. However, the information about the composition of the group turns out to be even more important than we expected. It helps cooperative groups to avoid wasting resources for an unneeded punishment institution. In uncooperative groups, it helps members to recognize the need for punishment early on and not to follow an uncooperative path that produces a persistently competitive attitude. These

findings highlight the role of group composition and information for institution formation and that lessons learned by one group cannot be readily transferred to other groups.

On the Social Organization of the Commons - An Analytical Framework

Authors

Goetz, Renan-Ulrich, , Universitat de Girona

Dr. Marco, Jorge, Post doctoral researcher, Universidad de los Andes

Presenter

Goetz, Renan-Ulrich, , Universitat de Girona

Abstract

This paper analyzes the influence social networks and the state of a common property resource have on compliance with social norms in relation to a social dilemma. We find that interior equilibria can be stable and their stability is augmented when informal enforcement (social pressure) entails costs. The area of network influence allows to identify under which conditions legal (e.g., fines or subsidies) and informal enforcement policies are available to policymakers and design optimal policies to achieve full cooperation. In relation to the resource, we show that cooperativeness is unlikely to prevail if social dilemmas are perceived as not severe.

Inequality aversion for climate policy

Authors

Anthoff, David, , Economic and Social Research Institute

Kornek, Ulrike, , Mercator Institute

Del Campo, Stellio, , MCC Berlin

Presenter

Del Campo, Stellio, , MCC Berlin

Abstract

A sizeable body of literature on climate economics utilizes the notion of inequality aversion. We review and synthesize published estimates of inequality aversion to guide this literature. We review both axiomatic and empirical studies, accordingly our findings draw on different lines of evidence. In the former case, a variety of ethical principles underlie the recommendations for positive inequality aversion. The latter studies use various methods to present estimates based on some form of

On the existence of efficient, individually rational, and fair environmental agreements

Author

Mr. Athanasoglou, Stergios, ,

Presenter

Mr. Athanasoglou, Stergios, ,

Abstract

Suppose a group of agents are engaged in economic activity that produces emissions of pollutants. Emissions yield private benefits and impose negative externalities. The status-quo is assumed to be inefficient so that the agents are willing to

negotiate an improved allocation of emissions. In this context, we are interested in allocations satisfying Pareto efficiency, individual rationality, and a principle of fairness that generalizes concepts that are encountered in practice. While the existence

of such allocations is not guaranteed, we derive a necessary and sufficient condition for it. This condition is succinct and its verification is computationally tractable.

Uniqueness will generally not hold, and so we describe a procedure that generates allocations with the desired properties and discuss ways of selecting from them. We apply our model to a setting of climate-change policy based on Nordhaus (2015).

Our results show that it is possible to achieve a large reduction in global CO₂ emissions that enhances every region efficiency and respecting norms of fairness.

Experiments on environmental behaviour or Behaviour, economics, and nature - experimental evidence

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Reversing impatience: framing mechanisms to increase the purchase of energy-saving appliances (PRESENTER: Mariateresa Silvi ; DISCUSSANT: Hefti Andreas)
2. Igniting Deliberation in High Stake Decisions: A Field Study (PRESENTER: Hefti Andreas ; DISCUSSANT: Andreas Löschel)
3. When Nudges Fail to Scale: Field Experimental Evidence from Goal Setting on Mobile Phones (PRESENTER: Andreas Löschel ; DISCUSSANT: Cloe Garnache)
4. Grid transmission critical peak pricing: A large-scale field experiment with default enrollment (PRESENTER: Cloe Garnache ; DISCUSSANT: Mariateresa Silvi)

Speakers

- Silvi, Mariateresa, ,

Prof. Hefti, Andreas, Professor of Economics, School of Management and Law

Loeschel, Andreas, , University Muenster

Dr. garnache, cloe, ,

Presentations

Reversing impatience: framing mechanisms to increase the purchase of energy-saving appliances

Authors

- Silvi, Mariateresa, ,

Prof. Padilla Rosa, Emilio, Professor, Univ. Autónoma de Barcelona

Presenter

- Silvi, Mariateresa, ,

Abstract

Most environmental decisions involve intertemporal trade-offs, in that they require foregoing immediate gratification for the sake of future environmental quality. One such example is investing in improving energy efficiency, which entails an initial upfront cost in exchange for a future stream of reduced energy use and economic savings. Previous experiments have sought to address the energy efficiency gap by addressing information deficits and cognitive constraints. Our experiment aims at understanding the role of individual temporal preferences in the decision to invest in energy conservation. We report results from two studies: The first, based on a sample of 224 students at a Spanish university and, the second, based on a

nationally representative sample of 2,010 United States adults. Participants were presented with a choice between two appliances that solely differ in purchase price and lifetime operating costs. We manipulate the salience of energy costs and prime participants with future-oriented messages. Our treatments increase energy efficient choices by 16

Igniting Deliberation in High Stake Decisions: A Field Study

Author

Prof. Hefti, Andreas, Professor of Economics, School of Management and Law

Presenter

Prof. Hefti, Andreas, Professor of Economics, School of Management and Law

Abstract

We use a randomized field experiment to study whether providing recipients -- Chinese villagers in a rural area -- with qualified information about the costs associated with a real decision they make helps them to improve the quality of their choices.

The decisions are of high financial impact, as the objects of deliberation -- heating/cooling devices -- already have upfront prices exceeding the average monthly salary of a household.

Besides providing factual cost information, we additionally conduct two treatments where i) we present the same information by making the real opportunity costs salient, and ii) we administer the information via a quiz intended to enhance the cognitive involvement.

The data shows that providing cost information substantially affects the choices made, and is likely to reduce decision mistakes, in particular in the opportunity cost and involvement treatments.

When Nudges Fail to Scale: Field Experimental Evidence from Goal Setting on Mobile Phones

Authors

Loeschel, Andreas, , University Muenster

Werthschulte, Madeline, , ZEW – Leibniz Centre for European Economic Research

- Rodemeier, Matthias, -,

Presenter

Loeschel, Andreas, , University Muenster

Abstract

Non-pecuniary incentives motivated by insights from psychology (be effective tools to change behavior in a variety of fields. An often unanswered question relevant for public policy is whether these promising interventions can be scaled up. In cooperation with a large public utility in Germany, we develop an energy savings application for mobile phones that can be used by the majority of the population. The app randomizes a goal-setting nudge prompting users to set themselves energy consumption targets. The roll-out of the app is promoted by a mass-marketing

campaign and large financial incentives. Results document low demand for the energy app in the general population and a tightly estimated null effect of the nudge on electricity consumption among app users. A likely mechanism of the null effect is unfavorable self-selection into the app: users are characterized by an already low baseline energy consumption and exhibit none of the behavioral biases that typically explain why goal setting affects behavior. We also find that the nudge significantly decreases the likelihood to use the app over time. Structural estimates imply that the average user is willing to pay 7.41 EUR to avoid the nudge and the intervention would yield substantial welfare losses if implemented nationwide.

Grid transmission critical peak pricing: A large-scale field experiment with default enrollment

Authors

Dr. garnache, cloe, ,

Dr. Hernæs, Øystein, Researcher, Frisch Center for Economic Research

Mr. Imenes, Anders, Psychology PhD candidate,

Presenter

Dr. garnache, cloe, ,

Abstract

Using hourly electricity consumption data for 22,000 households in Norway, we conduct a randomized controlled trial to evaluate the impact of nine critical peak pricing (CPP) events on the grid transmission charge during the winter 2019-2020, with day-ahead notification, on residential electricity consumption. In contrast to most studies, our experimental design relies on an enrollment by default to mitigate sample selection bias. Results show a 13% reduction in electricity consumption during CPP events. We observe little load shifting to non-CPP hours, leading to overall net reductions in electricity consumption, consistent with adjustments in heating-related demand on cold days. Interestingly, electricity consumption reduction is not tied to households having access to real-time consumption, nor is it limited to high-electricity users. We observe, however, that households with electric cars reduce consumption slightly more than other households, with some load shifting to shoulder hours and to the next days.

Green Finance: Firms

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Network centrality and the environmental-financial performance nexus of EU ETS firms (PRESENTER: Andrea Flori ; DISCUSSANT: Andrea Ugolini)
2. Does the low-carbon transition risk impact on the profitability and stock return performance of firms? (PRESENTER: Andrea Ugolini ; DISCUSSANT: Andrea Rangel Guevara)
3. When ESG disclosure gets regulated: Financial Impact of the French Energy Transition Law (PRESENTER: Andrea Rangel Guevara ; DISCUSSANT: Piero Basaglia)
4. Climate policy uncertainty and firms' and investors' behavior (PRESENTER: Piero Basaglia ; DISCUSSANT: Andrea Flori)

Speakers

Dr. Flori, Andrea, Assistant Professor, Polytechnic of Milan, Department of Management, Economics and Industrial Engineering

Prof. Ugolini, Andrea, ,

Ms Rangel Guevara, Andrea, ,

Mx Basaglia, Pier, , Universität Hamburg

Presentations

Network centrality and the environmental-financial performance nexus of EU ETS firms

Authors

Prof. Marin, Giovanni, ,

Borghesi, Simone, , European University Institute

Dr. Flori, Andrea, Assistant Professor, Polytechnic of Milan, Department of Management, Economics and Industrial Engineering

Presenter

Dr. Flori, Andrea, Assistant Professor, Polytechnic of Milan, Department of Management, Economics and Industrial Engineering

Abstract

Cap-and-trade schemes are particularly attractive among climate mitigation policies due to their flexibility. Indeed, companies can decide to either release emissions (and purchase permits) or abate emissions (and possibly sell permits), with some degree of dynamic flexibility through banking of excess permits. These features can allow companies to minimise their compliance costs, thus leading to a less negative or even positive relationship between environmental performance and financial performance. However, cap-and-trade

schemes can be difficult to manage for companies with limited financial resources, leading to their under-participation in permit markets.

In this paper we provide empirical evidence on the relationship between environmental performance and financial performance for a panel of EU-ETS firms. In particular, we examine how participation in the EU ETS (measured by network centrality measures) may affect this relationship and we use quantile regression analysis to account for possible heterogeneous behaviors at different quantiles of the financial performance distribution. Results suggest that lower emission intensity is associated with higher financial performance, the more (less) so the higher the firm

Does the low-carbon transition risk impact on the profitability and stock return performance of firms?

Authors

Prof. Ugolini, Andrea, ,
Prof. Reboredo, Juan Carlos, Professor, University of Santiago de Compostela

Presenter

Prof. Ugolini, Andrea, ,

Abstract

We investigate whether climate transition risk is reflected in the financial performance and cross-section pricing of publicly-traded European and US firms. Using a firm-level carbon risk score (CRS) that assesses the vulnerability of a firm

WHEN ESG DISCLOSURE GETS REGULATED: FINANCIAL IMPACT OF THE FRENCH ENERGY TRANSITION LAW

Author

Ms Rangel Guevara, Andrea, ,

Presenter

Ms Rangel Guevara, Andrea, ,

Abstract

The French Energy Transition Law (ETL) highlighted the road map for France to comply with the Paris Agreement. It included Article 173-VI, a stringent article tightening the disclosure requirements of ESG-efforts of publicly traded companies and asset managers. Using a unique data set, I employ the methodology of event study to show that stock prices of affected companies react negatively to announcements of stricter ESG-disclosure regulations, even when firms are already disclosing high ESG scores. In a second step, I study the long-term premium effect of ESG score disclosure on corporate financial performance(CFP), using panel data for the years between 2014 to 2018, inclusive. Results show that the current issue of

Climate policy uncertainty and firms' and investors' behavior

Authors

Carattini, Stefano, , Yale University
Dr. Kruse, Tobias, ,
Dr. Dechezleprêtre, Antoine, Senior Economist, OECD
Mx Basaglia, Pier, , Universität Hamburg

Presenter

Mx Basaglia, Pier, , Universität Hamburg

Abstract

Whether and how firms are affected by uncertainty revolving around the implementation of climate policy is crucial to understand firms

Transportation Externalities

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Tackling Transport-Induced Pollution in Cities: A case Study in Paris (PRESENTER: Marion Leroutier ; DISCUSSANT: Nicolas Taconet)
2. Unequal 'drivers': on the inequality of mobility emissions (PRESENTER: Nicolas Taconet ; DISCUSSANT: Gerrit Nieder)
3. "Are we still on track?" The climate impact of the transport sector and its development reveal urgent need for additional measures (PRESENTER: Gerrit Nieder ; DISCUSSANT: Anna Dugan)
4. Developing policy packages for sustainable passenger transport: A qualitative and CGE analysis of trade-offs and synergies (PRESENTER: Anna Dugan ; DISCUSSANT: Marion Leroutier)

Speakers

Ms Leroutier, Marion, ,

Mr. Taconet, Nicolas, ,

Mr. Nieder, Gerrit, ,

Ms Dugan, Anna, Scientist, Wegener Center for Climate and Global Change, University of Graz, Austria

Presentations

Tackling Transport-Induced Pollution in Cities: A case Study in Paris

Authors

Quirion, Philippe , , CIRED

Ms Leroutier, Marion, ,

Presenter

Ms Leroutier, Marion, ,

Abstract

Urban road transport is an important source of local pollution and CO₂, and local governments are deploying diverse policies to tackle these emissions. To know who would bear the costs of these policies, it is crucial to understand who contributes to emissions today and what are the alternatives to high-emission trips. We bring together a travel demand survey and emission data to estimate individual contributions to transport-induced emissions in the Paris area. We find that 20% of individuals contribute 80% of nitrogen oxide (NO_x) emissions and 70% of carbon dioxide (CO₂) emissions on a representative weekday. These top emissions result mainly from individuals travelling higher distances and choosing high-emission modes, and only moderately from differences in cars' emission intensities. Using counterfactual travel times with low-emission modes, we estimate

that 53% of current car drives could be shifted to electric bikes or public transport with a limited time increase. Such modal shift would reduce the emissions associated with residents' daily mobility by 18% for NO_x and 19% for CO₂.

Unequal 'drivers': on the inequality of mobility emissions

Authors

Mr. Taconet, Nicolas, ,
Ms Klein, Franziska, PhD Candidate, ICTA-UAB

Presenter

Mr. Taconet, Nicolas, ,

Abstract

Transportation and mobility patterns contribute to greenhouse gas emissions. Understanding the drivers of these emissions, particularly for high emitters, is key to design appropriate climate policies. In this article, we study the unequal distribution of emissions from mobility in Germany and their drivers. We use a 2017 nation-wide mobility survey to calculate the carbon footprint of individuals associated with both daily and long-distance travels. We use quantile regression to investigate both socioeconomic and attitudinal drivers of emissions across different categories of emitters, and for different mobility types. We discuss our results with respect to previous findings in the literature. Overall, the top 10% of emitters are found to be responsible for 50% of total emissions, and 70% of emissions from long-distance. Our statistical analysis reveals strong differences regarding the contribution of socioeconomic drivers such as income or location at different levels of emissions. Attitudes toward different transportation modes also strongly participate in shaping different mobility behaviors.

“Are we still on track?” The climate impact of the transport sector and its development reveal urgent need for additional measures

Authors

Mr. Nieder, Gerrit, ,
Dr. Gaugler, Tobias, Research Associate, University of Augsburg

Presenter

Mr. Nieder, Gerrit, ,

Abstract

To contribute to the European Green Deal

Developing policy packages for sustainable passenger transport: A qualitative and CGE analysis of trade-offs and synergies

Authors

Steininger, Karl, , University of Graz
Mr. Mayer, Jakob, ,
Ms Dugan, Anna, Scientist, Wegener Center for Climate and Global Change, University of Graz, Austria
Dr. Bachner, Gabriel, Scientist, Wegener Center for Climate and Global Change, University of Graz, Austria
Ms Thaller, Annina, Researcher,

Presenter

Abstract

Transportation is associated with multiple external effects such as congestion, noise and notably climate change. Both the externalities and the often conflicting objectives associated with transport policy have raised calls for balanced policy packages in order to account for a diverse range of challenges simultaneously. Empirical assessment is needed to identify the effects of the potential overlaps and interactions associated with these packages. This paper investigates the economic, environmental and distributional effects of a policy package for sustainable passenger transport, co-developed with policy experts and representatives from interest groups in Austria. The package includes hard measures such as a mandated phase-out of conventional cars and explicit road pricing, as well as soft measures to foster the uptake of public transportation. We assess the environmental, economic and social consequences of the policy package with a computable general equilibrium model that incorporates heterogeneous household groups, CO₂ emissions and a detailed representation of the transport sector. Our results suggest that the decoupling of economic welfare and negative external effects of transport is possible with a well-designed policy package. Our analysis also highlights potential urban-rural conflicts and regressive impacts of single policy measures, issues which the suggested policy package can alleviate. The policy package is also shown to be capable of balancing a variety of (conflicting) targets while managing to maintain substantial cost effectiveness.

Cooperation, lobbying and the environment

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Endogenous sanctioning institutions in public goods games (PRESENTER: Carlo Gallier ; DISCUSSANT: Nico Bauer)
2. Quantification of an efficiency–sovereignty trade-off in climate policy (PRESENTER: Nico Bauer ; DISCUSSANT: Rosanne Logeart)
3. The Environmental Safeguards Team: An Analysis of NGOs' Advocacy at the European Commission (PRESENTER: Rosanne Logeart ; DISCUSSANT: Dimitri Szerman)
4. Lobbying for Free Allowances in the EU ETS (PRESENTER: Dimitri Szerman ; DISCUSSANT: Carlo Gallier)

Speakers

Dr. Gallier, Carlo, Researcher, ZEW Mannheim

Dr. Bauer, Nico, ,

Ms Logeart, Rosanne, ,

Dr. Szerman, Dimitri, ,

Presentations

Endogenous sanctioning institutions in public goods games

Authors

Ms Fugger, Carina, ,

Dr. Gallier, Carlo, Researcher, ZEW Mannheim

Presenter

Dr. Gallier, Carlo, Researcher, ZEW Mannheim

Abstract

We study the effectiveness of an exclusive sanctioning institution on cooperative behavior. This is an institution that imposes a deterrent sanctioning rule on its members while having no effect on the others. For this purpose, we compare the implementation frequency and welfare of this institution with an inclusive institution, where the majority decision determines whether the contribution and sanction rule is imposed either on all members of a group or on none. We conduct a two-stage laboratory experiment consisting of a vote on the costly institution formation and a public goods game. We find that giving participants the option to form an inclusive institution is significantly more welfare enhancing than giving them the option of forming an exclusive institution. Furthermore, our results suggest that the performance of an exclusive institution is enhanced by a positive spillover effect of yes-

voters on the contributions of no-voters. However, this effect wears off over time. Understanding the role exclusive institutions can play in providing public goods is particularly important in situations where inclusive institutions are not feasible as they might interfere with states

Quantification of an efficiency–sovereignty trade-off in climate policy

Author

Dr. Bauer, Nico, ,

Presenter

Dr. Bauer, Nico, ,

Abstract

The Paris Agreement calls for a cooperative response with the aim of limiting global warming to well below two degrees Celsius above pre-industrial levels while reaffirming the principles of equity and common, but differentiated responsibilities and capabilities (1). Although the goal is clear, the approach required to achieve it is not. Cap-and-trade policies using uniform carbon prices could produce cost-effective reductions of global carbon emissions, but tend to impose relatively high mitigation costs on developing and emerging economies. Huge international financial transfers are required to complement cap-and-trade to achieve equal sharing of effort, defined as an equal distribution of mitigation costs as a share of income (2,3), and therefore the cap-and-trade policy is often perceived as infringing on national sovereignty (2) we show that a strategy of international financial transfers guided by moderate deviations from uniform carbon pricing could achieve the goal without straining either the economies or sovereignty of nations. We use the integrated assessment model REMIND

carbon pricing systems, differentiated carbon pricing in the absence of financial transfers, or a hybrid combining financial transfers and differentiated carbon prices. Under uniform carbon prices, a present value of international financial transfers of 4.4 trillion US dollars over the next 80 years to 2100 would be required to equalize effort. By contrast, achieving equal effort without financial transfers requires carbon prices in advanced countries to exceed those in developing countries by a factor of more than 100, leading to efficiency losses of 2.6 trillion US dollars. Hybrid solutions reveal a strongly nonlinear trade-off between cost efficiency and sovereignty: moderate deviations from uniform carbon prices strongly reduce financial transfers at relatively small efficiency losses and moderate financial transfers substantially reduce inefficiencies by narrowing the carbon price spread. We also identify risks and adverse consequences of carbon price differentiation due to market distortions that can undermine environmental sustainability targets (8,9). Quantifying the advantages and risks of carbon price differentiation provides insight into climate and sector-specific policy mixes.

1. Okereke, C. & Coventry, P. Climate justice and the international regime: before, during, and after Paris: climate justice and the international regime. Wiley Interdiscip. Rev. Clim.

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2. Tavoni, M. et al. Post-2020 climate agreements in the major economies assessed in the light of global models. Nat. Clim. Change 5,119
3. Tavoni, M. et al. The distribution of the major economies scenarios. Clim. Change Econ. 04, 1340009 (2013).
4. Leimbach, M. & Giannousakis, A. Burden sharing of climate change mitigation: global and regional challenges under shared socio-economic pathways. Climatic Change 155, 273
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8. Gonz and terrestrial carbon leakage under climate policy fragmentation. Clim. Policy 17, S148
9. Otto, S. A. C. et al. Impact of fragmented emission reduction regimes on the energy market and on CO2 emissions related to land use: a case study with China and the European Union as first movers. Technol. Forecast. Soc. Change 90, 220

The Environmental Safeguards Team: An Analysis of NGOs' Advocacy at the European Commission

Author

Ms Logeart, Rosanne, ,

Presenter

Ms Logeart, Rosanne, ,

Abstract

This paper sheds light on advocacy strategies adopted by environmental non-governmental organizations (NGOs) at the European Commission (EC). First, I design a general theoretical model of NGOs

Lobbying for Free Allowances in the EU ETS

Authors

Wagner, Ulrich, , University of Mannheim

Dr. Szerman, Dimitri, ,

Dr. Habla, Wolfgang, Researcher, ZEW

Ms Fadl, Nada, Student, University of Mannheim

Presenter

Dr. Szerman, Dimitri, ,

Abstract

Regulators often face lobbying from regulated firms. If successful, lobbying can reduce the policy

Tipping points, regime shifts, and management

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Responsibility for regime shifts in managed ecosystems (PRESENTER: Stefan Baumgärtner ; DISCUSSANT: Markus Eigruber)
2. (Non)Cooperative Climate Engineering with a Regime Shift (PRESENTER: Markus Eigruber ; DISCUSSANT: Michael Stecher)
3. Responsible management of ecosystems with tipping points (PRESENTER: Michael Stecher ; DISCUSSANT: Anne-Sophie Crépin)
4. Cascading regime shifts in pollution recipients and resource systems (PRESENTER: Anne-Sophie Crépin ; DISCUSSANT: Stefan Baumgärtner)

Speakers

Prof. Baumgaertner, Stefan, , University of Freiburg
Eigruber, Markus, ,
Stecher, Michael, ,
Crépin, Anne-Sophie, , The Beijer Institute of Ecological Economics

Presentations

Responsibility for regime shifts in managed ecosystems

Author

Prof. Baumgaertner, Stefan, , University of Freiburg

Presenter

Prof. Baumgaertner, Stefan, , University of Freiburg

Abstract

I develop a quantitative measure of a manager's responsibility for a regime shift in a managed ecosystem with stochastic dynamics. I build on the well-established concept of responsibility, which I operationalize in a simple generic model. Causal responsibility is the degree of causation of an outcome due to the manager's action, which is in contrast to chance influences that may also have caused the outcome ("good luck" or "bad luck"). Normative responsibility is the manager's obligation to see to it that the system is in, or shifts to, a specified desired state. It implies a particular management action. Virtuous responsibility is the degree to which the manager lives up to her normative responsibility when taking a management action. The quantitative measurement of responsibility is relevant to judge management actions, to reward or punish the manager based on the extent of her

(ir)responsibility, and to design institutions that enable and encourage responsible management of ecosystems with potential regime shifts.

(Non)Cooperative Climate Engineering with a Regime Shift

Author

Eigruber, Markus, ,

Presenter

Eigruber, Markus, ,

Abstract

We apply the shallow lake system of M

Responsible management of ecosystems with tipping points

Authors

Prof. Baumgaertner, Stefan, , University of Freiburg

Stecher, Michael, ,

Presenter

Stecher, Michael, ,

Abstract

Economically optimal management strategies for ecosystems with tipping points can lead to sub-optimal outcomes when ecological processes are oversimpli

Cascading regime shifts in pollution recipients and resource systems

Authors

Crépin, Anne-Sophie, , The Beijer Institute of Ecological Economics

Dr. Rocha, Juan, Researcher, Stockholm Resilience Centre at Stockholm University

Presenter

Crépin, Anne-Sophie, , The Beijer Institute of Ecological Economics

Abstract

Ecosystems can undergo regime shifts - large, abrupt and persistent changes in their structure and function. These regime shifts can interact with each other creating cascading effects. We explore potential characteristics of such interactions and their outcomes. We focus on two types of systems where regime shifts can substantially influence human welfare and livelihoods: pollution recipients, such as the atmosphere and water bodies, and renewable resources, such as wild animal stocks. We set up a dynamic modeling framework where patches of either pollution recipients or resource producing systems interact with each other. We identify clear mechanisms, through which cascading effects can either increase the probability of a shift in a particular patch or decrease it. We also investigate the conditions for optimal control of such systems. We show that spatial dispersion can trigger regime shifts in controlled and uncontrolled systems compared

to systems without dispersion.

Climate change adaptation

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Economic damage of climate change: How far is it from the physical damage? (PRESENTER: Taoyuan Wei ; DISCUSSANT: Eva Preinfalk)
2. The macroeconomic and budgetary implications of public adaptation in three European countries: Austria, the Netherlands & Spain (PRESENTER: Eva Preinfalk ; DISCUSSANT: Simone Borghesi)
3. (Mal)adaption to environmental degradation and the interplay between negative and positive externalities (PRESENTER: Simone Borghesi ; DISCUSSANT: Klaus Eisenack)
4. Adapting long-lived investments to uncertainty from climate change (PRESENTER: Klaus Eisenack ; DISCUSSANT: Taoyuan Wei)

Speakers

Dr. Wei, Taoyuan, ,
Ms Preinfalk, Eva, ,
Borghesi, Simone, , European University Institute
Prof. Eisenack, Klaus, , Humboldt-Universität zu Berlin

Presentations

Economic damage of climate change: How far is it from the physical damage?

Author

Dr. Wei, Taoyuan, ,

Presenter

Dr. Wei, Taoyuan, ,

Abstract

Costs of climate change in integrated assessment models (IAMs) are in most cases based on a fixed relationship between a change in mean temperature and a change in the value added. The consequences of economic behavior, measures taken to adapt specifically to expected climatic changes and resulting market effects are thereby omitted. This chapter shows how attention to these factors affects estimates of the costs of climate change. With a given physical effect on grain yield as the point of departure, we show how the economic impacts depend on assumptions related to adaptation within the agricultural sector throughout the world. In an average 2100 climate, the economic impacts of a 2.3-percent reduction in the productivity of grain under present economic conditions ranges between 0 to 2.3 percent of the sum of GDP in all world regions, depending on opportunities for adaptation, but between -25 and 70 percent of the GDP on regional levels. Changes in relative prices across sectoral

products modify considerably the economic damage estimated at constant prices. The regional GDP calculated at purchasing power parities (PPP) used in many studies tends to be too optimistic to indicate the economic damages particularly in developing countries. Hence, GDP deflated at local consumer price index is recommended to indicate the regional rather than global economic damages in these countries. The regions depending heavily on agriculture are suggested to reduce their dependence on agriculture during the economic development to be better prepared for the potential economic consequences of climate change.

The macroeconomic and budgetary implications of public adaptation in three European countries: Austria, the Netherlands & Spain

Authors

Bednar-Friedl, Birgit, , University Graz

Mr. Tesselaar, Max, ,

Dr. Bachner, Gabriel, Scientist, Wegener Center for Climate and Global Change, University of Graz, Austria

Ms Preinfalk, Eva, ,

Ms Knittel, Nina, researcher,

Dr. Sainz de Murieta, Elisa, Researcher, Basque Centre for Climate Change

Presenter

Ms Preinfalk, Eva, ,

Abstract

With tightening fiscal space e.g. due to the COVID-19 crisis, public expenditures on adaptation need to demonstrate that they are not only effectively reducing climate risks but also creating economic co-benefits. This paper assesses the macroeconomic and budgetary implications of three national adaptation strategies (Austria, the Netherlands, Spain) until 2050 by (i) exploring adaptation cost pathways based on publicly available documents and stakeholder and expert input, (ii) refining a multi-regional multi-sectoral CGE model towards different types of adaptation (infrastructural, informational, ecosystem-based), (iii) and analyzing the effects for different sectors, the economy as a whole, and the government budget. We find that public adaptation generates net benefits on an economy-wide scale for the countries under investigation, despite their different exposure to climate risks and their different approaches to adaptation. However, some sectors may be negatively affected by adaptation e.g. because of reduced availability of land. In general, government revenues increase because of the macroeconomic impulses created by adaptation, and higher expenditures on adaptation do not require reductions in other government consumption or transfers to households, compared to an impact scenario without additional adaptation action. However, very high levels of adaptation, and hence high public expenditures, can increase the budgetary burden when considering only mean climate change effects in the assessment but not low-probability high impact events.

(Mal)adaptation to environmental degradation and the interplay between negative and positive externalities

Authors

Borghesi, Simone, , European University Institute

Prof. Antoci, Angelo, ,

Prof. Galeotti, Marcello, University Professor, University of Florence

Prof. Russu, Paolo, University Professor, University of Sassari

Presenter

Borghesi, Simone, , European University Institute

Abstract

This paper investigates the possible dynamics that may emerge in an economy in which agents adapt to environmental degradation by increasing the produced output to repair the damages of environmental degradation. The analyzed economy is characterized by both positive and negative externalities. On the one hand, an increase in production-related environmental degradation lowers the net income left at disposal for consumption and investment; on the other hand, it induces an increase in labor and capital to repair environmental damages from production, which enhances the positive externalities occurring in the production process. From the analysis of the model we show that there can be two stationary states but only the one with lower capital level can be locally attractive. Both local and global indeterminacy may arise in the model, even with decreasing returns to scale. It follows that one cannot predict a priori which path the economy will follow when converging to an equilibrium, nor the equilibrium the dynamics will eventually converge to. In particular, the trajectories emerging from the model may eventually lead the economy to be trapped in a Pareto-dominated equilibrium with lower capital and higher environmental degradation levels. Moreover, the interplay between positive and negative externalities generates a rich set of possible trajectories that may lead to opposite extreme outcomes, namely, either infinite growth or the collapse of the economy. This suggests that the degree of uncertainty surrounding the effects of environmental degradation is extremely high and that anything can happen once the domino effects generated by environmental degradation are at work.

Adapting long-lived investments to uncertainty from climate change

Authors

Prof. Eisenack, Klaus, , Humboldt-Universität zu Berlin

Dr. Paschen, Marius, Economist, Kiel Institute for the World Economy

Presenter

Prof. Eisenack, Klaus, , Humboldt-Universität zu Berlin

Abstract

Should investments be designed to be more robust to cope with stronger negative trends? What about when such trends are more uncertain? This decision problem is difficult if the design of the investments is irreversible for their lifetime, for instance, for climate change adaptation in the construction industry. We study an irreversible design decision when the investment starts, combined with an irreversible option to abandon. We find that for short-lived investments, optimal robustness decreases if negative trends are stronger, and increases if uncertainty is higher. For long-lived investments, these effects reverse. Results show that higher uncertainty from climate change may require adaptation through less robust designs.

Climate impacts

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Climate variability, migration and population in Kenya (PRESENTER: Melanie Gittard ; DISCUSSANT: Manuel Linsenmeier)
2. Temperature variability and long-run economic development (PRESENTER: Manuel Linsenmeier ; DISCUSSANT: Maurizio Malpede)
3. The Global Economic Consequences of Desertification (PRESENTER: Maurizio Malpede ; DISCUSSANT: Bahre Gebru Kiros)
4. Climate change, water scarcity, and household's choice of sanitation facilities in Ethiopia (PRESENTER: Bahre Gebru Kiros ; DISCUSSANT: Melanie Gittard)

Speakers

Gittard, Mélanie, -, Paris School of Economics (PSE) and CIRED
Mr. Linsenmeier, Manuel, ,
Dr. Malpede, Maurizio, Postdoctoral researcher, Bocconi University
Mr. Kiros, Bahre Gebru, ,

Presentations

Climate variability, migration and population in Kenya

Author

Gittard, Mélanie, -, Paris School of Economics (PSE) and CIRED

Presenter

Gittard, Mélanie, -, Paris School of Economics (PSE) and CIRED

Abstract

Over the past decades, East Africa has faced repetitive climate extremes and changes in precipitation trends, driving modification of demographic patterns. This paper studies the effects of past climate variability on inter-district migration and intra-district population, at the level of the 3715 Kenyan sub-locations. This study contributes to the micro-oriented literature on climate induced migration, by decompressing history, using long term, local, precise and representative data. We match, over twenty years, population data at the sub-location level, from three exhaustive administrative censuses (1989, 1999 and 2009), with high spatial and temporal resolution precipitation and temperature data sets from the Climate Hazard Center (CHIRPS/CHIRTS-ERA). It is also a methodological contribution, advocating for the use of relevant climatic indicators (and data) and local demographic effects in order to understand the impacts of climate variability on internal migration. A particular attention is

devoted to the definition and analysis of climate variability and changes in precipitation trends over the country.

At the district level, a yearly panel on bilateral migration is built thanks to retrospective questions, and permanent migrations are distinguished from return/seasonal movements thanks to micro level data (the literature pointing out different magnitudes of effects between temporary and permanent movements). The results suggest that climate events act as push factors on inter-district migration rather than pull factors, but with no statistical significance, showing the necessity to estimate migration locally. The main limitation of this first analysis is the spatial resolution, increasing the risk of concomitance between climatic and economic variables, and erasing an intra-district migration which should be important in the hypothesis of short distance movements. Thus, a second analysis is made at a much finer scale. A decadal panel fixed effect model, at the sub-location level, is used in order to understand the incidence of climate variability on migration behaviors and sub-location population changes and to tackle endogeneity issues. In order to estimate the magnitudes, and demographic decomposition of the induced migration, a demographic record of migration, according to gender, economic activity, age brackets is built. The results suggest that an additional dry rainy season over the decades implies a decrease of -2 percentage points (p.p) of the decadal population growth rate, and that the induced migration is about 48 % female (so 52 % male), 95 % of working population with its own business. A Difference-in-Difference identifies the effect in West-Center of the country, and mainly borne by rural sub localities with a high share of pastoralists.

Temperature variability and long-run economic development

Author

Mr. Linsenmeier, Manuel, ,

Presenter

Mr. Linsenmeier, Manuel, ,

Abstract

We study the causal effects of seasonal and interannual temperature variability on economic activity. For identification we use a novel research design based on spatial first-differences. Economic activity is proxied by nightlights. Our results show a negative effect of seasonal variability on economic activity at all temperature levels. The estimated effect of interannual variability is positive at low and negative at high temperatures. We do not find evidence that our results are primarily due to urban areas nor that they can be explained with the spatial distribution of agriculture. Our results draw attention to the effect of climate variability, which is projected to change but has so far been mostly overlooked in assessments of the economic impacts of climate change.

The Global Economic Consequences of Desertification

Authors

Dr. Malpede, Maurizio, Postdoctoral researcher, Bocconi University

Prof. Percoco, Marco, Associate Professor, Bocconi University

Presenter

Dr. Malpede, Maurizio, Postdoctoral researcher, Bocconi University

Abstract

We examine the impact of human induced desertification on economic growth by exploiting a 56km frequency for the period 1990-2015. We find that areas that have experienced large aridification of the soil are associated to a reduction in GDP per capita. The effects of desertification are more pronounced in poor African countries relying predominantly on agriculture. We also find that the agricultural yield of major crops is negatively associated to the aridity of the soil, providing the underlying mechanism behind the economic effects. The estimates are robust to adding higher-order terms of geo-climatic variables and to controlling for country specific linear trends.

Climate change, water scarcity, and household's choice of sanitation facilities in Ethiopia

Authors

Prof. Elofsson, Katarina, Professor, Aarhus University

Mr. Kiros, Bahre Gebru, ,

Dr. auakwa-Mensah, Franklin, Economist,

Dr. Marbuah, George, Economist,

Presenter

Mr. Kiros, Bahre Gebru, ,

Abstract

This study investigates how climate change affects households

Thematic Session: The political economy of coal

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Electoral response to the decline of coal mining in the United States
2. The U.S. Coal Sector between Shale Gas and Renewables: Last Resort Coal Exports?
3. The Impact of Electric Utility Ownership Structures on High- and Low-Carbon Investment Decisions
4. Unraveling the political economy of coal - A cross country comparison

Speakers

Dr. Egli, Florian, ,
Mr. Hauenstein, Christian, ,
Prof. Steffen, Bjarne, ,
Mr. Ohlendorf, Nils, ,

Presentations

Electoral response to the decline of coal mining in the United States

Authors

Dr. Egli, Florian, ,
Dr. Schmid, Nicolas, Post-doc,
Prof. Schmidt, Tobias, Professor,

Presenter

Dr. Egli, Florian, ,

Abstract

Replacing coal with cleaner energy carriers is a crucial lever to reach the Paris climate targets. However, as coal decline results in local job loss, political backlash might arise, jeopardizing the clean energy transition. Yet, we lack evidence on whether such backlash exists. Here, we analyze the electoral response to coal mining job losses in the United States presidential elections from 2000 to 2016 in a panel regression and a matched difference-in-difference setting. Our results suggest an electoral response in the 2012 and 2016 presidential elections specific to the loss of coal mining jobs. We estimate an increased Republican vote share of 1.2 pp in 2012 and 1.5 pp in 2016 for each 100 coal mining jobs lost. The estimated electoral response is thus almost five times as large as the numbers of jobs lost. We observe this response only in places with large job losses, where these jobs account for a large share of locally available jobs and where income levels are low. Existing relative party strengths, however, do not influence the results. Moreover, we find a spillover effect of 2.2 pp in 2016 into counties within 50 km of those affected by coal decline. We discuss the implications of these findings for coal phase-outs worldwide.

The U.S. Coal Sector between Shale Gas and Renewables: Last Resort Coal Exports?

Authors

Mr. Hauenstein, Christian, ,

Prof. Holz, Franziska, Academic, German Institute for Economic Research (DIW Berlin) & Norwegian University of Science and Technology (NTNU)

Presenter

Mr. Hauenstein, Christian, ,

Abstract

Coal consumption and production have sharply declined in recent years in the U.S., despite political support. Reasons are mostly unfavorable economic conditions for coal, including competition from natural gas and renewables in the power sector, as well as an aging coal-fired power plant fleet. Nevertheless, coal remains a major energy source in the North American energy markets. Supplementing EMF34 energy system analyses, we take a sectoral perspective to analyze coal

The Impact of Electric Utility Ownership Structures on High- and Low-Carbon Investment Decisions

Authors

Prof. Schmidt, Tobias, Professor,

Prof. Steffen, Bjarne, ,

Prof. Karplus, Valerie, Professor, Carnegie Mellon University

Presenter

Prof. Steffen, Bjarne, ,

Abstract

In industries that are characterized by large technical systems, technological change often occurs incrementally along given technological trajectories. Given pressing issues such as climate change, much research has studied how to induce and accelerate socio-technical transitions in such industries, for instance the transition to renewables in electricity. The adoption of new technologies by incumbent electric utilities is a key step in this transition, but not a given. Particularly, little is known on how the ownership structure of utilities affects technology adoption. Following market liberalization, the electricity industry in many countries is now characterized by a co-existence of state-owned and private utilities, and the role of the different ownership setups on the adoption of low-carbon technologies remains elusive. To fill this gap, here we bring together innovation literature and economic ownership literature to derive hypotheses how ownership could affect renewable energy adoption by utilities. Taking incumbent utilities in the European Union (EU) during 2005

Unraveling the political economy of coal - A cross country comparison

Authors

Dr. Jakob, Michael, Senior Researcher, Mercator Research Institute on Global Commons and Climate Change

Dr. Steckel, Jan, Head, Climate and Development Working Group, Mercator Research Institute on Global Commons and Climate Change

Mr. Ohlendorf, Nils, ,

Presenter

Mr. Ohlendorf, Nils, ,

Abstract

The political economy is key to explain why several countries persistently expand their coal capacity. While case studies provide valuable insights, a systematic cross-country comparison providing robust evidence is thus far missing. To address this gap, we elicit 123 energy experts for eight major coal countries on the political economy of coal via an online survey. Despite diverse political and economic systems in the countries, we

Thematic Session: Climate change adaptation: Micro-level evidence about preferences from different regions of the world

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Preferences for climate change adaptation options of winemakers from the Spanish wine appellation Rioja
2. Preferences for coastal adaptation to climate change: A test-retest analysis of an external shock
3. Analysis of water conservation measures and their associated policy implications in urban South Africa: The case of Cape Town
4. Tropical Storms and Temporary Migration. Empirical Evidence for Vietnam

Speakers

Dr. Mariel, Petr, ,
Ms Wunsch, Andrea, ,
Mr. Aina, Ifedotun, ,
Prof. Berlemann, Michael, -, -

Presentations

Preferences for coastal adaptation to climate change: A test-retest analysis of an external shock

Authors

Meyerhoff, Jürgen, , Technische Universität Berlin
Rehdanz, Katrin, , Department of Economics, Kiel University
Ms Wunsch, Andrea, ,

Presenter

Ms Wunsch, Andrea, ,

Abstract

Adaptation to climate change is becoming increasingly crucial for coastal areas. This paper adds to the limited evidence on the trade-offs people are willing to make to support decision-making on adaptation strategies for coastal protection. Acknowledging preference heterogeneity found in earlier studies, this paper examines the test-retest reliability of the resulting welfare estimates. Two samples from the same target population were surveyed at two time points five months apart. In between, the first Corona wave developed in Germany. Because the Corona wave acts like an external shock, willingness-to-pay (WTP) estimates may at first be expected to decrease over the rather short time period. We find mixed evidence. WTP values decreased or became insignificant for two attributes (beach nourishment and cliff protection) but remained stable for two other attributes (dyke extension and access to dunes). For sites of coastal realignment, WTP increased but this might be due to a slight increase in the number of potential realignment sites in the second wave. When comparing non-marginal welfare effects, those of the second wave are significantly lower for

two of the adaptation scenarios. We conclude that the external shock altered the benefits society would derive from coastal adaptation to climate change, conditional on the assumption that it is the main driver behind the differences in stated preferences at the two points in time to be true. However, we find this to hold true to a lesser extent than expected initially.

Keywords: adaptation, choice experiment, climate change, coastal protection, test re-test

Preferences for climate change adaptation options of winemakers from the Spanish wine appellation Rioja

Authors

Meyerhoff, Jürgen, , Technische Universität Berlin

Dr. Mariel, Petr, ,

Dr. Vega-Bayo, Ainhoa, Assistant Professor, University of the Basque Country (UPV/EHU)

Dr. Corsi, Armando Maria, Associate Professor, Adelaide Business School – University of Adelaide

Presenter

Dr. Mariel, Petr, ,

Abstract

Like other wine regions around the world, the Spanish Rioja wine appellation faces the challenges associated with climate change. Although substantial uncertainty remains about future adaptation needs, producers are facing two challenges for sure. Rising temperatures and declining water availability will both significantly affect grapevines and, subsequently, wine quality. The goal of this study is thus to elicit preferences winemakers in Rioja have for adaptation strategies to climate change. In a discrete choice experiment different potential adaptation strategies including, among others, the usage of different grape clones, the installation of a full or partial irrigation system, building vegetative or artificial structures to shade the vines, or enological adaptations are presented. As it is in the interest of the wine regions that producers can stay and maintain their business, regional authorities are interested in supporting winemakers by, for example, subsidising adaptation measures. The DCE included thus as a payment vehicle a subsidy. The results show that the most accepted strategy is the installation of irrigation and shading structures. In contrast, the least accepted strategy is the change of location, which is likely to affect wine growing in the long run. The monetary measures obtained are informative for policy makers as they indicate how much financial support will be needed to adapt to changes caused by climate change and to maintain high quality wine production.

Analysis of water conservation measures and their associated policy implications in urban South Africa: The case of Cape Town

Authors

Dinar, Ariel, , University of California, Riverside

Thiam, Djiby Racine, ,

Mr. Aina, Ifedotun, ,

Presenter

Mr. Aina, Ifedotun, ,

Abstract

Drought severity is expected to increase in South Africa in the coming years, given the deteriorating effects exerted by climate change on rainfall patterns and global temperature and evaporation. One common mitigation strategy adopted by households is to promote water demand management initiatives to reduce water consumption volume and complement the existing water supply management approaches being implemented by suppliers. This paper contributes to the discussion on adaptation strategies by investigating the determinants of adopting water-saving technologies through empirical evidence from urban Cape Town, South Africa. We estimate the attribute levels and household characteristics that influence the adoption of several water-saving technologies, including greywater reuse technology, rainwater collection systems, installment of dual-flush cisterns, and water-efficient showerheads. We use a choice modelling framework to investigate heterogeneity among households based on their preferences for individual or groups of characteristics embedded in each water-saving technology. A pilot survey (n=72) was first conducted using an orthogonal design method in order to obtain precise parameter priors for the D-efficient design framework used in our main survey (n=303) estimation. Random Parameter Logit (RPL) is compared with the Nested Logit (NL) model to estimate marginal willingness to pay (MWTP) for the adoption of water-saving technology. Our results show that households are sensitive to the reliability, lifespan, and quantity of water saved by the technologies when explaining the attributes that determine adoption. Alongside other policy interventions, our results also show that initiatives that support the installation of technologies with fewer complexities are favourable in predicting positive household response to adoption.

Tropical Storms and Temporary Migration. Empirical Evidence for Vietnam

Authors

Ms. Tran, Thi Xuyen, Researcher, -
Prof. Berlemann, Michael, -, -

Presenter

Prof. Berlemann, Michael, -, -

Abstract

In this paper we provide the first empirical multi-event study of internal migration in consequence of tropical storms on the household level. In order to do so we combine three waves of the Vietnam Household Living Standard Survey with geo-referenced typhoon data from the Best Track Archive for Climate Stewardship. Based on this panel dataset we study temporary emigration patterns evolving in the aftermath of occurring storms in the sample communes. We find robust empirical evidence in favor of hypothesis that typhoons have significant push effect on migration.

Occurring

storms increase the likelihood that a household sends household members to

other regions in Vietnam. Typhoons also tend to increase the number of absent

household members and absence time. Moreover, we show that occurring

typhoons increase both, seasonal and long-term absence.

Policy Session: Transformative investment for an inclusive, green and digital recovery from COVID 19 pandemic: Lancet COVID19 commission and UN SDSN European Green Deal Report

23rd June 2021, 12:30 PM - 02:30 PM

Description

The session aims to present and discuss the results of two reports, one global and one European Report, which focus on “a green recovery from COVID 19 pandemic”:

1. The first and second statement and the forthcoming final statement of the “Lancet COVID-19 Commission: Transformative investment for an inclusive green and digital society”
2. The United Nations Sustainable Development Solutions Network (UN SDSN <https://www.unsdsn.org/>) Senior Working Group (SWG) Report on: “European Transformations for the Jointed Implementation of Agenda 2030, the Sustainable Development Goals and the European Green Deal: A Green and Digital, Job-Based and Inclusive Recovery from COVID-19 Pandemic”

Organizers and Participants:

Prof. Phoebe Koundouri

Prof. Jeffrey Sachs

Prof. Vitor Gaspar

Participants:

Prof. Ian Bateman

Dr. Ismail Serageldin

Dr. Carlo Papa

Speakers

Prof. Koundouri, Phoebe , Professor , Athens Univeristy of Economics and Buisness

Prof. Bateman, Ian, Professor, University of Exeter

Prof. Sachs, Jeffrey, University Professor and Director, Center for Sustainable Development, Columbia University

Meadows, Damien , Advisor on European and International Carbon Markets, EU Commission (DG Climate Action)

Papa, Carlo, Managing Director , Enel Foundation

Gaspar, Vitor, Director, Fiscal Affairs Department, IMF

Dr. Serageldin, Ismail, -, The World Bank

Presentation

Policy Session: What makes economic analysis useful for large water body restoration? A comparison of the Chesapeake Bay and Baltic Sea contexts

23rd June 2021, 12:30 PM - 02:30 PM

Description

Environmental economists conduct analyses that could be applied to lower costs of large water body restoration and promote social efficiency of programs. Yet, the uptake of such analyses by policy makers seeking to improve water quality and aquatic habitat has been limited. In this session we will use the Chesapeake Bay and Baltic Sea case studies to review economic analyses that have been applied to policy, explore the legal and institutional (dis)incentives for applying economics, and consider approaches to increase use of economic analyses and principles in policy design. The speakers represent economists, lawyers and policymakers actively working to restore water quality and aquatic habitat in large water bodies throughout the US and EU.

Questions to be addressed include:

What benefits have resulted from the application of economic analyses in restoration program design or implementation?

Do the different legal contexts of the Chesapeake Bay and Baltic Sea result in different incentives to use economic analyses? What other institutional and social factors contribute to or hinder use and application of economic principles?

What types of economic analyses are likely to be most useful to policy makers in the future?

How are information needs and incentives changing with increasing variability of climate change?

Session organisers and participants:

Lisa Wainger and Heini Ahtiainen

Participants:

Jim Shortle

Veronica Manfredi

Richard S. Davis

Speakers

Dr. Wainger, Lisa , Professor, University of Maryland Center for Environmental Science

Dr. Ahtiainen, Heini, Senior Scientist, Natural Resources Institute Finland (Luke)

Prof. Shortle, James, Distinguished Professor Emeritus of Agricultural and Environmental Economics, PennStante - College of Agricultural Science

Ms. Manfredi, Veronica , Directorate-General for Environment (DG ENV), European Commission

Davis, Richard S., Principal, Beveridge & Diamond

Presentation

Egg-Timer: Markets, Regulation, Coalitions

23rd June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The Long Road to First Oil
2. Formation of Climate Coalitions and Preferential Free Trade - The Case for Participation Linkage
3. Impacts of human behaviour in agri-environmental policies: how adequate is homo oeconomicus in the design of market-based conservation instruments?
4. Stakeholder perspectives towards agri-environmental contract design - A Q-methodology approach
5. Inefficient Coasean Negotiations over Emissions and Transfers
6. Targeted regulation of nitrogen loads: a national, cross-sectorial analysis
7. Climate reputation risk and abnormal returns in the stock markets: a focus on large emitters

Speakers

Mr. Mihalyi, David, ,

Prof. Kuhn, Thomas, -, TU Chemnitz

Prof. Drechsler, Martin, ,

Mr. Schulze, Christoph, Researcher, b) Leibniz Centre for Agricultural Landscape Research

Caparros, Alejandro, -, Spanish National Research Council

Dr. Konrad, Maria Theresia, Researcher, Aarhus University

Mr. mazzarano, matteo, -, -

Presentations

The Long Road to First Oil

Author

Mr. Mihalyi, David, ,

Presenter

Mr. Mihalyi, David, ,

Abstract

The road from a petroleum discovery to production is long, especially in developing countries. On average they take 7 years with a standard deviation of 9 years and a quarter of the fields are yet to reach production.

I analyze the drivers of petroleum project timelines using survival analysis and event study methods. Institutions are a key factor. Democracies and state-owned firms operating domestically are significantly quicker. My findings suggest earlier research which measured lagged impacts of giant petroleum discoveries provided biased estimates of subsequent production shocks.

Formation of Climate Coalitions and Preferential Free Trade - The Case for Participation Linkage

Authors

Prof. Kuhn, Thomas, -, TU Chemnitz

Mr. Pestow, Radomir, Dipl.Math. , TU Chemnitz

Dr. Zenker, Anja, M.Sc. Economics, TU Chemnitz

Presenter

Prof. Kuhn, Thomas, -, TU Chemnitz

Abstract

We deal with the endogenous formation of climate coalitions linked to a preferential free trade arrangement. In a multi-stage strategic trade model coalition and fringe countries can dispose of a policy regime incorporating a discriminatory import-tariff on dirty goods as well as emission permits. A fairly novel modelling of the preferential free trade area is at the core of our approach. Permits are imposed on producers and traded on a coalitional permit market. Further, countries taking a free-ride on the environment may equally build a free trade area. As a remarkable finding, we find strong support for the claim that preferential free trade can create fairly large and effective climate coalitions, though fringe countries were given the option of retaliated trade cooperation. This result is mainly driven by a favorable shift in the coalition's terms of trade. As a policy implication, negotiations on international climate treaties and free trade arrangements should be interlinked.

Impacts of human behaviour in agri-environmental policies: how adequate is homo oeconomicus in the design of market-based conservation instruments?

Author

Prof. Drechsler, Martin, ,

Presenter

Prof. Drechsler, Martin, ,

Abstract

Models of human-environment systems frequently employ the model of rational behaviour in which a rational, perfectly informed and self-interested homo oeconomicus maximises individual utility. This model has been criticised with regard to its adequacy in models of social-ecological systems, because other motives exist beyond profit maximisation that affect land-use decisions. The question arises what consequences do these other motives have on the design and performance of environmental policy instruments. For this, two existing generic models of agri-environmental schemes are expanded to consider alternative landowner behaviours: agents make mistakes in their search for the profit-maximising land-use decision, are inequity-averse and care about the profits of their neighbours, and are influenced by their neighbours

Stakeholder perspectives towards agri-environmental contract design - A Q-methodology approach

Authors

Mr. Schulze, Christoph, Researcher, b) Leibniz Centre for Agricultural Landscape Research

Prof. Matzdorf, Bettina, Governance von Ökosystemleistungen, Leibniz-Zentrum für Agrarlandschaftsforschung (ZALF) e. V.

Presenter

Mr. Schulze, Christoph, Researcher, b) Leibniz Centre for Agricultural Landscape Research

Abstract

Agriculture has large impacts on the environment, and agri-environmental schemes are considered a promising mechanism to achieve environmental policy goals. Different stakeholders are important players in developing and implementing these agri-environmental schemes. Their attitudes largely determine the institutional design of policies and drive farmers

Inefficient Coasean Negotiations over Emissions and Transfers

Authors

Caparros, Alejandro, -, Spanish National Research Council

Prof. Pereau, Jean-Christophe, Professor Economics, University of Bordeaux

Presenter

Caparros, Alejandro, -, Spanish National Research Council

Abstract

This article analyses the outcomes of multilateral and sequential negotiation procedures in a Rubinstein alternating-offers model where two polluters and a victim bargain simultaneously over transfers and pollution levels. We show that the Coase Theorem does not hold in a multilateral framework if sequential negotiations are possible, although there are no frictions and no delays between stages. Sequential negotiations lead to emission levels which are not socially optimal, but players involved in the first agreement in the sequential path may prefer this path and hence launch it. We also show that when negotiations focus only on transfers, as commonly assumed, the inefficiency vanishes. Finally, we show that the inefficiency can be explained by the player's inside options, which are given by their potential temporary disagreement payoffs, despite the fact that agreements are reached immediately in equilibrium. Results are generalized to a large number of polluters.

Targeted regulation of nitrogen loads: a national, cross-sectorial analysis

Authors

Dr. Konrad, Maria Theresia, Researcher, Aarhus University

Dr. Blicher-Mathiesen, Gitte, Researcher,

Prof. Hasler, Berit, Professor,

Ms Martinsen, Louise, Academic staff member, Aarhus University

Dr. Andersen, Hans, Researcher,

Presenter

Dr. Konrad, Maria Theresia, Researcher, Aarhus University

Abstract

In Denmark, eutrophication of coastal areas is one of the major challenges in meeting the requirements from the European Water Framework Directive (WFD). This eutrophication is mainly a cause of excessive nitrogen loads from agricultural production, which can be reduced by implementing abatement measures. The cost-effectiveness of a land use policy may vary depending on the measures used and where they are implemented. Taking account of the spatial heterogeneity of costs and effects in the choice of land use measures significantly reduce the cost to meet the WFD targets. Targeting of regulation to identify least cost options to reduce nitrogen has for many years focused on agricultural measures. However, the marginal costs of reductions in agriculture has now increased to an extent,

where it becomes relevant also to reconsider other sectors. We set out to compare nitrogen abatement measures across agriculture and wastewater treatment at a national level, acknowledging heterogeneity in marginal costs across spatial location as well as differences in reduction requirements across catchments. In the analysis, we combine data on costs and effects of abatement measures at a fine spatial scale to estimate marginal costs within the two sectors at a national level for Denmark. The model minimizes the costs of meeting the specific required nitrogen load reduction targets for all catchments and finds the composition and spatial location of the optimal abatement effort. We find that wastewater treatment measures are only relevant in two coastal catchments, where they mainly serve as a supplement due to insufficient potential for agricultural land in rotation to provide all the N load reductions. Furthermore, we find that the pressure on agricultural land to reduce nutrient loads is very high in some catchments, leading to higher advantages of using effective and high-cost measures such as land retirement. The recommendations and average costs vary across catchments, indicating that results are not easily translated to generic national-level policy design.

Climate reputation risk and abnormal returns in the stock markets: a focus on large emitters

Authors

Prof. Guastella, Gianni, Professor, -

Mr. mazzarano, matteo, -, -

Prof. Pareglio, Stefano, Professor, -

Xepapadeas, Anastasios, , Athens University of Economics and Business

Presenter

Mr. mazzarano, matteo, -, -

Abstract

Transition to a climate-neutral society is expected to generate disruptive changes and influence the investor's and consumers

EAERE President's Announcements and Plenary Panel: Creating Incentives for Sustainable Finance

23rd June 2021, 03:30 PM - 05:30 PM

Description

EAERE President's Announcements

The winners of the "European Award for Researchers in Environmental Economics under the Age of Forty" and the of the "The Erik Kempe Award in Environmental and Resource Economic", and the EAERE Fellows appointed this year, will be announced by Simon Dietz, EAERE Vice-President.

Plenary Panel: Creating incentives for Sustainable Finances

With the adoption of the Action Plan 'Financing Sustainable Growth', the European Commission is taking steps towards directing capital flows towards sustainable investment, in order to achieve sustainable economic growth. The Action Plan comprises a variety of measures to be implemented such as introducing a taxonomy of EU sustainability for the financial sector, creating standards and labels for green financial products, developing sustainability benchmarks, including of risks associated with climate and other environmental factors in institutions risk management policies. However, these regulative measures can only be successfully implemented if target-oriented incentives are set on the part of the relevant actors.

This panel includes experts from academia, politics and the financial sector:

- Prof. Stefano Battiston, Center for Financial Networks and Sustainability, Department Banking and Finance, University of Zurich
- Prof. Marie Brière, Head of Investor Research Center at AMUNDI (Asset Management of Crédit Agricole and Société Générale), Affiliate Professor with Paris Dauphine University
- Dr. Barbara Buchner, Climate Policy Initiative (CPI)
- Prof. Geoffery Heal, Professor of Social Enterprise, Columbia Business School
- Prof. Sophie Moinas, Professor of Finance at the IAE Toulouse School of Management and Member of the Toulouse School of Economics, the Center for Research in Management and the Institut D'Economie Industrielle (moderator)

Speakers

Prof. Battiston, Stefano, Associate Professor in Sustainable Finance and Networks, University of Zurich

Prof. Birère, Marie , Head of Investor Research Center, AMUNDI, Paris Dauphine University

Dr. Buchner, Barbara, Global Managing Director, Climate Policy Initiative

Prof. Heal, Geoffrey, Professor of Economics, Columbia Business School

Prof. Moinas, Sophie , Professor of Finance, IAE Toulouse School of Management

Presentation

#DBUcirconomy: Die Kreislaufwirtschaft im gesamtgesellschaftlichen Kontext

23rd June 2021, 05:30 PM - 08:00 PM

Description

Mit der Initiative #DBUcirconomy nimmt die DBU das Thema Circular Economy auf und möchte es in einen gesamtgesellschaftlichen Kontext stellen, der nicht nur technische Kreislaufsysteme als Lösung der Probleme betrachtet. Alternative Konzepte und ihre institutionelle Umsetzung sind dabei von entscheidender Bedeutung. Im Rahmen der Jahrestagung der „European Association of Environmental and Resource Economists“, wird die DBU im Rahmen eines get-together von Wissenschaftler:innen, Forscher:innen und Praktiker:innen erörtern, wie die Strategie einer erweiterten Kreislaufwirtschaft aufgebaut werden kann. Neben der Vorstellung der Förderinitiativen von #DBUcirconomy geht es um einen Gedankenaustausch über zukünftige Forschungslinien und strategische Konzepte zur Schließung der Stoffkreisläufe.

Speakers

Presentation

Forests and risks

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Composition diversification vs. structure diversification: How to conciliate timber production and carbon sequestration objectives under drought and windstorm risks in forest ecosystems (PRESENTER: Sandrine Breteau-Amores ; DISCUSSANT: Felix Bastit)
2. Natural disturbances in forest: A multi-hazard risk review (PRESENTER: Felix Bastit ; DISCUSSANT: Geraldine Bocqueho)
3. Forest manager facing extreme risks : Do probability weighting and loss aversion matter in adapting management to windstorms? (PRESENTER: Geraldine Bocqueho ; DISCUSSANT: Samuli Korhonen)
4. Asymmetric information hampers the EU forest reference levels (PRESENTER: Samuli Korhonen ; DISCUSSANT: Sandrine Breteau-Amores)

Speakers

Dr. Brèteau-Amores, Sandrine, ,
Mr. BASTIT, Félix, ,
Dr. Bocquého, Géraldine, ,
Mr. Korhonen, Samuli, ,

Presentations

Composition diversification vs. structure diversification: How to conciliate timber production and carbon sequestration objectives under drought and windstorm risks in forest ecosystems

Authors

Dr. Brèteau-Amores, Sandrine, ,
Prof. Hanewinkel, Marc, Researcher, Chair of Forest Economics and Forest Planning
Prof. Yousefpour, Rasoul, Researcher, Chair of Forest Economics and Forest Planning
Dr. Fortin, Mathieu, Researcher, Canadian Forest Service

Presenter

Dr. Brèteau-Amores, Sandrine, ,

Abstract

Forests provide ecosystem services such as timber production and carbon sequestration. However, forests are sensitive to climate change. As the pace of climate change continues to accelerate, climate-induced damages are expected to cause substantial amenity losses for the society, in addition to financial losses for forest owners. Forests in the Grand-Est region, France, are dominated by European beech, for which a decline in productivity is anticipated due to repeated drought events induced by climate change. These forest ecosystems are also threatened by windstorm events. Tree species diversification is one of the many forest

management strategies that can help beech forests to adapt to increased risks of severe drought and windstorm events. This article presents the results of a study that compared different forest adaptation strategies from an economic perspective with the objective to reduce drought- and windstorm-induced risks of dieback. In this study, two types of diversification strategies were analysed, first separately then jointly. These are: mixing beech with oak (composition diversification) and shifting from an even-aged to an uneven-aged forest (structure diversification). We also considered two types of loss associated with different recurrences of drought and windstorm risks, namely financial loss and reduction of carbon sequestration capacity. We combined a forest growth simulator with a forest economic approach through the computation of land expectation value (LEV). The maximisation of the LEV criterion made it possible to identify the most economically effective adaptation strategies. Results show that diversification increases timber production and LEV, but reduces carbon storage. The two risks as well as the adaptation strategies show some synergies. Finally, trade-offs between the financial balance and the carbon balance (i.e., adaptation vs. mitigation) are achievable.

Natural disturbances in forest: A multi-hazard risk review

Authors

Dr. Brunette, Marielle, Researcher, INRAE

Mr. BASTIT, Félix, ,

Dr. Montagne-Huck, Claire, Ingénieur d'étude INRAE,

Presenter

Mr. BASTIT, Félix, ,

Abstract

Natural disturbances jeopardise the provision of forest ecosystem services. Climate change stresses this threat and favours interactions between disturbances. Our objective is thus to apprehend this dimension of multiple disturbances in forest through a literature review. We build a database gathering more than hundred English peer-reviewed articles published between 1916 and 2020. We look at the relations between six main natural hazards: fire, windstorm, drought, ice/snow, insects and pathogens/disease. Our results indicate that the more frequent couples of hazards analysed jointly are

Forest manager facing extreme risks : Do probability weighting and loss aversion matter in adapting management to windstorms?

Authors

Dr. Bocquého, Géraldine, ,

Mr. Rua Montes, Javier, Student, INRAE

Presenter

Dr. Bocquého, Géraldine, ,

Abstract

In a context of climate change, low-probability high-impact extreme events are increasingly threatening European forest stands. Forest owners react by adapting their management to mitigate profit loss. We combine a simplified forest growth model to economic models to simulate the risk of windstorm on a stand of oak, and compare the economic attractiveness of three competing adaptive strategies. These strategies feature increasing levels of thinning intensity. The economic decision frameworks are the rank-dependent expected utility (RDEU) and the cumulative prospect theory (CPT), which account for forest managers

Asymmetric information hampers the EU forest reference levels

Authors

Tahvonen, Olli, , University of Helsinki

Mr. Korhonen, Samuli, ,

Presenter

Mr. Korhonen, Samuli, ,

Abstract

The Paris Agreement asks for enhancement and preservation of forest carbon sinks but does not include any specific implementation mechanism. The European Union (EU) has a shared climate policy framework for its member states, also including the land use, land-use change and forestry sector (LULUCF). In the LULUCF regulation, the carbon emissions and removals are debited or credited by the means of counterfactual forest reference levels. They are based on the continuation of the forest management practices of the reference period (2000

One key concept, determining the forest reference levels, is the projection base year since results are sensitive to state of the forest at the beginning of the projection period. Many member states have experienced an increase in timber demand leading to increased harvesting levels after the reference period. For these member states, it is favourable to start the projection before the increased demand is observable in the forest age-class structure. The opposite is true for the member states that have experienced a decrease in demand. Forest reference levels also crucially depend on the definition for the sustainable forest management practices. Most member state define these by a ratio between harvest levels and a varying choice of available biomass for harvesting. The dynamic nature of the age-related characteristics of forest and the possibility to apply different definitions for available biomass allows the member states to obtain windfall carbon credits and circumvent the effects of regulation on their harvests and potential liabilities.

While the EU

Power markets

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Efficiency in Wholesale Electricity Markets: On the Role of Externalities and Subsidies (PRESENTER: Sylwia Bialek ; DISCUSSANT: Teng Ma)
2. Renewable Energy Generation Effects on the Electricity Market: An Empirical Study on Japan's Electricity Spot Market (PRESENTER: Teng Ma ; DISCUSSANT: Leonard Goeke)
3. The adequacy of time-series reduction for renewable energy systems (PRESENTER: Leonard Goeke ; DISCUSSANT: Valeriya Azarova)
4. Unraveling the Black Box of Power Market Models (PRESENTER: Valeriya Azarova ; DISCUSSANT: Sylwia Bialek)

Speakers

Dr. Bialek, Sylwia, ,
Dr. MA, Teng, ,
Mr. Göke, Leonard, ,
Dr. Azarova, Valeriya, ,

Presentations

Efficiency in Wholesale Electricity Markets: On the Role of Externalities and Subsidies

Authors

Dr. Bialek, Sylwia, ,
Dr. Unel, Burcin, economist,

Presenter

Dr. Bialek, Sylwia, ,

Abstract

We evaluate the effects of homogeneous subsidies granted for emission-free electricity generation on market outcomes and social welfare. We use an analytical model to assess the conditions under which such subsidies increase efficiency of wholesale energy and capacity markets. While the subsidies, even when combined with energy consumption taxes, cannot achieve first-best outcomes when there are resources with heterogeneous emission intensities, there exists a range of subsidy rates that are welfare-enhancing when greenhouse gas externalities are taken into account. We also derive the conditions under which generation subsidies do not affect the equilibrium price in capacity markets. Finally, we evaluate the capacity

market reforms that are being undertaken in the U.S. in response to these kinds of subsidies.

Renewable Energy Generation Effects on the Electricity Market: An Empirical Study on Japan's Electricity Spot Market

Authors

Dr. MA, Teng, ,
Dr. DU, Yimeng, Senior Lecturer,
Dr. XU, Tao, Lecturer,

Presenter

Dr. MA, Teng, ,

Abstract

This study examines the impact of renewable energy power supply on reducing spot prices and on the realized price volatility in an imperfectly competitive market. Using the hourly supply data of renewable energy sources collected from nine traditional electric power companies, and the spot price data collected from the Japan Electric Power Exchange (JEPX), this study investigates how the increase in renewable power generation affects spot prices and realized volatility in the JEPX. Our results suggest that renewable power production decreases market spot prices with regional differences, and the impact of price reduction depends on not only the renewable power generation, but also the stability of renewable power supply in different local electricity markets. Moreover, an electricity shortage decreases the price-reducing effect on renewable power in the JEPX due to the substitution of thermal power for renewable power. Furthermore, we investigate annual differences in the impact on spot prices, and find that the effects are gradually enhanced as electricity market reform deepened. However, the increase in renewable power production has positive effects on realized volatility in the nationwide market. Our results indicate that increasing renewable power generation has both positive and negative impacts on realized volatility for different areas in Japan; the opposite volatility effects are due to not only the stability of renewable electricity supply, but also renewable power generation being curtailed or transmitted to other areas.

The adequacy of time-series reduction for renewable energy systems

Authors

Mr. Göke, Leonard, ,
Mr. Kendzioriski, Mario, Research Associate,

Presenter

Mr. Göke, Leonard, ,

Abstract

To manage computational complexity, models of macro-energy systems commonly deploy reduced sets of time-series data. This paper evaluates the adequacy of time-series reduction when modelling energy systems with fully renewable generation and a consequent dependency on storage.

Analysis includes various methods to derive reduced time-series and to implement them into models, either as time-slices, also referred to as representative days, or continuous timesteps.

All methods are tested with regard to unmet demand and accuracy of estimated system costs using a simple capacity expansion model of the power sector within a renewable energy system. Some methods achieve little unmet demand, but instead their results regarding storage are biased and favour seasonal at the expense of short-term storage. We conclude that renewable energy systems limit the adequacy of time-series reduction and future research should focus on alternative methods to reduce computational complexity.

Unraveling the Black Box of Power Market Models

Authors

Dr. Azarova, Valeriya, ,

Dr. Mier, Mathias, Economist, ifo Institute

Presenter

Dr. Azarova, Valeriya, ,

Abstract

Detailed numerical models of power markets with millions of variables and equations are often perceived as black boxes, since differences in results cannot be traced back to single assumptions. The complexity of those models also means they need to be kept linear

Incentives for energy efficiency

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Subsidizing appliance replacement in low-income households (PRESENTER: Bettina Chlond ; DISCUSSANT: Cristina Penasco)
2. Assessing the effectiveness of energy efficiency measures in the residential sector through dynamic treatment effects: Evidence for the United Kingdom (PRESENTER: Cristina Penasco ; DISCUSSANT: Elena Paglialunga)
3. Network-driven positive externalities in clean energy technology production. The case of energy efficiency in the EU residential sector (PRESENTER: Elena Paglialunga ; DISCUSSANT: Yu Zhang)
4. Power Dispatch Reform and Energy Efficiency Distortions: Evidence from China (PRESENTER: Yu Zhang ; DISCUSSANT: Bettina Chlond)

Speakers

- Chlond, Bettina, Researcher, ZEW Mannheim
Dr. Peñasco, Cristina, ,
Dr. Paglialunga, Elena, ,
Ms Zhang, Yu, ,

Presentations

Subsidizing appliance replacement in low-income households

Authors

- Chlond, Bettina, Researcher, ZEW Mannheim
Prof. Goeschl, Timo, Professor, Heidelberg University
Prof. Kesternich, Martin, Researcher, ZEW – Leibniz Centre for European Economic Research

Presenter

- Chlond, Bettina, Researcher, ZEW Mannheim

Abstract

More and more countries commit to ambitious climate goals and enact comprehensive CO2 pricing schemes. Putting a price on greenhouse gas emissions affects low-income households disproportionately as they spend a large share of their income on energy, have only limited scope for behavioral changes and often cannot afford investments in energy-efficient technologies. This paper studies the effect of subsidizing energy-efficient appliance replacement on the adoption of efficient appliances in German low-income households. Using a unique dataset from a large-scale Germany-wide appliance replacement program targeted at low-income households, we investigate how the program design affects technology adoption. Exploiting temporal and spatial variation in the program design, we

make use of exogenously imposed discontinuities in the program to estimate both the effect of different subsidy levels and expiration periods on refrigerator replacement. Our analysis covers observations from more than 66,000 households having been identified eligible for a subsidized appliance replacement in one of more than 200,000 audits between April 2014 and June 2019. We find that decreasing the subsidy for appliance replacement by EUR 50 (from EUR 150 to 100) reduces the propensity for technology adoption by 7 to 18 percent points. In addition, a subsidy scheme that proportionally increases with the number of persons in the household raises the propensity of larger households to invest in an energy-efficient refrigerator by up to 18 percent points. Introducing an expiration period of two months for individual subsidies reduces the propensity for appliance replacement by 7 to 10 percent points.

Assessing the effectiveness of energy efficiency measures in the residential sector through dynamic treatment effects: Evidence for the United Kingdom

Authors

Dr. Peñasco, Cristina, ,
Prof. Anadon, Laura Diaz, Professor , Cambridge University

Presenter

Dr. Peñasco, Cristina, ,

Abstract

Improving energy efficiency (EE) is vital to ensure a sustainable, affordable, and secure energy system. The residential sector represents, on average, 18.6% of the total final energy consumption in the OECD countries in 2018, reaching one of the highest percentages of Europe in the UK, with 29.5% of total final energy consumption (IEA, 2020). Using a staggered differences-in-differences approach with dynamic treatment effects, we analyse changes in residential gas consumption before and after the adoption of energy efficiency measures in an event study design. For this study we focus on gas consumption. The analysis includes households

Network-driven positive externalities in clean energy technology production. The case of energy efficiency in the EU residential sector

Authors

Dr. Paglialunga, Elena, ,
Prof. Costantini, Valeria, Full Professor, Roma Tre University
Dr. Leone Scialolazza, Valerio, Researcher, University of Naples Parthenope

Presenter

Dr. Paglialunga, Elena, ,

Abstract

In this paper, we propose a model of national innovation production that formalizes the role of trade partnerships as a channel of knowledge spillovers across countries. The model is used to investigate the energy efficiency technological domain in the European Union (EU) using a panel database covering 19 EU countries for the time span 1990-2015. The model is estimated by using a new empirical strategy which allow to assess the knowledge spillover effects benefiting a country depending on its relative position in the trade network, and correct for common endogeneity concerns. We show that being central in the trade network is a significant determinant of a country's innovative performance, and that learning-by-exporting is responsible for positive knowledge spillovers across countries. We further reveal

that neglecting network effects may significantly reduce our understanding of domestic innovation patterns. Finally, we find that the benefits obtained from knowledge diffusion varies with the domestic absorptive capacity and policy mix composition. Our main implication is that policy mix design informed by network-based case studies could help maximizing the exploitation of positive knowledge spillovers.

Power Dispatch Reform and Energy Efficiency Distortions: Evidence from China

Authors

Ms Zhang, Yu, ,
Prof. Cao, Jing, Associate Professor, Tsinghua University

Presenter

Ms Zhang, Yu, ,

Abstract

This study evaluates the impact of a government-regulated dispatch reform in China using a difference-in-differences (DD) strategy. During the Eleventh Five-Year Plan period, China implemented a reform on Energy-Saving Generation Dispatch (ESGD) in five pilot provinces, which prioritizes power plants with low energy use to be allocated with more generating hours. We find that the pilot reform does not achieve expected energy saving effects, but instead even reduces the energy efficiency of large-scale thermal power plants. That is, the larger the plant size is, the greater the unexpected negative impact of the regulation policy on the energy efficiency will be. Further analysis of the mechanism illustrates that the distortion of large thermal power plants

Policy dimensions of fossil energy

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Energy Policy Trade-Offs in Poland: A Best-Worst Scaling Discrete Choice Experiment (PRESENTER: Kentaka Aruga ; DISCUSSANT: Cahen-Fourot Louison)
2. Capital stranding cascades: The impact of decarbonisation on productive asset utilisation (PRESENTER: Cahen-Fourot Louison ; DISCUSSANT: Franziska Holz)
3. The political economy of fossil-fuel subsidy removal: Theory and empirical evidence from presidential democracies (PRESENTER: Franziska Holz ; DISCUSSANT: Clement Renoir)
4. Economic Growth and Equity in Anticipation of Climate Policy (PRESENTER: Clement Renoir ; DISCUSSANT: Kentaka Aruga)

Speakers

Dr. Aruga, Kentaka, ,

Dr. Cahen-Fourot, Louison, Post-doctoral researcher, Vienna University of Economics and Business
Prof. Holz, Franziska, Academic, German Institute for Economic Research (DIW Berlin) & Norwegian University of Science and Technology (NTNU)

Mr. Renoir, Clément, ,

Presentations

Energy Policy Trade-Offs in Poland: A Best-Worst Scaling Discrete Choice Experiment

Authors

Dr. Aruga, Kentaka, ,

Dr. Bolt, Timothy, Associate Professor, Saitama University

Dr. Pest, Przemysław, Assistant Professor, University of Wrocław

Presenter

Dr. Aruga, Kentaka, ,

Abstract

This study applied a discrete choice experiment using best-worst scaling questions (multi-profile, BWS case 3) to estimate the trade-offs which the Polish population is willing to make for energy reform regarding carbon reduction. Attributes considered in the study are CO₂ emissions reduction, national energy independence, employment impact, the time needed for policy transition, and impact on household energy prices. Respondents (online panel, n=639) choose the best and worst of the presented policy options such that a rank-ordered logit model could be run. This study demonstrates that the Polish public has a concern about

climate change but prioritizes energy prices and employment in their choice of preferred energy policy. The respondents

Capital stranding cascades: The impact of decarbonisation on productive asset utilisation

Authors

Dr. Campiglio, Emanuele, ,

Dr. Kemp-Benedict, Eric, Program Director, Stockholm Environment Institute

Dr. Godin, Antoine, Senior Economist , French Agency for Development

Dr. Cahen-Fourot, Louison, Post-doctoral researcher, Vienna University of Economics and Business

Mr. Trsek, Stefan, Researcher, University of Bologna

Presenter

Dr. Cahen-Fourot, Louison, Post-doctoral researcher, Vienna University of Economics and Business

Abstract

The aim of this article is to assess the exposure of economic systems to the risk of physical capital stranding following a reduction of fossil fuel production and use. We calculate cross-sectoral and cross-country 'marginal stranding multipliers' for 43 regions, and study how supply-side capital stranding might propagate via international production networks. We show how the fossil industry has the potential of creating significant stranding cascades affecting downstream sectors and the economic system as a whole. We then focus on cross-country stranding impacts and rank countries according to their external stranding potential and to their exposure to external stranding risk. Finally, we analyse more in depth the origins and transmission channels of the stranding links affecting the most exposed countries (US, China and Germany). Our results confirm the relevance of including multi-regional production networks and physical capital stranding into the ongoing effort to assess the macro-financial implications of a low-carbon transition.

The political economy of fossil-fuel subsidy removal: Theory and empirical evidence from presidential democracies

Authors

Dr. Hagen, Achim, ,

Prof. Holz, Franziska, Academic, German Institute for Economic Research (DIW Berlin) & Norwegian University of Science and Technology (NTNU)

Ms Montes de Oca León, Mariza, ,

Presenter

Ms Montes de Oca León, Mariza, ,

Abstract

The removal of fossil-fuel subsidies (FFS) is one of the most compelling, yet strenuous climate change policies. Removing fossil-fuel subsidies can induce greenhouse gas (GHG) emissions reductions, increase fiscal space and lead to net benefits to society. However, their removal can overturn the public opinion tide, making them pervasive and difficult to remove. This study investigates the effect of fossil-fuel subsidy removal on executive approval using quasi-experimental evidence from a synthetic control model and a probabilistic voting model. We contribute to existing literature with the first empirical estimation of the political costs of subsidy removal and a theoretical explanation behind its unexpectedly strong effect on approval rates. We find evidence of a negative effect of subsidy removal on political approval, yet with differing magnitudes depending on the phase-out design. We explain this

result by the strong ideological fragmentation of voters in our study region Latin America. Finally, we test our theoretical explanations using survey data for Latin American democracies.

Economic Growth and Equity in Anticipation of Climate Policy

Authors

Dr. Miftakhova, Alena, , ETH Zurich

Mr. Renoir, Clément, ,

Presenter

Mr. Renoir, Clément, ,

Abstract

We study the role of the anticipation period of climate policies in a numerical model of general equilibrium with endogenous growth, heterogeneous households with labor-leisure choice, and multiple economic sectors. The anticipation period is defined as the period of time the policy maker gives to the agents in the economy to adjust their decisions before the implementation of a policy. On an example of the Swiss economy, we analyze the implications of such anticipation period for welfare and economic growth at various stringency levels of carbon policy. We find strongly positive and progressive effect of anticipation for more stringent climate policies. Under such policies, the economy adjusts by redirecting the investments capital burden and thus higher profitability. The more affluent groups of households with high share of income from capital thus benefit the most from a given opportunity to adjust to the announced policy.

IAM and input-output analysis

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Beyond aggregated damage functions in an integrated assessment model (PRESENTER: Koji Tokimatsu ; DISCUSSANT: Florian Landis)
2. The Incidence of Carbon Pricing: From Input–Output via Microsimulation to General Equilibrium (PRESENTER: Florian Landis ; DISCUSSANT: Milan Scasny)
3. Elasticity of Marginal Utility of Consumption: The Equal-Sacrifice Approach Applied for the Czech Republic (PRESENTER: Milan Scasny ; DISCUSSANT: Kutay Cingiz)
4. A Cross-Country Measurement of the EU Bioeconomy: An Input-Output Approach (PRESENTER: Kutay Cingiz ; DISCUSSANT: Koji Tokimatsu)

Speakers

Prof. Tokimatsu, Koji, , Tokyo Institute of Technology

Dr. Landis, Florian, , ETH Zurich

Scasny, Milan, , Charles University in Prague

Dr. Cingiz, Kutay, ,

Presentations

Beyond aggregated damage functions in an integrated assessment model

Authors

Prof. Tokimatsu, Koji, , Tokyo Institute of Technology

Ms Yasuoka, Rieko, systems engineer, Systems Research Company, Inc

Dr. NISHIO, Masahiro, research scientist, National Institute of Advanced Industrial Science and Technology

Presenter

Prof. Tokimatsu, Koji, , Tokyo Institute of Technology

Abstract

The paper presents an advance in integrated assessment modeling (IAM) interlinked with a lifecycle impact assessment (LCIA). The model includes feedback effects on the world economy by substituting LCIA modeling for the so-called

The Incidence of Carbon Pricing: From Input–Output via Microsimulation to General Equilibrium

Authors

Dr. Landis, Florian, , ETH Zurich
Prof. Böhringer, Christoph, Professor, Univeristy of Oldenburg
Dr. Tovar Reaños, Miguel Angel, Research Officer,

Presenter

Dr. Landis, Florian, , ETH Zurich

Abstract

To combat global warming many countries have pledged drastic reductions of CO2 emissions and intend to achieve these via stringent carbon pricing. The societal acceptance of such carbon pricing will critically hinge on the magnitude and distribution of induced economic adjustment costs across heterogeneous households. To inform decision makers on the incidence of carbon pricing, economists draw upon three established quantitative methods: input

Elasticity of Marginal Utility of Consumption: The Equal-Sacrifice Approach Applied for the Czech Republic

Authors

Scasny, Milan, , Charles University in Prague
Mr. Opatrny, Matej, Junior Research Fellow, PhD student , Charles Universiity

Presenter

Scasny, Milan, , Charles University in Prague

Abstract

We provide the first estimate of the elasticity of marginal utility,

A Cross-Country Measurement of the EU Bioeconomy: An Input-Output Approach

Authors

Wesseler, Justus, , Wageningen University
Dr. Cingiz, Kutay, ,
Prof. Heijman, Wim, Professor,
Mr. Gonzalez, Hugo, Consultant,

Presenter

Dr. Cingiz, Kutay, ,

Abstract

This paper measures the development of the national income share of the bioeconomy for 28 European Union Member States (MS) and 16 industries of BioMonitor scope from 2005 to 2015.

The paper proposes a model which includes the up- and downstream linkages using Input-Output

tables. The results show that for the majority of the MS the value added of the up- and downstream

sector is at the band of 40%

since the financial crisis.

Voluntary approaches

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Enhancing the informational nudge of energy labels: Evidence from a DCE in New Delhi (PRESENTER: Charu Grover ; DISCUSSANT: Shutong He)
2. Energy labels and heuristic decision-making: the role of cognition and energy literacy (PRESENTER: Shutong He ; DISCUSSANT: Patrick Bigler)
3. Welfare, Redistributive and Revenue Effects of Policies Promoting Fuel Efficient and Electric Vehicles (PRESENTER: Patrick Bigler ; DISCUSSANT: Gunnar Gutsche)
4. Individual preferences for sustainable investments across Europe – A framed field experiment in five countries (PRESENTER: Gunnar Gutsche ; DISCUSSANT: Charu Grover)

Speakers

Dr. Grover, Charu, ,
Ms He, Shutong, ,
Mr. Bigler, Patrick, ,
Dr. Gutsche, Gunnar, ,

Presentations

Enhancing the informational nudge of energy labels: Evidence from a DCE in New Delhi

Authors

Dr. Grover, Charu, ,
Prof. Bansal, Sangeeta, Professor, Jawaharlal Nehru University
Prof. Martinez-Cruz, Adan L., Professor, Department of Forest Economics and Centre for Environmental and Resource Economics (CERE), Swedish University of Agricultural Sciences, Sweden

Presenter

Dr. Grover, Charu, ,

Abstract

India's contribution to global CO₂ emissions makes it a priority case for policy makers worldwide. The Indian government is considering the adoption of energy labels for new passenger cars to tackle CO₂ emissions. This paper's first aim is to assess New Delhi's car buyers' preferences for cars displaying energy labels. To do so, a discrete choice experiment (DCE) has been designed to document both WTP for energy efficiency (212 USD for one kilometer per liter) and WTP for the best efficiency label (4.93 thousand USD). The informational nudge embedded in a labeling system may not be enough to boost uptake of efficient cars. Thus this paper investigates the potential of combining a labeling system and

car driving restrictions. Via a split-sample approach, this paper documents an increase of 2.55 thousand USD in stated WTP for the best efficiency label. This number can be interpreted as reflecting the costs imposed by the driving restrictions on car drivers. Under this interpretation, 2.55 thousand USD fall within the range of estimations reported in previous studies. The results in this paper suggest that a combination of driving restrictions and a labeling system may deliver an increase in energy efficient cars in New Delhi.

Energy labels and heuristic decision-making: the role of cognition and energy literacy

Authors

Ms He, Shutong, ,

Prof. van Beukering, Pieter, Professor, Institute for environmental studies (IVM), Vrije Universiteit Amsterdam

Dr. Blasch, Julia, Assistant Professor, Vrije Universiteit Amsterdam

Prof. Wang, Junfeng, Professor, Nankai University

Presenter

Ms He, Shutong, ,

Abstract

To overcome the inefficiency in household energy use, energy labels with a grade-like categorical efficiency rating-scale are widely used across the globe. However, presenting energy efficiency information in categories has been found to induce heuristic rather than rational decision-making, known as the "class valuation effect": consumers value the classes, while being inattentive to the actual energy use of the respective appliance. Although replacing the categorical by a continuous scale could eradicate this effect, it has not been formally examined to what extent a continuous scale promotes more rational decision-making. This study investigates whether visualising energy efficiency using a continuous-scale instead of a categorical-scale energy label increases consumers' awareness of the energy performance of appliances. We experimentally examine this question in an online survey with randomised decision tasks conducted in China and the Netherlands, two countries using energy labels with categorical rating-scale whose populations differ in cognitive style and energy literacy (energy-related knowledge, attitudes, and behaviours). We find that continuous-scale labels are overall more effective in promoting rational decision-making. For Dutch respondents the effectiveness depends on their holistic cognitive tendency and the type of comparison they are faced with, whereas the Chinese sample is not sensitive to these moderators. Moreover, we find that the different aspects of energy literacy have opposing influence on rational choices: possessing knowledge related to daily-life energy use increases the likelihood of rational decisions, while energy-saving attitudes and behaviours encourage individuals to opt for more energy-efficient appliances even when it is not economically optimal. Based on the results, we suggest to represent energy efficiency on continuous scales as an auxiliary visual information to support purchase decisions. In energy education and information programmes, emphasis should be put on energy knowledge that directly links to daily life, which is well translated into consumers' conscious decisions.

Welfare, Redistributive and Revenue Effects of Policies Promoting Fuel Efficient and Electric Vehicles

Authors

Mr. Bigler, Patrick, ,

Prof. Radulescu, Doina, Professor,

Presenter

Mr. Bigler, Patrick, ,

Abstract

Worldwide, the road transport sector accounts for a large share of CO₂ emissions. However, despite generous government programs to subsidise electric and hybrid cars, their uptake continues to be very low. In this paper we employ a rich dataset including information on around 24,000 newly purchased cars in the Swiss Canton of Bern, as well as a large number of household socio-demographic characteristics and information on car attributes to analyse household choice behaviour towards hybrid and electric vehicles (EVs) as well as the welfare implications of policies to promote them. We consider the implications of the introduction of a mileage dependent levy, an increase in fossil fuel taxes or an EV subsidy. The random coefficient logit model employed reveals a more pronounced reaction with respect to car prices than driving costs. The mileage dependent generates public revenues to secure infrastructure finances, however it decreases the likelihood of EV adoption. In contrast, both subsidies as well as higher fossil fuel levies support the uptake of EVs, thus reducing CO₂ emissions. However, these two policies feature regressive effects across the income distribution.

Individual preferences for sustainable investments across Europe – A framed field experiment in five countries

Authors

Dr. Gutsche, Gunnar, ,

Mr. Engler, Daniel, Research associate, University of Kassel

Prof. Smeets, Paul, Researcher, Maastricht University

Presenter

Dr. Gutsche, Gunnar, ,

Abstract

To understand the extent to which individual preferences towards sustainable investments and their determinants vary across countries, we are going to conduct an incentivized framed field experiment in five European countries during February and March 2021. The experiment is part of a representative survey of financial decision-makers in households in France, Germany, the Netherlands, Poland, and Spain, with about 1,000 respondents per country. Thus, this study is the first to compare preferences for sustainable investments at the individual level across different countries. Following the seminal study by Riedl and Smeets (2017), we particularly analyze to what extent financial motives, social signaling, and social preferences matter for individual sustainable investing and whether the relevance of pecuniary and non-pecuniary motives varies across countries.

Labour and the environment I

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The Ins and Outs of Employment: Labor Market Adjustments to Carbon Taxes (PRESENTER: Chi Man Yip ; DISCUSSANT: Das Saudamini)
2. Effect of extreme heat and humidity on income and health expenditure of informal sector workers in New Delhi, India (PRESENTER: Das Saudamini ; DISCUSSANT: Yun Qiu)
3. Productivity Loss amid Invisible Pollution (PRESENTER: Yun Qiu ; DISCUSSANT: Vladimir Otrachshenko)
4. Climate variability, female empowerment, and household employment decisions (PRESENTER: Vladimir Otrachshenko ; DISCUSSANT: Chi Man Yip)

Speakers

Dr. Yip, Chi Man, ,

Prof. Das, Saudamini, ,

Prof. Qiu, Yun, Economics, Jinan University

Dr. Otrachshenko, Vladimir, Senior Researcher, Center for International Development and Environmental Research, Justus Liebig University Giessen; Far Eastern Federal University

Presentations

The Ins and Outs of Employment: Labor Market Adjustments to Carbon Taxes

Author

Dr. Yip, Chi Man, ,

Presenter

Dr. Yip, Chi Man, ,

Abstract

Job cuts are tough; wage cuts aren

Effect of extreme heat and humidity on income and health expenditure of informal sector workers in New Delhi, India

Author

Prof. Das, Saudamini, ,

Presenter

Prof. Das, Saudamini, ,

Abstract

This paper estimates the income loss of urban daily-wage workers and self-employed persons on high-temperature days in New Delhi. I conducted a daily income and health status survey of such workers over the summer months (24th May to 20th June 2019) when the maximum temperature varied between 30

Productivity Loss amid Invisible Pollution

Author

Prof. Qiu, Yun, Economics, Jinan University

Presenter

Prof. Qiu, Yun, Economics, Jinan University

Abstract

Ground-level ozone is a continuing problem worldwide, but research on the influences of ozone pollution on labour productivity in developing countries is insufficient. We investigate the effect of ozone pollution on outdoor worker productivity in the service sector using a unique panel dataset of courier productivities from a top five express company in China. Using an instrumental variable constructed from ozone pollution of upwind nearby cities, we find that a one-standard-deviation increase in daily ozone pollution decreases courier productivity by 8.91%. The same increase in ozone in the previous 30 days decreases worker productivity by 37.9%.

Climate variability, female empowerment, and household employment decisions

Authors

Dr. Popova, Olga, Senior Researcher, Leibniz Institute for East and Southeast European Studies (IOS); CERGE-EI; Ural Federal University

Dr. Otrachshenko, Vladimir, Senior Researcher, Center for International Development and Environmental Research, Justus Liebig University Giessen; Far Eastern Federal University

Dr. Alimukhamedova, Nargiza, Lecturer, Westminster International University in Tashkent

Presenter

Dr. Otrachshenko, Vladimir, Senior Researcher, Center for International Development and Environmental Research, Justus Liebig University Giessen; Far Eastern Federal University

Abstract

This paper examines the role of female empowerment in building the resilience to climate change in urban and rural areas. Using a novel household survey data from Uzbekistan, a developing country in Central Asia, we focus on the impact of climate variability on household employment choices and analyze whether female empowerment serves as a channel for this relationship. The findings suggest that rainfall variability in rural and urban areas leads to reallocation of labor from unemployment to business activities and temporary self-employment but does not affect the reallocation of labor from unemployment to salaried employment. We show that the impact of climate variability is partially explained by female involvement in decision-making, e.g., into the planning of important family expenses, female labor market participation, or greater freedom in participation in social activities, especially in rural areas. This implies that traditional gender roles may make households in developing countries more vulnerable to adverse consequences of climate change, while female empowerment contributes to more resilient and sustainable development in the face of climate change.

Climate change and redistributional effects

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Distributional effects of carbon pricing when considering household heterogeneity: An EASI application for Austria (PRESENTER: Anna Eisner ; DISCUSSANT: Philipp M. Richter)
2. Emission Taxes, Redistribution Schemes, and the Impact on Occupational Choice Decisions (PRESENTER: Philipp M. Richter ; DISCUSSANT: Naser Amanzadeh)
3. The Distributional Effects of Global Warming: Evidence from Iran (PRESENTER: Naser Amanzadeh ; DISCUSSANT: Laura Atarody)
4. Aggregate and intergenerational redistributive effects of recycling a carbon price signal on firms and/or households: evidence from France (PRESENTER: Laura Atarody ; DISCUSSANT: Anna Eisner)

Speakers

Ms Eisner, Anna ,
Dr. Richter, Philipp ,
Dr. Amanzadeh, Naser ,
Ms Atarody, Laura ,

Presentations

Distributional effects of carbon pricing when considering household heterogeneity: An EASI application for Austria

Authors

Dr. Kulmer, Veronika ,
Ms Eisner, Anna ,
Dr. Kortschak, Dominik, Scientist,

Presenter

Ms Eisner, Anna ,

Abstract

This paper studies the distributional impacts of a carbon tax in Austria and explores compensating measures to mitigate negative side effects. We extend previous studies by focussing on household heterogeneity, i.e. how housing attributes and socio-demographics govern a household's vulnerability to energy price increases. We apply the EASI demand system, which captures non-linear Engel curves and heterogeneous preferences; both crucial to estimate energy consumption. By simulating stylized, separate price increases we identify how seemingly overall similar welfare effects differ, depending on the energy good taxed, the region a household lives in, year of construction and household composition. These impact

channels, with the severity of impacts differing according to various household characteristics are also reflected by the carbon tax scenario and reveal the importance of targeted support schemes. Although, each of the tested transfer schemes is able to enhance equality and cushion negative welfare effects, transfer schemes focussing on household size or on particular vulnerable population segments show the strongest effects in terms of equality, proportionality of the tax burden and welfare. Consequently, in order to yield a socially fair energy or carbon tax regime, taking household heterogeneity into account is essential.

Emission Taxes, Redistribution Schemes, and the Impact on Occupational Choice Decisions

Author

Dr. Richter, Philipp, ,

Presenter

Dr. Richter, Philipp, ,

Abstract

This paper focuses on the effect of emissions taxes on the occupational choice decisions of individuals.

Two different systems of tax revenue redistribution schemes are considered: a uniform transfer to all individuals and, alternatively, a progressive redistribution scheme with transfers only to low-income individuals in the economy. Accounting for general equilibrium effects, we find that for a given emissions tax a progressive redistribution scheme leads to a shift in the factor allocation towards more employees and fewer but more productive firms. This distortion leads to reduced aggregate emissions but increased income inequality between managers and employees relative to a uniform per capita transfer scheme.

The Distributional Effects of Climate Change: Evidence from Iran

Authors

Arimura, Toshi, , Waseda University

Dr. Amanzadeh, Naser, ,

Mr. Vesal, Mohammad, Assistant professor of economics, Sharif University of Technology

Dr. Fatemi Ardestani, Seyed Farshad, Assistant professor of economics, Sharif University of Technology

Presenter

Dr. Amanzadeh, Naser, ,

Abstract

Climate change has heterogeneous effects on poor and wealthy households due to differences in vulnerabilities and exposure. However, few papers provide estimates on the magnitude of climate impacts across the income distribution. In this paper, we combine 21 rounds of household expenditure and income surveys from Iran for the period from 1998 to 2018 to construct a large sample of rural and urban households. Using within-district variation in temperature, we show that a one-degree Celsius increase in annual temperature leads to 8.1 and 4.7 percent decreases in rural and urban per capita expenditures, respectively. We find that the impact is twice the average effect for the poorest decile. Furthermore, we provide evidence that available household resources that determine vulnerabilities play a more important role than the difference in exposure to climate change. Our findings suggest that compensatory policies should target the poorest

households, as poverty is a stronger determinant of the impact than being an agricultural worker or residing in already hot areas.

Aggregate and intergenerational redistributive effects of recycling a carbon price signal on firms and/or households: evidence from France

Authors

Ms Atarody, Laura , ,

Mr. Ayouz, Mourad, Engineer. Ph.D Researcher in Macroeconomics, EDF

Mr. Gonand, Frédéric, Prof. of economics at University Paris Dauphine-PSL, University Paris Dauphine-PSL

Presenter

Ms Atarody, Laura , ,

Abstract

Environmental tax policies bring about issues of intergenerational redistribution. Curbing down emissions of CO₂ indeed takes decades, and accordingly may affect differently the welfare of different cohorts born at relatively distant years. Additionally, environmental policies usually involve a rise in some price of carbon (through, notably, a tax) and a simultaneous diminution of some other, direct taxes by the same amount. Thus they may affect differently firms and households in the long run. Overall, environmental tax policies that are generally implemented typically involve redistributive effects in the long run between cohorts of households and between firms and households. This paper provides with an empirical modelling framework that allows for identifying these effects at an aggregate level. The paper analyses the intergenerational redistributive effects in the long run of different scenarios of a carbon price on firms and/or households on French data. Its dynamics on the demand side models 15 different cohorts over time, and 5 different economic sectors on the supply side which are more or less energy-intensive. In all scenarios, the carbon tax is recycled. Results suggest that a (recycled) carbon price signal levied on both firms and households fosters production in the medium run but weighs on households

Regulation I

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Environmental taxation in the Bertrand differentiated duopoly: new insights (PRESENTER: Walid Marrouch ; DISCUSSANT: Sandra Rousseau)
2. Strategic Pricing and Lifespan Choices with Peer-to-Peer Sharing: Implications for the Environment (PRESENTER: Sandra Rousseau ; DISCUSSANT: Franceska Tomori)
3. The impact of acquisition tax and emission standards on productivity and innovation: electric vs. fuel-powered vehicles. (PRESENTER: Franceska Tomori ; DISCUSSANT: Xiaojun Yu)
4. Contracts as a pro-environmental instrument: The nudging effect of government purchase (PRESENTER: Xiaojun Yu ; DISCUSSANT: Walid Marrouch)

Speakers

Dr. Marrouch, Walid, Associate Professor of Economics, Lebanese American University
Prof. Rousseau, Sandra, , KU Leuven
Ms. Tomori, Franceska, PhD student, Universitat Rovira i Virgili
Mr. Yu, Xiaojun, ,

Presentations

Environmental taxation in the Bertrand differentiated duopoly: new insights

Authors

Dr. Marrouch, Walid, Associate Professor of Economics, Lebanese American University
Ms Abdul-Baki, Ghina, PhD student, University of Ottawa

Presenter

Dr. Marrouch, Walid, Associate Professor of Economics, Lebanese American University

Abstract

We derive an optimal emission tax under imperfect competition among polluters, while taking into account the significance of the spatial dimension for non-uniformly mixed pollutants. We build a partial equilibrium model that is based on Hotelling's location model. First, the firms' locations are considered to be exogenous, but later we relax this assumption. Our results shed light on a trade-off between the environmental externality and the distortions resulting from the Bertrand competition. This trade-off is modulated by the locations of the two producers. Our results also indicate that, in the presence of more than one market failure, the principle of maximal differentiation is not always guaranteed. Finally, we stress that designing a spatial emission tax is not too demanding in terms of regulator information.

Strategic Pricing and Lifespan Choices with Peer-to-Peer Sharing: Implications for the Environment

Authors

Andre, Francisco, , Universidad Complutense de Madrid

Arguedas, Carmen, , Universidad Autónoma de Madrid

Prof. Rousseau, Sandra, , KU Leuven

Presenter

Prof. Rousseau, Sandra, , KU Leuven

Abstract

Peer-to-peer sharing has become increasingly popular in recent years. Individuals can offer their belongings available for rent while they are not using them, mainly through digital platforms. In this paper, we consider a monopolist that produces a good that is suitable for rent in a peer-to-peer sharing platform, and that chooses the price and lifespan of the product to maximize profits. The sharing market affects the monopolist in two opposing ways. On the one hand, potential buyers of the good may experience an increase in their willingness to pay for the product, since they can obtain rents by offering the product to others part-time. On the other hand, the monopolist may lose some clients that may instead get access to the good in the sharing market. We analyze the cases where the monopolist is myopic about her possible influence in the sharing market versus the case where the firm can choose her decision variables strategically, and we compare the results with the situation where the sharing market is absent. We derive some policy implications regarding the environmental damages associated with both production and usage of products under each setting.

The impact of acquisition tax and emission standards on productivity and innovation: electric vs. fuel-powered vehicles.

Author

Ms. Tomori, Françeska, PhD student, Universitat Rovira i Virgili

Presenter

Ms. Tomori, Françeska, PhD student, Universitat Rovira i Virgili

Abstract

In the presence of multiproduct oligopoly firms for the automobile market, I compare which of the two policy instruments -emission standards and acquisition tax- induces a larger adoption of electric vehicles at the expense of fuel-powered vehicles. Because innovation incentives depend on the damage caused to the environment, emission standards can offer greater innovation incentives than does a negative tax. In the competitive equilibrium, it results in a higher quantity of electric-vehicles produced under an acquisition tax policy rather than under an emission standard policy. The total output of both electric and fuel-powered vehicles is higher under an emission standard. Consumers would prefer an emission standard if the tax revenues are not distributed among them. Otherwise, they would be better under a tax.

Contracts as a pro-environmental instrument: The nudging effect of government purchase

Authors

Dr. Zhang, Lin, Academics, City University of Hong Kong

Mr. Yu, Xiaojun, ,

Presenter

Mr. Yu, Xiaojun, ,

Abstract

How to efficiently improve corporate environmental responsibility (CER) remains a challenge in the literature on the private provision of public goods. Using data from 2009 to 2016 on the environmental responsibility of publicly listed firms, we document consistent causal evidence that the government could nudge the market to motivate contracted firms for undertaking CER, and thus lower the social costs of promoting CER. The magnitude of the impact varies significantly across regions and industries, being attributable to the differentiated environmental attitudes of local authorities and the relative bargaining power. Our findings suggest that governments in a region with polluting firms can use the

Political Economy

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Delegation of Regulation and Perceived Corruption in South Africa (PRESENTER: Pedro Naso ; DISCUSSANT: Laure de Preux)
2. Does 'Green' Matter? Environmental Management Practices and Firm Performance in China (PRESENTER: Laure de Preux ; DISCUSSANT: Yuhang Pan)
3. The Distortionary Effects of Institutional Incentives: Evidence from Transboundary Water Quality Regulation in China (PRESENTER: Yuhang Pan ; DISCUSSANT: Marie Helene Hubert)
4. Civil Unrests and Climate in India (PRESENTER: Marie Helene Hubert ; DISCUSSANT: Pedro Naso)

Speakers

Dr. Naso, Pedro, ,
Dr. de Preux, Laure, ,
Mr. Pan, Yuhang, ,
Ms Hubert, Marie-Hélène, ,

Presentations

Delegation of Regulation and Perceived Corruption in South Africa

Author

Dr. Naso, Pedro, ,

Presenter

Dr. Naso, Pedro, ,

Abstract

In this paper, I study the economic motivations behind a reduction in the discretionary power of environmental inspectors, and show the impact that such reduction has on perceived corruption in South Africa. I examine the transition from the Air Pollution Protection Act of 1965 to the Air Quality Act of 2005, a change from full to partial delegation of regulation. By constructing a principal-agent model, I argue that this transition might have occurred because of an increase in inspectors

for a two-period panel with 191 South African firms to show that the regulatory change decreased treated firms

Does 'Green' Matter? Environmental Management Practices and Firm Performance in China

Authors

Wagner, Ulrich, , University of Mannheim

Dr. de Preux, Laure, ,

Dr. Muûls, Mirabelle, Assistant Professor, Imperial College London

Dr. Yong, Soo Keong, Economist,

Dr. Shen, Peiyao, Economist,

Dr. Martin, Ralf, Associate Professor, Imperial College London

Dr. Cao, Jing, Associate Professor, Tsinghua University

Presenter

Dr. de Preux, Laure, ,

Abstract

Achieving net zero carbon emissions requires significant changes to the business practice. Research on European facilities highlighted that environmental-friendly management practices and higher productivity are positively correlated. With the rolling out of carbon markets among the largest emitting countries it is essential to understand whether these relationships hold and could enforce this virtuous circle. We collected and analysed unique data on managerial practices by interviewing managers in Beijing city and Hubei province. Our result shows that environmental-friendly management is significantly associated with higher productivity: a one-standard-deviation increase in the quality of the management practices is associated with an 8.3% improvement in productivity. Moreover, this form of management style corresponds to lower oil intensity. Management practices focusing on controlling energy usage, curbing GHG emissions, and enforcing targets, are correlated with lower oil usage intensity. Using patent information related to a subset of our data shows that Chinese environmental friendly firms are more likely to generate a higher share of 'green' innovation.

The Distortionary Effects of Institutional Incentives: Evidence from Transboundary Water Quality Regulation in China

Author

Mr. Pan, Yuhang, ,

Presenter

Mr. Pan, Yuhang, ,

Abstract

The distortionary effort in policymaking has been paid insufficient attention. China

Civil Unrests and Climate in India

Authors

Prof. Pelli, Martino, , University of Sherbrooke

Ms Hubert, Marie-Hélène, ,

Dr. Drouard, Joeffrey, Associate Professor , University of Rennes 1, Department of Economics

Presenter

Ms Hubert, Marie-Hélène, ,

Abstract

In this paper we investigate whether high temperatures, through their impact on human aggression levels, play a role in the emergence of civil unrests. To date, the contribution of climate to civil unrests has been mainly analyzed only through its capacity to disrupt

agricultural production, creating greater strain on an often already financially constrained population. In a context of growing worries about climate change, and a growing number of hot days, it becomes important to know how these climatic shocks impact the probability of conflicts. Using daily civil unrest events and climate data, we adopt a semi parametric approach. We find a positive and statistically significant impact of temperature on the probability of civil unrests, even after controlling for its impact on agricultural outcomes. These findings are also important for a second reason. They show that the identification of the impact of climate variation on conflicts through yearly data may cover much of the heterogenous effects that appear when the data are disaggregated at a finer level.

Waste

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. To avoid littering: locally controlled factors more important than waste management (PRESENTER: Raymond Gradus ; DISCUSSANT: Claes Ek)
2. Norm-based feedback on household waste: A large-scale field experiment in two Swedish municipalities (PRESENTER: Claes Ek ; DISCUSSANT: Linda Tesauro)
3. Household waste sorting behavior: the impact of norms and infrastructures (PRESENTER: Linda Tesauro ; DISCUSSANT: Elisabetta Marzano)
4. Does social capital affect waste management? (PRESENTER: Elisabetta Marzano ; DISCUSSANT: Raymond Gradus)

Speakers

Prof. Gradus, Raymond, ,
Dr. Ek, Claes, ,
Ms Tesauro, Linda, ,
Dr. MARZANO, ELISABETTA, ,

Presentations

To avoid littering: locally controlled factors more important than waste management

Authors

Prof. Gradus, Raymond, ,
Prof. Dijkgraaf, Elbert, Professor,
Mr. Styer, Matt, PhD-student, Vrije Universiteit Amsterdam

Presenter

Prof. Gradus, Raymond, ,

Abstract

Using unique data on littering of waste and waste collection services in the Netherlands, this paper examines their relation to inferred levels of illegal dumping of waste. The results show that locally controlled factors have a greater influence on illegal dumping, while the type of waste management services has a comparatively weaker influence. Physical factors controlled by decision makers of local shop centers have the most influence on less dumping, while community characteristics relating to lower income, non-western populations, and industrial economic activity have an influence on more dumping. The structure of waste management services is less influential, but there is indication that collective bins rather than house-to-house collection influences less illegal dumping, and that increased density and

frequency of waste collection services was also associated with less illegal dumping. Also some unit based pricing systems of waste might result in more littering.

Norm-based feedback on household waste: A large-scale field experiment in two Swedish municipalities

Authors

Dr. Ek, Claes, ,
Prof. Söderberg, Magnus, Economics, University of Southern Denmark

Presenter

Dr. Ek, Claes, ,

Abstract

We conduct separate randomized controlled trials of norm-based feedback on household waste in two municipalities in western Sweden. Our main treatment presents recipients with accurate, household-specific feedback highly similar to the standard Home Energy Report design, but with residual (unsorted) waste as the object of comparison. We also test a novel 'dynamic' formulation of the social norm informed by psychological research. We identify post-experimental reductions on the order of 7-12% in both municipalities, much larger than typically found in the literature on norm-based feedback. Effect differences between our main treatment and the dynamic-norm treatment are not significant. Our results have implications for the usefulness of feedback interventions as well as for unit-based pricing of waste, on which our feedback materials crucially rely.

Household waste sorting behavior: the impact of norms and infrastructures

Authors

Ms Tesauro, Linda, ,
Prof. Baranzini, Andrea, HEG Director,

Presenter

Ms Tesauro, Linda, ,

Abstract

Abstract This paper analyzes the determinants of households' municipal waste sorting behavior, to understand and develop voluntary waste recycling policies. We design a survey to investigate households

Does social capital affect waste management?

Authors

Dr. MARZANO, ELISABETTA, ,
Prof. Chiarini, Bruno, Professor,
Dr. Argentiero, Amedeo, Associate Professor,

Presenter

Dr. MARZANO, ELISABETTA, ,

Abstract

In a social capital framework, institutions and generalized social trust enhance attitudes toward disposal practices that are less invasive on the environment. The aim of this paper is to improve our empirical knowledge of this relationship. The study uses Italian provincial data to show that social capital and the quality of institutions are extremely important in

determining the inflows of landfill waste and recycling behavior. More specifically, we use panel data models to show that recycling attitudes are affected by trust, as a measure of social capital, distrust (crime), education, and government effectiveness. Finally, the relationship between income and recycling captures the hypothesis that high incomes lead to high consumption with a corresponding aggravation of the environmental condition.

Health concerns

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Non-Occupational Pesticide Exposure and Academic Achievement: School-Level Evidence from California (PRESENTER: Andrew Chia ; DISCUSSANT: Fanny Le Gloux)
2. How can health concerns improve environmental public good provision through labels? (PRESENTER: Fanny Le Gloux ; DISCUSSANT: Lecole Pauline)
3. Designing an effective small farmers scheme in France with environmental and employment conditions (PRESENTER: Lecole Pauline ; DISCUSSANT: Caroline Orset)
4. Risk aversion and estimates of the Value of statistical life and mortality risk for air pollution in France (PRESENTER: Caroline Orset ; DISCUSSANT: Andrew Chia)

Speakers

Mr. Chia, Andrew, ,
Ms. Le Gloux, Fanny, PhD student, INRAE
Ms LECOLE, Pauline, ,
Dr. Caroline, Orset, ,

Presentations

Non-Occupational Pesticide Exposure and Academic Achievement: School-Level Evidence from California

Authors

Mr. Chia, Andrew, ,
Prof. Steinbach, Sandro, Professor, University of Connecticut

Presenter

Mr. Chia, Andrew, ,

Abstract

This paper assesses the impact of non-occupational pesticide exposure on the academic achievements of children and teenagers. We use geospatial statistical methods to relate field-level pesticide application data to educational testing and air pollution data from California from 2003 to 2013. We measure pesticide and air pollution exposure at the school attendance zone level. Using a difference-in-differences research design, we find that prolonged pesticide exposure in a 16-week window before testing is associated with a statistically significant decrease in academic achievement. Non-occupational pesticide exposure in the immediate lead-up to testing is statistically insignificant. The negative impact of non-

occupational pesticide exposure on academic performance is more pronounced for students from school attendance zones with pesticide exposure above the highest percentile. Our results are robust to a set of different model specifications. A placebo test shows that the impact of pesticide exposure within one, two, and three months after the test date is unrelated to test scores. A heterogeneity analysis indicates that the negative impact is more pronounced for boys than for girls, larger for Whites and Hispanics than for Asians, and more detrimental for children from economically advantaged families and whose parents have a college degree than for children from financially disadvantaged families and whose parents do not have a college degree. The impact of non-occupational pesticide exposure appears more subtle than for other environmental pollutants, pointing toward an understudied environmental externality of intensive agricultural practices.

How can health concerns improve environmental public good provision through labels?

Authors

Ms. Le Gloux, Fanny, PhD student, INRAE

Ms Letort, Elodie, Researcher, INRAE

Mr. Dupraz, Pierre, Senior Researcher , INRAE

Presenter

Ms. Le Gloux, Fanny, PhD student, INRAE

Abstract

This paper deals with the environmental performance of labeling strategies promoting an agricultural commodity characterised by the joint and complementary provision of an environmental public good and a private characteristic such as health benefits. In a theoretical analysis, we explore different market settings with an eco-label, health label, or a label promoting both health and the environment to see how the degree of information given to homogeneous consumers on the public and private characteristics affects public good provision. We show that when consumers only have access to partial information on one of the two complementary characteristics (eco-label or health label), public good provision is higher through a health label in most situations. An eco-label leads to higher provision in a small market if consumers

Designing an effective small farmers scheme in France with environmental and employment conditions

Authors

Ms Préget, Raphaële, Researcher, INRAE, CEEM

Ms LECOLE, Pauline, ,

Ms Thoyer, Sophie, Researcher, CEE-M INRAE

Presenter

Ms LECOLE, Pauline, ,

Abstract

The small farm sector has long been neglected by the Common Agricultural Policy (CAP). Since CAP support is mainly allocated through the first pillar budget on a per-hectare basis, small farms receive little or no direct income support. This situation is compounded by cumbersome administrative procedures which discourage small farmers from claiming the financial support they are entitled to, and by eligibility criteria which exclude part of the small farm sector from the CAP system. The 2014 CAP introduced the Small Farmers

Scheme (SFS) offering small farms the option of an unconditional annual lump-sum payment per farm replacing the standard direct payments of the first pillar. This paper assesses the acceptability in France of a more sophisticated version of the 2014 SFS for the post-2020 CAP. We propose that this extended SFS include easily controllable conditions on environmental efforts and on salaried employment. The results of a discrete choice experiment conducted in France show that the principle of such extended SFS would be attractive to small farmers, especially those specialized in market gardening, and that the vast majority of respondents have a preference for an extended SFS incorporating an environmental condition.

Risk aversion and estimates of the Value of statistical life and mortality risk for air pollution in France

Authors

Dr. Caroline, Orset, ,

Mr. Marco, Monnier, Etudiant,

Presenter

Dr. Caroline, Orset, ,

Abstract

This article presents the results of a contingent valuation survey conducted in France measuring the willingness to pay of individuals (WTP) to reduce the risk of mortality related to air pollution and the accepted level of this risk. It also examines individuals' risk aversion and compares actual and perceived air quality. The results show that WTP to reduce the risk of air pollution is influenced by degrees of health status, air quality and perception of damage, severity, personal exposure, place of residence and income, while risk aversion is affected by smoking behavior, perceived health status, level of effort to reduce air pollution, gender and public exposure. The results show that respondents overestimate their own air quality relative to objective air quality measurements. The median WTP for preventing air pollution is between

Responses to natural disasters

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Do Income and Government Responsiveness Reduce Flood Damages and Fatalities? Evidence from the Indian States (PRESENTER: Joyita Roy Chowdhury ; DISCUSSANT: Simon Touboul)
2. Innovation in adaptation technologies as an answer to extreme climate events: Evidence from patent data. (PRESENTER: Simon Touboul ; DISCUSSANT: Svenja Fluhrer)
3. Sitting in the same boat: Subjective well-being and social comparison after an extreme weather event (PRESENTER: Svenja Fluhrer ; DISCUSSANT: Lennart Vogelsang)
4. Assessing the cost-effectiveness of Nature-Based Solutions under climate change uncertainty and learning: the case of the Westerwoldse Aa River in the Netherlands (PRESENTER: Lennart Vogelsang ; DISCUSSANT: Joyita Roy Chowdhury)

Speakers

Prof. Roy Chowdhury, Joyita, Assistant Professor of Economics, FLAME University
Mr. TOUBOUL, Simon, ,
Ms Fluhrer, Svenja, ,
Mr. Vogelsang, Lennart, ,

Presentations

Do Income and Government Responsiveness Reduce Flood Damages and Fatalities? Evidence from the Indian States

Authors

Prof. Roy Chowdhury, Joyita, Assistant Professor of Economics, FLAME University
Dr. Parida, Yashobanta, Research Fellow (Economics Area), Verghese Kurien Centre of Excellence,
Institute of Rural Management Anand, India
Prof. Saini, Swati, Assistant Professor of Economics, Delhi School of Economics

Presenter

Prof. Roy Chowdhury, Joyita, Assistant Professor of Economics, FLAME University

Abstract

We examine the impact of income and government responsiveness on flood impact measured through flood fatalities, the population affected, and damages due to floods in 19 Indian states over the period 1980-2011. Our result confirms an inverted-U shaped relation between income and fatalities and population affected by floods. In particular, fatalities and population affected by floods increase with a turning point of PCI up to 882 US\$ and 578 US\$, respectively, and diminishes thereafter. Furthermore, a non-linear relationship continues

between income and flood damages. In addition, we find that government responsiveness has an insignificant effect on flood fatalities and flood damages; however, this effect is non-linear. Our result further shows that the higher severity of floods causes greater flood damage and fatalities while state elections significantly lower these impacts. In sum, our results indicate that the current government responsiveness level is not adequate to mitigate flood impact in Indian states.

Innovation in adaptation technologies as an answer to extreme climate events: Evidence from patent data.

Author

Mr. TOUBOUL, Simon, ,

Presenter

Mr. TOUBOUL, Simon, ,

Abstract

Using patent data and original climate indicators at the country level, this study analyses countries

Sitting in the same boat: Subjective well-being and social comparison after an extreme weather event

Authors

Ms Fluhrer, Svenja, ,

Dr. Kraehnert, Kati, postdoc researcher, Potsdam Institute for Climate Impact Research (PIK)

Presenter

Ms Fluhrer, Svenja, ,

Abstract

This paper provides novel evidence on social comparison effects after an extreme weather event occurred by examining the case of Mongolian pastoralists. Our empirical analysis builds on a detailed household panel survey, which we link with climate data and historic livestock census data, aggregated at the district and sub-district levels. We find that both shock-induced damages experienced by a given household as well as average damages experienced by pastoralists in the reference group significantly reduce subjective well-being. Similarly, exposure to extreme weather conditions increases the perceived inequality among pastoralists with assets at risk. We argue that extreme weather events increase sectoral disparities between pastoralists and households not engaged in agriculture. Results are robust to using self-reported damages by households and shock intensity measures calculated from secondary data at an aggregated level.

Assessing the cost-effectiveness of Nature-Based Solutions under climate change uncertainty and learning: the case of the Westerwoldse Aa River in the Netherlands

Authors

Bednar-Friedl, Birgit, , University Graz

Weikard, Hans-Peter, , Wageningen University

Mr. Vogelsang, Lennart, ,

Dr. Van Loon-Steensma, Jantsje, Researcher, Wageningen University and Research

Presenter

Mr. Vogelsang, Lennart, ,

Abstract

The Netherlands have a long standing tradition in flood risk management and are currently switching their management approach from Nature-based Solutions, such as retention areas. However, while nature-based solutions have been found to be a cost-effective approach to address flood risks, it is unclear whether the same holds true when also taking the recently emerging risk of summer drought into consideration. In this article we develop a real-options model in which the decision maker learns about climate change from two types of events: riverine flooding and drought. While probabilities of riverine flooding are comparatively well known, the uncertainty conveyed in the drought information is higher. In each period, the decision maker can either invest into retention areas, dike heightening, or does not invest. But even if (s)he does not invest, costs incur for maintenance of past investments. If an event occurs, the magnitude of the impact depends on which and how much adaptation has been implemented until then. We calibrate our decision model with data from the Westerwoldse Aa, a lowland river in the Dutch Province of Groningen. We find that the cost-effectiveness of Naturebased Solutions in comparison to dike heightening depends not only on the frequency of drought experienced, but also on the time such measures need to mature in order to provide full-fledged flood protection. Our results show the potential of Nature-based Solutions to become a viable alternative to grey climate change adaptation and are expected to help with their proliferation.

Air pollution in Asia

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Effectiveness of Command-and-Control in Mitigating Industrial Pollution: Evidence from Environmental Regulation in India (PRESENTER: Ashish Tyagi ; DISCUSSANT: Wei Qi)
2. Is Air Quality a Predictor of Internet Use? —Estimates from a Chinese Live Streaming Platform (PRESENTER: Wei Qi ; DISCUSSANT: Ruipeng Tan)
3. Environmental enforcement and Firm Environmental Performances in China (PRESENTER: Ruipeng Tan ; DISCUSSANT: Daniel Ostale Valriberas)
4. The economic benefits of international co-operation to improve air quality in Northeast Asia: a focus on Japan, Korea and China (PRESENTER: Daniel Ostale Valriberas ; DISCUSSANT: Ashish Tyagi)

Speakers

Dr. Tyagi, Ashish, ,
Dr. Qi, Wei, ,
Dr. Tan, Ruipeng, ,
Mr. Ostalé Valriberas, Daniel, ,

Presentations

Effectiveness of Command-and-Control in Mitigating Industrial Pollution: Evidence from Environmental Regulation in India

Author

Dr. Tyagi, Ashish, ,

Presenter

Dr. Tyagi, Ashish, ,

Abstract

Environmental quality regulators, especially in developing countries, face significant resource and institutional constraints in the enforcement and implementation of environmental standards. To overcome these constraints, they may at times resort to utilizing a group-performance mechanism combined with the strictest possible penalty, which reduces the monitoring costs and can potentially maximize the effectiveness. This paper investigates one such program from India, the Comprehensive Environmental Pollution Index (CEPI) for mitigation of industrial pollution. This paper analyzes the causal outcomes of the program on air and water quality indicators using a difference in difference setup. Results show that the program was successful in lowering PM10 levels by around 9 percent relative to the pre-CEPI period but failed to bring any improvements in other air pollutants like NO₂, SO₂, and

in water quality. Using the unique nature of the program with staggered action on polluting clusters, this paper finds that frequent interventions by the regulator enhanced the credibility of the penal threat and resulted in improved outcomes for PM10 abatement. To assess the tangible benefits of the program on health outcomes, this paper evaluates trends in child mortality over the course of the program but finds that the improvements in PM10 levels were not sufficient to bring significant reductions in child mortality.

Is Air Quality a Predictor of Internet Use? —Estimates from a Chinese Live Streaming Platform

Authors

Dr. Qi, Wei, ,

Prof. Cao, Jing, Associate Professor, Tsinghua University

Prof. Ho, Mun Sing, , Harvard University

Presenter

Dr. Qi, Wei, ,

Abstract

This study estimates the effect of air pollution on Internet use by using a detailed database of a Chinese live streaming platform. We set up a theoretical model to identify the potential mechanism and adopt two strategies, including the daily and monthly level, based on the structure of our data. Our primary findings are first, there is a positive effect after we use the wind direction as instruments, where a 1% increase in daily AQI leads to 0.39% increase of Internet use and PM2.5 accounts for most of it. This effect is heterogenous cross cities and it is closely correlated with air quality and the structure of industries. Within a week, the maximum and minimum response appears at the end and middle of working days respectively. People do use the Internet in a persistent fashion and the using patterns will be influenced by air pollution, like when to begin and stop. People

Environmental enforcement and Firm Environmental Performances in China

Authors

Dr. Tan, Ruipeng, ,

Prof. Zhang, Bing, Environment Economics, Nanjing University

Presenter

Dr. Tan, Ruipeng, ,

Abstract

This paper draws on a natural experiment generated by Regulations on the Application and Management of Automatic Monitoring Data for Domestic Waste Incineration Power Plants (AMAMD regulation) in China to evaluate the effectiveness of increasing punishment intensity in environmental enforcement. We explore a unique outlet-level Continuous Emissions Monitoring System dataset and employs a differences-in-differences strategy to identify the impact of increasing punishment intensity in decreasing the concentrations of pollutions at outlet level. The results indicate that increasing the punishment in environmental enforcement reduces the concentrations of Total Suspended Particulate (TSP) and SO₂ respectively by 21.4% and 12.3%. To improve the punishment intensity in environmental enforcement so as to ensure the better environmental performance in the future is thus recommended.

The economic benefits of international co-operation to improve air quality in Northeast Asia: a focus on Japan, Korea and China

Authors

Dr. Lanzi, Elisa, , OECD

Mr. Ostalé Valriberas, Daniel, ,

Mr. Botta, Enrico, Economist, OECD

Presenter

Mr. Ostalé Valriberas, Daniel, ,

Abstract

Air pollution is one of the most serious environmental challenges that modern societies face. According to the Global Burden of Disease estimates, ambient air pollution was the cause of nearly 3 billion premature deaths in 2017 at the global level. The North-East Asia region is one of the regions of the world with the highest concentrations of particulate matter and ground-level ozone. This is particularly dangerous as many of the areas are also highly populated, hence affecting a large share of the population. In the coming decades, with economic growth and demographic changes (population growth and ageing) in this region, there is a high danger that air pollution will continue increasing and affect a higher share of the population.

The report quantifies the economic benefits of both single-country and internationally coordinated policy action to improve air quality to 2050 in Japan, Korea, and China, as compared to a baseline scenario that assumes no changes to current policies in place. The main modelling tool used in the analysis is the OECD

The main findings from the analysis show that policy action in the region can substantially decrease the environmental and health impacts of air pollution, especially in China. This also leads to economic benefits in the three countries. Internationally coordinated policy action can lead to additional benefits.

Equity and Discounting

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Rumble in the Jungle? Philosophers and Economists on Social Discounting (PRESENTER: Frikk Nesje ; DISCUSSANT: Martin Hänsel)
2. Carbon Taxation and Horizontal Equity: A welfare-theoretic approach with application to German household data (PRESENTER: Martin Hänsel ; DISCUSSANT: Shiply Verma)
3. Reducing Poverty and Natural Resource Degradation Through Human Capital Accumulation (PRESENTER: Shiply Verma ; DISCUSSANT: Olga Chiappinelli)
4. Optimal Discounts in Green Public Procurement (PRESENTER: Olga Chiappinelli ; DISCUSSANT: Frikk Nesje)

Speakers

Nesje, Frikk, , University of Copenhagen

Dr. Hänsel, Martin, ,

Dr. VERMA, SHILPY, ,

Dr. Chiappinelli, Olga, ,

Presentations

Rumble in the Jungle? Philosophers and Economists on Social Discounting

Authors

Drupp, Moritz, , University Hamburg

Groom, Ben, , London School of Economics

Nesje, Frikk, , University of Copenhagen

Prof. Freeman, Mark, Economist, York Business School

Presenter

Nesje, Frikk, , University of Copenhagen

Abstract

The value to society of long-term public projects, like climate change mitigation and infrastructure construction, is highly sensitive to the social discount rate (SDR).

Governmental guidance on social discounting has predominantly been based on input from expert economists. It is not clear, however, that economists possess any special expertise on the ethical matters of long-term societal decision-making. This study compares expert views on key components of the long-term SDR of economists with those of a disciplinary group of experts who may be deemed most trained on ethical matters: philosophers. The results indicate that both expert bodies provide similar recommendations on these components, as

well as on the SDR itself, with a median SDR recommendation of 2 percent for both subsamples. A preliminary analysis of stated rationales for the recommended SDR shows areas of broad agreement and yet distinct differences in the motivations. While economists provide a number of technical extensions within a consequentialist discounted Utilitarian approach, many experts within both fields underscore the importance of going beyond the workhorse framework by considering alternative ethical approaches that also incorporate non-consequentialist rationales. We see this as evidence of the benefits of a more inclusive approach: areas of agreement are identified, and new insights are discovered by reflecting on differences. In the politicized world of long-term decision-making, such as on climate change, a more inclusive and deliberative approach is now being called for. This paper will provide some first evidence on what can be learned from such approaches when applied to experts.

Carbon Taxation and Horizontal Equity: A welfare-theoretic approach with application to German household data

Authors

Kalkuhl, Matthias, , Mercator Institute

Dr. Hänsel, Martin, ,

Dr. Franks, Max, -, Potsdam Institute for Climate Impact Research and Technical University of Berlin

Presenter

Dr. Hänsel, Martin, ,

Abstract

We develop a model of optimal carbon taxation and redistribution taking into account horizontal equity concerns. Within each income decile, households are heterogeneous in terms of how efficient an exogenous technology allows them to convert carbon-intensive energy into individual well-being. We then investigate how horizontal equity is considered in the economy's welfare maximizing tax structure by deriving first and second-best policy rules. Further, we characterize optimal non-linear carbon taxes, which the government can use when individual households' energy efficiency is not directly observable. Subsequently, we apply our finding to empirical data on energy consumption in Germany to quantify optimal policies.

Reducing Poverty and Natural Resource Degradation Through Human Capital Accumulation

Author

Dr. VERMA, SHILPY, ,

Presenter

Dr. VERMA, SHILPY, ,

Abstract

This study examines the role of human capital accumulation in reducing poverty and natural resource degradation by using data of 26 Indian states for the time period 1993 to 2011. For this purpose, we extend the model developed by Ikefuji and Horii (2014) as our analytical framework. Unlike Ikefuji and Horii (2014) who developed an overlapping generations model (OLG) in the context of local pollution, we have adapted it in the context of renewable natural resources. As the main result of our theoretical analysis, we find that an investment in education will increase consumption, income or reduce poverty and natural resource degradation. Based on empirical estimation, we find that natural resource conservation will

increase poverty. We also find that increase in education of the individual will reduce natural resource degradation and poverty depending on the indicator used to measure it. The primary classes education will reduce natural resource degradation. Whereas higher level of education as measured by sixth to twelfth classes will reduce poverty. In theory school education makes the students aware of environmental concerns, thereby making them aware of the impact their choices likely to have on environment.

Optimal Discounts in Green Public Procurement

Authors

Dr. Chiappinelli, Olga, ,

Dr. Seres, Gyula, Researcher, Humboldt University

Presenter

Dr. Chiappinelli, Olga, ,

Abstract

We consider a Green Public Procurement setting where the procurer provides a bid discount to environmentally friendly technologies to foster their use. We assume that prior to the auction firms may switch to green technology by a publicly observable costly investment. We show that investment acts as a signaling device. It mitigates the effect of incomplete information on cost-efficiency by reducing bid shading, which results in lower prices for the procurer. If no firm is green initially, even a procurer with no preference towards green technology finds it optimal to use a discount. However, the signaling power and the induced competitive effect are weaker if there are green firms initially. Our results challenge the common perception that Green Public Procurement always implies a trade-off between environmental performance and purchasing price.

Climate policies and firm behaviour

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Does Emission Trading Scheme Reduce Carbon Emissions: Firm-level Evidence from the Regional Carbon Market Pilots in China (PRESENTER: Yang Zheng ; DISCUSSANT: Tobias Kruse)
2. The effect of climate policy on innovation and economic performance along the supply chain: a firm- and sector-level analysis (PRESENTER: Tobias Kruse ; DISCUSSANT: Vanessa da Cruz)
3. The Impact of Environmental Policy on Innovation: The Case of California. Empirical Analysis of Regional Climate Policy and Green Patent Filings. (PRESENTER: Vanessa da Cruz ; DISCUSSANT: Sascha Lehmann)
4. Ten years after: Corporate emissions-trading behaviour during the first decade of the EU ETS (PRESENTER: Sascha Lehmann ; DISCUSSANT: Yang Zheng)

Speakers

Mr. Zheng, Yang, ,
Dr. Kruse, Tobias, ,
Ms da Cruz, Vanessa, ,
Mr. Lehmann, Sascha, Professor,

Presentations

Does Emission Trading Scheme Reduce Carbon Emissions: Firm-level Evidence from the Regional Carbon Market Pilots in China

Authors

Dr. Cui, Jingbo, Associate Professor, Division of Social Sciences and Environmental Research Center, Duke Kunshan University, China

Mr. Zheng, Yang, ,

Dr. Wang, Chunhua, Assistant Professor, Antai College of Economics and Management, Shanghai Jiao Tong University

Presenter

Mr. Zheng, Yang, ,

Abstract

Under the Paris Agreement, China has pledged to tackle climate change by resorting to the Emission Trading Scheme (ETS). Whether this climate policy reduces firm-level carbon emissions remains unknown. This paper assembles a unique firm-level dataset during the 2009-2015 period, allowing us to probe into two major ETS phases: the announcement and trading phases. Utilizing the variations in the regional ETS pilots

across years, regions, and sectors, we employ a matched difference-in-differences approach to identify the effects of ETS on firms' carbon emissions. We find that the ETS, in the trading phase of 2013-2015, reduces firms' carbon emissions. The ETS effect is more pronounced under the mass-based allowance allocation rule favored in some regional pilots than the alternative rate-based tradable performance standard. We further investigate the abatement channel. We find no evidence that the regulated firms adjust production, increase the energy share of electricity, and raise the capital intensity. However, regulated firms increase investment substantially. Lastly, our findings suggest that regulated firms do not suffer a loss of productivity.

The effect of climate policy on innovation and economic performance along the supply chain: a firm- and sector-level analysis

Authors

Dr. Kruse, Tobias, ,

Dr. Dechezleprêtre, Antoine, Senior Economist, OECD

Presenter

Dr. Kruse, Tobias, ,

Abstract

The paper estimates the effect of climate policy stringency on innovation and economic performance, both directly on regulated sectors and indirectly through supply chain relationships. The analysis is based on a combination of global firm-level and sector-level data combined with input-output tables and data on embodied CO2 emissions in international trade.

The Impact of Environmental Policy on Innovation: The Case of California. Empirical Analysis of Regional Climate Policy and Green Patent Filings.

Author

Ms da Cruz, Vanessa, ,

Presenter

Ms da Cruz, Vanessa, ,

Abstract

Based on patent data provided by the United States Patent and Trademark Office (USPTO), this paper examines the effect of California's Cap-and-Trade Program on innovation. The analysis exploits the International Patent Classification system developed at the World Intellectual Property Organisation to identify patents relating to environmentally sound technologies which enables the study to focus on the effects of the policy intervention on green patent filings. Applying the synthetic control method, a counterfactual is constructed by the combination of other states in the US.

The study finds that, relative to the synthetic control unit, the number of environmentally-friendly technology related patents granted by the USPTO increased after the passing of the Cap-and-Trade regulation. This result is robust to alternative specifications of the synthetic control method.

Ten years after: Corporate emissions-trading behaviour during the first decade of the EU ETS

Authors

Betz, Regina, , ZHAW School of Management and Law

Schleich, Joachim, , Grenoble Ecole de Management

Dr. Abrel, Jan, Researcher,

Dr. Cludius, johanna, Researcher,

Mr. Lehmann, Sascha, Professor,

Presenter

Mr. Lehmann, Sascha, Professor,

Abstract

This study analyses factors related to allowance-trading behaviour for the first ten years of the European Union Emissions Trading System (EU ETS). Our empirical analysis employs a novel dataset that combines information on trading activities for more than 6000 companies with company characteristics. Indicators of trading activity include the volume and the number of transactions as well as the usage of intermediaries and of derivatives markets. For 2005

Thematic Session: Estimating the welfare impacts of marine litter with stated preferences

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Economic valuation of benefits from the proposed REACH restriction of intentionally added microplastics.
2. Public preferences for marine litter reduction across Europe
3. How could marine litter on touristic beaches be tackled? A British-Irish choice experiment on clean-up actions and prevention policies
4. Assessing Fishermen's Preferences for a "Fishing for Litter" Program in Galicia (NW SPAIN)
5. Have preferences and willingness to pay for marine litter management and other marine ecosystem service benefits remained stable before and during the global Covid-19 shock?

Speakers

Mr. King, Peter, ,

Ms Khedr, Salma, Research Assistant, Kiel University

Dr. Grilli, Gaetano, ,

Loureiro, Maria, , Universidade de Santiago de Compostela

Dr. Hynes, Stephen, Economist,

- Luisetti, Tiziana, Principal Environmental Economist, Centre for Environment Fisheries and Aquaculture Science

Presentations

Economic valuation of benefits from the proposed REACH restriction of intentionally added microplastics.

Authors

Mr. King, Peter, ,

Dr. Hunt, Alistair, Senior Lecturer, University of Bath

Dr. Georgiou, Stavros, Head of CRD Socioeconomics, Health and Safety Executive

Ms Rainsford, Caroline, Head of Scientific and Environmental Services, Cosmetic, Toiletry and Perfumery Association

Mr. Dean, Richard, Senior Specialist, Environment Agency

Presenter

Mr. King, Peter, ,

Abstract

This study elicited the willingness to pay (WTP) for measures to control the release of intentionally added microplastics. Although microplastics accumulate in the marine environment and are practically unrecoverable, there is considerable scientific uncertainty about their environmental and health effects. This study used both a Choice Experiment (CE) and Contingent Valuation (CV) to evaluate where it was more beneficial to target restrictions

at source or emissions. The CE investigated source-control in evaluating how respondents accept a trade-off between the price and performance of cosmetic products when reformulated to reduce the use of microplastics. Two CV tasks then estimated the benefits of research to resolve the uncertainty, and the benefits of upgrading Wastewater Treatment Plants (WWTP) to retain more microplastics. The difference in the annual CV WTP;

Public preferences for marine plastic litter reductions across Europe

Authors

Brouwer, Roy, , University of Waterloo

Rehdanz, Katrin, , Department of Economics, Kiel University

Prof. van Beukering, Pieter, Professor, Institute for environmental studies (IVM), Vrije Universiteit Amsterdam

Ms Khedr, Salma, Research Assistant, Kiel University

Mr. Duijndam, Sem, PhD student,

Ms Dijkstra, Hanna, PhD researcher, Vrije Universiteit Amsterdam

Mr. Okoli, Ikechukwu, Researcher, Kiel University

Presenter

Ms Khedr, Salma, Research Assistant, Kiel University

Abstract

Plastic pollution is one of the most challenging problems affecting the marine environment of our time. Based on a unique dataset covering four European seas and eight European countries, this paper adds to the limited empirical evidence base related to the societal welfare effects of marine litter management. We use a discrete choice experiment to elicit public willingness-to-pay (WTP) for macro and micro plastic removal to achieve Good Environmental Status across European seas as required by the European Marine Strategy Framework Directive. Using a common valuation design and following best-practice guidelines, we draw meaningful comparisons between countries, seas and policy contexts. Public WTP estimates differ significantly across countries and seas. We explain why and discuss the implications for policy and decision-making.

How could marine litter on touristic beaches be tackled? A British-Irish choice experiment on clean-up actions and prevention policies

Authors

Dr. Grilli, Gaetano, ,

- Andrews, Barnaby, Senior Research Associate, Tyndall Centre (University of East Anglia)

Ferrini, Silvia, , University of Siena & CSERGE (University of East Anglia)

- Luisetti, Tiziana, Principal Environmental Economist, Centre for Environment Fisheries and Aquaculture Science

Presenter

Dr. Grilli, Gaetano, ,

Abstract

Marine litter is a global problem impacting the coasts and seas of the whole world. This study examines the preferences and willingness to pay of English and Irish respondents towards beach use and the removal of marine litter. Whilst several European studies have investigated the effects of marine litter on coastal tourism, marine litter was not always the main focus of these investigations and to our knowledge this is the first time these issues have been directly

addressed in a cross-country comparison between England and Ireland. An online survey which included a choice experiment and behavioural questions was used to estimate willingness to pay for beach clean-up programs and plastic related policies. Choice experiment data were analysed through use of mixed multinomial logit and latent class logit models. We found that Irish respondents are generally more inclined to take care of the environment and to pay more for beach clean-up and associated policies such as a ban on single use plastics and deposit return schemes. Our results highlight the loss of recreational benefits due to the presence of marine litter on beaches. Furthermore, marginal willingness to pay estimates derived in this study can be used to inform the design of new policies directed at reducing marine litter on beaches.

ASSESSING FISHERMEN'S PREFERENCES FOR A "FISHING FOR LITTER" PROGRAM IN GALICIA (NW SPAIN)

Author

Loureiro, Maria, , Universidade de Santiago de Compostela

Presenter

Loureiro, Maria, , Universidade de Santiago de Compostela

Abstract

Marine litter seriously damages the marine environment, becoming a threat nowadays for coastal communities. In this paper, we assess the impact of marine litter on Galician coasts by conducting a survey in a sample of representative artisanal fishermen. The main objective of this study is to understand fishermen

Have preferences and willingness to pay for marine litter management and other marine ecosystem service benefits remained stable before and during the global Covid-19 shock?

Authors

Dr. Hynes, Stephen, Economist,
Dr. Ressurreicao, Adriana, Academic, -
Dr. Simpson, Katherine, academic,
Prof. Armstrong, Claire , academic,
Dr. Ankamah-Yeboah, Isaac, academic,
Dr. Xuan, Bui Bich , academic,
Dr. Tinch, Rob, academic,

Presenter

Dr. Hynes, Stephen, Economist,

Abstract

This study tests the stability of environmental preferences and willingness to pay (WTP) values associated with marine litter management and other marine ecosystem service benefits using a discrete choice experiment (DCE) across three countries pre and post the peak of the first wave of the Covid-19 pandemic. The DCE examines the public

Egg-Timer: Resources, Water, Agriculture

24th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The heterogeneous preferences for the ecosystem services and facilities: A case study from Xixi National Wetland Park, China
2. Water quality trading markets for non-point sources – integrating land and marine based measures under a smart market approach.
3. Coastal cod management in Arctic Norway: testing the sensitivity of WTP estimates to choice architecture applications
4. Multiple shocks and threats to food security among households in Sub-Saharan Africa. Evidence from Malawi.
5. Rural Electrification and Agricultural Transformation: Evidence from Ethiopia
6. Optimal Management of Pomegranate Butterfly in Oman in the Presence of Agro-tourism and When Government Bears Treatment Costs
7. The impact of climate change on the economic value of insect-pollination in drylands- consumers' perspective
8. Market incentives for shark fisheries

Speakers

Dr. Yang, Jue, ,
Mr. Filippelli, Raphael, ,
Ms AHI, JULIDE CEREN, ,
Ms McLaughlin, Shannon, ,
Ms Dorinet, Elizavetta, ,
Dr. Al Abri, Ibtisam, ,
Dr. Gallai, Nicola, Senior Lecturer, ENSFEA
Dr. Pincinato, Ruth, -, -

Presentations

The heterogeneous preferences for the ecosystem services and facilities: A case study from Xixi National Wetland Park, China

Author

Dr. Yang, Jue, ,

Presenter

Dr. Yang, Jue, ,

Abstract

This study aims to investigate heterogeneous preferences for ecological services, cultural services/facilities and info-related facilities in an urban wetland park in Hangzhou, China and explore the possible inconsistencies in individuals

Random parameter logit models and the generalized multinomial logit models that allow correlated coefficients were applied to capture the heterogeneity and analyze the factors shaping the preferences. The respondents

Biodiversity improvement is ranked the most important on average, followed by info-related facilities and cultural facilities/services. The confidence interval for the average willingness to pay for each attribute are US\$4.30 to US\$4.74(biodiversity improvement), US\$1.64 to US\$3.35(info-related facilities) and US\$1.83 to US\$2.04(cultural facilities/services) across the best and worst parts. Heterogeneous preferences as well as uncertainty were found in both the best and worst parts. Visitors from other regions show higher willingness to improve both the ecological services and cultural services compare to local visitors, and visitors with higher income levels or with kids under 18 shows various demands for improvement. Based on the preferences, the aggregated compensating surplus for conservation and tourism-balanced management strategy is 13.09~25.25 million USD per year, which may not able to cover the costs. Additionally, using the best-worst scaling method may narrow the estimates of benefits which may help decision makers to better address the trade-off challenges in wetland management in urban area.

These findings add new evidence to the literature that identify park users

Water quality trading markets for non-point sources – integrating land and marine based measures under a smart market approach.

Authors

Prof. Hasler, Berit, Professor,

Prof. Smart, James, Professor,

Dr. Block Hansen, Line, Consultant,

Mr. Filippelli, Raphael, ,

Prof. Termansen, Mette, Professor, University of Copenhagen - Department of Food and Resource Economics

Dr. Hasan, Syezlin, Researcher, Griffith University

Presenter

Mr. Filippelli, Raphael, ,

Abstract

Implementation of Water Quality Trading Markets (WQTM) for non-point agricultural sources has been challenging. Mussel farming has the potential to mitigate diffuse nitrogen losses from agricultural production, and a WQTM between agricultural and mussel farmers could potentially be an efficient mechanism. We simulate a WQTM in a catchment in northern Denmark using a relatively new approach to designing such markets referred to as a smart market for water quality. Expanding on previous work, we integrate mussel farmers as permit sellers and analyse the effect of the market on the cost of meeting water quality improvement targets. In addition, we set-up scenarios of decreasing levels of participation of agricultural farmers (-10%, -20% and -30%). The results show a clear benefit from allowing trading between agricultural and mussel farmers, reducing the overall costs by 28.2%. Lower participation results in reductions in the benefits from trade. However, the relative reduction in costs were lower than the relative reduction in participation, for all scenarios. The study

illustrates the economic and environmental potential of integrating land- and marine-based farmers in a joint policy scheme to reduce nitrogen concentrations in coastal and marine areas.

Coastal cod management in Arctic Norway: testing the sensitivity of WTP estimates to choice architecture applications

Authors

Prof. Kipperberg, Gorm, Associate Professor, University of Stavanger

Ms AHI, JULIDE CEREN, ,

Prof. Aanesen, Margrethe, Professor, SNF

Presenter

Ms AHI, JULIDE CEREN, ,

Abstract

This study employs a three-way split sample discrete choice experiment (DCE) to investigate welfare measures for attributes related to the management of coastal cod stocks in Arctic Norway. In a base DCE design, respondents face three core attributes: (1) coastal cod spawning biomass as an indicator of the sustainability of the cod stocks, (2) stricter regulations on primary coastal cod user groups (commercial fishermen, local recreational anglers, marine fishing tourism industry) and (3) annual household cost. In two experimentally varied DCE designs, respondents receive a fourth attribute that explicitly describes the expansion of the marine fishing tourism industry in the region. In treatment 1, the expansion is represented by the number of coastal cod caught by marine fishing tourists as an indicator of the environmental impact of the industry. In treatment 2, the expansion is represented by the number of new jobs as an indicator of the socio-economic impact of the industry. These two attribute translations are perfectly correlated and serve as instruments for testing a choice architecture framework recently proposed in the management science literature. Several statistically significant differences in estimated welfare effects across DCE versions indicate that, the welfare deriving from specific configurations of user regulations are context dependent, while the welfare associated with sustainable management of the coastal cod stocks is robust. Furthermore, application of auxiliary analyses on probability of choosing status-quo and conditional WTP estimates demonstrate that choice architecture treatments lead to systematic differences in preferences and welfare, suggesting that these treatments may influence subsequent policy analysis.

Key words: stated preferences, discrete choice experiment, choice context, attribute selection, marine ecosystem service valuation.

JEL codes: Q22, Q51, Q57, C25.

Multiple shocks and threats to food security among households in Sub-Saharan Africa. Evidence from Malawi.

Authors

Ms McLaughlin, Shannon, ,

Dr. Bozzola, Martina, Lecturer, Queen's University Belfast

Dr. Nugent, Anne, Senior Lecturer, Queen's University Belfast

Presenter

Ms McLaughlin, Shannon, ,

Abstract

Households in Sub-Saharan Africa (SSA) face multiple threats that undermine economic development and food security. In this article, we use a comprehensive panel dataset of 1,889 Malawian households for the years 2010-2017 to study the causal effects of multiple and diverse shocks on household food security. Among other shocks that negatively affect household income, we capture the effects of a changing climate. A panel data fixed effect model has been used to assess the effect of shocks throughout time on food security outcomes, controlling for household characteristics, such as gender, total income, crop income and rurality. Food security has been evaluated using multiple measures; per capita calorie consumption, the food consumption score (FCS) and food expenditures per capita. By determining the impact on food security using a range of indicators, we attempt to build more precise metrics of food security, than those used in previous economic studies.

We observe shocks influence household food security, but this effect is dependent on the type of shock and household characteristics. Certain household types, i.e., wealthier households, those owning large livestock, borrowing on credit enable households to foster greater resilience to shocks. Conversely, households involved in agricultural activities and female headed households have greatest vulnerability to certain shocks.

Rural Electrification and Agricultural Transformation: Evidence from Ethiopia

Author

Ms Dorinet, Elizavetta, ,

Presenter

Ms Dorinet, Elizavetta, ,

Abstract

To what extent is access to electricity necessary for agricultural development and through which mechanism in rural areas? Using a GIS dataset with census data of rural households in Ethiopia and energy infrastructure location, I investigate the causal effect of electrification expansion on agricultural labor productivity. Preliminary results support evidence of a positive impact: villages that get electrified do experience an increase in their agricultural labor productivity. I also investigate the mechanisms through which electricity access affects agriculture, focusing on the irrigation channel. While the literature has shown evidence of the positive link between electrification and irrigation in Asia, we lack evidence for Africa. I find that electrified villages are more likely to benefit from an irrigation system in Ethiopia, but that the quality of electrification might be important. This paper has policy relevant implications. It investigates the synergies between the development of energy infrastructure and irrigation policies in order to accelerate agricultural transformation.

Optimal Management of Pomegranate Butterfly in Oman in the Presence of Agro-tourism and When Government Bears Treatment Costs

Author

Dr. Al Abri, Ibtisam, ,

Presenter

Dr. Al Abri, Ibtisam, ,

Abstract

The pomegranate tree is one of the most important crops in Oman given the exceptional quality of Omani pomegranates and the continuous high demand. Omani pomegranate, which dominantly grows in Al-Jabal Al-Akhdhar, is facing threats from pests that are seriously affecting pomegranate production as well as the livelihood of hundreds of farmers who are dependent on its cultivation. The government of Oman has made great efforts to both improve the productivity of this crop and mitigate the risks associated with cultivating it. In order to manage the pest spread and to mitigate its financial and economic losses, the government has been managing the pest with an integrated pest management (IPM) program to suppress the pest populations. The first objective of this study is to develop a stochastic dynamic bioeconomic model to obtain the optimal pest control strategy for pomegranate butterfly and optimal replanting age of pomegranate trees after the first pest infestation. The second objective is to investigate different scenarios of pest status and agro-tourism value. This study is the first attempt that considers the benefits of agro-tourism in the management of agricultural pests. It is also the first study that drives a stochastic dynamic bioeconomic model to analyze a resource in the Arabian countries. The study aims to inform policymakers of the best strategy to maximize socioeconomic welfare. Considering the literature on this context, the study is a unique case where the government undertakes pest control on behalf of pomegranate growers.

Results of this study indicate that it is optimal to increasingly invest in pest management to mitigate the risk of pest, thus the pomegranate fruit damages. However, scenario analysis shows that the current pest management actions by the government are not sufficient to maximize the net benefit from pomegranate cultivation. In addition, the agro-tourism benefits associated with pomegranate trees in Al-Jabal Al-Akhdher is found to have a considerable positive influence in the economic and social value of pomegranate cultivations. These findings imply that government could introduce more effective educational programs to ensure that all pomegranate growers are fully aware of pest-resultant damages in order to align socially and privately optimal decisions, thus minimizing externality costs. The government, biocontrol agents

The impact of climate change on the economic value of insect-pollination in drylands-consumers' perspective

Authors

Ms. Anougmar, Soukaina, , CEE-M

Dr. Christmann, Stefanie, ,

Dr. Salles, Jean-Michel, Research Manager, CNRS

Dr. Gallai, Nicola, Senior Lecturer, ENSFEA

Presenter

Dr. Gallai, Nicola, Senior Lecturer, ENSFEA

Abstract

Pollinating insects are essential ecological agents for natural ecosystems and are vital for food security. It is well established that these species are facing severe declines worldwide. Dependency on insect-pollination is particularly high in dry low and middle income countries, hence, they are more vulnerable to pollinator decline. In these countries, the increase in the level of aridity, due to climate change, is one of the main potential drivers of this decline. Mitigation strategies for the conservation of these species require behavioral

changes. In this study, we target consumer behavior, often neglected in the course of pollution protection despite being of great importance. Consumers

Market incentives for shark fisheries

Authors

Dr. Pincinato, Ruth, -, -

Prof. Anderson, James, Professor, University of Florida

Prof. Gasalla, Maria A., Professor, University of São Paulo

Dr. Garlock, Taryn, Researcher, University of Florida

Presenter

Dr. Pincinato, Ruth, -, -

Abstract

Fishers tend to prioritize landings of the most valuable product in order to better utilize their limited vessel capacity. This may lead to discards of catches that are economically undesirable or legally prohibited. The high-value of shark fins and the low-value of shark carcasses has traditionally led to an example of that practice, known as finning. Brazil is an important player in the trade for non-fin shark commodities. In particular, the recent increase in the shark meat trade is associated with increased imports of shark meat in

Brazil. This increase may be a consequence of stricter shark finning regulations that has created incentives for full utilization of sharks and exposed the resource to a new source of demand. If that is the case, the vulnerability of sharks to overexploitation may increase, or at least be maintained, even if demand for their fins weakens in the long term. This paper investigates the shark meat market development in Brazil over the last decades using demand and cointegration analysis, with a focus on before and after finning restrictions in 1998, and the increasing importance of imports as a supply source. Results suggest that shark meat in Brazil is not a new market, but that poorly managed domestic fisheries and the increasing seafood demand have facilitated imports. In addition, domestic prices influence imports, most likely because Brazil is an important player as a shark meat consumer. Thus, even with the global shark fin market weakening, the Brazilian demand for shark meat is likely to contribute to the overexploitation of sharks in poorly managed fisheries.

Policy Session: Economics for integrated policy: Climate change, air quality and human health

24th June 2021, 10:00 AM - 12:00 PM

Description

Climate change mitigation and air quality are two policy challenges that are closely intertwined because they share common underlying drivers. While shifting away from fossil fuels may give rise to synergies between air quality and climate mitigation, other technology options may require a careful balancing of trade-offs. The COVID-19 pandemic has put the spotlight on human health considerations – how can the Green Deal move the EU towards climate neutrality and maximize health improvements from better air quality at the same time?

This policy session brings together researchers and policymakers to discuss how policy design can ensure that synergies and trade-offs are appropriately accounted for in choices on emission abatement strategies. Does the current mix of quantity and price instruments provide the right incentives to households, firms and other decision makers? How can the EU reach climate neutrality and meet the air pollution limits recommended by the World Health Organization in an efficient and timely manner? This session explores how economics can better support air and climate policy design and aims to strengthen the science-policy interaction in this field.

Organizer:

Toon Vandyck

Panelists:

Thomas Stoerk

Elisa Lanzi

Ottmar Edenhofer

Jessica Coria

Speakers

Dr. Vandyck, Toon, , European Commission, Joint Research Centre

Dr. Stoerk, Thomas, -, European Commission, DG Climate Action

Dr. Lanzi, Elisa, , OECD

Prof. Edenhofer, Ottmar , Director , PIK, MCC

Dr. Coria, Jessica , Senior Lecturer, University of Gothenburg

Presentation

Policy Session: Economic modelling to support adaptation to climate change— case studies from Asia

24th June 2021, 10:00 AM - 12:00 PM

Description

The discussion will focus on the importance of:

- Consistency. Having a consistent framework helps to better understand effects from climate change and climate change adaptation.
- Data base: science-based policy making increases transparency in the discussion process.
- Illustration: Quantitative results support the communication process of decision making.

The practitioners will give examples from the respective Country background. The panel discussion will be facilitated by Mirka Bodenbender, GIZ (tbc)

Organizers:

Markus Flaute and Ulrike Lehr

Participants:

Sebastian Homm

Annett Großmann

Frank Hohmann

Katja Heinisch

Vakhtang Tsintsadze

Aydin Bakdolotov

Tran Binh Minh

Speakers

Dr. Flaute, Markus, Researcher, GWS

Dr. Homm, Sebastian, Advisor , GIZ

Prof. Großmann, Annett, Professor , Heilbronn University of Applied Sciences

Mr. Hohmann, Frank, Consultant, GWS

Dr. Heinisch, Katja, Head of the Research Group - Econometric Tools for Macroeconomic Forecasting and Simulation, Halle Institute for Economic Research

Mr. Tsintsadze , Vakhtang , -, Ministry of Economy and Sustainable Development of Georgia

Bakdolotov, Aydin , -, JSC

Ms. Tran, Binh Minh, -, Central Institute for Economic Management, Ministry of Planning and Investment, Vietnam

Presentation

Biodiversity I

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Valuation of Nature-based Tourism using Contingent Valuation Survey: Evidence from South Africa (PRESENTER: Herbert Ntuli ; DISCUSSANT: Soukaina Anougmar)
2. Impact of climate change on the value of insect-pollination in dry climates- farmers' perspective (PRESENTER: Soukaina Anougmar ; DISCUSSANT: Tristan Amiri)
3. The impact of water protection measures in the Vittel impluvium on recreational values: A choice experiment with local residents (PRESENTER: Tristan Amiri ; DISCUSSANT: Elisabeth Gsottbauer)
4. What makes PES fair (PRESENTER: Elisabeth Gsottbauer ; DISCUSSANT: Herbert Ntuli)

Speakers

Dr. Ntuli, Herbert, Research, Environmental Policy Research Unit, University of Cape Town
Ms. Anougmar, Soukaina, , CEE-M
Mr. Amiri, Tristan, ,
Dr. Gsottbauer, Elisabeth, ,

Presentations

Valuation of Nature-based Tourism using Contingent Valuation Survey: Evidence from South Africa

Authors

Muchapondwa, Edwin, , University of Cape Town (UCT) - EPRU
Mr. Mukanjari, Samson, ,
Dr. Ntuli, Herbert, Research, Environmental Policy Research Unit, University of Cape Town

Presenter

Dr. Ntuli, Herbert, Research, Environmental Policy Research Unit, University of Cape Town

Abstract

Despite having the potential to generate more revenue, national parks in developing countries are largely reliant on fiscal transfers to fund conservation activities. The increasing pressure for governments to focus on other national objectives has led to declining fiscal transfers for conservation. It is therefore crucial that there should be accurate estimates of the value of national parks to help policymakers address issues of conservation management, sustainable development, and public financial support. This paper assesses the potential for the Kruger National Park to generate additional revenue in order to finance park operations, by estimating international tourists

Impact of climate change on the value of insect-pollination in drylands: farmers' perspective

Authors

Ms. Anougmar, Soukaina, , CEE-M

Dr. Christmann, Stefanie, ,

Dr. Salles, Jean-Michel, Research Manager, CNRS

Dr. Gallai, Nicola, Senior Lecturer, ENSFEA

Presenter

Ms. Anougmar, Soukaina, , CEE-M

Abstract

Pollinating insects are facing worrying declines in many parts of the world. Farmers in drylands in low and middle income countries, which cannot afford rewarding schemes for pollinator protection, are particularly vulnerable to pollinator decline because of the growing dependency on insect-pollination. The increase in the levels of aridity, as a result of climate change, and agricultural intensification are two main factors endangering pollinators in dry areas. Therefore, actions for the protection of pollinators depend on farmers

The impact of water protection measures in the Vittel impluvium on recreational values: A choice experiment with local residents

Authors

Dr. Montagne-Huck, Claire, Ingénieur d'étude INRAE,

Dr. Abildtrup, Jens, Researcher, INRAE

Dr. GARCIA, SERGE, Senior researcher, Deputy director, INRAE

Mr. Amiri, Tristan, ,

Presenter

Mr. Amiri, Tristan, ,

Abstract

Water quality, as a public good, is a matter of concern for environmental economics. Indeed, negative externalities, like agricultural pollution, can alter such quality. In that case, pro-environmental farming practices are needed to restore it. Because of the multifunctional character of agriculture, actions undertaken for the protection of source water catchment areas by mineral water companies may produce positive externalities. We make the hypothesis that, by implementing environmental friendly measures, mineral waters not only create value for water companies and its consumers, but for the territory and the local population as well, in particular through the environmental and social services (e.g., habitats, landscape, and recreation) jointly produced with the protection of water quality. For instance, these decisions can (positively) affect the recreational potential of the area, and ultimately, contribute to the local population welfare. That is why this paper aims at assessing the environmental and social preferences of the local population of Vittel (France) and surroundings, the area where Nestl

What makes PES fair

Authors

Prof. Engel, Stefanie, Economist, Osnabruck University

Dr. Gsottbauer, Elisabeth, ,

Dr. Koukou, Abel Gautier, Researcher, University of Osnabrueck

Presenter

Dr. Gsottbauer, Elisabeth, ,

Abstract

Payments for ecosystem services (PES) have become a popular approach for biodiversity conservation. PES policy discussions have largely focused on their effectiveness at achieving environmental objectives at lowest cost, while some have even highlighted that this potentially requires trading-off environmental for social outcomes. We focus on the social dimension, notably on fairness and its important role in the effectiveness of such a policy instrument by conducting lab-in-the-field experiments measuring fairness ideals and individual-level fairness preferences of a sample of farmers in Benin and also compare their preferences with a sample of generic university students. We further associate the heterogeneity in fairness preferences and ideals to PES schemes using different design elements including auctions and fixed-price schemes. We provide clean evidence from laboratory and lab-in-the-field experiments that how we design PES play an important role in shaping perceptions of fairness.

Fisheries and complexity

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Too Far to Profit: Fishing Effort's Spatial Distribution in Lake Victoria's Nile Perch Fishery (PRESENTER: Santiago Gomez Cardona ; DISCUSSANT: Frank Jensen)
2. Joint Management of Populations of Marine Mammals and Fish Species: The Case of Grey Seals in the Baltic Sea. (PRESENTER: Frank Jensen ; DISCUSSANT: Tenaw Gedefaw Abate)
3. Does Output Restriction Improve Environmental Outcomes? Evidence from A Spatial Group Regulation in Norwegian Aquaculture (PRESENTER: Tenaw Gedefaw Abate ; DISCUSSANT: Benjamin Blanz)
4. The Value of Noise (PRESENTER: Benjamin Blanz ; DISCUSSANT: Santiago Gomez Cardona)

Speakers

Dr. Gomez, Santiago, ,
Prof. Jensen, Frank, ,
Dr. Abate, Tenaw G. , ,
Mr. Blanz, Benjamin, PhD Candidate, University of Hamburg

Presentations

Too Far to Profit: Fishing Effort's Spatial Distribution in Lake Victoria's Nile Perch Fishery

Author

Dr. Gomez, Santiago, ,

Presenter

Dr. Gomez, Santiago, ,

Abstract

Lake Victoria, the second-largest freshwater Lake by surface area in the world, houses an artisanal Nile Perch Fishery that directly involves around two hundred thousand people. There is much discussion about the real state of Fishery, with views that state a fishery on the brink of collapse, recently giving space to views stating a fishery that does not seem to be close to collapse. This paper explores an understudied aspect of the Fishery, i.e., the spatial distribution of effort that relates to this discussion. Due to Lake Victoria's shape and extension, some areas are up to 70 km away from the nearest land. While the whole Lake surface is potentially available to fishing activities, the fishing vessels' operational and technical characteristics, in conjunction with fuel costs, create stark differences in the access costs between areas close to the shore and those farther away. This creates an imbalance between the fish stock distribution and the fishing fleet's ability to access and profit from it. Evidence indicates that most fishing effort is done very close to the shore (less than 10 km away). This paper explores the hypothesis that far-from-the-shore fishing areas receive little

fishing pressure, potentially limiting the impact of open access in a context with low regulation enforcement capabilities. A spatial model of fishing effort is used to understand the dynamics involved in fishing activities, the weight that spatial dynamics have on the exploitation of the resource, and consequently the extent to which spatial considerations must be taken into account in the Fishery management.

Joint Management of Populations of Marine Mammals and Fish Species: The Case of Grey Seals in the Baltic Sea.

Authors

Prof. Jensen, Frank, ,
Dr. Blomquist, Johan, Assistant professor, University of Lund
Dr. Waldo, Staffan, Associate professor, University of Lund
Prof. Flaaten, Ola, Professor, University of Tromsø
Dr. Holma, Maija, Assistant professor, University of Helsinki

Presenter

Prof. Jensen, Frank, ,

Abstract

In this paper, we present a steady-state equilibrium predator-prey model for joint management of grey seals and fish species (cod and herring) where a broad set of benefits and costs associated with seals is taken into account. The model is used to investigate a number of practical policy scenarios

Does Output Restriction Improve Environmental Outcomes? Evidence from A Spatial Group Regulation in Norwegian Aquaculture

Authors

Dr. Abate, Tenaw G. , ,
Dr. Belay, Dagim G., Postdoc, University of Copenhagen
Prof. Tveterås, Ragnar, Professor, University of Stavanger

Presenter

Dr. Abate, Tenaw G. , ,

Abstract

In 2017, the government of Norway introduced a new regulation, The Traffic Light System (TLS), that divides the Norwegian coast into 13 aquaculture production zones and labels them

The Value of Noise

Authors

Held, Hermann, , University Hamburg
Mr. Blanz, Benjamin, PhD Candidate, University of Hamburg

Presenter

Mr. Blanz, Benjamin, PhD Candidate, University of Hamburg

Abstract

We demonstrate that management of a natural resource characterized by a bifurcation can benefit from noise-based early-warning methodologies even for relatively short time series of only a few decades. Specifically, we demonstrate how meaningful early warning information

can be extracted from the noise component of very short time series by using the AR(1) likelihood function, in the context of a calibrated bio-economic model. We further show how the extracted information can be combined with an existing prior belief of the distributions of ecosystem parameters in order to improve management outcomes. The expected escape time of the system from the interior steady state is used to translate from the modelling realm into policy parameters. Thereby we are able to specify a quota setting rule which relies only on this intuitive measure. We measure the value of incorporating the information contained in the noise component of the time series by the increase in harvesting it allows, while maintaining the precaution prescribed by the policy parameters. To the best of our knowledge, this paper is the first to successfully extract early warning signals from such short time series and demonstrate their added value for the management of a natural resource.

Forests I

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Climate and energy policies and forest bioeconomy (PRESENTER: Jenni Miettinen ; DISCUSSANT: Olli Tahvonen)
2. Reinforcement learning in optimizing forest management (PRESENTER: Olli Tahvonen ; DISCUSSANT: Cees Withagen)
3. Road Networks and Tropical Deforestation (PRESENTER: Cees Withagen ; DISCUSSANT: Andrea Pacheco)
4. Land tenure regimes determine tropical deforestation rates across socio-environmental contexts (PRESENTER: Andrea Pacheco ; DISCUSSANT: Jenni Miettinen)

Speakers

Dr. Miettinen, Jenni, ,

Tahvonen, Olli, , University of Helsinki

Prof. Withagen, Cees, Professor of Economics, Vrije Universiteit Amsterdam

Ms Pacheco, Andrea, ,

Presentations

Climate and energy policies and forest bioeconomy

Authors

Ollikainen, Markku, , University of Helsinki

Dr. Miettinen, Jenni, ,

Presenter

Dr. Miettinen, Jenni, ,

Abstract

Forest bioeconomy is expected to find solutions to mitigate global climate change via material substitution and cascading use of wood. Its evolution depends, however, on the designs of climate policies and how they balance, for instance, allocation of wood between cascading use and renewable energy production. We examine how climate and energy policy instruments impact forest bioeconomy in terms of use of wood, production of renewable energy and cascading use on wood in biochemical production. We compare two policy regimes, EU

Reinforcement learning in optimizing forest management

Authors

Tahvonen, Olli, , University of Helsinki

- Malo, Pekka, -, -
- Suominen, Antti, -, -
- Back, Philipp, -, -
- Viitassari, Lauri, -, -

Presenter

Tahvonen, Olli, , University of Helsinki

Abstract

We solve a stochastic high-dimensional optimal harvesting problem by reinforcement learning algorithms developed for agents who learn an optimal policy in a sequential decision process through repeated experience. This approach produces optimal solutions without discretization of state and control variables. Our stand-level model includes mixed species, tree size structure, optimal harvest timing, choice between rotation and continuous cover forestry, stochasticity in stand growth, and stochasticity in the occurrence of natural disasters. The optimal solution or policy maps the system state to the set of actions, i.e. clear-cut/thinning/no harvest decisions and the intensity of thinning over tree species and size classes. The algorithm repeats the solutions for deterministic problems computed earlier with time-consuming methods. Optimal policy describes harvesting choices from any initial state and reveals how the initial thinning vs. clear-cut choice depends on the economic and ecological factors. Stochasticity in stand growth increases the diversity of species composition. Despite the high variability in natural regeneration, the optimal policy closely satisfies the certainty equivalence principle. The effect of natural disasters is similar to an increase in the interest rate, but in contrast to earlier results, this tends to change the management regime from rotation forestry to continuous cover management.

Road Networks and Tropical Deforestation

Authors

van der Meijden, Gerard, , Vrije Universiteit Amsterdam

Dr. Bogmans, Christian, ,

Prof. Withagen, Cees, Professor of Economics, Vrije Universiteit Amsterdam

Presenter

Prof. Withagen, Cees, Professor of Economics, Vrije Universiteit Amsterdam

Abstract

Roads provide economic benefits, but they are also a proximate driver of tropical deforestation, which comes with serious repercussions for global warming, biodiversity, and wildlife populations. This paper formulates a dynamic and spatial economic model of road construction and deforestation. We use our framework to examine the positive and negative externalities associated with road construction in tropical rain forests and show how these externalities evolve over time, depending on the size of the existing road network and the remaining forest reserves. We find that governments may have an incentive to subsidize road construction early on in the development process, but to tax it at a later stage. In the absence of price instruments, the government discourages road construction to commit to conservation.

Land tenure regimes determine tropical deforestation rates across socio-environmental contexts

Authors

Ms Pacheco, Andrea, ,

Dr. Meyer, Carsten, Junior Research Group Leader, iDiv (German Centre for Integrative Biodiversity Research)

Presenter

Ms Pacheco, Andrea, ,

Abstract

Many tropical forestlands are experiencing changes in land-tenure regimes, but how these changes may affect deforestation remains theoretically and empirically ambiguous. Using Brazil

Spatial analysis

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Optimal Stock-Enhancement of a Spatially Distributed Renewable Resource (PRESENTER: Thorsten Upmann ; DISCUSSANT: Giorgio Fabbri)
2. A DYNAMIC THEORY OF SPATIAL EXTERNALITIES (PRESENTER: Giorgio Fabbri ; DISCUSSANT: Charlotte Geiger)
3. Managing the spatial externalities of RES Deployment: Uniform vs. Differentiated Regulation (PRESENTER: Charlotte Geiger ; DISCUSSANT: Martin Jegard)
4. The optimal distribution of polluting activities across space (PRESENTER: Martin Jegard ; DISCUSSANT: Thorsten Upmann)

Speakers

Dr. Upmann, Thorsten, ,
Mr. Fabbri, Giorgio, ,
Ms Geiger, Charlotte, ,
Mr. Jégard, Martin, ,

Presentations

Optimal Stock-Enhancement of a Spatially Distributed Renewable Resource

Authors

Dr. Upmann, Thorsten, ,
Prof. Uecker, Hannes, Professor, University of Oldenburg
Ms Hammann, Liv, Researcher, University of Oldenburg
Prof. Blasius, Bernd, Professor, University of Oldenburg

Presenter

Dr. Upmann, Thorsten, ,

Abstract

We study the economic management of a renewable resource, the stock of which is spatially distributed and moves over a discrete or continuous spatial domain. In contrast to standard harvesting models where the agent can control the take-out from the stock, we consider the case of optimal stock enhancement. In other words, we model an agent who is, either because of ecological concerns or because of economic incentives, interested in the conservation and enhancement of the abundance of the resource, and who may foster its growth by some costly stock--enhancement activity (eg, cultivation, breeding, fertilizing, or nourishment). By investigating the optimal control problem with infinite time horizon in both spatially discrete and spatially continuous (1D and 2D) domains, we show that the

optimal stock--enhancement policy may feature spatially heterogeneous (or patterned) steady states. We numerically compute the global bifurcation structure and optimal time-dependent paths to govern the system from some initial state to a patterned optimal steady state. Our findings extend the previous results on patterned optimal control to a class of ecological systems with important ecological applications, such as the optimal design of restoration areas.

A DYNAMIC THEORY OF SPATIAL EXTERNALITIES

Authors

Boucekkine, Rauf, , CORE Louvain

Mr. Fabbri, Giorgio, ,

Prof. Gozzi, Fausto, professor,

Prof. Federico, Salvatore, professor,

Presenter

Mr. Fabbri, Giorgio, ,

Abstract

This work targets the class of spatiotemporal problems with free-riding under natural (pollution, epidemics...etc) diffusion and spatial externalities. Such a class brings to study a family of differential games in continuous time and space. In the fundamental pollution free-riding problem we develop a strategy to solve completely the associated game contributing to the associated debate on environmental federalism. We depart from the preexisting literature in several respects. First, instead of assuming ad hoc pollution diffusion schemes across space, we consider a realistic spatiotemporal law of motion for pollution (diffusion and advection). Second, we tackle spatiotemporal non-cooperative (and cooperative) differential games instead of static games in the related literature. Precisely, we consider a circle partitioned into several states where a local authority decides autonomously about its investment, production and depollution strategies overtime knowing that investment/production generates pollution, and pollution is transboundary. The time horizon is infinite. Third, we allow for a rich set of geographic heterogeneities across states while the literature assumes identical states. We solve analytically the induced non-cooperative differential game under decentralization and fully characterize the resulting long-term spatial distributions. In particular, we prove that there exist a unique Perfect Markov Equilibrium. We further provide with full exploration of the free riding problem, reflected in the so-called border effects. Finally, we explore how geographic discrepancies (the most elementary being the asymmetry of players) affect the shape of the border effects. We check in particular that our model is consistent with the set of stylized facts put forward by the related empirical literature.

Managing the spatial externalities of RES Deployment: Uniform vs. Differentiated Regulation

Authors

Ms Geiger, Charlotte, ,

Prof. Lehmann, Paul, junior professor,

Presenter

Ms Geiger, Charlotte, ,

Abstract

With the expansion of renewable energy sources (RES) in countries all over the world, policy design to attend to the negative impacts of RES plants on their local and regional environment gains in importance. These externalities display both spatial heterogeneity and interregional cumulative effects. We analyse whether policy design should be spatially-differentiated or uniform if these two spatial externality characteristics are observed. In a theoretical model of the RES electricity generation sector, we compare the welfare differential between both regulatory designs and analyse how it is altered by cumulative environmental effects. We confirm that the welfare cost of attaining a RES deployment target are lower under a spatially-differentiated than a spatially-uniform regulation. However, we find that considering cumulative environmental effects alters the welfare costs of a uniform regulation. This depends on the heterogeneity of region-specific generation cost and social cost parameters of RES electricity generation. If heterogeneity is more (less) pronounced in regional generation cost parameters than in regional social cost parameters, positive (negative) cumulative effects decrease the welfare costs of a uniform instrument.

The optimal distribution of polluting activities across space

Author

Mr. Jégard, Martin, ,

Presenter

Mr. Jégard, Martin, ,

Abstract

How should we distribute polluting activities that generate local externalities across space? On the one hand, we should probably avoid high concentrations of pollution in some areas due to their detrimental effects on health and productivity (because of non-linearities in the dose-response function). On the other hand, manufacturing activities benefit from agglomeration effects, which implies that firms locating in large agglomerations will be more productive and presumably less emission intensive than firms locating in smaller cities. There is thus a trade-off between dispersion and agglomeration forces in the optimal distribution of polluting activities. In this paper, we build a multi-sector spatial general equilibrium framework featuring endogenous pollution from manufacturing industries located in different cities within a country, and we allow people to move and goods to be traded across cities. Using a calibration on French city- and firm-level data, we compare the observed distribution of local environmental regulations across cities with an optimal distribution chosen by a central planner that internalizes the environmental externalities, the agglomeration effects, and the free mobility constraint.

Water markets I

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Managed Aquifer Recharge as a Strategy to Mitigate Drought Impacts in Irrigated Agriculture: Role of Institutions and Policies with Application to California (PRESENTER: Ami Reznik ; DISCUSSANT: Max Tesselaar)
2. Charity Hazard and the Flood Insurance Protection Gap: an EU Scale Assessment under Climate Change. (PRESENTER: Max Tesselaar ; DISCUSSANT: Iddo Kan)
3. Centralized Water Management under Lobbying: Economic Analysis of Desalination in Israel (PRESENTER: Iddo Kan ; DISCUSSANT: Markus Siehlow)
4. Modeling Social-Optimal Two Part Tariffs in Water Supply Systems Under the Consideration of Inequity Aversion (PRESENTER: Markus Siehlow ; DISCUSSANT: Ami Reznik)

Speakers

Dr. Reznik, Ami, Environmental and Resource Economics,
Mr. Tesselaar, Max, ,
Prof. Kan, Iddo, ,
Mr. Siehlow, Markus, Researcher, TU Berlin

Presentations

Managed Aquifer Recharge as a Strategy to Mitigate Drought Impacts in Irrigated Agriculture: Role of Institutions and Policies with Application to California

Authors

Dinar, Ariel, , University of California, Riverside
Prof. Kan, Iddo, ,
Dr. Reznik, Ami, Environmental and Resource Economics,
Ms Forni, Laura, Senior Scientist, Stockholm Environment Institute
Ms Bresney, Susie, Scientist, Stockholm Environment Institute
Dr. Joyce, Brian, Senior Scientist, Stockholm Environment Institute
Dr. Wallander, Steven, Economist, Economic Research Service U.S. DEPARTMENT OF AGRICULTURE
Dr. Bigelow, Daniel, Assistant Professor, Montana State University

Presenter

Dr. Reznik, Ami, Environmental and Resource Economics,

Abstract

Managed Aquifer Recharge (MAR) is a set of practices that allow the recharge of water of various types and qualities into a given aquifer. MAR has been practiced in locations that

face water scarcity, and is considered a potential strategy to mitigate recurring drought effects in California. Using a dynamic optimization economic model coupled with a hydrologic model applied to the Kings Groundwater Basin in California

Charity Hazard and the Flood Insurance Protection Gap: an EU Scale Assessment under Climate Change.

Authors

Prof. Botzen, Wouter, Full professor, Institute for Environmental Studies, Vrije Universiteit Amsterdam
Mr. Tesselaar, Max, ,

Dr. Robinson, Peter, Postdoctoral researcher, Institute for Environmental Studies (IVM), Vrije Universiteit Amsterdam

Prof. Aerts, Jeroen, Full Professor, Institute for Environmental Studies (IVM), Vrije Universiteit Amsterdam

Presenter

Mr. Tesselaar, Max, ,

Abstract

The flood insurance protection gap, the level of uninsured flood risk, is a problem faced by many European countries and is expected to increase due to climate change. In some countries a cause of low demand for flood insurance is the crowding out of private insurance uptake due to the anticipation of government compensation for uninsured damage, a phenomenon known as charity hazard. This study applies the

Centralized Water Management under Lobbying: Economic Analysis of Desalination in Israel

Authors

Prof. Kan, Iddo, ,

Prof. Finkelshtain, Israel, Agricultural and Environmental Economics,

Dr. Bar-Nahum, Ziv, Agricultural Economics,

Dr. Reznik, Ami, Environmental and Resource Economics,

Presenter

Prof. Kan, Iddo, ,

Abstract

This paper studies the impact of lobbying on policies in a centrally managed water economy. First, we develop an optimal control model where long-run water-management policies are an outcome of negotiation between policymakers and a politically organized farming sector. We show that under equilibrium conditions in the political game, larger political power of the farming lobby leads to faster exhaustion of naturally replenished water resources, accelerating investments in water-supply backstop technologies such as desalination. Then, we employ a detailed hydro-economic model of Israel's water economy to assess the validity of claims in the literature that lobbying by the local agricultural sector has contributed to the depletion of the country's natural freshwater resources, thereby expediting the development of seawater desalination. We compare observed trajectories of water-management policies in the years 2000

Modeling Social-Optimal Two Part Tariffs in Water Supply Systems Under the Consideration of Inequity Aversion

Author

Mr. Siehlow, Markus, Researcher, TU Berlin

Presenter

Mr. Siehlow, Markus, Researcher, TU Berlin

Abstract

In this paper, one model is presented for designing a two part tariff system which meets the water policy goals (financial sustainability, economic efficiency, ecological sustainability). To address social concerns and equality aspects, inequity aversion is also implemented in this model. The modeling are based on Stone-Geary demand functions which are approximated by a multitude of affine functions.

The model is applied to the water supply network of Navato in California. Compared to the current two-part tariff, the modelled two-part tariff is characterised by a higher fixed fee and a lower volume price which leading to a raising of the total consumer surplus for the entire supply system by about 5.8%. However, the rich consumers gains about 7.4\%, while the poor losses about 3.6% due to the burden of the increasing fixed fee. With increasing inequity aversion the base price of a two part tariff decreases, while the volume price increases.

Renewables capacity in space

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Renewable energy potential – a meta-analysis (PRESENTER: Marie-Alix Dupre la Tour ; DISCUSSANT: Astier Nicolas)
2. What kinds of distributed generation technologies defer network expansions? Evidence from France (PRESENTER: Astier Nicolas ; DISCUSSANT: Karl Steininger)
3. The prospects of photovoltaics and global trade in electricity (PRESENTER: Karl Steininger ; DISCUSSANT: Philip Tafarte)
4. Quantifying trade-offs for the spatial allocation of onshore wind generation capacity – a case study for Germany (PRESENTER: Philip Tafarte ; DISCUSSANT: Marie-Alix Dupre la Tour)

Speakers

Ms Dupré la Tour, Marie-Alix, ,
Dr. Astier, Nicolas, ,
Steininger, Karl, , University of Graz
Prof. Lehmann, Paul, junior professor,

Presentations

Renewable energy potential – a meta-analysis

Author

Ms Dupré la Tour, Marie-Alix, ,

Presenter

Ms Dupré la Tour, Marie-Alix, ,

Abstract

In a context of increased development of renewable energies, a growing number of studies are seeking to determine their potential. Such a potential is a crucial input for long-term energy planning studies, dispatch simulations and for designing energy policies. Based on a systematic literature review, this study aims to identify good practices to calculate a potential and compares the values obtained in the literature. The potential values are very heterogeneous and I analyzed the reasons for this. I also found that 73% of the potential values were higher than the development prospects. This raises questions about the propensity of development studies to systematically account for potential studies, which are normally a condition for the development of renewables. Moreover, as current development projects already face opposition from local populations, this may indicate insufficient consideration of social acceptance in potential studies.

What kinds of distributed generation technologies defer network expansions? Evidence from France

Authors

Wolak, Frank A., , Stanford University
Dr. Astier, Nicolas, ,
Prof. Rajagopal, Ram, Professor, Stanford

Presenter

Dr. Astier, Nicolas, ,

Abstract

We estimate the relationship between distributed generation investments and hourly net injections to the distribution grid across over 2,000 substations in France between 2005 and 2018. A 1 MW increase in solar PV capacity has no statistically significant impact on the highest percentiles of the annual distribution of hourly net of injections to the distribution grid. A 1 MW increase in wind capacity is predicted to reduce the 99th percentile of the annual distribution of hourly net injections to the distribution grid by 0.037 MWh. In contrast, a 1 MW investment in a distributed small hydro, non-renewable thermal, or renewable thermal generation unit predicts an almost five times larger MWh reduction in the 99th percentile of the annual distribution of hourly net injections to the distribution grid. A 1 MW investment in distributed solar PV or wind capacity predicts substantial absolute changes in both extremes of the annual distribution of hourly ramp rates of net injections to the distribution grid. For the remaining three distributed generation technologies, a 1 MW capacity increase does not predict a non-zero change in any percentile of the annual distribution of hourly ramp rates of net injections to the distribution grid. These results argue that, at least for the case of France, increases in distributed solar and wind capacity are more likely to lead to increases, rather than decreases, in distribution network investments.

The prospects of photovoltaics and global trade in electricity

Authors

Steininger, Karl, , University of Graz
Dr. López-Prol, Javier, Researcher,
Mr. Williges, Keith, Economist, University of Graz, Wegener Center for Climate and Global Change
Prof. Grossmann, Wolf, Senior Scientist, University of Graz, Wegener Center for Climate and Global Change
Prof. Grossmann, Iris, Senior Scientist, Chatham University, Pittsburgh, PA

Presenter

Steininger, Karl, , University of Graz

Abstract

Although solar photovoltaics (PV) has become the lowest-cost electricity generation technology, its further diffusion is hampered by its variability. Interhemispheric (north-south and east-west) trade in electricity, however, could help to overcome PV variability by combining complementary seasonal and diurnal cycles to achieve a more stable generation profile, thus increasing PV penetration and reducing the unit cost of electricity. We develop a stylized analytical model to first minimize the unit cost of electricity in autarky by combining PV with subseasonal battery storage and a conventional dispatchable technology, followed by analysis of expanding to different trade configurations. In particular, interhemispheric trade could provide potential benefits derived from combining regions with opposite diurnal/seasonal patterns and global trade could additionally allow all regions to benefit from

the lowest-cost PV generation in the best locations. Finally, we evaluate our model using current empirical data, indicating location-specific potential willingness to pay for different types of interhemispheric and global trade configurations. While there are multiple political economic considerations that might pose obstacles to such large-scale integration, our findings suggest that the benefits could be considerable, such that a stable and mutually beneficial arrangement could be achieved to realize these benefits. While the advancements of trade analysis and modeling have been timely in informing welfare-enhancing global industrial development to date, integration of Earth

Quantifying trade-offs for the spatial allocation of onshore wind generation capacity – a case study for Germany

Authors

Lehmann, Paul, , Leipzig University

Mr. Tafarte, Philip, Research Fellow, University of Leipzig

Presenter

Mr. Tafarte, Philip, Research Fellow, University of Leipzig

Abstract

The deployment of onshore wind power is an important means to mitigate climate change. However, wind turbines also produce negative externalities at the local scale, like disamenities to residents living next to them, changes in landscape quality, or conflicts with wind power-sensitive birds. Our paper analyses how these externalities affect the optimal siting of wind turbines, as compared to a spatial allocation minimizing generation costs. To quantify the spatial trade-offs between these criteria, we propose a novel approach using Pareto-frontiers and a Gini-like potential trade-off indicator. Our analysis builds on a spatial optimization model using geographical information system data for Germany. We show that spatial trade-offs between the criteria under consideration are significant. Their size depends on the spatial heterogeneity of the each criterion as well as the spatial correlation between the sustainability criteria. Spatial trade-offs are particularly pronounced between the protection of wind power-sensitive birds and other criteria.

Finance and climate policy

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Policy Interaction and the Transition to clean Technology (PRESENTER: Ghassane Benmir ; DISCUSSANT: Fabio Antoniou)
2. Pollution permits and financing costs (PRESENTER: Fabio Antoniou ; DISCUSSANT: Emilie Rosenlund Soysal)
3. Financial frictions, currency risk and carbon policy (PRESENTER: Emilie Rosenlund Soysal ; DISCUSSANT: Dongyang Pan)
4. Financial Policy, Green Transition and Recovery after the COVID-19 (PRESENTER: Dongyang Pan ; DISCUSSANT: Ghassane Benmir)

Speakers

Mr. Benmir, Ghassane, PhD Researcher, LSE
Prof. Antoniou, Fabio, ,
Ms Rosenlund Soysal, Emilie, ,
Mr. Pan, Dongyang, ,

Presentations

POLICY INTERACTION AND THE TRANSITION TO CLEAN TECHNOLOGY

Authors

Mr. Benmir, Ghassane, PhD Researcher, LSE
Mr. Roman, Josselin, PhD Researcher, PSL Research - Paris Dauphine University

Presenter

Mr. Benmir, Ghassane, PhD Researcher, LSE

Abstract

Using a stochastic general equilibrium model with financial frictions and a two-sector production economy (i.e. green and dirty sectors), we assess different types of fiscal, monetary, and macroprudential policies aimed at reducing carbon dioxide (CO₂) emissions. We show that CO₂ emissions and CO₂ mitigation policies induce two inefficiencies: risk premium and welfare distortions, respectively. We first find that a substantial carbon tax is needed in the Euro Area to be aligned with the Paris Agreement, but that it leads to a significant welfare loss. To dampen this effect and prevent potential shocks to emissions from distorting the functioning of monetary policy through a rise in risk premia, we explore monetary and macroprudential tools. We find that sectoral time-varying macroprudential weights on loans favourable to the green sector boost green capital and output, reducing the

effect of the carbon tax on welfare. With respect to quantitative easing (QE), we find that a carbon tax improves the benefits of both green and dirty asset purchases. We also find that macroprudential policy is needed to provide an incentive to central banks to engage in green QE. Regarding the impact of the environmental externality, we show that a QE rule would allow authorities to drastically reduce the effect of emissions on risk premia. This work aims to provide central banks and similar institutions with the tools to contribute to climate change mitigation, and demonstrates the importance of including these institutions in the push to reduce global emission levels.

Pollution permits and financing costs

Authors

Prof. Antoniou, Fabio, ,

Prof. Delis, Manthos, Economics and Finance, Montpellier Business School

Prof. Ongena, Steven, Economics and Finance, Universität Zurich

Prof. Tsoumas, Chris, Economics and Finance, Hellenic Open University

Presenter

Prof. Antoniou, Fabio, ,

Abstract

We show theoretically and empirically that environmental policy must consider financing costs of polluting firms. When tighter policy is anticipated and/or the price of pollution permits is low, firms act proactively, leading to lower loan spreads by banks. Our empirical analysis exploits the dichotomy created by phase III of the EU Emission Trading System designed to increase and pass the cost of CO₂ emissions to the polluters. We show that loan spreads fell on average by 25% during the post-treatment period (from 2013 onward). This decrease was mainly the result of allowances storage before the program and partly undermined the expected reduction in CO₂ emissions.

Financial frictions, currency risk, and carbon policy

Authors

Ms Rosenlund Soysal, Emilie, ,

Mr. Schuldt, Hendrik, Doctoral researcher,

Dr. Lessman, Kai, Senior scientist, group leader,

Presenter

Ms Rosenlund Soysal, Emilie, ,

Abstract

To achieve the targets of the Paris agreement, substantial amounts of investments need to be made in developing countries. Dependence on foreign finance makes investments in this group of countries vulnerable to international borrowing conditions. In particular, under the presence of financial frictions where borrowing is constrained by the net worth of the borrower, foreign currency denominated debt can become a barrier to investment. This has implication for the optimal design of the carbon policy. This paper analyses the impact of foreign currency debt on investment and capital accumulation under the presence of financial frictions and different carbon policies. We build a model of a small open economy, where capital purchases can be funded domestically and from abroad. As an example of a developing economy, we calibrate the model to Brazil. We find that an unexpected shock to the foreign borrowing rate leads to a decrease in the domestic firm value and a decrease in the

investment. Though the effects of the carbon policies are generally small, we find that the negative impact on entrepreneurial net worth is less severe when the carbon price is denominated in foreign currency, while in the short term, the output and investments remain higher under an domestic intensity target.

Financial Policy, Green Transition and Recovery after the COVID-19

Authors

Grubb, Michael, , University College London

Mr. Pan, Dongyang, ,

Mr. Chen, Chuanqi, PhD Candidate, Central University of Finance and Economics

Prof. Wang, Yao, Professor, Central University of Finance and Economics

Presenter

Mr. Pan, Dongyang, ,

Abstract

Public policy that acts on financing activity -- referred to here as

Transports and pollution in cities

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Stranded to be? Diesel ban in cities and used car markets (PRESENTER: Quentin Hoarau ; DISCUSSANT: Alexandros Dimitropoulos)
2. Mind the crossover! The effects of notches in vehicle CO2 taxation on manufacturer and consumer behaviour (PRESENTER: Alexandros Dimitropoulos ; DISCUSSANT: Alexander Janosch Dangel)
3. Disaggregating the Effect of Air Quality Alerts on Modal Choice by Space and Time: An Empirical Study of a Particulate Matter Alert Program (PRESENTER: Alexander Janosch Dangel ; DISCUSSANT: Nicole Waegner)
4. Low Emission Zones Revisited: Intended and Unintended Consequences of Air Pollution Policy through Driving Restrictions (PRESENTER: Nicole Waegner ; DISCUSSANT: Quentin Hoarau)

Speakers

Dr. Hoarau, Quentin, ,
Dr. Dimitropoulos, Alexandros, ,
Mr. Dangel, Alexander, ,
Ms Wagner, Nicole, ,

Presentations

Stranded to be? Diesel ban in cities and used car markets

Authors

Dr. Hoarau, Quentin, ,
Dr. Civel, Edouard, Post-doc researcher, Ecole Polytechnique

Presenter

Dr. Hoarau, Quentin, ,

Abstract

After promoting their development for two decades, European governments are pulling back their support to diesel cars. While those engines were assumed to be

Mind the crossover! The effects of notches in vehicle CO2 taxation on manufacturer and consumer behaviour

Authors

Dr. Dimitropoulos, Alexandros, ,
Prof. van Ommeren, Jos, Professor, Vrije Universiteit (VU) Amsterdam

Presenter

Dr. Dimitropoulos, Alexandros, ,

Abstract

Notches

Disaggregating the Effect of Air Quality Alerts on Modal Choice by Space and Time: An Empirical Study of a Particulate Matter Alert Program

Authors

Prof. Goeschl, Timo, Professor, Heidelberg University

Mr. Dangel, Alexander, ,

Presenter

Mr. Dangel, Alexander, ,

Abstract

We study the effect of air quality alerts on modal choice in a large European city with widespread pro-environmental preferences and dense public transportation infrastructure. We build a theoretical framework for the alert system by extending previous modal switching models to include social-norm considerations, the dynamic effects of multi-day alerts, and cycling as a transport alternative. Using 28 months of traffic data from January 2016 through April 2020 for 80 automatic traffic counters in Stuttgart, we evaluate empirically whether calling an alert reduces driving and whether these effects are uniform in space and over time. In our preferred specifications, we employ a spatiotemporally-disaggregated regression model of daily counter-level traffic flows that rigorously controls for confounding factors. We also use a novel subsampling approach to identify counterfactual alert days and validate the results of our preferred specifications.

Our results show that car traffic increases, on average, between 1.1\% and 2.4\% on alert days. Disaggregate regressions show this alert effect to be driven by disproportionately large weekend traffic increases and heightened periphery traffic on alert days. Further, we find evidence for alert fatigue as the magnitude and significance of the alert effect falls after the second alert day. These findings contribute to a growing pool of evidence that air quality alerts can be ineffective or even counter-productive in reducing driving on poor air quality days.

Low Emission Zones Revisited: Intended and Unintended Consequences of Air Pollution Policy through Driving Restrictions

Authors

Dr. Zaklan, Aleksandar, , DIW Berlin

Ms Wagner, Nicole, ,

Dr. Sarmiento, Luis, Researcher,

Presenter

Ms Wagner, Nicole, ,

Abstract

This paper analyzes intended and unintended effects of German low emissions zones (LEZs) on pollution levels and individual well-being. First, we analyze the effectiveness and spillover effects of German LEZs with respect to four criteria pollutants. Using a regression discontinuity approach we show that LEZs induce spatial spillovers by decreasing pollution

levels. Second, we analyze whether LEZs make a difference to affected individuals and show that individuals living inside a LEZ are negatively affected in their well-being using differences-in-differences designs.

Environmental impacts on production

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Firm Level Evidence of Disaster Impacts on Growth in Vietnam (PRESENTER: Fujin Zhou ; DISCUSSANT: Robert Genthner)
2. Global warming and productivity: Evidence from Indonesia's manufacturing sector (PRESENTER: Robert Genthner ; DISCUSSANT: Kimmo Ollikka)
3. Energy Taxes and Manufacturing Firm Performance: Evidence from Finland's Green Tax Reform (PRESENTER: Kimmo Ollikka ; DISCUSSANT: Konstantin Sommer)
4. The Effect of the 2004 and 2007 EU Enlargement on Pollution Intensities in New and Old Member States (PRESENTER: Konstantin Sommer ; DISCUSSANT: Fujin Zhou)

Speakers

Zhou, Fujin, -, Institute for Environmental Studies, Vrije University Amsterdam
Mr. Genthner, Robert, ,
Dr. Ollikka, Kimmo, ,
Mr. Sommer, Konstantin, ,

Presentations

Firm Level Evidence of Disaster Impacts on Growth in Vietnam

Authors

Zhou, Fujin, -, Institute for Environmental Studies, Vrije University Amsterdam
Prof. Botzen, Wouter, Full professor, Institute for Environmental Studies, Vrije Universiteit Amsterdam

Presenter

Zhou, Fujin, -, Institute for Environmental Studies, Vrije University Amsterdam

Abstract

The theory about the impacts from natural disasters on firms is ambiguous and the empirical evidence on this topic is scarce, which hampers the design of disaster risk reduction and climate change adaptation policies. In this paper we identify the short-run impacts of storms and floods on firm growth in labor, capital, and sales, using Enterprise Census Data (2000-2014) for Vietnam. We define storms and floods with three different disaster measures: physical intensities, number of deaths, and economic damage. The performance of these disaster measures is compared by estimating dynamic growth models using the Blundell-Bond system generalized method of moments. We find evidence that flooding significantly increases labor growth and capital growth, but reduces sales growth. We also observe that storms have a significant positive lag impact on labor growth and a significant positive

impact on capital growth in the same year based on the economic damage measure, but have mixed impacts on sales growth. The impacts of floods and storms on firm growth are more pronounced and persistent for small and medium sized firms. Finally, unlike at the macro level, the direction and scale of the disaster impacts found at the firm level are fairly consistent across the three disaster measures.

Global warming and productivity: Evidence from Indonesia's manufacturing sector

Authors

Prof. DE CIAN, ENRICA, ,
Dr. Mistry, Malcolm, researcher,
Dr. Renner, Sebastian, researcher,
Mr. Genthner, Robert, ,

Presenter

Mr. Genthner, Robert, ,

Abstract

The economic effects of global warming are complex and still not sufficiently well understood. This paper aims at providing some new evidence about the impact of rising temperatures on manufacturing firm outcomes in Indonesia. Using a panel of manufacturing firms and controlling for a wide range of fixed effects, we estimate the marginal effect of additional days with extreme temperature relative to the zone of thermal comfort. Our findings suggest an inverted U-shaped relationship between temperature and firm productivity. The effect is especially pronounced among firms with high labor and low electricity intensity. We further present suggestive evidence that hints at electricity supply shortages, making air conditioning infeasible for some firms.

Energy Taxes and Manufacturing Firm Performance: Evidence from Finland's Green Tax Reform

Authors

Laukkanen, Marita, , VATT Institute for Economic Research
Dr. Ollikka, Kimmo, ,

Presenter

Dr. Ollikka, Kimmo, ,

Abstract

Finland

The Effect of the 2004 and 2007 EU Enlargement on Pollution Intensities in New and Old Member States

Authors

de Groot, Henri, , VU University Amsterdam, Institute for Environmental Studies (IVM)
Mr. Sommer, Konstantin, ,
Mr. Klaassen, Franc, Professor, University of Amsterdam

Presenter

Mr. Sommer, Konstantin, ,

Abstract

What was the effect of the 2004 and 2007 EU enlargement on the emission intensities in new and old member states?

In this study we analyse a multidimensional panel with data on almost all EU member states from 1995 to 2015. We estimate the effects on the country aggregate as well as on a manufacturing sector level on carbon dioxide, sulphur oxides and nitrogen oxides emission intensities. We analyse potential channels through which further trade integration can influence emissions: The Pollution Haven Hypothesis (PHH) and the Factor Endowment Hypothesis (FEH).

By finding support for both effects, we thus also find evidence for potential within-Europe carbon leakage channels. Additionally, we can establish that income growth, spurred by the accession, might have led to decreases in emission intensity by several tens of percent, both on the country aggregate as well as within manufacturing sectors.

Redistributional effects of climate policies

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Is carbon pricing always regressive? Insights from a recursive-dynamic CGE analysis with heterogeneous households for Austria (PRESENTER: Jakob Mayer ; DISCUSSANT: Gustav Fredriksson)
2. Distributional and Efficiency Impacts of Higher EU Climate Targets (PRESENTER: Gustav Fredriksson ; DISCUSSANT: Stefan Naberneegg)
3. Emission distribution and incidence of national mitigation policies among households in Austria (PRESENTER: Stefan Naberneegg ; DISCUSSANT: Ulrich Eydam)
4. The Distributional Implications of Climate Policies under Uncertainty (PRESENTER: Ulrich Eydam ; DISCUSSANT: Jakob Mayer)

Speakers

Mr. Mayer, Jakob, ,
Mr. Fredriksson, Gustav, , ETH Zurich
Mr. Naberneegg, Stefan, ,
- Eydam, Ulrich, ,

Presentations

Is carbon pricing always regressive? Insights from a recursive-dynamic CGE analysis with heterogeneous households for Austria

Authors

Steininger, Karl, , University of Graz
Mr. Mayer, Jakob, ,
Ms Dugan, Anna, Scientist, Wegener Center for Climate and Global Change, University of Graz, Austria
Dr. Bachner, Gabriel, Scientist, Wegener Center for Climate and Global Change, University of Graz, Austria

Presenter

Mr. Mayer, Jakob, ,

Abstract

To meet the climate targets as set out in the Paris Agreement, EU member states agreed to strongly reduce their greenhouse gas (GHG) emissions. Besides the EU-wide emission trading system (ETS), also national carbon pricing policies are expected to be implemented in the upcoming years, raising issues on how to design such policies in an acceptable way. To address this issue we explore the effects of unilateral carbon pricing in Austria from a multi-criteria perspective. For that we use a recursive-dynamic computable general equilibrium

model, which incorporates twelve distinct groups of private households, differentiated by income and location of residence. We find that in Austria carbon pricing works progressively, even without revenue recycling. This is due to the capital-intensive incidence of carbon prices, affecting high-income capital owners more than public-transfer protected low-income households. Also, we find that households living in the periphery bear a greater burden. The

Distributional and Efficiency Impacts of Higher EU Climate Targets

Authors

Dr. Landis, Florian, , ETH Zurich

Prof. Rausch, Sebastian, ,

Mr. Fredriksson, Gustav, , ETH Zurich

Presenter

Mr. Fredriksson, Gustav, , ETH Zurich

Abstract

This paper examines the efficiency and distributional consequences of various EU climate policy design options for realizing a higher 2030 emissions reduction target. Combining household micro-data on expenditure and income from Eurostat

Emission distribution and incidence of national mitigation policies among households in Austria

Author

Mr. Naberneegg, Stefan, ,

Presenter

Mr. Naberneegg, Stefan, ,

Abstract

One major barrier for the feasibility of national climate policies is limited public acceptance because of distributional concerns. In the literature, different approaches are used to investigate the incidence of climate policies across income groups. We apply three approaches of incidence analysis to the case of Austria, that vary in terms of data and computational intensity: (i) household fuel expenditure analysis, (ii) household carbon footprints and (iii) macroeconomic general equilibrium modelling with heterogeneous households. As concerns about heterogeneity within low-income groups (horizontal equity) were recently articulated as main objection for effective redistributive revenue recycling in the literature, we compare a pricing instrument of a fuel tax with two non-pricing instruments. We find that expenditure analysis, without considering embodied emissions in consumption, overestimates regressivity as well as within group variations of carbon pricing instruments. An economy-wide fuel tax without redistributive revenue recycling shows a slightly regressive distributional effect in the general equilibrium analysis, driven by households use of income. This is well approximated by the carbon footprint analysis as income source effects play a minor role for this policy. For the two examples of non-pricing policies, we show that income source effects, which can be only evaluated in a closed macroeconomic model, strongly codetermine the mostly progressive distributional effect. Therefore we derive three general aspects that determine the incidence of climate policies: (i) the consumption patterns of households and the corresponding emission intensities of consumption, (ii) the existing distribution and composition of income, and (iii) the specific policy and policy design considered. For the feasibility of climate policy, we conclude that

the evaluation as well as the clear communication of distributional effects is essential, as policy acceptance depends on the perceived individual outcome.

The Distributional Implications of Climate Policies under Uncertainty

Author

- Eydam, Ulrich, ,

Presenter

- Eydam, Ulrich, ,

Abstract

Promoting the decarbonization of economic activity through climate policies raises many questions. From a macroeconomic perspective, it is important to understand how these policies perform under uncertainty, how they affect short-run dynamics and to what extent they exert distributional effects. In addition, uncertainties directly associated with climate policies, such as uncertainty about the carbon budget or emission intensities become relevant aspects. We study the implications of emission reduction schemes within a Two-Agent New-Keynesian (TANK) model. The quantitative exercise, based on data for the German economy, provides various insights. In the light of frictions and fluctuations, compared to other instruments, a carbon price (i.e. tax) is associated with lower volatility in output and consumption. In terms of aggregate welfare price instruments are found to be preferable. Conditional on the distribution of revenues from climate policies, quantity instruments can exert regressive effects, posing a larger economic loss on wealth-poor households, whereas price instruments are moderately progressive. Finally, we find that unexpected changes in climate policies can induce substantial aggregate adjustments. With uncertainty about the carbon budget, the costs of adjustment are larger under quantity instruments.

Choice experiments I

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Do Municipal Climate Protection Activities Interfere with Individual Engagement? (PRESENTER: Martin Kesternich ; DISCUSSANT: Wiktor Budzinski)
2. Controlling for endogeneity of perceptions about survey consequentiality in stated preference modelling (PRESENTER: Wiktor Budzinski ; DISCUSSANT: Danny Campbell)
3. The trade-off between statistical efficiency and plausibility in stated choice experiments (PRESENTER: Danny Campbell ; DISCUSSANT: Malte Welling)
4. Information processing in stated preference surveys: A case study on urban gardens (PRESENTER: Malte Welling ; DISCUSSANT: Martin Kesternich)

Speakers

Prof. Kesternich, Martin, Researcher, ZEW – Leibniz Centre for European Economic Research
Mr. Budziński, Wiktor, PhD student,
Campbell, Danny, , Queen's University Belfast
Mr. Welling, Malte, ,

Presentations

Do Municipal Climate Protection Activities Interfere with Individual Engagement?

Authors

Ms Bartels, Lara, ,
Prof. Kesternich, Martin, Researcher, ZEW – Leibniz Centre for European Economic Research

Presenter

Prof. Kesternich, Martin, Researcher, ZEW – Leibniz Centre for European Economic Research

Abstract

The Paris Agreement aims at limiting the global average temperature increase to well below 2

Controlling for endogeneity of perceptions about survey consequentiality in stated preference modelling

Authors

Czajkowski, Mikołaj, , University of Warsaw
Mr. Budziński, Wiktor, PhD student,
Zawojnska, Ewa, ,

Presenter

Mr. Budziński, Wiktor, PhD student,

Abstract

Stated preference surveys often ask respondents about their perceptions about the survey consequentiality (that is, the likelihood of the survey outcome having real-life consequences). It is acknowledged that the survey consequentiality is needed for the validity of the value estimates obtained from stated preferences. Nevertheless, concerns remain on how to elicit the consequentiality perceptions and how to include them in econometric models of preferences. This paper contributes to these both issues. A particular challenge is potential endogeneity, as consequentiality self-reports and stated preferences are likely driven by similar factors, unobservable for a researcher. The literature lacks empirical tools how to address the endogeneity problem. We provide the first empirical application of an extended hybrid choice model in theory controlling for the endogeneity. To that end, we use three datasets, each coming from a large discrete choice experiment survey. That way, we illustrate the use of the approach in contexts varying with respect to the evaluated public good and consequentiality elicitation questions. Our findings suggest that controlling for the endogeneity of consequentiality perceptions matters for the value estimates. We believe this might provide important insights for future research, as it suggests that the validity of stated preference value estimates can be improved upon controlling for perceived consequentiality and incorporating approaches addressing the endogeneity of the perceptions.

The trade-off between statistical efficiency and plausibility in stated choice experiments

Authors

Campbell, Danny, , Queen's University Belfast

Dr. Sandorf, Erlend Dancke, ,

Presenter

Campbell, Danny, , Queen's University Belfast

Abstract

Stated choice experiments typically require the construction of an experimental design of specific combinations of attribute levels. Often this is based on statistical efficiency criteria alone, with insufficient thought given to ensuring the choice tasks resemble those that respondents might encounter in reality. While imposing restrictions to avoid designs with choice situations that are not feasible is commonplace, some of the remaining combinations, albeit feasible, may not be probable in the real world. Thus, standard experimental designs may actually exacerbate the hypothetical nature of stated choice experiments. In this paper, we promote an experimental design procedure that explicitly considers the likelihood of each alternative profile and consequently the realism of each design candidate. Using Monte Carlo simulations we show that this leads to choice scenarios more likely to be encountered in the real world. We conjecture, that this may go some way to reducing hypothetical bias in stated choice experiments.

Information processing in stated preference surveys: A case study on urban gardens

Authors

Dr. Sagebiel, Julian, ,

Dr. Rommel, Jens, Researcher, Swedish University of Agricultural Sciences

Mr. Welling, Malte, ,

Presenter

Mr. Welling, Malte, ,

Abstract

Stated preference surveys must provide information on the good to be valued. The amount and type of information can affect stated preferences and the validity of value estimates. The provided information needs to be processed and recalled by respondents. Some studies find that respondents showing improved processing of the information state different preferences. Our study is the first to use a random exogenous manipulation to investigate how improved processing of the survey information affects stated preferences. Based on stated preference recommendations and psychological literature, we examine the effect of (1) quiz questions and (2) self-reference questions on information processing, learning and stated preferences in a discrete choice experiment survey on urban gardens in the German cities of Berlin and Stuttgart. Our results show that respondents spend more time on the information page when asked quiz questions rather than self-reference questions. For both question types we do not find an effect on stated preferences, contrasting earlier correlational studies on information processing in stated preference surveys.

Tipping points and forecasts

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Dangerous socio-economic tipping points with implications for Earth system stability (PRESENTER: Roger Cremades ; DISCUSSANT: Laurent Drouet)
2. Net Zero Emission Pathways Reduce the Physical and Economic Risks of Climate Change (PRESENTER: Laurent Drouet ; DISCUSSANT: Frank Venmans)
3. Optimal climate policy in the face of tipping points and asset stranding (PRESENTER: Frank Venmans ; DISCUSSANT: Matti Sihvonon)
4. Past trends, driving factors and future forecasts of the GHG sinks and emissions of the land use sector in EU – is the “no debit” rule attainable? (PRESENTER: Matti Sihvonon ; DISCUSSANT: Roger Cremades)

Speakers

Dr. Cremades, Roger, ,
Dr. Drouet, Laurent, -, RFF-CMCC EIEE
Dr. Venmans, Frank, ,
Dr. Sihvonon, Matti, ,

Presentations

Dangerous socio-economic tipping points with implications for Earth system stability

Author

Dr. Cremades, Roger, ,

Presenter

Dr. Cremades, Roger, ,

Abstract

Can tipping points within the socio-economic realm have game-changing implications for Earth system stability? Earlier attempts exploring the social and policy dimensions of tipping points excluded those happening within the socio-economic realm that could trigger dangerous abrupt changes in the Earth system. Exploring feedback loops in the climate-policy-economy interactions, we explain how the Paris Agreement and other related goals from the Agenda 2030 could be put into danger by ongoing dynamics, as they are likely to be augmented by already foreseen events, and how there are still opportunities for intervening these dynamics. We show that a social tipping point involving migration from projected climate impacts, political populism, and scepticism towards climate change could further push the Earth system trajectory towards a hothouse Earth, compromising climate policies and the feasible space for global transformations to sustainability. Importantly, we find that

tipping points challenge the assumption of identically shared responsibilities on common-pool resources and sinks. The insights presented suggest a broadening of the scope of the actions to be implemented by the parties of climate treaties and sustainability agendas.

Net Zero Emission Pathways Reduce the Physical and Economic Risks of Climate Change

Authors

Dr. Drouet, Laurent, -, RFF-CMCC EIEE
Dr. Oshiro, Ken, -, Kyoto University
Prof. Bosetti, Valentina, Full Professor, Bocconi University
Dr. Riahi, Keywan, -, IIASA
Prof. van Vuuren, Detlef, -, PBL and Utrecht University
Prof. Tavoni, Massimo, Professor,
Dr. Bertram, Christoph, -, Potsdam Institute for Climate Impact Research
Emmerling, Johannes, , EIEE
Dr. Aleluia Reis, Lara, -, RFF-CMCC EIEE
Dr. Piontek, Franziska, -, Potsdam Institute for Climate Impact Research
Dr. Harmsen, Mathijs, -, -

Presenter

Dr. Drouet, Laurent, -, RFF-CMCC EIEE

Abstract

Mitigation pathways exploring end-of-century temperature targets entail varying degrees of temperature overshoot. The intertemporal consequences of overshoot have been typically evaluated from the point of view of mitigation. Here, we provide the first assessment of the benefits of limiting overshoot via an ensemble of integrated assessment models. We compute physical and macroeconomic probabilistic indicators of temperature overshoot pathways for different warming targets. Temperature overshooting affects the full distribution of many critical physical impacts, such as those associated with heat extremes.

We show that limiting overshoot reduces the risk in the right tail of the distribution, especially for low-temperature targets such as 1.5C. Overshooting leads to lower short-term mitigation costs. However, our analysis allows us to fully appreciate the significant economic gains arising after 2050 from avoided impacts and reduced mitigation efforts resulting from early investments. The analysis highlights the need to integrate climate benefits in mitigation pathways and to account for fat-tailed distributions.

Optimal climate policy in the face of tipping points and asset stranding

Authors

Dietz, Simon, , London School of Economics (LSE)
Dr. Campiglio, Emanuele, ,
Dr. Venmans, Frank, ,

Presenter

Dr. Venmans, Frank, ,

Abstract

We study the optimal transition to a low-carbon economy using a stochastic dynamic general equilibrium model, striking a balance between the risks of climate warming and the costs of abating emissions. Our model has adjustment costs and frictions that constitute obstacles to rapidly decumulating dirty capital. We find that introducing costs to repurposing dirty capital

as clean leads to a slower decline of emissions initially, which leads to the need for greater emissions reductions later. These frictions thus optimally push abatement effort further into the future, with consequences for 21st century temperature, but not steady-state temperature. However, even though emissions decline initially more slowly, carbon prices are higher, because dirty capital owners need an incentive to incur those extra costs of repurposing that are optimal from society's point of view. The share of genuinely dirty capital in the economy

Past trends, driving factors and future forecasts of the GHG sinks and emissions of the land use sector in EU – is the LULUCF target attainable?

Authors

Ollikainen, Markku, , University of Helsinki

Dr. Sihvonen, Matti, ,

Prof. Seppälä, Jyri, engineer, Suomen ympäristökeskus SYKE (The Finnish Environment Institute)

Presenter

Dr. Sihvonen, Matti, ,

Abstract

EU

Adaptation to climate change

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Innovation in Irrigation Technologies for Sustainable Agriculture: A Panel Endogenous Switching Analysis on the Italian Farms' Land Productivity (PRESENTER: Sabrina Auci ; DISCUSSANT: Katrin Millock)
2. Long term migration trends and climate change: The role of irrigation (PRESENTER: Katrin Millock ; DISCUSSANT: Francois Bareille)
3. Adapting to Climate Change: Structural Estimations of Chemical Input Applications in Agriculture (PRESENTER: Francois Bareille ; DISCUSSANT: Julie Schlick)
4. Climate Change and the Water Capability to Export Agricultural Goods (PRESENTER: Julie Schlick ; DISCUSSANT: Sabrina Auci)

Speakers

Prof. Auci, Sabrina, Researcher, University of Palermo

Dr. Millock, Katrin, ,

Dr. Bareille, Francois, ,

Dr. Schlick, Julie, ,

Presentations

Innovation in Irrigation Technologies for Sustainable Agriculture: A Panel Endogenous Switching Analysis on the Italian Farms' Land Productivity

Authors

Prof. Auci, Sabrina, Researcher, University of Palermo

Dr. Pronti, Andrea, PhD student, University of Ferrara

Presenter

Prof. Auci, Sabrina, Researcher, University of Palermo

Abstract

This paper aims to analyse how the farmer

Long term migration trends and rising temperatures: The role of irrigation

Authors

Dr. Millock, Katrin, ,

Prof. Taraz, Vis, ,

Mr. Benonnier, Theo, teacher,

Presenter

Dr. Millock, Katrin, ,

Abstract

Climate variability has the potential to affect both international and internal migration profoundly. Earlier work finds that higher temperatures reduce agricultural yields, which in turn reduces migration rates in low-income countries, due to liquidity constraints. We test whether access to irrigation modulates this temperature relationship, since irrigation buffers agricultural incomes from high temperatures. We regress measures of international and internal migration on decadal averages of temperature and rainfall, interacted with country-level data on irrigation and income. We find robust evidence that, for poor countries, irrigation access significantly offsets the negative effect of increasing temperatures on internal migration, as proxied by urbanisation rates. Our results demonstrate the importance of considering access to alternative adaptation strategies when analysing the temperature-migration relationship.

Adapting to Climate Change: Structural Estimations of Chemical Input Applications in Agriculture

Authors

Dr. Chakir, Raja, Researcher, INRAE

Dr. Bareille, Francois, ,

Presenter

Dr. Bareille, Francois, ,

Abstract

The costs of climate change on agriculture depends critically on farmers paper, we investigate how farmers adapt their input mix in response to weather fluctuations during the growing season using individual panel data from La Meuse (France) between 2006 and 2013. Specifically, we estimate structural models of profit-maximizer farmers with cropspecific yields and input-specific demand functions, conditionally on farm and year fixed effects. The results show that climate change affects crop yields but that farmers adapt their chemical input applications to limit the negative impacts. The effects are heterogeneous among crops and inputs. Temperatures and precipitations affect also the chemical inputs productivity and reduce the substitution between the inputs. Overall, we find that farmers reduce under a RCP2.6 scenario, principally due to increased uses of fertilizers and pesticides. The non-marketed public costs due to non-point source pollution are expected to be larger than the private costs bared by the farmers.

Climate Change and the Water Capability to Export Agricultural Goods

Authors

Prof. CANDAU, Fabien, Professor of Economics, Université de Pau et des Pays de l'Adour (CATT-UPPA)

Dr. Schlick, Julie, ,

Dr. Regnacq, Charles, Post-Doctorate, BRGM

Presenter

Dr. Schlick, Julie, ,

Abstract

This article presents a new indicator of water resources by taking into account hydrological, agronomic and climatic variables at a very disaggregated spatial scale. This indicator is then used

to estimate the water trade elasticity of agricultural goods to determine change in the comparative

advantages of nations in the wake of climate change around the year 2050. We

in general, in part due to the capability to relocate the agricultural production within country.

However in each country, dramatic changes in the comparative advantage of particular crops are

observed.

Circular economy

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Recycling in a Globalised Economy (PRESENTER: Eugenie Joltreau ; DISCUSSANT: Kai Lessmann)
2. The Quadrilemma of a Small Open Circular Economy Through a Prism of the 9R Strategies (PRESENTER: Kai Lessmann ; DISCUSSANT: Etienne Lorang)
3. Sectoral, resource and carbon impacts of increased paper and cardboard recycling (PRESENTER: Etienne Lorang ; DISCUSSANT: Eugenie Joltreau)

Speakers

Ms Joltreau, Eugénie, ,
Dr. Lessmann, Kai, Researcher,
Mr. Lorang, Etienne, , INRAE

Presentations

Recycling in a Globalised Economy

Author

Ms Joltreau, Eugénie, ,

Presenter

Ms Joltreau, Eugénie, ,

Abstract

Developing a circular economy (CE) by means of waste recycling has become the new paradigm to sustain non-renewable resources. However, what does implementing a CE mean in a globalised economy? Waste generated by consumption on the national territory will not necessarily coincide with the national production's quantitative needs of materials. In addition, depending on the product added value, producers may require high quality virgin materials. This material mismatch will give rise to interactions with the environment or international trade strategies. In this paper I offer a new perspective on recycling policies, taking into account international trade and national material imbalances.

The Quadrilemma of a Small Open Circular Economy Through a Prism of the 9R Strategies

Authors

Dr. Lessmann, Kai, Researcher,
- Banioniene, Justina, Researcher, Kaunas University of Technology

Dr. Dagliene, Lina, Senior Researcher, Kaunas University of Technology

Dr. Donadelli, Michael, Professor, University of Brescia

Dr. Grüning, Patrick, Senior Researcher, Center for Excellence in Finance and Economic Research (CEFER) of the Bank of Lithuania

Dr. Jüppner, Marcus, Researcher, Deutsche Bundesbank

Dr. Kizys, Renatas, Professor, University of Southampton

Presenter

Dr. Lessmann, Kai, Researcher,

Abstract

The Circular Economy (CE) challenges the traditional linear economy model to arrive at a sustainable economy that minimizes resource use, its negative environmental impact, and dependency on resource imports. We develop a multi-sector dynamic stochastic general equilibrium small open economy model with partly endogenous economic growth (via the endogenous adoption of exogenous foreign technology innovations), a climate change externality, and CE elements, comprising recyclable waste, as well as recycling and refurbishing sectors. Using recycled material and refurbished goods reduces the demand for raw material imports, thus lowering polluting emissions and dependence on world resource markets. We analyze the model-implied impulse response functions with respect to several economic shocks and conduct a rich scenario-based analysis, for which the scenarios are derived from the 9R strategies. We find important trade-offs to be considered by the economy with respect to circularity, trade, environment, and growth -- the four dimensions of the quadrilemma of a small open circular economy. Specifically, a positive shock to the price of the polluting resource resolves the quadrilemma in the medium and long run. Moreover, arriving at a higher share of refurbished used intermediate goods in the economy resolves the quadrilemma in the long run.

Sectoral, resource and carbon impacts of increased paper and cardboard recycling

Authors

Mr. Lorang, Etienne, , INRAE

Mr. Lobianco, Antonello, Research engineer, AgroParisTech

Mr. Delacote, Philippe, Senior Research, INRAE

Presenter

Mr. Lorang, Etienne, , INRAE

Abstract

Recycling is emerging as an alternative to extraction in many industries and one of the corner stones of the circular economy. In this paper, we assess the role of paper and cardboard recycling on the forest sector, both from an economic and carbon perspective. For that purpose, we model this recycling industry within our forest sector model, in order to relate it to other wood products. As the forest sector has an important potential for climate change mitigation, this model allows us to assess the effects on the resource and the carbon balance of the forest sector. We show that these results are strongly linked to the hypothesis of substitution or complementarity between recycled and wood-pulp.

Thematic Session: Climate policy, stranded assets and financial stability

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Endogenous climate policy, systemic risk and asset stranding
2. A Run on Oil? The Implications of Climate Policy Action and Stranded Assets Risk
3. Climate Change and Financial Stability: do stringent climate policies lead to unsustainable losses for the Euro Area?
4. Carbon taxes and stranded assets: Evidence from Washington

Speakers

Jaakkola, Niko, , Ifo Institut

Prof. Barnett, Michael, ,

Dr. Stolbova, Veronika, ,

Dr. SEN, SUPHI, ,

Presentations

Endogenous climate policy, systemic risk and asset stranding

Authors

Dr. Hagen, Achim, ,

Vogt, Angelika, -, Humboldt-Universität zu Berlin

Jaakkola, Niko, , Ifo Institut

Presenter

Jaakkola, Niko, , Ifo Institut

Abstract

Asset stranding due to climate policies has been recognised as a threat to financial stability. In this paper, we model a regulator's decision to set a carbon tax under stochastic climate change. Severe climate change demands high carbon taxes and low rates of return. The resulting downward pressure on asset prices may precipitate a systemic crisis in the financial sector. We identify two equilibria: one is associated with carbon-intensive investments, while the socially more desirable involves a rapid fossil fuel phase-out. We propose instruments for the regulator to achieve the latter equilibrium: (1) increasing the equity buffer of the banking system; (2) increasing the wedge between the cost of funding fossil versus renewable assets; (3) separating fossil assets into a 'brown bank' network not connected to the rest of the financial sector. These functions mix together financial supervision and climate policy objectives.

A Run on Oil? The Implications of Climate Policy Action and Stranded Assets Risk

Author

Prof. Barnett, Michael, ,

Presenter

Prof. Barnett, Michael, ,

Abstract

I study the dynamic implications of climate policy and stranded assets risk on macroeconomic outcomes and asset prices. I find that incorporating climate-related action that restricts oil use and has an unknown arrival time in an otherwise standard climate-economic model with oil extraction generates a run on oil; meaning oil firms dynamically accelerate extraction as climate change increases and oil reserves decrease due to the risk of future climate-related action stranding oil reserves. Furthermore, the risk of stranded assets, and the run on oil it causes, leads to a downward shift and dynamic decrease in the oil spot price and value of oil firms compared to the setting without climate policy risk. Event study and VAR estimates using a novel empirical measure of climate-action-related events show that shifts in the likelihood of stranded assets and future climate action impacts stock returns, oil prices, and oil production in dynamic and persistent ways that are consistent with the key model predictions.

Climate Change and Financial Stability: do stringent climate policies lead to unsustainable losses for the Euro Area?

Author

Dr. Stolbova, Veronika, ,

Presenter

Dr. Stolbova, Veronika, ,

Abstract

There is an ongoing debate on the relation between climate change and financial stability. Financial system (in)stability plays a prominent role in the consideration of costs of climate change, and neglecting it may result in underestimation of the impacts of climate change and climate policy. Taking into account that financial (in)stability can be prevented and controlled by regulators, it is crucial to provide regulators with appropriate tools to assess the need for timely intervention. Here, we address this question by introducing a novel model for monitoring macro-level financial stability in the context of climate change which could help to prevent potentially large financial losses resulting from climate policy introduction or unexpected climate-related extreme events. We calibrate the model for the Euro Area and estimate the monetary value of potential financial contagion losses of the Euro Area banks, investment funds, insurance&pension funds, households, government and firms of the real economy as a result of stringent climate policy introduction or extreme climate-related events affecting the value of fossil-fuel assets. We find that insurance&pension funds is the most vulnerable sector to climate-related events, while households is the most exposed sector in monetary terms. The findings suggest that during the introduction of stringent climate policies in times when the financial system stability is under pressure, policymakers need to take into account the impact of assets devaluation on all sectors, but specifically, on the insurance&pension funds sector of the Euro Area.

Carbon taxes and stranded assets: Evidence from Washington

Authors

Carattini, Stefano, , Yale University

Dr. SEN, SUPHI, ,

Presenter

Dr. SEN, SUPHI, ,

Abstract

The climate challenge requires ambitious climate policy. If investors are not aligned with long-term climate goals, a sudden increase in carbon prices may lead some assets to lose part of their value, others all of it, and hence become

Thematic Session: Managing energy demand: New empirical evidence

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Information Campaigns for Residential Energy Conservation
2. Behavioral intervention to conserve energy in the workplace
3. The Narrative of Energy Efficiency and Its Implication for Policy Targeting
4. Discriminatory subsidies for energy-efficient technologies and the role of social preferences

Speakers

Dr. Gerster, Andreas, ,
Dr. Fanghella, Valeria , ,
Mr. Wekhof, Tobias, ,
Schleich, Joachim, , Grenoble Ecole de Management

Presentations

Information Campaigns for Residential Energy Conservation

Authors

Dr. Gerster, Andreas, ,
Dr. Andor, Mark, Economist, RWI - Leibniz Institute for Economic Research
Prof. Peters, Jörg, Economist, RWI - Leibniz Institute for Economic Research

Presenter

Dr. Gerster, Andreas, ,

Abstract

This paper evaluates an intervention that randomized information letters about energy efficient investments and behaviors among 120,000 customers of two utilities in Germany. We find that conservation effects differ considerably between both utilities, ranging from a precisely estimated zero effect to 1.4%. By contrast, we do not detect significant framing effects from presenting savings in monetary or ecological terms. Based on random causal forest methods, we show that the effect heterogeneity across utilities cannot be explained by socio-demographic characteristics. Our results demonstrate the importance of site-specific factors for the effectiveness of information campaigns, which has crucial implications for targeting.

Behavioral intervention to conserve energy in the workplace

Authors

Dr. Fanghella, Valeria , ,
Prof. Tavoni, Massimo, Professor,

Prof. D'Adda, Giovanna , Professor,

Presenter

Dr. Fanghella, Valeria , ,

Abstract

This study investigates the effect of a large-scale behavioral intervention to conserve energy in the workplace, consisting of an energy-saving competition among a bank

The Narrative of Energy Efficiency and Its Implication for Policy Targeting

Authors

Houde, Sebastien , , ETHZ, Zurich

Mr. Wekhof, Tobias , ,

Presenter

Mr. Wekhof, Tobias , ,

Abstract

For more than forty years researchers and analysts have pointed out that society might be too slow in adopting energy-efficient technologies, a phenomenon known as the Energy Efficiency Gap. Governments have designed a wide range of policies to address various market failures at the source of the Gap but with mitigated success. There are persistent market barriers that impede these efforts. The long list of potential market barriers is context, time, and household specific. Eliciting these market barriers and their heterogeneity is thus key for policy design. In this paper, we use narratives, a novel approach using unstructured text in survey, to elicit the barriers and determinants of energy efficiency investments. Using recent advances in Natural Language Processing (NLP), we turn narratives into quantifiable metrics to elicit proxy for households' preferences. We find that narratives are a powerful tool. In our context, homeowners living in Switzerland, narratives are particularly illuminating to capture heterogeneity across different types of households. We find that households with recent experience with energy efficiency investments focus on the co-benefits of such investments. On other hand, households with no recent experience focus on the financial barriers. Narratives also show that different types of households favor very different types of policies to address the Gap.

Discriminatory subsidies for energy-efficient technologies and the role of social preferences

Authors

Dr. Fanghella, Valeria , ,

Prof. Schleich , Joachim, Professor, Grenoble Ecole de Management

Prof. Guetlein , Marie-Charlotte , Professor, Grenoble Ecole de Management

Prof. Corine , Faure, Professor, Grenoble Ecole de Management

Presenter

Prof. Schleich , Joachim, Professor, Grenoble Ecole de Management

Abstract

Discriminatory subsidies, i.e., incentives available only to a subset of the population, are widespread although theoretical research on social preferences suggests that they may trigger unintended effects on non-eligible households. Employing a discrete choice experiment, we study how discriminatory subsidies affect households

Thematic Session: Policy options for the protein transition: the role of price incentives and information provision

24th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Curbing carbon: An experiment on information and uncertainty about CO2 emissions
2. Do Carbon Footprint Labels promote Climatarian Diets? Evidence from a large-scale Field Experiment
3. Demand elasticities for animal-based products and plant-based substitutes: evidence from Dutch supermarket scanner data

Speakers

Mr. Pace, Davide, ,

Mr. Lohmann, Paul, PhD Researcher, University of Cambridge

Ms Liu, Zhaoxin, ,

Presentations

Curbing carbon: An experiment on information and uncertainty about CO2 emissions

Authors

Mr. Pace, Davide, ,

Dr. van der Weele, Joël, Associate Professor, University of Amsterdam

Presenter

Mr. Pace, Davide, ,

Abstract

We investigate how consumers respond to uncertainty about CO2 emission size. In an online experiment, participants can acquire a valuable good that emits an unknown amount of CO2. We find that information that makes beliefs more precise causes a 26% reduction in overall emissions, although average beliefs are unchanged. The reduction occurs as the marginal willingness to pay for emission reduction declines with emission size, so people who are too optimistic about emissions are more responsive to information. Overall, the results suggest that information about CO2 impact can be an important policy lever if consumers are unsure about emission sizes.

Do Carbon Footprint Labels promote Climatarian Diets? Evidence from a large-scale Field Experiment

Authors

Kontoleon, Andreas, , University of Cambridge

Mr. Lohmann, Paul, PhD Researcher, University of Cambridge

Ms Gsottbauer, Elisabeth, Assistant Professor, University of Innsbruck

Presenter

Mr. Lohmann, Paul, PhD Researcher, University of Cambridge

Abstract

We estimate the causal effect of carbon footprint labels on individual food choices and quantify potential carbon emission reductions, using data from a large-scale field experiment in five university cafeterias with nearly 85,000 individual meal choices. Results show that carbon labels lead to a decrease in the probability of selecting a high-carbon footprint meal by approximately 2.8 percentage points with consumers substituting to mid-ranged carbon impact meals. Moreover, we find a decrease in the probability of selecting a fish or meat meal option by on average 1.8 percentage points. We find no change in the market share of low-carbon meals. Our results suggest that carbon footprint labels present a viable and low-cost policy tool to address information failure and encourage more sustainable food choices.

Demand elasticities for animal-based products and plant-based substitutes: evidence from Dutch supermarket scanner data

Authors

Ansink, Erik, , VU University Amsterdam

Bouma, Jetske, , PBL - Netherlands Environmental Assessment Agency

Ms Liu, Zhaoxin, ,

Presenter

Ms Liu, Zhaoxin, ,

Abstract

This study provides novel evidence on consumer response to price changes in terms of consumption on animal and plant proteins. We conduct demand system estimations using an Almost Ideal Demand System. Using weekly store-level scanner data from Dutch supermarkets from 2015 to 2019, we estimate price elasticities for four categories of animal-based products (beef, pork, poultry, fish), and plant-based meat substitutes. Our results indicate that the own-price elasticities for both animal-based and plant-based products are elastic. The cross-price elasticities indicate that beef, poultry and fish are substitutes for meat substitutes, while we do not find such an effect with pork. These results imply that a potential meat tax may cause undesired side-effects.

Policy Session: Ecosystem and cultural values: Sustainability in the Venice lagoon

24th June 2021, 12:30 PM - 02:30 PM

Description

The economy of Venice and its lagoon is mostly based on the tourism and maritime transportation sectors and activities that support these, like electricity generation (Da Mosto et al., 2020). This very specialized structure produces benefits in terms of high returns, profits, and employment opportunities, on the one hand, and on the other produces costs represented by negative social and environmental externalities. The productive activities generate around 9 million tons of CO₂ per year. This is almost 3% of national emissions (320.411 million is the amount produced in Italy, source Word Bank). Per capita emissions in the area (around 10 tons) are double those in the nation as a whole (5.2 tons).

The heavy industries, moreover, are located in a very fragile lagoon ecosystem that, in turn, produces ecosystem services with economic value, including carbon sequestration. The saltmarshes and seagrass of the Venetian lagoon in fact are extremely productive in sequestering carbon (Romer et al), which can help offsetting the emissions generated by the productive activities.

Safeguarding the future of Venice and its lagoon is a globally recognized challenge of sustainability that not only concentrates on safeguarding the cultural heritage and/or reducing the damages from over-tourism, but focuses on a broader vision that requires conceptualizing Venice as a matrix of interlinked natural, cultural and social capital.

In particular, the issue of CO₂ emission and sequestration in the Venetian Lagoon suggests several topics that can be illustrated as follows:

- 1) Computing the value of the ecosystem service as an avoided social cost of carbon, and understanding how to harness this value to support goals in policy and management including sustainable development, coastal and marine conservation and climate change;
- 2) Measuring the sequestration capacity of the natural resource and understanding its context in the greater summation of ecosystem benefits that the Venice Lagoon supports;
- 3) Understanding carbon sequestration withing a range of nature-based blue economy options, thereby helping to conserve the natural capital by switching to more sustainable economic activities;
- 4) Understanding capacity needs in science, management and education of stakeholders, and priorities in dressing such needs;
- 5) Understanding the potential for generating carbon offsets, including additionality, bundling of carbon with other ecosystem services, carbon market and finance required to support restoration and conservation efforts.

These, amongst other themes, represent important dimensions that may switch the “usual” paradigm of conservation and sustainability of Venice and its lagoon.

Enhancing the flow of ecosystem services from the lagoon (in the case at issue, carbon sequestration) can increase local incomes and offset some of the harm from site-specific traditional industries, such as the glass-making industry.. Such ecosystem based and natural capital-based measures will augment the social capital of the city, through creating more local employment, which is declining sharply, and therefore attempt to stop the city depopulation and abandonment.

In this we intend to bring together several experts from different fields, (economists, entrepreneurs, scientists, policy makers, activists) in order to tackle the problem from a science-based perspective which will inspire new business models, paradigms and institutional facilitation, with a focus on revamping traditional though profitable activities, like artistic glass making.

The session, therefore, would analyze the economics of the Venice lagoon, interpreted as a stock of natural capital, producing flows of ecosystem services, with a focus on the carbon sequestration from the Lagoon salt marshes (barene veneziane) and on the local entrepreneurs, including the Murano artistic glass producers, willingness to offset by and restoring the stock of salt marshes for an amount equal to their emissions. This is a typical Coase bargaining situation that could inspire the definition of the social costs of carbon, in situations very local, where property rights are clearly allocated and transaction costs are low, as prescribed by Coase theorem.

Key experts, scientists, economists, and policy makers will discuss how to close the gaps identified above and address the interdependence of the more commercial tourism to the way ecosystem services are supported and exploited. Experiences on how these problems are being handled elsewhere will help.

Organizers:

Geoffrey Heal and Laura Onofri

Participants:

Thomas Sterner

Steven Lutz

Jane da Mosto

Marcantonio Brandolini d'Adda

Speakers

Dr. Onofri, Laura, Research Professor, University of Padova

Prof. Heal, Geoffrey, Professor of Economics, Columbia Business School

Prof. Sterner, Thomas, Professor of Environmental Economics, EfD Environment for Development initiative, University of Gothenburg

Mr. Lutz, Steven, Senior Programme Officer, Blue Carbon Lead, GRID ARENDAL

Ms. da Mosto, Jane , -, We Are Here Venice

Mr. Brandolini d'Adda, Marcantonio, Artist and Designer, Laguna B

Presentation

EAERE Award for Best Doctoral Dissertations in Environmental and Resource Economics 2021

24th June 2021, 12:30 PM - 02:30 PM

Description

This thematic session is dedicated to the EAERE Award for Best Doctoral Dissertations in Environmental and Resource Economics. This award is given to encourage and recognize outstanding and innovative academic achievement in the field of Environmental and Resource Economics. Three dissertations are awarded every year after peer review of all submissions.

This year's award recipients are:

- THOMAS DOUENNE, "Essays on the economics of environmental policies: preferences, beliefs, and redistribution" (Paris School of Economics & Université Paris 1 Panthéon-Sorbonne)
- FRIKK NESJE, "Assessing climate change" (University of Oslo)
- YUTING YANG, "Economic Studies on Energy Transition and Environmental Regulations (Toulouse School of Economics)

The award session will be chaired by Phoebe Koundouri, who also chaired this year's Best Doctoral Dissertation 2021 Nominating Committee also composed by Scott Barrett and Bård Harstad.

Speakers

Prof. Koundouri, Phoebe, Professor, Athens University of Economics and Business

Presentation

Meet Editors of Environmental and Resource Economics: Katrin Millock, Ian Schumacher, Ian Bateman

24th June 2021, 02:30 PM - 03:30 PM

Description

This session provides an opportunity to meet three of the Editors of the journal Environmental and Resource Economics:

- Katrin Millock
- Ingmar Schumacher and
- Ian Bateman

The session will kick off with a short presentation about the journal, its development and remit. We will then illustrate this with regard to the Special Issue of the journal currently being prepared to celebrate the Dasgupta Biodiversity Review. The session will then be thrown open for questions from the audience. The session is very much open to all and we particularly encourage younger researchers to ask the questions they want to.

Speakers

Dr. Millock, Katrin, ,

Prof. Bateman, Ian, Professor, University of Exeter

Mr. Schumacher, Ian , Co-Editor, ERE

Presentation

Keynote by Joseph E. Stiglitz: The Social Cost of Carbon

24th June 2021, 03:30 PM - 05:00 PM

Description

Joseph E. Stiglitz is professor at Columbia University teaching at the Columbia Business School, the Graduate School of Arts and Sciences (Department of Economics) and the School of International and Public Affairs. He is also the co-chair of the High-Level Expert Group on the Measurement of Economic Performance and Social Progress at the OECD, and the Chief Economist of the Roosevelt Institute. A recipient of the Nobel Memorial Prize in Economic Sciences (2001) and the John Bates Clark Medal (1979), he is a former senior vice president and chief economist of the World Bank and a former member and chairman of the (US president's) Council of Economic Advisers. In 2001 he won the Nobel Prize for Economics joint with A. Michael Spence and George A. Akerlof for laying the foundations for the theory of markets with asymmetric information. In 2011 Stiglitz was named by Time magazine as one of the 100 most influential people in the world. He is the author of numerous books, and several bestsellers. His most recent titles are People, Power, and Profits, Rewriting the Rules of the European Economy, Globalization and Its Discontents Revisited, The Euro and Rewriting the Rules of the American Economy.

The session is hosted by Maria Loureiro.

Speakers

Prof. Stiglitz, Joseph E., Nobel Laureate, Columbia University
Loureiro, Maria, , Universidade de Santiago de Compostela

Presentation

Ecosystem services I

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Temporal Reliability of Estimates with Contingent Behavior Trip Data in Kuhn-Tucker Recreation Demand Models (PRESENTER: Lusi Xie ; DISCUSSANT: Abenezer Zeleke Aklilu)
2. Wetland investment support schemes: adoption and spatial interactions (PRESENTER: Abenezer Zeleke Aklilu ; DISCUSSANT: Matteo Zavalloni)
3. Democracy and Protected Areas (PRESENTER: Matteo Zavalloni ; DISCUSSANT: Sebastien Gerard Costedoat Costedoat)
4. Additionally and Permanence of Payments for Ecosystem Services: the case of \textit{Bolsa Verde} in Brazil (PRESENTER: Sebastien Gerard Costedoat Costedoat ; DISCUSSANT: Lusi Xie)

Speakers

Dr. Xie, Lusi, ,
Dr. Aklilu, Abenezer Zeleke, ,
Dr. Zavalloni, Matteo, Assistant professor, University of Bologna
Dr. Costedoat, Sebastien, ,

Presentations

Temporal Reliability of Estimates with Contingent Behavior Trip Data in Kuhn-Tucker Recreation Demand Models

Authors

Adamovicz, Vic, , University of Alberta
Dr. Xie, Lusi, ,

Presenter

Dr. Xie, Lusi, ,

Abstract

Contingent behavior (CB) trip data, eliciting intended trip decisions with hypothetical scenarios, has been popular in recreation demand models. Unlike other stated preference methods, the temporal reliability of CB data has not been examined in recreation demand models, especially in a Kuhn-Tucker (KT) framework. This paper assesses the temporal reliability of CB trip data collected over three years in KT models. We find that coefficient and welfare estimates are largely reliable over time. Our findings add confidence in using CB trip data to model demands within and beyond recreation contexts and provide insight into the broader application of KT models.

Wetland investment support schemes: adoption and spatial interactions

Authors

Dr. Aklilu, Abenezer Zeleke, ,
Prof. Elofsson, Katarina, Professor, Sodertorn University

Presenter

Dr. Aklilu, Abenezer Zeleke, ,

Abstract

Agri-environmental investment support that compensates landowners for the costs of wetland creation and restoration is considered an effective policy for increasing biodiversity and reducing nonpoint emissions in agricultural landscapes. This study assesses the extent to which such an agri-environmental scheme is propagated across landowners and examines determinants of the adoption of the policy in Sweden. Using spatiotemporal variations in the implementation of the scheme, we show that endogenous spatial interaction across landowners helps propagate the adoption of the scheme. We did not find spatial interactions to play a role in the disadoption of the scheme.

Democracy and Protected Areas

Authors

Dr. Bareille, Francois, ,
Dr. Wolfersberger, Julien, ,
Dr. Zavalloni, Matteo, Assistant professor, University of Bologna

Presenter

Dr. Zavalloni, Matteo, Assistant professor, University of Bologna

Abstract

While it is recognized that institutions play an important role in development, there are limited evidence on their impacts on environmental quality. In this paper, we investigate how democratic level affects the establishment of new Protected Areas (PAs). We compile information from WDPA and Polity project databases to build a balanced panel of 148 countries from 1992 to 2018. Exploiting year-to-year variations and long differences, we estimate the causal relationship between democratic levels and new PAs in the short, medium and long runs,

controlling for economic development and countries increases the implementation of new PAs. Democratization has positive effects at both the extensive and intensive margins in the short run. The intensive margin effect is more important in the long term. We also highlight some quality effects, democracies tending to privilege stringent PAs in the short run (e.g. strict biodiversity reserves) but more permissive PAs in the long run (e.g. PAs aiming to maintain cultural landscapes).

Additionally and Permanence of Payments for Ecosystem Services: the case of \textit{Bolsa Verde} in Brazil

Authors

Pfaf, Alexander, , Duke University
Dr. Costedoat, Sebastien, ,

Presenter

Dr. Costedoat, Sebastien, ,

Abstract

Payments for Ecosystem Services (PES) provide conditional incentives in exchange for better natural resources management. PES programs have been widely implemented as a tool to conserve forests and avoid greenhouse gases emissions. Emerging evidence from rigorous impact evaluations suggests that PES generally have a small but positive impact on forest cover. We assess whether deforestation has been avoided in sites where households have been enrolled in \textit{Bolsa Verde} (

Biodiversity II

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The welfare impact of delaying nature based climate solutions (PRESENTER: Michela Faccioli ; DISCUSSANT: Andrea Lucchesi)
2. Araguaia Biodiversity Corridor Cost Benefit Analysis: Large scale restoration and sustainable agribusiness in Amazon and Cerrado (PRESENTER: Andrea Lucchesi ; DISCUSSANT: Ganga Shreedhar)
3. Linking Human Destruction of Nature to COVID-19 Increases Support for Wildlife Conservation Policies (PRESENTER: Ganga Shreedhar ; DISCUSSANT: Endre Kildal Iversen)
4. Altruist talk in (also) cheap. Revealed versus stated altruism as a predictor in stated preference surveys (PRESENTER: Endre Kildal Iversen ; DISCUSSANT: Michela Faccioli)

Speakers

Dr. Faccioli, Michela, ,
Prof. Lucchesi, Andrea, ,
Dr. Shreedhar, Ganga, ,
Mr. Iversen, Endre, ,

Presentations

The welfare impact of delaying nature based climate solutions

Authors

Dr. Glenk, Klaus, Reader (Environmental and Resource Economics), SRUC
Dr. Faccioli, Michela, ,
Prof. Martin-Ortega, Julia, Professor (Environmental/Ecological Economics), Sustainability Research Institute, University of Leeds
Mr. Schulze, Christoph, Researcher, b) Leibniz Centre for Agricultural Landscape Research
Dr. Potts, Jacqueline, Senior Statistician, Biomathematics & Statistics Scotland (BIOSS), The James Hutton Institute

Presenter

Dr. Faccioli, Michela, ,

Abstract

Habitat restoration plays an important role as a greenhouse gas removal strategy to move towards net zero emissions. It is now clear that inaction in the short term will imply a need for substantive removals of greenhouse gases later in this century to remain within acceptable limits for projected warming scenarios. Peatland restoration has been identified as a

promising and cost-effective greenhouse gas mitigation strategy. Drawing on data from a choice experiment with members of the general public in Scotland, this paper investigates the economic welfare impacts of delaying peatland restoration and, consequently, the economic welfare impacts of inaction with respect to restoration in the short term. Our research design considers important medium to long term implications of restoration, which may affect preferences and thus values associated with peatland restoration to be used in cost-benefit assessments of peatland restoration programmes. The medium to long term implications are related to the notion that

Araguaia Biodiversity Corridor Cost Benefit Analysis: Large scale restoration and sustainable agribusiness in Amazon and Cerrado

Authors

Khanna, Madhu, , University of Illinois, Urbana-Champaign

Prof. Lucchesi, Andrea, ,

Prof. Pereda, Paula, Economist,

Ms Ussami, Keyi, Biologist,

Ms Ruggiero, Patricia , Biologist,

Mr. Dornelas, Victor, Economist,

Ms Lallemant, Tess, Economist,

Presenter

Prof. Lucchesi, Andrea, ,

Abstract

This paper focuses on the cost-benefit and cost-effectiveness analysis of reforesting 931 thousand hectares of legally protected areas in the Amazon and Cerrado biomes located in the Araguaia Biodiversity Corridor (Brazil), as required by the Brazilian Forest code regulation. We analyze two alternative models for recovery (ecological or economic when including timber and agroforestry systems), and project the main expenses, revenues and monetized environmental benefits, utilizing social cost of carbon and the replacement cost method (carbon capture and avoided soil erosion) for land enrolled in the recovery activity over a 50-year time horizon. According to our estimates, the recovery of the Araguaia Corridor leads to net societal benefits with either the ecological (US\$ 19.8 billion) or economic (US\$ 18.9 billion) models, in all macro regions (north, central and south) and rural property sizes (small, medium and large). The recovery captures 262 million tCO₂eq and avoids 527 million tons of soil erosion with the economic model; these estimates are 23% and 1.7% higher, respectively, when using the ecological model. There are also important local impacts, such as 38 thousand and 12 thousand direct jobs created with the economic and ecological models, respectively.

Linking Human Destruction of Nature to COVID-19 Increases Support for Wildlife Conservation Policies

Authors

Dr. Shreedhar, Ganga, ,

Prof. Mourato, Susana, Professor, LSE

Presenter

Dr. Shreedhar, Ganga, ,

Abstract

This paper investigates if narratives varying the cause of the COVID-19 pandemic affects pro-wildlife conservation outcomes. In a pre-registered online experiment (N = 1081), we randomly allocated subjects to either a control group or to one of three narrative treatment groups, each presenting a different likely cause of the COVID-19 outbreak: an animal cause; an animal and human cause (AHC); and an animal, human or lab cause. We found that the AHC narrative elicited significantly greater pro-conservation policy support, especially

for bans in the commercial trade of wildlife, when compared to the control group.

Possible mechanisms driving this effect are that AHC narratives were less familiar, elicited higher mental and emotional engagement, and induced feelings that firms and governments are responsible for mitigating wildlife extinction.

[Altruist talk in \(also\) cheap. Revealed versus stated altruism as a predictor in stated preference surveys](#)

Authors

Dr. Grimsrud, Kristine, Senior Researcher, Statistics Norway

Dr. Lindhjem, Henrik, Partner, Menon

Mr. Iversen, Endre, ,

Dr. Mitani, Yohei, ,

Presenter

Mr. Iversen, Endre, ,

Abstract

Altruistic preferences of various forms may cause difficulties in welfare economics. In the valuation of public goods, such preferences are believed to help explain the substantial non-use values found in many stated preference (SP) valuation surveys. However, studies analysing the effect of altruism on willingness to pay (WTP) have underappreciated the challenges in measuring altruism by the stated measures typically used. Instead, we exploit a naturally occurring decision domain to investigate the role of altruism in SP. We make use of an Internet survey company

Choice models I

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Public preferences for soil biodiversity-friendly forest management: a comparison across three European regions (PRESENTER: Iris Vanermen ; DISCUSSANT: Sonja Kolstoe)
2. Understanding Differences in Willingness to Pay for Endangered, Threatened, and Non-Listed Bird Species Across Sample Populations in the Age of Social Media (PRESENTER: Sonja Kolstoe ; DISCUSSANT: Anders Dugstad)
3. "This is Ours" – Psychological Ownership in Stated Preference Research (PRESENTER: Anders Dugstad ; DISCUSSANT: Jürgen Meyerhoff)
4. About the performance and preference stability in full versus partial profile choice set designs in environmental valuation (PRESENTER: Jürgen Meyerhoff ; DISCUSSANT: Iris Vanermen)

Speakers

Ms Vanermen, Iris, ,
Dr. Kolstoe, Sonja, ,
Mr. Dugstad, Anders, ,
Meyerhoff, Jürgen, , Technische Universität Berlin

Presentations

Public preferences for soil biodiversity-friendly forest management: a comparison across three European regions

Authors

Ms Vanermen, Iris, ,
Dr. Kessels, Roselinde, /,
Prof. Muys, Bart, Professor,
Prof. Verheyen, Kris, Professor,
Prof. Vranken, Liesbet, Professor,

Presenter

Ms Vanermen, Iris, ,

Abstract

Sustainable forest management is increasingly recognized as essential throughout Europe. Nevertheless, the social dimension of sustainability is often overlooked leading to several conflicts among stakeholders, including citizens. A crucial component linking management and ecosystem services valued by citizens is soil biodiversity while it is often overlooked, undervalued and under pressure. In this study, we want to assess public preferences for forest management choices impacting soil biodiversity to investigate the presence or absence of

support for soil biodiversity-friendly forest management. We do this through a discrete choice experiment with 775 citizens across three regions in Europe (Finland, Flanders and Italy). This allows us to assess the relevance of regional context on preferences and the relative importance of management choices. Moreover, we investigate the extent to which an informational video can direct preferences towards soil biodiversity-friendly forest management. We find similarities as well as differences in preferences between regions. Forest layering, the absence of open patches, tree species diversity and recreation possibilities are considered important in all three regions, with soil biodiversity-friendly levels generally preferred. However, mushroom and berry picking was valued more in Finland compared to Flanders, while Flemish respondents expressed significantly higher preferences for forest layering, the absence of open patches, a regulation of forest roads for recreation and high carbon storage compared to Finnish and Italian respondents. These findings can be linked to the context of these regions as mushroom and berry picking is common practice in Finland while forbidden in Flanders. Moreover, small forest patches and limited forest area lead to high pressures on forest in Flanders, while forest availability is considerably higher in Finland and Italy and access is not restricted. Additionally, the informational video was found to have limited effects in Finland and Italy, while generally willingness-to-pay significantly increased for one or more levels of most attributes in Flanders. Nevertheless, the informational video significantly increased preferences for higher shares of old trees and dead wood and tree logging through fixed logging roads in all three regions. These findings point at the need for developing forest management approaches adapted to a specific region, especially concerning prioritization of management goals and cultural ecosystem services, while also similarities in public preferences for forest management were found (e.g. absence of open patches, diverse tree stands, etc.). Moreover, soil biodiversity-friendly levels of forest management were generally preferred in all three regions, except for higher shares of old trees and dead wood, which was however found to be positively impacted by information transfer in all regions. Hence, information transfer seems to have most potential concerning these management choices.

Understanding Differences in Willingness to Pay for Endangered, Threatened, and Non-Listed Bird Species Across Sample Populations in the Age of Social Media

Authors

Dr. Kolstoe, Sonja, ,

Dr. Vander Naald, Brian, Professor, Drake University

Ms Cohan, Alison, Director of Maui Nui program, The Nature Conservancy

Presenter

Dr. Kolstoe, Sonja, ,

Abstract

Nonprofits are increasingly involved in managing sites to preserve habitat for endangered and threatened species. We use a discrete choice experiment (DCE) to investigate willingness to pay (WTP) by the general public to go on a birding-focused hike into an ecologically unique site managed by a nonprofit. We gather survey data from two separate groups of respondents -- social media users and a quota-based representative sample from Qualtrics

“This is Ours” – Psychological Ownership in Stated Preference Research

Authors

Brouwer, Roy, , University of Waterloo

Navrud, Stale, , Norwegian University of Life Sciences
Mr. Dugstad, Anders, ,
Dr. Grimsrud, Kristine, Senior Researcher, Statistics Norway
Prof. Kipperberg, Gorm, Associate Professor, University of Stavanger
Dr. Lindhjem, Henrik, Partner, Menon

Presenter

Mr. Dugstad, Anders, ,

Abstract

With its origin in organizational sciences, psychological ownership is a state where people feel they own an object that they do not necessarily have legal ownership over. Referred to as the embedding effect, ownership is understood to be value-enhancing. Likewise, consumer research suggests that psychological ownership is value-enhancing. While psychological ownership has been very limited explored in relation to natural resources, environmental psychological research suggests that it can serve as an explanation for opposition against developments in natural areas, which has a tendency to be described as the not-in-my-backyard syndrome. By conducting a discrete choice experiment and estimating a hybrid mixed logit model, we conduct the very first study to assess the significance of collective psychological ownership in response to changes in natural areas. The setting is a proposed rural wind farm. Consistent with consumer research, we find that psychological ownership of the affected natural areas is value-enhancing. People with psychological ownership value the natural areas more and also attach a higher monetary value to accept undesired impacts of the wind farm. We further find evidence of that psychological ownership explains opposition. Policy and environmental management implications of the findings are discussed. We also provide recommendations for future research.

About the performance and preference stability in full versus partial profile choice set designs in environmental valuation

Authors

Meyerhoff, Jürgen, , Technische Universität Berlin
Dr. Oehlman, Malte, Senior researcher, TU Munich

Presenter

Meyerhoff, Jürgen, , Technische Universität Berlin

Abstract

An issue constantly raising concerns is the complexity of choice tasks in stated choice experiments. Generally, designing them requires trade-offs between the amount of information one can derive, especially through the number of attributes, and the measurement error caused through increased complexity. Leaving certain attributes out, however, might not only lead to a reduced amount of information but also to a misrepresentation of the good in question. An opportunity to reduce the trade-off is to apply partial profile designs. The idea is that not all attributes have to vary on all choice tasks. They have, however, rarely been used in environmental valuation, and if, no split sample approaches were used to investigate performance differences. In this study, we aim at filling this gap by using both design types to value the good ecological status of the German North and Baltic Sea. Additionally, two survey waves were conducted, one at the beginning of the first Covid-19 wave in March 2020 and one at the beginning of September

2020 at the end of summer. We find that the partial profile design leads in both points in time to substantially lower WTP estimates, but that the difference narrows in the second wave.

Forests and land use

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Indigenous Land, Property Rights, and Violence in Brazil (PRESENTER: Bernardo Mueller ; DISCUSSANT: Daniela Miteva)
2. Avoided forest conversion due to vertical integration of wood production in community forests (PRESENTER: Daniela Miteva ; DISCUSSANT: Vesa-Pekka Parkatti)
3. Economics of multifunctional forestry in the Sámi people homeland region (PRESENTER: Vesa-Pekka Parkatti ; DISCUSSANT: Rafael González-Val)
4. The probability distribution of worldwide forest areas (PRESENTER: Rafael González-Val ; DISCUSSANT: Bernardo Mueller)

Speakers

Prof. Mueller, Bernardo, ,
Dr. Miteva, Daniela, ,
Mr. Parkatti, Vesa, ,
Dr. González-Val, Rafael, ,

Presentations

Indigenous Land, Property Rights, and Violence in Brazil

Author

Prof. Mueller, Bernardo, ,

Presenter

Prof. Mueller, Bernardo, ,

Abstract

Brazil holds a large proportion of all indigenous land in the world, much of it in the Amazon. The rights of indigenous people to their land has been formally recognized since colonial times and was significantly strengthened in the 1988 Constitution, providing the legal basis for several efforts to identify, demarcate and title this land. Despite these protections, indigenous rights have been encroached upon and their land regularly pillaged by an expanding economy. Can stronger property rights prevent the suffering and devastation that have resulted from this process or is this an inevitable side effect of economic development and modernization? In this paper I analyze data on all indigenous lands in Brazil to measure the impact of property rights on land-related violence and murder, controlling for geographical and economic factors. Property rights for indigenous land in Brazil go through a four-stage titling process, providing useful variability for identifying the impact of these rights. Further variation arises from the several land titling programs pursued by the

government over several decades, allowing me to separate different levels of property rights security. The results highlight that indigenous land in Brazil covers a wide variety of contexts, peoples, and situations, each posing different challenges. Yet, the evidence shows that, on average, clearer property right can reduce land-related violence.

Avoided forest conversion due to vertical integration of wood production in community forests

Authors

Dr. Miteva, Daniela, ,

Prof. Sills, Erin, economist,

Mr. Ellis, Peter, forest carbon scientist,

Dr. Ellis, Edward, research professor, forest management & conservation,

Dr. Griscom, Bronson, researcher, climate change, forest carbon,

Presenter

Dr. Miteva, Daniela, ,

Abstract

Natural resource conservation and development programs across the developing world have recently been emphasized the devolution of natural resource management to local communities. While emerging empirical work has suggested that community management can generate significant income to communities while protecting forests, only a few studies test why some community managed resources are successful, whereas others are not. To address this gap, we focus on community forest enterprises (CFEs), where forests are communally managed, with most of the timber sold on markets for profit and examine the impact of the level at which community managed forests are integrated into the supply chain (vertical integration) on deforestation driven by forest conversion. Deriving a theoretical model of forest conversion under different levels of vertical integration, we use detailed spatially explicit panel data from the state of Quintana Roo in Mexico to test our predictions. We find evidence that vertical integration reduces forest conversion. Our results have important implications for conservation, development, and climate mitigation policy.

Economics of multifunctional forestry in the Sámi people homeland region

Authors

Tahvonen, Olli, , University of Helsinki

Mr. Parkatti, Vesa, ,

Presenter

Mr. Parkatti, Vesa, ,

Abstract

We study forestry in the S

The probability distribution of worldwide forest areas

Author

Dr. González-Val, Rafael, ,

Presenter

Dr. González-Val, Rafael, ,

Abstract

This paper analyses the probability distribution of worldwide forest areas. We find moderate support for a Pareto-type distribution (power law) using FAO data from 1990 to 2015. A power law is a plausible model for the world probability distribution of forest areas in all examined years although the log-normal distribution is a plausible alternative model that cannot be rejected. The random growth of forest areas could generate a power law or log-normal distribution. We study the change in forest coverage using parametric and non-parametric methods and although we find evidence of a slight convergence of forest areas over the period, random forest area growth cannot be rejected for most of the distribution of forest areas.

Water markets II

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Flood Your Neighbors: Spillover Effects of Levee Building (PRESENTER: Haoluan Wang ; DISCUSSANT: Yichun Huang)
2. Assessing the trade off between environmental objectives and economic cost: a study of water management rules for oil sands mining In Canada (PRESENTER: Yichun Huang ; DISCUSSANT: Zehua Pan)
3. Benefits of improved water quality with a hedonic pricing analysis: can spatial dependence analyses support? (PRESENTER: Zehua Pan ; DISCUSSANT: Jennifer Meyer)
4. Water Reliability Improvements in Jordan: An Impact Evaluation (PRESENTER: Jennifer Meyer ; DISCUSSANT: Haoluan Wang)

Speakers

Mr. Wang, Haoluan, ,
Dr. Huang, Yichun, ,
Mr. Pan, Zehua, ,
Dr. Meyer, Jennifer, ,

Presentations

Flood Your Neighbors: Spillover Effects of Levee Building

Author

Mr. Wang, Haoluan, ,

Presenter

Mr. Wang, Haoluan, ,

Abstract

Measures taken to protect against natural catastrophes can raise the risk of damage by incentivizing agents to increase economic activities in catastrophe-prone areas. In the meanwhile, an agent

Assessing the trade off between environmental objectives and economic cost: a study of water management rules for oil sands mining In Canada

Authors

Dr. Huang, Yichun, ,

Prof. Insley, Margaret, Associate Professor, University of Waterloo

Presenter

Dr. Huang, Yichun, ,

Abstract

The regulation of water demand by the mining sector is an important policy concern in many regions. This paper examines a particular water regulation developed for oils sands mining operations in Alberta, Canada. In developing this water management regulation (called the Phase 2 regulation), the government examined multiple alternatives to determine the most cost effective set of rules to limit water withdrawals from the Athabasca River. While the effectiveness of different rule sets was based on scientific environmental assessment, the cost was measured simply by the construction cost of water storage capacity. This paper applies a stochastic optimal control model to examine the total cost of alternative rule sets in a dynamic setting under different assumptions regarding future river flows and economic factors. Our goal is to determine whether the government's choice of the optimal rule set is robust when river conditions and other assumptions are varied. Our analysis shows that the most important factors in determining the projected cost of the water restrictions are assumptions regarding the storage capacity, cost of storage, projected river flow conditions, productive capacity and reserves. It is also found that given the significant growth of oil sands productive capacity assumed by the government while developing the Phase 2 rule set, the recommended water restriction rule set is robust. However, for a smaller assumed growth in oil sands capacity, the proposed water restrictions impose very little cost on the oil sands industry. In this case, a different rule set would be recommended based on its better expected outcome in terms of maintaining the chosen ecosystem indicator. The insights from our analysis are generally applicable to the regulation of water use in the mining sector.

Benefits of improved water quality with a hedonic pricing analysis: can spatial dependence analyses support?

Authors

Brouwer, Roy, , University of Waterloo

Mr. Pan, Zehua, ,

Ms Leng, Zhongxiao, University of Waterloo,

Dr. Linderhof, Vincent, Environmental and water resources economist,

Presenter

Mr. Pan, Zehua, ,

Abstract

Hedonic pricing models can quantify the economic benefit of hydrological improvements due to policy changes. However, most recent studies only focus on single site restorations, which may cause external validation problems. In other words, these estimations may not be representable due to variations of pollution sources and causations. This study exploited the correlation between water parameters and housing price in four major regions of the Netherlands. By comparing regions with similar environmental and demographical characters, we find regions possess similar impacts due to housing and amenities covariates. On the other hand, we find these four regions present different influences due to water quality changes caused by different pollution sources through a stepwise control and spatial specifications.

Water Reliability Improvements in Jordan: An Impact Evaluation

Authors

Dr. Meyer, Jennifer, ,

Dr. Jeuland, Marc, Associate Professor, Duke University

Presenter

Dr. Meyer, Jennifer, ,

Abstract

Over 300 million households globally suffer from intermittent water supply (IWS) from existing piped water systems (Kumpel and Nelson 2016). Households with IWS often invest in costly water storage solutions or rely on alternative water sources which are often less safe and have significant time costs (Ashraf et al. 2017; Brocklehurst and Slaymaker 2015). IWS is particularly acute in Jordan, which ranks the seventh lowest globally in total renewable water resources per capita (FAO 2017). This paper evaluates a water infrastructure intervention which aimed to reduce water losses and improve water reliability for households in peri-urban Jordan. Such interventions are difficult to rigorously evaluate, because their large-scale nature makes randomization impossible. Using a large-scale infrastructure improvement funded by the Millennium Challenge Corporation, we use a combination of difference-in-differences and propensity score matching to estimate the impacts of the improvements on household welfare. We find that the intervention decreased the probability of experience water shortage and that water pressure improved in intervention households relative to controls. However, we do not find statistically significant effects on network water consumption; and the effects on non-network water expenditures (coping costs) are ambiguous.

Power markets: microeconomics

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Evidence of Flexibility and its Economic Implications on the Day-ahead Electricity Market (PRESENTER: Gloria Maria Colmenares Montero ; DISCUSSANT: Oliver Ruhnau)
2. Market-based renewables: How flexible hydrogen electrolyzers stabilize wind and solar market values (PRESENTER: Oliver Ruhnau ; DISCUSSANT: Clement Leblanc)
3. Pitfalls of Insuring Production Risk: a Case Study on some Wind Power Auctions in France (PRESENTER: Clement Leblanc ; DISCUSSANT: Mirjam Kosch)
4. The Cross-border Merit-order Effect: Impact of German Renewable Promotion on Neighbouring Countries (PRESENTER: Mirjam Kosch ; DISCUSSANT: Gloria Maria Colmenares Montero)

Speakers

Ms Colmenares, Gloria, ,
Mr. Ruhnau, Oliver, ,
Mr. Leblanc, Clément, ,
Dr. Kosch, Mirjam, ,

Presentations

Evidence of Flexibility and its Economic Implications on the Day-ahead Electricity Market

Author

Ms Colmenares, Gloria, ,

Presenter

Ms Colmenares, Gloria, ,

Abstract

I use the first wave of COVID-19 as a natural experiment to document evidence of flexibility on the German day-ahead electricity market. I parameterize a model that represents uncertainty on the demand side as intermittency of renewables. I then compare pre- to post-COVID-19 data to investigate lower-bound economic implications. Post-COVID-19 and with 44% of renewable shares, electricity prices were most sensitive to fuel costs, and almost completely passed through, while they remained rigid to CO2 costs. A decrease in demand consumption had a detrimental welfare effect on both, consumers and producers. An increase in demand consumption was slightly beneficial in the afternoon peak, mainly for consumers. Although the distributional gap was reduced, both actors, were worst off post-COVID-19. This kind of flexibility response was likely the result of a reduction in the minimum generation. CO2 emissions were lower by 31% on average, but emissions from lignite remained almost constant, at around 56% of total emissions from fossil fuels. If the observed

consumption pattern persists to some extent, in a market with higher renewable shares and more extreme weather conditions, more appropriate market rules would be necessary to achieve allocative efficiency.

Market-based renewables: How flexible hydrogen electrolyzers stabilize wind and solar market values

Author

Mr. Ruhnau, Oliver, ,

Presenter

Mr. Ruhnau, Oliver, ,

Abstract

Wind and solar energy are often expected to fall victim to their own success: the higher their share in electricity production, the more their revenue on electricity markets (their

Pitfalls of Insuring Production Risk: a Case Study on some Wind Power Auctions in France

Authors

Mr. Leblanc, Clément, ,

Dr. Lamy, Laurent, Researcher, CIRED / ENPC

Presenter

Mr. Leblanc, Clément, ,

Abstract

We consider auctions for procurement contracts that have both exogenous production risk and a payment rule depending on the winning bidder's self-reported expected production. We establish an incentive to overestimate production when the payment rule is production-insuring (under truthful reporting), and that it is impossible to design a rule that fully insures strategic bidders. We then analyze equilibrium bidding behavior under several paradigms and illustrate our results on the pitfalls of production-insuring payment rules with some offshore wind power auctions in France. The estimated benefits under truthful reporting are much lower in magnitude than the potential losses due to misreporting, which exceed 3%. We consider variants of the French rule, in particular with punishments aimed to discourage misreporting, and find limited room for improving unit-price contracts.

The Cross-border Merit-order Effect: Impact of German Renewable Promotion on Neighbouring Countries

Authors

Dr. Kosch, Mirjam, ,

Dr. Abrell, Jan, Senior Researcher,

Presenter

Dr. Kosch, Mirjam, ,

Abstract

Electricity generation based on renewable energy (RE) sources such as wind and solar replace the most expensive generators in the market, and thus induce a decrease in wholesale electricity prices. This so-called merit-order effect stimulates an increase in net-exports. Consequently, prices in neighboring countries are also likely to decrease. This cross-border merit-order effect causes opposing effects on consumers and producers: Generators' profits

decline, while consumers benefit from decreasing prices and an increase in the consumer surplus. This implies that unilateral RE promotion, which is usually paid for by the consumers within the country itself, impact neighboring electricity markets. We estimate the cross-border merit-effect for German RE using hourly data on electricity generation, demand and wholesale prices for the period from 2015 to 2018. We find that German RE decreased electricity prices in surrounding countries by up to 10EUR/MWh or 23%, and can thus have a significant impact on their consumer and producer rents.

Land use I

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Optimal Localization of Agricultural Biofuel Production Facilities (PRESENTER: Ida Nordin ; DISCUSSANT: Raja Chakir)
2. Land use adaptation to climate change in Europe: a spatial econometric analysis (PRESENTER: Raja Chakir ; DISCUSSANT: Roger von Haefen)
3. Congestion Pricing for Outdoor Recreation: An Application to Gulf Coast Beaches (PRESENTER: Roger von Haefen ; DISCUSSANT: Moritz Hentschl)
4. Land use change and dietary transitions – Addressing preventable climate and biodiversity damage (PRESENTER: Moritz Hentschl ; DISCUSSANT: Ida Nordin)

Speakers

Ms Nordin, Ida, ,
Dr. Chakir, Raja, Researcher, INRAE
von Haefen, Roger, , North Carolina State University
Mr. Hentschl, Moritz, ,

Presentations

Optimal Localization of Agricultural Biofuel Production Facilities

Authors

Prof. Elofsson, Katarina, Professor,
Ms Nordin, Ida, ,
Dr. Jansson, Torbjörn, Reseracher, Swedish University of Agricultural Sciences

Presenter

Ms Nordin, Ida, ,

Abstract

Policies for investment in biofuel production facilities and feedstock can be necessary to meet climate and renewable energy targets. Such policies entail a trade-off between high transportation cost of biomass and economies of scale of production facilities. We develop a spatial optimisation model and investigate the cost-effective localization of production facilities for ethanol from agricultural land in Sweden. Feedstock costs were most important for the location, but high feedstock density motivates large facilities in areas with high feedstock costs. For higher production levels, feedstock from the whole country is used despite high transport costs.

Land use adaptation to climate change in Europe: a spatial econometric analysis

Authors

Dr. Lungarska, Anna, ,

Dr. Chakir, Raja, Researcher, INRAE

Dr. Jayet, Pierre-Alain, Researcher, INRAE

Presenter

Dr. Chakir, Raja, Researcher, INRAE

Abstract

We estimate a spatial econometric land use share model (agriculture, forest, urban, and other) at the EU level and the regional scale. We employ our estimations to assess how land use in Europe will adapt to climate change (CC). We simulate a mitigation policy for agriculture (tax on greenhouse gas (GHG) emissions) and study its impact on land use under the CC scenario. Our results show that: first, there is a spatial auto-correlation in the land use data which we need to account for explicitly in our econometric land use models. Second, in Europe CC implies an increase in crop areas (+ 2.65%) at the expense of pasture (-2.03%) and other uses. This means that land use adaptation to CC in Europe will increase GHG emissions through a reduction of the carbon sink of pasture. Third, the impact on agriculture of a GHG emissions tax is greater in relation to GHG reductions if we account for land use change (LUC). Finally, adaptation to land use to accommodate CC could have a negative effect on mitigation efforts.

Congestion Pricing for Outdoor Recreation: An Application to Gulf Coast Beaches

Authors

von Haefen, Roger, , North Carolina State University

Dr. Lupi, Frank, Professor, Michigan State University

Presenter

von Haefen, Roger, , North Carolina State University

Abstract

This paper combines a simple conceptual framework and a more detailed empirical analysis to investigate congestion fees for sandy beach access in the Gulf Coast region. The conceptual framework highlights three distinct effects from congestion fees: 1) a pure price effect, whereby higher fees, reduce demand at taxed sites, ceteris paribus; 2) a taxed site substitution effect, where the lower demand at taxed sites reduces congestion, which, all else equal, increases demand at these sites; and 3) a non-taxed site congestion effect, where the fee also generates a substitution or

Land use change and dietary transitions – Addressing preventable climate and biodiversity damage

Authors

Mr. Hentschl, Moritz, ,

Ms Michalke, Amelie, Doctorand, Greifswald University

Mr. Pieper, Maximilian, Student, Technical University of Munich

Dr. Gaugler, Tobias, Scientific assistant, University of Augsburg

Prof. Stoll-Kleemann, Susanne, Professor, University of Greifswald

Presenter

Mr. Hentschl, Moritz, ,

Abstract

Land use changes (LUC) cause a large share of anthropogenic greenhouse gas emissions and endanger global biodiversity. Although LUC appear mainly as loss of tropical rainforest, the drivers can be located in regions of the global north, importing large quantities of agricultural goods from tropical countries. The aim of this study is to present a method to quantify and monetize the LUC impact caused by consumption of animal-based food, followed by applying this method to Germany as part of a case study and subsequently explore potential driven dietary transitions.

We calculate the LUC impacts related to German animal-based food consumption with a combination of a land-balance, emission and physical trade model. In particular, we determine CO₂ emissions caused by LUC as well as deforested area with its associated biodiversity losses. Following the true cost accounting approach (TCA), the calculated LUC impacts are then monetized in order to approximate the related true costs of German food consumption.

Our results show that German consumption of animal products causes 16.4 kha of deforestation annually (investigation period: 2013)

There is a great urgency for political measures as well as shifts in consumer behavior if sustainability goals are to be achieved: both sides need to strive for a dietary transition towards more plant-based diets.

Choice experiments II

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Biogas attribute tradeoffs among coffee-dairy farmers: a choice experiment in Kiambu and Machakos counties, Kenya (PRESENTER: Stephen Mailu ; DISCUSSANT: Pierre-Alexandre Mahieu)
2. Has the COVID-19 pandemic had an effect on stated preferences towards renewable energy development? (PRESENTER: Pierre-Alexandre Mahieu ; DISCUSSANT: Rossella Atzori)
3. Health or Economy? A Hybrid Choice modelling approach to estimate the trade-off between perceived health risks and economic benefits (PRESENTER: Rossella Atzori ; DISCUSSANT: Liana Anderson)
4. Innovative fire policy in the Amazon: a statistical Hicks-Kaldor analysis (PRESENTER: Liana Anderson ; DISCUSSANT: Stephen Mailu)

Speakers

Mr. Mailu, Stephen, ,

Dr. Mahieu, Pierre-Alexandre, Researcher, Université de Nantes

Ms Atzori, Rossella, ,

Dr. Anderson, Liana, Researcher, Brazilian Centre for Monitoring and Early Warnings of Natural Disasters

Presentations

Biogas attribute tradeoffs among coffee-dairy farmers: a choice experiment in Kiambu and Machakos counties, Kenya

Authors

Mr. Mailu, Stephen, ,

Dr. Irungu, Patrick, Senior Lecturer, Department of Agricultural Economics, University of Nairobi

Dr. Rewe, Thomas, Senior Lecturer, Department of Animal Science, Pwani University

Prof. Kiriamiti, Henry, Professor, Department of Chemical and Process Engineering, School of Engineering, Moi University

Presenter

Mr. Mailu, Stephen, ,

Abstract

The biogas technology trajectory in Kenya, as well as other countries in the region, has not been impressive. Granted that the cost is touted as the one most important challenge to the adoption of this technology, other emergent problems still exist. These are based on some attributes of the technology. This concerns the number of defective plants which we argue is important in enticing potential adopters to consider taking up the technology.

After presenting the random utility framework upon which choices among alternatives are made, a choice experiment was designed. Six attributes in the choice experiment including the ease of defect identification were considered in the experiment. A mixed logit model was used for the estimation of these tradeoffs using data collected from a sample of coffee farmers in Kiambu and Machakos. Respondents were willing to pay a non-zero amount for easy defect identification. This result suggests its utility enhancing quality. An argument towards the possibility of coupling individual biogas units with IoT based sensor instrumentation is presented.

Has the COVID-19 pandemic had an effect on stated preferences towards renewable energy development?

Authors

Dr. Chèze, Benoît, ,
Dr. Crastes dit Sourd, Romain, ,
Zawojaska, Ewa, ,
- Mahieu, Pierre, -,
- Gastineau, Pascal, -,

Presenter

- Mahieu, Pierre, -,

Abstract

This paper inquiries whether stated preferences and value estimates for environmental programs are sensitive to changes in overall conditions caused by the COVID-19 pandemic. The specific case study concerns valuation of a project of developing renewable energy infrastructure in France, by building underwater turbines to generate energy from marine currents. Two identical surveys were conducted in 2019, about a year before the pandemic, and in 2020, during the pandemic, on split samples comparable with respect to socio-demographics. The COVID-19 pandemic appears to have an impact on respondents

Health or Economy? A Hybrid Choice modelling approach to estimate the trade-off between perceived health risks and economic benefits

Authors

Ms Atzori, Rossella, ,
Ms Meleddu, Daniela, Researcher,
Prof. Strazzera, Elisabetta, Full Professor,

Presenter

Ms Atzori, Rossella, ,

Abstract

Hazardous facilities raise issues of public acceptance which require comprehension in order to evaluate welfare changes and compensation measures for the local populations impacted by their presence. While the socio-psychological literature has delved in depth in the psychological motivations behind acceptance, economics studies are more focused on the characteristics of the project and the contextual factors which could influence the acceptance. The present work deals with public preferences regarding a military facility in Sardinia (Italy). It applies a hybrid choice model which integrates a rich socio-psychological framework with a choice model, resulting in a complex multi-layer structure. Results show that place attachment positively affects the sense of community and a higher community

involvement increases trust in institutions. In turn, higher trust reduces perceived health risks and increase perceived economic benefits. The latter factors are negatively correlated and directly influence preferences toward the hazardous facility, along with attributes characterising the alternatives and respondents

Innovative fire policy in the Amazon: a statistical Hicks-Kaldor analysis

Authors

Prof. Morello, Thiago, ,

Dr. Anderson, Liana, Researcher, Brazilian Centre for Monitoring and Early Warnings of Natural Disasters

Prof. Silva, Sonaira, Professor, Federal University of Acre State, Brazil

Presenter

Dr. Anderson, Liana, Researcher, Brazilian Centre for Monitoring and Early Warnings of Natural Disasters

Abstract

Developing countries have been recently addressing the respiratory health impact of agricultural burnings with innovative environmental policy. In Acre state, Brazilian Amazon, mechanization is subsidized, enabling smallholders to comply with a cap on burned area. To appraise amendments in the policy, a statistical Hicks-Kaldor test, robust to stakeholders' disparities in preferences and number of affected individuals, was developed and applied to stakeholders

Energy: behavioural aspects

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Modelling behavioural barriers in energy system analysis: The example of renewable heat in Ireland (PRESENTER: Tong Zhu ; DISCUSSANT: Tarun Khanna)
2. Reducing carbon emissions of households through monetary incentives and behavioral interventions: a meta-analysis (PRESENTER: Tarun Khanna ; DISCUSSANT: Muxi Yang)
3. Optimal Targeting in Information Provision Programs: Evidence from Home Energy Reports (PRESENTER: Muxi Yang ; DISCUSSANT: Christa Brunnschweiler)
4. Follow the leader: Using videos to make information on resource revenue management more relevant (PRESENTER: Christa Brunnschweiler ; DISCUSSANT: Tong Zhu)

Speakers

Dr. Zhu, Tong, ,
Mr. Khanna, Tarun, ,
Ms Yang, Muxi, ,
Brunnschweiler, Christa, , University of East Anglia

Presentations

Modelling behavioural barriers in energy system analysis: The example of renewable heat in Ireland

Authors

Dr. Zhu, Tong, ,
Prof. Curtis, John, Prof,
Dr. Clancy, Matthew, Prof,

Presenter

Dr. Zhu, Tong, ,

Abstract

While there is a rich body of literature on the wide range of barriers to energy efficiency, little guidance exists on how to integrate the barriers in energy system modelling. The present study develops a prototype to represent barriers such as risk perceptions and inertia in energy system analysis. Employing a simulation model that describes the supply and demand of bioenergy in Ireland, our results show the methodological importance of the representation of heat-users' decision making process in energy system analysis. Implications in promoting renewable heat, market development and regulation are discussed.

Reducing carbon emissions of households through monetary incentives and behavioral interventions: a meta-analysis

Authors

Dr. Koch, Nicolas, Head Policy Evaluation Lab, Mercator Research Institute on Global Commons and Climate Change (MCC)

Prof. Löschel, Andreas, Professor, University of Münster

Mr. Khanna, Tarun, ,

Dr. Minx, Jan, Professor,

Dr. Creutig, Felix, Professor,

Dr. Haddaway, Neal, researcher,

Prof. Baiocchi, Giovanni , Professor,

Prof. Hirth, Lion, Professor,

Mr. Callaghan, Max, researcher,

Presenter

Mr. Khanna, Tarun, ,

Abstract

Despite the importance of evaluating all mitigation options so as to inform policy decisions addressing climate change, a systematic analysis of household-scale interventions to reduce carbon emissions is missing. Here, we address this gap through a state-of-the-art machine-learning assisted meta-analysis to comparatively assess the effectiveness of a range of monetary and behavioral interventions in energy demand of residential buildings. These include time of use pricing, feedback on electricity consumption, information provision etc., but excluding incentives for equipment adoption and structural changes. We identify 122 studies and extract 360 effect sizes representing trials on 1.2 million households in 25 countries. We find that all the studied interventions reduce energy consumption of households. Our meta-regression evidences that monetary incentives are on an average more effective than behavioral interventions, but deploying the right combinations of interventions together can increase overall effectiveness. We estimate global cumulative carbon emissions reduction of 8.64 Gt CO₂ by 2040, though deploying the most effective packages and interventions could result in greater reduction. While modest, this potential should be viewed in conjunction with the need for de-risking mitigation with energy demand reductions and realizing substantial co-benefits.

Optimal Targeting in Information Provision Programs: Evidence from Home Energy Reports

Authors

Gerarden, Todd, , Harvard University

Ms Yang, Muxi, ,

Presenter

Ms Yang, Muxi, ,

Abstract

We investigate the potential for targeted treatment rules to improve the cost-effectiveness of a large-scale behavioral intervention to encourage energy conservation. We first verify that receiving personalized feedback on energy use causes households to reduce their electricity consumption on average, and we present evidence of treatment effect heterogeneity. We then use a policy learning approach to derive treatment rules based on observable household characteristics that exploit this heterogeneity to maximize the expected benefits of the intervention. Targeting using transparent and easily implemented treatment rules yields

significant gains, relative to both the randomized treatment assignment that was actually implemented and universal treatment.

Follow the leader: Using videos to make information on resource revenue management more relevant

Authors

Brunnschweiler, Christa, , University of East Anglia

Prof. Lujala, Paivi, Professor, University of Oulu

Mr. Edjekumhene, Ishmael, NGO Director, KITE

Presenter

Brunnschweiler, Christa, , University of East Anglia

Abstract

How can citizens be motivated to demand accountability in the management of public revenues? We use a video survey experiment to provide information, and employ role models to provide encouragement and motivation to act. The experiment focused on petroleum revenue management in Ghana and included over 2300 respondents. Providing information significantly increased satisfaction with current revenue management, though treated participants remained dissatisfied on average. We also found increased intention to demand more accountability through greater debate. The role models had an additional effect: they increased the sense that an individual can influence how petroleum revenues are used; the intention to contact media and to vote differently to ensure better accountability. These changes, however, did not persist, and a follow-up with 925 respondents 2.5 years later later showed few differences between the control and the treated groups. The experiment demonstrates that providing relevant information affects attitudes and planned behavior in the short term, and that role models give valuable encouragement for behavioral change.

Energy efficiency and transportation

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Who Values Future Energy Savings? Evidence from American Drivers (PRESENTER: Lutz Sager ; DISCUSSANT: Marco Horvath)
2. Drive Less, Drive Better, or Both? Behavioral Adjustments to Fuel Price Changes in Germany (PRESENTER: Marco Horvath ; DISCUSSANT: Suchita Srinivasan)
3. Behavioral Anomalies and Fuel Efficiency: Evidence from Motorcycles in Nepal (PRESENTER: Suchita Srinivasan ; DISCUSSANT: Tingmingke Lu)
4. Income Elasticity of Driving and Regressivity of Emission Control Taxation Policies: Evidence from Massachusetts New Car Market (PRESENTER: Tingmingke Lu ; DISCUSSANT: Lutz Sager)

Speakers

Dr. Sager, Lutz, ,

Dr. Horvath, Marco, Researcher, RWI - Leibniz Institute for Economic Research

Dr. Srinivasan, Suchita, ,

Dr. Lu, Tingmingke, ,

Presentations

Who Values Future Energy Savings? Evidence from American Drivers

Authors

Dr. Sager, Lutz, ,

Prof. Levinson, Arik, Academia,

Presenter

Dr. Sager, Lutz, ,

Abstract

Regulators attest that tightened energy efficiency standards save consumers money. Efficient light bulbs, appliances, and vehicles cost more upfront but reduce energy expenses by more than enough to compensate. We use survey data on American cars and their drivers to examine whether individual drivers have indeed underinvested in fuel economy, given the gas prices they face and the miles they drive. We find that may be true, but only on average. Some drivers could likely have saved money by spending more upfront for efficient cars. But many others could have saved money purchasing less expensive, less fuel-efficient cars. In fact we find little correlation between individual drivers

Drive Less, Drive Better, or Both? Behavioral Adjustments to Fuel Price Changes in Germany

Authors

Alberini, Anna , , University of Maryland

Dr. Horvath, Marco, Researcher, RWI - Leibniz Institute for Economic Research

Prof. Vance, Colin, Researcher, RWI - Leibniz Institute for Economic Research

Presenter

Dr. Horvath, Marco, Researcher, RWI - Leibniz Institute for Economic Research

Abstract

The demand for motor fuel should decline when its price rises, but how exactly does that happen? Do people drive less, do they drive more carefully to conserve fuel, or do they do both? To answer these questions, we use data from the German Mobility Panel from 2004 to 2019, taking advantage of the fluctuations in motor fuel prices over time and across locales to see how they affect Vehicle Kilometers Traveled (VKT) and on-road fuel economy (expressed in kilometers per liter). Our reduced-form regressions show that while the VKTs driven by gasoline cars decrease when the price of gasoline rises, their fuel economy tends to get worse. It is unclear why this happens. Perhaps attempts to save on gasoline

Behavioral Anomalies and Fuel Efficiency: Evidence from Motorcycles in Nepal

Authors

Dr. Srinivasan, Suchita, ,

Prof. Filippini, Massimo, Professor, ETH Zürich and USI Lugano

Dr. Kumar, Nilkanth, Postdoctoral researcher, ETH Zürich

Presenter

Dr. Srinivasan, Suchita, ,

Abstract

Air pollution is a grave problem in urban areas of developing countries, with the transport sector being one of the largest contributors to emissions. In Kathmandu, Nepal, motorcycles comprise the largest share of the total fleet of vehicles, and are responsible for a large share of total emissions from the transport sector. A possibility to reduce carbon dioxide emissions would be for individuals to switch to more fuel-efficient vehicles. However, a gamut of behavioral anomalies and market failures inhibit individuals from investing in fuel-efficient motorcycles (the well-known 'energy-efficiency gap'). In this study, we use novel data from Kathmandu to understand the socio-economic and psychological determinants of present bias, loss aversion, risk aversion and time preferences. As a second step, we then evaluate the effect of these anomalies on three different measures of the energy-efficiency gap in the choices that they make. We find that present-biased individuals are less likely to invest in fuel-efficient motorcycles, and we find that liquidity constraints and income also play an important role in determining these choices. Our results suggest that behavioral anomalies may indeed pose as a hindrance to individuals making cost-minimizing (and environmentally sound) investment decisions.

Income Elasticity of Driving and Regressivity of Emission Control Taxation Policies: Evidence from Massachusetts New Car Market

Author

Dr. Lu, Tingmingke, ,

Presenter

Dr. Lu, Tingmingke, ,

Abstract

What is the distributional impact of emission control taxation policies on new car markets? This paper examines the relative regressivity of taxes on fuel and taxes on the low fuel economy of cars, conditioning on car purchases. By estimating a structural model of new car demand paired with a joint distribution of household demographic characteristics and mileage types, I estimate how tax revenues change with income. The heterogeneity allowed in my model demonstrates that the difference between the elasticities of tax revenues with respect to income across the two policies lies in the income elasticity of driving. Theory shows that if the income elasticity of driving is positive, the elasticity of fuel tax revenues with respect to household income must be greater than that of taxes on low fuel economy. Policy counterfactuals confirm the theoretical result. Although wealthier people are less likely to purchase more fuel-efficient cars when facing trade-offs between vehicle fuel efficiency and other vehicle attributes, the fact that more affluent households drive more makes fuel taxes more progressive relative to taxes on low fuel economy. Moreover, I show that the loss in total consumer surplus from applying fuel taxes is smaller than that from applying taxes on low fuel economy for achieving the same level of externality reduction because fuel taxes have heterogeneous influences on consumers in different mileage groups. Therefore, this paper provides a framework for understanding the distributional consequences of regulating the market of energy-using durable goods with various policy instruments in the presence of usage heterogeneity.

Energy: development and political economy

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Gendered Time-Saving Benefits of LPG Fuel Use (PRESENTER: Ipsita Das ; DISCUSSANT: Francesco Ricci)
2. Critical raw materials for the energy transition (PRESENTER: Francesco Ricci ; DISCUSSANT: Camelia Turcu)
3. Natural Resource Discoveries and Fiscal Discipline (PRESENTER: Camelia Turcu ; DISCUSSANT: Nadia Ameli)
4. A climate investment trap in developing economies (PRESENTER: Nadia Ameli ; DISCUSSANT: Ipsita Das)

Speakers

Dr. Das, Ipsita, Research Associate, Duke University
Ricci, Francesco, ,
Prof. Turcu, Camelia, ,
Dr. Ameli, Nadia, ,

Presentations

Gendered Time-Saving Benefits of LPG Fuel Use

Authors

Dr. Meyer, Jennifer, ,
Dr. Das, Ipsita, Research Associate, Duke University
Dr. Jeuland, Marc, Associate Professor, Duke University

Presenter

Dr. Das, Ipsita, Research Associate, Duke University

Abstract

This paper explores the effect of LPG fuel use on fuel collection time savings for both females and males. We use both cross-sectional data of over 1000 households in Odisha, India and use longitudinal data (n=24046 households) from the India Human Development Survey. Using kernel propensity-score matching with the Odisha data, we do not find evidence of solid fuel collection time savings for either females or males. However, we do find that men spend significantly more time than women travelling to purchase LPG cylinders. We use a fixed effects model with the India Human Development Survey and find that women and men save approximately 5 minutes and 3 minutes per day, respectively, collecting solid fuels. One key difference between the two datasets is the degree of exclusive LPG use. In the Odisha dataset, all households that used LPG also report fuel stacking with

solid fuels. On the other hand, in the IHDS dataset, roughly 50% of households that use LPG also report using solid fuels. Therefore, we provide suggestive evidence that the degree of fuel stacking may be an important factor in realizing fuel collection time-saving benefits.

Critical raw materials for the energy transition

Authors

Pommeret, Aude, , IREG USMB

Schubert, Katheline, , University of Paris

Ricci, Francesco, ,

Presenter

Ricci, Francesco, ,

Abstract

Low carbon technologies for renewable energy are relatively intensive in critical raw materials (CRM). We investigate how this fact impacts the timing of the energy transition, when a very costly backstop technology also exists. The size of CRM reserves affects the investment in the equipment for renewable energy generation and the time when fossils are abandoned. In addition, we consider political economy constraints, such as the acceptability of carbon taxes or imperfect information on the side of the regulator. We show how abstracting from the scarcity of CRM, or tightly linking carbon tax revenue and subsidies for renewables, may be severely misleading in designing climate policy. We also study how recycling may effectively be used to release the stress imposed by CRM on the energy transition. We obtain that recycling does reduce the cost of this transition and it also calls for having a large stock of recyclable materials at the time of the switch to the backstop, hence for delaying investment in renewable infrastructure.

Natural Resource Discoveries and Fiscal Discipline

Authors

Prof. Turcu, Camelia, ,

Mr. KEITA, Arrouna, PhD Student, University of Orléans - LEO

Presenter

Prof. Turcu, Camelia, ,

Abstract

We analyze the impact of natural resource discoveries on fiscal policy, exploring the effects of expectations due to the discovery of large oil and gas deposits. The response of fiscal policy to resource discoveries is analyzed through changes in its cyclicity. To do this, we use a Local Projection Model (LPM) on two country-groups: high- and upper-middle-income countries (HMICs) and low- and lower-middle-income countries (LMICs) over the period 1984-2012. Our results show that natural resource discoveries do drive a fiscal policy response in HMICs and LMICs. Indeed, following the announcement of a natural resource discovery, we observe, around the first year after the discovery, the beginning of an increasing contracyclicality in total public spending in the HMICs. This contracyclicality is stronger in the presence of fiscal rules, and the response of fiscal policy is faster in the presence of good institutions. Thus, the HMICs have a disciplined response to a shock of natural resource discoveries. However, for LMICs, discovery shocks have different effects depending on the type of public spending: for public consumption expenditure, there is an increasing procyclicality starting from the first year after discovery, whereas for public investment expenditure, this procyclicality begins in the second year after discovery, after a

slight contracyclicality over the first year ffdade of discovery and the second year. These results are robust to different sample sizes, different specifications and measures of the cyclicity coefficient.

A climate investment trap in developing economies

Authors

Dr. Ameli, Nadia, ,
Grubb, Michael, , University College London
Dr. Dessens, Olivier, Researcher, UCL
Dr. Winning, Matthew, Researcher, UCL
Ms Cronin, Jennifer, Researcher, UCL
Dr. Chenet, Hugues, Researcher, UCL
Mr. Drummond, Paul, Researcher, UCL
Dr. Calzadilla, Alvaro, Associate Professor, UCL
Prof. Anandarajah, Gabrial, Associate Professor, UCL

Presenter

Dr. Ameli, Nadia, ,

Abstract

Finance is vital for the green energy transition, but the access to low cost finance is uneven as the cost of capital differs substantially between regions. This study shows how modelled decarbonisation pathways of developing economies are disproportionately impacted by assumptions around their cost of capital (WACC). For example, representing regionally specific WACC values indicates 35% lower green electricity production in Africa for a cost-optimal 2

Energy subsidy and tax schemes

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Theoretical and Empirical Evaluation of a Competitive Energy Rebate Program (PRESENTER: Chi Ta ; DISCUSSANT: Lehr Jakob)
2. Energy Tax Exemptions and Firms' Markups (PRESENTER: Lehr Jakob ; DISCUSSANT: Alexander Rohlf)
3. Network effects in mature electric vehicle markets: Lessons from a decade of electrification and infrastructure subsidies in Norway (PRESENTER: Alexander Rohlf ; DISCUSSANT: Pia Andres)
4. Subsidies and trade wars: solar photovoltaic innovation in Europe and the impact of the "China Shock" (PRESENTER: Pia Andres ; DISCUSSANT: Chi Ta)

Speakers

Ms Ta, Chi, ,
Mr. Lehr, Jakob, ,
Dr. Rohlf, Alexander, Postdoc,
Ms Andres, Pia, ,

Presentations

Theoretical and Empirical Evaluation of a Competitive Energy Rebate Program

Author

Ms Ta, Chi, ,

Presenter

Ms Ta, Chi, ,

Abstract

Rebates that reward economic agents if they meet a minimum conservation threshold are a popular policy to encourage energy conservation. However, most threshold-based rebates are structured such that they do not encourage reduction beyond the threshold. In this paper, I show theoretically that programs with the additional feature that households compete to win rebates can effectively encourage further conservation among those who can meet the threshold reduction. The theory also identifies factors that determine the effectiveness of the program. I then exploit a unique confidential dataset of monthly residential electricity use with over 45 million observations to estimate the overall effect of a Vietnamese electricity rebate program with this competitive element. Next, I empirically test the model

Energy Tax Exemptions and Firms' Markups

Author

Mr. Lehr, Jakob, ,

Presenter

Mr. Lehr, Jakob, ,

Abstract

Using the German census of manufacturer, I analyze the effect of electricity tax exemptions on firm-level markups. To estimate causal effects, I leverage a reform of the rules that determine firm's eligibility for tax exemption under the renewable energy law (EEG). My findings suggest that newly exempted firms' markups increased by 1 to 2 percent, indicating that cost pass-through is far from complete. Further, I do not find support for the hypothesis that exemptions helped to improve firms' economic performance, for example, total factor revenue productivity. Overall, my results cast doubt on the appropriateness of the current electricity tax exemption rules.

Network effects in mature electric vehicle markets: Lessons from a decade of electrification and infrastructure subsidies in Norway

Authors

Dr. Koch, Nicolas, Head Policy Evaluation Lab, Mercator Research Institute on Global Commons and Climate Change (MCC)

Dr. Ritter, Nolan, Postdoc,

Dr. Rohlf, Alexander, Postdoc,

Mr. Scarazzato, Francesco, ,

Presenter

Dr. Rohlf, Alexander, Postdoc,

Abstract

Abstract Norway has the highest market share of electric vehicles. This paper investigates whether the market has already grown sufficiently strong to maintain a sustainable long-term equilibrium without subsidies. To this end, we estimate indirect network effects in electric vehicle (EV) demand and charging station investment using an instrumental variable strategy and panel data at the municipality level for the years 2012 through 2019. We find that the EV market share increases by 0.07% when the number of local charging sockets increases by 10%. This implies that a price reduction of

Subsidies and trade wars: solar photovoltaic innovation in Europe and the impact of the "China Shock"

Author

Ms Andres, Pia, ,

Presenter

Ms Andres, Pia, ,

Abstract

This paper examines the effects of Chinese import competition on firm-level innovation in solar photovoltaic technology by European firms using a sample of 1,591 firms in 15 EU countries over the period 2002-2016. It is the first investigation of this question using a causal inference empirical design that focuses specifically on the solar sector, which has sparked controversy due to the 2011 US-China and the 2012 EU-China trade disputes, and should be of interest to environmental economists because of its crucial role in enabling a low carbon energy transition.

The results suggest that, in line with predictions from the broader literatures on trade/competition and innovation, increases in import competition stimulated innovation among firms at the technological frontier, while reducing it among the least technologically advanced. This implies that China's manufacturing expansion has been a driver of clean technological change.

Labour and the environment II

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The Employment Impact of a Green Fiscal Push: Evidence from the American Recovery and Reinvestment Act (PRESENTER: Ziqiao Chen ; DISCUSSANT: Martino Pelli)
2. Wildfires, Smoky Days, and Labor Supply (PRESENTER: Martino Pelli ; DISCUSSANT: Alessandro Palma)
3. Work Accidents and Air Pollution (PRESENTER: Alessandro Palma ; DISCUSSANT: Juan Pablo Rud)
4. Exposure or income? Labor supply on high pollution days (PRESENTER: Juan Pablo Rud ; DISCUSSANT: Ziqiao Chen)

Speakers

Dr. Chen, Ziqiao, ,

Prof. Pelli, Martino, , University of Sherbrooke

Dr. Palma, Alessandro, Assistant Professor, Gran Sasso Science Institute (GSSI)

Dr. Rud, Juan Pablo, ,

Presentations

The Employment Impact of a Green Fiscal Push: Evidence from the American Recovery and Reinvestment Act

Authors

Prof. Marin, Giovanni, ,

Popp, David, , Syracuse University

Vona, Francesco, , OFCE Sciences-Po

Dr. Chen, Ziqiao, ,

Presenter

Dr. Chen, Ziqiao, ,

Abstract

We evaluate the employment effect of green investments from the American Recovery and Reinvestment Act (ARRA). Most job creation from green ARRA investments emerged in the post-ARRA period (2013-2017) and mostly benefited areas with a greater prevalence of pre-existing green skills. On average, each \$1 million of green ARRA created approximately 10 long-run jobs, but the job creation effect doubled in regions in the last quartile of green skills distribution. New jobs are primarily in construction and in occupations performing green tasks. Manual workers are the main winners in terms of employability, but not of wage gains.

Wildfires, Smoky Days, and Labor Supply

Authors

Chan, Hei-Sing Ron, , University of Manchester

Prof. Pelli, Martino, , University of Sherbrooke

Ms Vienne, Veronica, PhD student, University of Manchester

Presenter

Prof. Pelli, Martino, , University of Sherbrooke

Abstract

In this paper we study the impact of air pollution on labor supply in Chile, a developing country characterized by a high level of air pollution. We use the exogenous incidence of wildfires between 2010 and 2018 in order to identify the causal impact of air pollution on labor supply. We complement the literature that focuses on health or worker productivity, and empirically estimates the economic costs of air pollution. We adopt a reduced form approach to estimate the economic impact of experiencing an additional smoky day on the number of hours that each worker worked, based on the random assignment of the day of visit for the National Labor Survey and the exogenous occurrence of wildfires. We find that an extra smoky day leads to a 2.3 percent reduction in hours worked for the average Chilean worker, with limited rebound effects in the following weeks. We find that the effect is more substantial for workers mainly involved in outdoor tasks (such as agriculture) and poor households, where the reduction on the number of hours worked can increase to 3.7 to 6.5 percent for this group of workers. These results compound on the results previously found in the literature on productivity, suggesting that air pollution could have a more important impact on production than previously thought.

Work Accidents and Air Pollution

Authors

Dr. Palma, Alessandro, Assistant Professor, Gran Sasso Science Institute (GSSI)

Dr. Depalo, Domenico, Economist, Bank of Italy

Presenter

Dr. Palma, Alessandro, Assistant Professor, Gran Sasso Science Institute (GSSI)

Abstract

We estimate the causal effect of air pollution on work accidents in Italy, a wealthy country with strict environmental and work safety regulation. We employ unique administrative data on work accidents at daily frequency and detailed information on workers

Exposure or income? Labor supply on high pollution days

Authors

Dr. Rud, Juan Pablo, ,

Dr. Hoffmann, Bridget, Research economist, Inter-American Development Bank

Presenter

Dr. Rud, Juan Pablo, ,

Abstract

We study the trade-off between health and income that workers face on days with high levels of fine particulate matter (PM 2.5). Using daily data on labor supply, hospital admissions for respiratory diseases, and air pollution levels at the locality level, we document that PM 2.5

has a negative, non-linear relationship with labor supply and that PM 2.5 has a positive, nonlinear relationship with hospital admissions for respiratory diseases. We provide evidence that suggests that informal workers experience worse health outcomes and worse income drops on days with high levels of PM 2.5. Results documenting that workers reduce their labor supply less on consecutive days with high levels of PM 2.5 indicates that income constraints may play an important role in workers more hours than formal workers on highly-polluted days, but fewer hours overall, suggesting a stronger shock both to their health and their income.

Rationality in international agreements

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Pledge and Review Bargaining in Environmental Agreements: Kyoto vs. Paris (PRESENTER: Thomas Eichner ; DISCUSSANT: Marco Rogna)
2. Coalition Formation with Optimal Transfers when Players are Heterogeneous and Inequality Averse (PRESENTER: Marco Rogna ; DISCUSSANT: Alistair Ulph)
3. International Environmental Agreements with Kantian Moral Behaviour (PRESENTER: Alistair Ulph ; DISCUSSANT: Bruno Nkuiya)
4. Effects of adaptation and systematic uncertainty on the stability of international environmental agreements (PRESENTER: Bruno Nkuiya ; DISCUSSANT: Thomas Eichner)

Speakers

Eichner, Thomas, , FernUniversität Hagen

Dr. Rogna, Marco, ,

Ulph, Alistair, , University of Manchester

Dr. Nkuiya, Bruno, Assistant Professor of Economics , University of Alberta

Presentations

Pledge and Review Bargaining in Environmental Agreements: Kyoto vs. Paris

Authors

Eichner, Thomas, , FernUniversität Hagen

Dr. Schopf, Mark, Lecturer,

Presenter

Eichner, Thomas, , FernUniversität Hagen

Abstract

The present paper compares the Kyoto Protocol and the Paris Agreement in a dynamic game in which countries choose emissions reductions, investments in green energy and the contract duration. Green investment costs are stock-dependent. Applying Harstad's (2020a, 2020b) bargaining model for the Paris Agreement we show that there is a large set of economies at which the Kyoto Protocol performs better in terms of total emissions and welfare than the Paris Agreement, which is in stark contrast to the results of Harstad (2020a, 2020b). Although the stable climate coalition is large at the Paris Agreement and small at the Kyoto Protocol, the emissions reductions of a single coalition country is much deeper at the Kyoto Protocol such that this per-country-emissions reduction effect outweighs the disadvantage of having a smaller stable climate coalition.

Coalition Formation with Optimal Transfers when Players are Heterogeneous and Inequality Averse

Authors

Dr. Rogna, Marco, ,

Prof. Vogt, Carla, Professor, Bochum University of Applied Sciences

Presenter

Dr. Rogna, Marco, ,

Abstract

Obtaining significant levels of cooperation in public good and environmental games, under the assumption of players being purely selfish, is usually prevented by the problem of free-riding. Coalitions, in fact, generally fail to be internally stable and this causes a serious under-provision of the public good together with a significant welfare loss. The assumption of relational preferences, capable of better explaining economic behaviors in laboratory experiments, helps to foster cooperation, but, without opportune transfers scheme, no substantial improvements are reached. The present paper proposes an optimal transfers scheme under the assumption of players having Fehr and Schmidt (1999) utility functions, whose objective is to guarantee internal stability and to maximize the sum of utilities of coalition members. The transfers scheme is tested on a public good contribution game parameterized on the data provided by the RICE model and benchmarked with other popular transfers scheme in environmental economics. The proposed scheme outperforms its benchmarking counterparts in stabilizing coalitions and sensibly increases cooperation compared to the absence of transfers. Furthermore, for high but not extreme values of the parameter governing the intensity of dis-utility from disadvantageous inequality, it manages to support very large coalitions.

International Environmental Agreements with Kantian Moral Behaviour

Authors

Pethig, Ruediger, , Universitat GH Siegen

Ulph, Alistair, , University of Manchester

Ulph, David, , University of St Andrew

Prof. Eichner, Thomas, Academic,

Presenter

Ulph, Alistair, , University of Manchester

Abstract

In this paper we study the non-cooperative formation of international environmental agreements (IEAs) when agents act in an imperfect Kantian fashion, whereby their objective function is a weighted average of the homo oeconomicus objective that underpins the standard literature on IEA formation, and the homo Kantiensis objective function under which agents take the action that would be best if everyone else took the same action. We examine what happens when act in an imperfectly Kantian fashion: (i) just with respect to their emission decisions; (ii) just with respect to their membership decisions. We show that in the first case the game is isomorphic to the standard game game where agents act as homo oeconomicus, and so yields the same pessimistic membership results as the conventional model of IEAs. However, when agents act as imperfect Kantians with respect to membership we show, in widely studied special cases, that it is always possible to achieve the grand coalition when the weight on Kantian behaviour which exceeds a lower bound which is never

greater than 0.5, is increasing in the number of countries, and either constant or decreasing in the severity of damage costs.

Effects of adaptation and systematic uncertainty on the stability of international environmental agreements

Author

Dr. Nkuiya, Bruno, Assistant Professor of Economics , University of Alberta

Presenter

Dr. Nkuiya, Bruno, Assistant Professor of Economics , University of Alberta

Abstract

Adaptation and uncertainty are two factors that critically affect the willingness of countries to ratify international environmental agreements (IEAs) aimed at managing global public bads. Despite its policy relevance, the question of how countries would respond to the combined effect of both factors has, however, been largely ignored within the economic literature. In this paper, we propose a game theoretical approach to investigate the combined effects of adaptation, uncertainty, and learning on incentives of sovereign countries to ratify IEAs. We explore the scenarios of partial learning, full learning, and no learning about the damage and adaptation cost functions. Our analysis suggests that systematic uncertainty or learning may raise or reduce the equilibrium coalitions depending on economic and environmental conditions. These results are, however, reversed when the possibility to invest in adaptation technology is not taken into account.

Risk and uncertainty

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Collusion Stability Under an Endogenous Environmental Regulation with an Uncertain Evolution of the Pollution Stock (PRESENTER: Miguel Borrero ; DISCUSSANT: Martin Quaas)
2. The Commons Problem under Uncertainty and Precaution (PRESENTER: Martin Quaas ; DISCUSSANT: Michael Livermore)
3. Society-Climate Feedback Effects: Be Wary of Unidentified Connections (PRESENTER: Michael Livermore ; DISCUSSANT: Christian Gambardella)
4. The joint impacts of carbon pricing and renewable generation on fossil generation profits in Germany (PRESENTER: Christian Gambardella ; DISCUSSANT: Miguel Borrero)

Speakers

Mr. Borrero Ridaura, Miguel, ,
Quaas, Martin, , Kiel University
Dr. Livermore, Michael, -, University of Virginia
Dr. Gambardella, Christian, ,

Presentations

Collusion Stability Under an Endogenous Environmental Regulation with an Uncertain Evolution of the Pollution Stock

Author

Mr. Borrero Ridaura, Miguel, ,

Presenter

Mr. Borrero Ridaura, Miguel, ,

Abstract

This paper characterizes the optimal environmental regulatory scheme for an oligopoly which pollutes as a by product of its production process but can also invest in abatement technology. It then analyzes whether this endogenous regulation enhances collusion incentives in the industry. To characterize such scheme we solve the feedback Stackelberg equilibrium of a differential policy game where the regulator announces the policy scheme and then the industry strategically selects its production and investment levels. The state variable is the accumulated pollution stock which is assumed to evolve under uncertainty. We find that the first best regulation requires a tax on emissions and a subsidy on production while the second best regulation consists of only a tax.

Although the first best solution induces a larger production path it also enhances investment leading to a lower emission path and lower pollution stock steady state than in the second best. Furthermore, we find that uncertainty in the stock's evolution lowers its expected steady state but has a negative effect on overall welfare. Finally, we find that when uncertainty is not present cartels are unstable when the industry size is greater or equal to four. On the other hand, adding uncertainty has a positive effect on the stable cartelization.

The Commons Problem under Uncertainty and Precaution

Authors

Drupp, Moritz, , University Hamburg

Meya, Jasper, , IDIV

Quaas, Martin, , Kiel University

Mr. Bos, Björn, ,

Presenter

Quaas, Martin, , Kiel University

Abstract

We study a commons problem under uncertainty, where individual actions affect the a risk of a future damage event. We show that for risk-averse agents, an extra risk on the amount of the damage induces more precautionary actions in Nash equilibrium. Similarly, for prudent agents an extra risk in all states of the world induces more precautionary actions in Nash equilibrium. We show that this may lead to the result that small extra risks may increase welfare in Nash equilibrium and derive a condition on the relationship between actions and damage probability and the opportunity costs of precaution for this result to occur.

The model applies to climate change, where the actions are the countries' carbon dioxide emissions causing the threat of climate damage, as well as to the COVID 19 pandemic, where physical social contacts cause the risk of an infection with the coronavirus. Data from a representative survey in Germany shows that the theoretical results are in line with the theoretical predictions.

Society-Climate Feedback Effects: Be Wary of Unidentified Connections

Authors

Dr. Howard, Peter, ,

Dr. Livermore, Michael, -, University of Virginia

Presenter

Dr. Livermore, Michael, -, University of Virginia

Abstract

Feedbacks within the economic-climate system are complex. The research analyzing the relationship between human activities and the climate is considerable with particular focus on intra-system feedback effects: environmental tipping points; and climate-triggered social tipping points, like migration, to a lesser extent (Robert Kopp et al., 2016; Kees van Ginkel et al., 2018). Due to their cross-disciplinary nature (Angela Guerrero et al., 2018), two-way interactions between the environment and society, whereby movement in either system can trigger inter-system feedbacks (Steven Lade et al., 2013; Johanna Yletyinen et al. 2019) as humans respond to a changing environment thereby further changing the environment, have only recently received attention by a growing inter-disciplinary research community. With the aim of improving climate policy and its tools, such as the social cost of carbon, we

describe these social-ecological system (SES) feedbacks and place them in the existing taxonomy for tipping points applied by mainstream economic-climate models. Drawing lessons from SES research and related interdisciplinary literatures, we discuss the value of and method by which to modify economic-climate integrated assessment models (EC-IAMs), like Nordhaus

The joint impacts of carbon pricing and renewable generation on fossil generation profits in Germany

Authors

Pahle, Michael, , Potsdam Institute for Climate Impact Research

Dr. Gambardella, Christian, ,

Prof. Bushnell, James, Economist, UC Davis

Prof. Novan, Kevin, Economist, UC Davis

Presenter

Dr. Gambardella, Christian, ,

Abstract

We analyze the combined effects of growth in renewable generation and the recent surge in the price for EU emission allowances on the operating profits of fossil generation units in Germany. Applying market data from 2016 to 2019, we estimate the day-ahead market price and fossil generation impacts of renewable generation and emission prices, accounting explicitly for potential interaction effects. Using counterfactual predictions, we estimate unit-specific operating profit impacts and find that the observed decline in annual lignite and coal unit profits of about 74.4 percent and 95.7 percent relative to 2016 profits can majorly be explained by the combined change in the EU allowances price and renewable generation levels in Germany. While we find the interaction effect of renewable generation and emission prices on wholesale prices and fossil generation to be statistically significant, it is relatively unimportant for explaining observed changes in both fossil dispatch rates and annual operating profits.

Vulnerability

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Same Environment, Stratified Impacts? Air Pollution, Extreme Temperatures, and Birth Weight in Southeast China (PRESENTER: Xiaoying Liu ; DISCUSSANT: Daniel Osberghaus)
2. Heat Vulnerability and Adaptation of Low-Income Households in Germany (PRESENTER: Daniel Osberghaus ; DISCUSSANT: Peter Howard)
3. Between Two Worlds: Methodological and Subjective Differences in Climate Impact Meta-Analyses (PRESENTER: Peter Howard ; DISCUSSANT: Emily Pakhtigian)
4. Collective action for sanitation: Evidence from experimental games in rural India (PRESENTER: Emily Pakhtigian ; DISCUSSANT: Xiaoying Liu)

Speakers

Dr. Liu, Xiaoying, ,
Dr. Osberghaus, Daniel, , Leibniz Centre for European Economic Research
Dr. Howard, Peter, ,
Dr. Pakhtigian, Emily, ,

Presentations

Same Environment, Stratified Impacts? Air Pollution, Extreme Temperatures, and Birth Weight in Southeast China

Authors

Dr. Liu, Xiaoying, ,
Prof. Behrman, Jere, professor,
Prof. Hannum, Emily, professor,
Prof. Wang, Fan, Assistant professor,
Mr. Zhao, Qingguo, professor,

Presenter

Dr. Liu, Xiaoying, ,

Abstract

Ambient air pollution and extreme temperatures have been associated in a number of settings with adverse birth outcomes. However, some newborns may be more vulnerable than others. First, the pathway from ambient conditions to adverse birth outcomes could vary according to indicators of

socioeconomic status such as maternal education. For example, less-educated mothers may be more vulnerable than more-educated mothers if they lack access to living, work, transportation, and leisure spaces with indoor air filtration and temperature regulation, or if they lack knowledge of or resources for mitigation strategies. Second, overall effect modifications associated with maternal education may mask another source of heterogeneity: babies' education may be more pronounced for the most physically vulnerable babies.

Linking 54,828 singleton live birth records from a district in Guangzhou, China to ambient air pollution (PM10 and a composite measure) and extreme temperature data, we test whether, overall, maternal education is an important determinant of birth weight. Via conditional quantile regressions, we then test for effect heterogeneity according to the underlying physical vulnerability of babies' birth weight. The effect of college-educated mother with respect to pollution and extreme heat is substantial: up to 0.31 standard deviations of birth weight. Importantly, this protection is amplified under more extreme ambient conditions and for physically vulnerable infants, after conditioning on other confounders.

Heat Vulnerability and Adaptation of Low-Income Households in Germany

Authors

Dr. Osberghaus, Daniel, , Leibniz Centre for European Economic Research
Dr. Abeling, Thomas, Project officer,

Presenter

Dr. Osberghaus, Daniel, , Leibniz Centre for European Economic Research

Abstract

In terms of death toll, heat is the most devastating climate change related natural hazard in developed countries, often affecting the economically deprived populations the most. In this study, we systematically analyze how the different components of heat vulnerability are related to household income. We contribute the first empirical analysis of heat vulnerability using household-level data at national scale, based on a longitudinal survey, including observations of 10,226 households in Germany. The results suggest that heat sensitivity and adaptive capacity substantially differ between low and high income households. In contrast, hazard and exposure are no drivers of heat vulnerability differences across socio-economic groups. We also contribute robust and significant empirical evidence that the implementation of technical heat adaptation measures is constrained by available income. These insights are important for informing policymakers on the appropriate design of instruments and measures for strengthening the vulnerable population

Between Two Worlds: Methodological and Subjective Differences in Climate Impact Meta-Analyses

Authors

Prof. Sterner, Thomas, Professor of Environmental Economics, EfD Environment for Development initiative, University of Gothenburg

Dr. Howard, Peter, ,

Presenter

Dr. Howard, Peter, ,

Abstract

In his 2019 Nobel Prize acceptance paper, William Nordhaus (2019) highlighted the uncertainty over climate damages by using two completely different damage functions: Nordhaus and Moffat (2017) and Howard and Sterner (2017). Despite their vastly different implications for climate policies, both were estimated using the meta-analysis technique: a method long considered the objective and scientifically rigorous way for combining results from multiple studies to develop a consensus estimate. This paper demonstrates that this disparity stems from both differing methodological decisions (with respect to addressing methodological impacts, heteroscedasticity, and clustering) and subjective decisions (with respect to data search, selection, and weighting). Of particular note, we find that the inclusion of Cline (1992)

Collective action for sanitation: Evidence from experimental games in rural India

Authors

Dr. Pakhtigian, Emily, ,

Prof. Pattanayak, Subhrendu, Professor, Duke University

Presenter

Dr. Pakhtigian, Emily, ,

Abstract

Open defecation and the lack of access to improved sanitation facilities remain persistent challenges in rural India. National sanitation policies have increased access to latrines; however, universal access and use targets have not been met. In this paper, I analyze data from an experimental public goods game implemented among over 1500 households in rural Bihar and Orissa, India. Prior to game play, each of the 70 villages in the sample were randomized into groups that are either homogeneous or heterogeneous by gender for game play. In the context of rural India, individuals are more likely to frequently interact with and make decisions in front of others of the same gender. Thus, splitting the groups in this way provides a proxy for peer or social group. Participants chose how much to contribute to improved sanitation by making decisions in the game that were associated with actual sanitation and hygiene choices they regularly face. Payoffs were awarded after each round, and payoff amounts were dependent on both individual contributions and aggregated group contributions, thus generating a setting with connected participant benefits. Comparing the game behavior among participants in groups that were homogeneous and heterogeneous by gender, I find evidence that contributions to collective action for sanitation are higher in gender homogenous groups. Female participants drive this difference, and it is more distinct in the first round of game play. I also find evidence that preferences for improved sanitation

as elicited during the experimental games are reflective of actual improved sanitation practices at the household level.

Health and pollution II

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Infant Health Outcomes in Mega-Fire Affected Communities (PRESENTER: Benjamin Jones ; DISCUSSANT: Zhenxuan Wang)
2. The Value of Information Disclosure: Evidence from Mask Consumption in China (PRESENTER: Zhenxuan Wang ; DISCUSSANT: Luis Guillermo Becerra-Valbuena)
3. Climatic shocks, air quality, and urban health in Bogotá (PRESENTER: Luis Guillermo Becerra-Valbuena ; DISCUSSANT: Francesco Granella)
4. A lab in the (track and) field? The effect of air pollution on physical performance: Evidence from sports competitions (PRESENTER: Francesco Granella ; DISCUSSANT: Benjamin Jones)

Speakers

Dr. Jones, Benjamin, ,
Wang, Zhenxuan, , Duke University
Mr. Becerra-Valbuena, Luis Guillermo, ,
Mr. Granella, Francesco, ,

Presentations

Infant Health Outcomes in Mega-Fire Affected Communities

Authors

Dr. Jones, Benjamin, ,
Dr. McDermott, Shana, Associate Professor of Economics, Trinity University

Presenter

Dr. Jones, Benjamin, ,

Abstract

We undertake a nationwide US study to estimate how mega-fires affect short- and long-term infant health outcomes in communities located within the flame zone. We find that pregnant mothers in affected counties experience 0.8 percentage point greater instances of low birth weight and 1.2 percentage point greater instances of prematurity; impacts are non-linearly increasing in mega-fire size. Infant health impacts persist for up to 3 years after mega-fire events, with the largest impacts affecting mothers in their first or second trimester. Better benefit-cost analyses is needed to account for mega-fire indirect impacts when making wildfire control and suppression decisions.

The Value of Information Disclosure: Evidence from Mask Consumption in China

Authors

Zhang, Junjie, , Duke University

Wang, Zhenxuan, , Duke University

Presenter

Wang, Zhenxuan, , Duke University

Abstract

We study the effect of information provision on avoidance behavior, using China's staggered roll-out of air pollution information and a unique dataset of high-frequency mask purchase transactions. Employing a generalized difference-in-differences approach, we estimate that the provision of air pollution information increases expenditures on PM2.5 respirators by 32%, which is mainly driven by improved information quality and the addition of PM2.5 index. The effect is enhanced by increased attention to pollution alerts and it is more pronounced during heavy pollution days. Our results shed light on the benefits of information provision through inducing avoidance behavior to reduce air pollution exposure.

Climatic shocks, air quality, and urban health in Bogotá

Authors

Mr. Becerra-Valbuena, Luis Guillermo, ,

Mr. Bonilla, Jorge, Assistant Professor, University of Los Andes

Presenter

Mr. Becerra-Valbuena, Luis Guillermo, ,

Abstract

We contribute to the literature on air pollution and health by assessing an additional channel, the effect of El Niño. There is a vast literature on the effects of urban pollution on health. Our research, unlike other studies, jointly investigates the direct and single effects of pollution, ENSO and local weather on health. On the one hand, ENSO manifests itself as an extreme climatic shock that follows certain seasonality and influences local weather. It may also have an impact on agriculture or disasters, inducing changes in food markets or a loss of household income. On the other hand, health outcomes are affected by other factors which follow additional mechanisms to the previous ones. Therefore, pollutant impacts on health may be interpreted as separate from economic shocks mediated through ENSO. Across all specifications ENSO affects birth weight and the probability of low birth weight after separating pollution and classical local weather impacts. Interestingly, the effect on birth weight of ENSO are several times larger than the impacts of pollution. From a policy point of view, these results are relevant because despite the exposure of pollution and regardless of the measure we employ, the amount of the general equilibrium impacts exhibited by economic shocks via ENSO events dominate.

A lab in the (track and) field? The effect of air pollution on physical performance: Evidence from sports competitions

Author

Mr. Granella, Francesco, ,

Presenter

Mr. Granella, Francesco, ,

Abstract

Considerable effort has been devoted to estimating the causal effects of air pollution on labor productivity. However, it remains unclear what physical tasks are most affected by pollution and how existing results can be generalized. This paper first suggests that, inspired by Autor et al. (2003), it is possible to increase the portability of findings by linking tasks to the capabilities required for performing them. It then estimates the effect of fine particulate matter

on clear physical tasks: track and field competitions. We find that a 10
2.5 reduces performance by 1% of a standard deviation and that the effect is strongest among high ability individuals. The effect grows with the duration of effort, indicating that occupations
exerting different types of physical effort may not be equally affected by air pollution.

Regulation II

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Competitive vs. Random Audit Mechanisms in Environmental Regulation: Emissions, Self-Reporting, and the Role of Peer Information (PRESENTER: Alice Soldà ; DISCUSSANT: Maureen Lackner)
2. Pricing Methane Emissions from Oil and Gas Production (PRESENTER: Maureen Lackner ; DISCUSSANT: Xavier Koch)
3. Adoption of Cleaner Technologies: Be on the Leading Edge or Wait for the Next Opportunity? (PRESENTER: Xavier Koch ; DISCUSSANT: Giraudet Louis Gaetan)
4. How to regulate procurement markets for externality-generating goods: a refreshing perspective on Pigovian taxation (PRESENTER: Giraudet Louis Gaetan ; DISCUSSANT: Alice Soldà)

Speakers

Dr. Soldà, Alice, ,
Ms Lackner, Maureen, , Environmental Defense Fund
Mr. Koch, Xavier, PhD, Paris School of Economics
Mr. Giraudet, Louis-Gaëtan, ,

Presentations

Competitive vs. Random Audit Mechanisms in Environmental Regulation: Emissions, Self-Reporting, and the Role of Peer Information

Authors

Dr. Soldà, Alice, ,
Dr. Oestreich, Marcel, Assistant Professor, Brock University
Prof. Goeschl, Timo, Professor, Heidelberg University

Presenter

Dr. Soldà, Alice, ,

Abstract

In a simplifying analytical framework with endogenous levels of actual and self-reported emissions, we consolidate the existing literature into three main hypotheses about the relative merits, for a resource-constrained regulator, of random (RAM) and competitive (CAM) audit mechanisms in the presence or absence of peer information about actual emissions. Testing the three hypotheses in a quasi-laboratory experiment ($N = 131$), we find supportive evidence that CAM always induce more truthful reporting than RAM. Moreover, we provide the empirical validation of the theoretical prediction that CAM can succeed in aligning actual

emissions more closely with the social optimum in the presence of peer information when RAM cannot. Behavioral mechanisms prevent reaching the first-best outcome.

Pricing Methane Emissions from Oil and Gas Production

Authors

Mohlin, Kristina, , Environmental Defense Fund

Ms Lackner, Maureen, , Environmental Defense Fund

- Camuzeaux, Jonathan, Director, Office of the Chief Economist, Environmental Defense Fund

- Kerr, Suzi, Chief Economist, Environmental Defense Fund

Presenter

Ms Lackner, Maureen, , Environmental Defense Fund

Abstract

Nearly a quarter of global greenhouse gas (GHG) emissions are covered by GHG pricing initiatives. However, few methane emissions are priced, even though methane is a significant driver of current warming. To reduce methane emissions from oil and gas production, comprehensive policies and regulations are critical.

Price-based policy instruments offer several attractive features to regulate these emissions, but have so far not been extensively used to address methane emissions from fossil fuel production. The main argument against pricing methane emissions from oil and gas production in the United States is that these emissions are difficult to measure cheaply, frequently, and with adequate precision and accuracy. Instead, current regulations to address oil and gas methane emissions in the United States rely on a mix of technology standards and leak detection and repair programs (LDAR).

While methane emissions from this sector remain difficult to measure on a comprehensive and frequent basis, emission pricing policies can still be effective complements to existing regulations

This paper provides a preliminary assessment of how a well-designed price on methane emissions from oil and gas production in the United States could be implemented in a way that incentivizes oil and gas companies to increase their mitigation efforts and improve their methane detection and measurement practices.

Adoption of Cleaner Technologies: Be on the Leading Edge or Wait for the Next Opportunity?

Authors

Mr. Koch, Xavier, PhD, Paris School of Economics

Prof. Chiroleu-Assouline, Mireille, , Paris School of Economics

Presenter

Mr. Koch, Xavier, PhD, Paris School of Economics

Abstract

We study the impact of pollution taxation on the adoption of new, less and less polluting technologies likely to appear successively with uncertainty. These technologies differ only in their fixed cost of adoption and emission rate per unit produced. We consider the case of a monopoly controlled by a regulator that pre-commits to a tax level. We show that, depending on the respective fixed costs of adoption and the respective environmental benefits provided by each of the two new technologies, the regulator can cause a technological lock-in, through an excessively high level of tax if he has not foreseen the arrival of the second technology.

On the other hand, if he anticipates it perfectly, he is able to push the firm to adopt it but may find it socially beneficial to prevent the firm from doing so.

How to regulate procurement markets for externality-generating goods: a refreshing perspective on Pigovian taxation

Author

Mr. Giraudet, Louis-Gaëtan, ,

Presenter

Mr. Giraudet, Louis-Gaëtan, ,

Abstract

We consider an externality-generating good in an imperfectly competitive market: a finite set of firms with convex production costs decide in an uncoordinated way whether to incur a visiting cost and participate in separate procurements each organised by consumers willing to buy a personalized good. We find that when the ex post first best involves mixed participation (resp. full participation), then it is implemented through a Pigovian (resp. super-Pigovian) subsidy coupled with no visit subsidies. We then analyse the ex post optimal regulation in terms of ex ante incentives and also discuss how our results extend or not to different auction rules, ad valorem instruments or with heterogeneous consumers. Our results give a large support for Pigovian subsidies possibly coupled with a regulation on firms

Modeling climate with calibrated analytical models

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Climate Actions, Market Beliefs, and Monetary Policy (PRESENTER: Barbara Annicchiarico ; DISCUSSANT: Richard Jaimes)
2. Global demographic change and climate policies (PRESENTER: Richard Jaimes ; DISCUSSANT: Matthias Kalkuhl)
3. Optimal Carbon Prices for Carbon Dioxide Removal (PRESENTER: Matthias Kalkuhl ; DISCUSSANT: Aapo Rautiainen)
4. Physical and social-cost-based CO2 equivalents for transient albedo-induced forcing (PRESENTER: Aapo Rautiainen ; DISCUSSANT: Barbara Annicchiarico)

Speakers

Prof. ANNICCHIARICO, BARBARA, ,
Dr. Jaimes, Richard, ,
Kalkuhl, Matthias, , Mercator Institute
Dr. Rautiainen, Aapo, Researcher, Finnish Meteorological Institute

Presentations

Climate Actions, Market Beliefs, and Monetary Policy

Authors

Prof. ANNICCHIARICO, BARBARA, ,
Dr. Di Dio, Fabio, ,
Dr. Diluiso, Francesca, Researcher, Mercator Research Institute on Global Commons and Climate Change

Presenter

Prof. ANNICCHIARICO, BARBARA, ,

Abstract

This paper studies the role of expectations and monetary policy in shaping the response of the economy to climate actions. We show that in a stochastic environment and without the standard assumption of perfect rationality of agents, there is more uncertainty regarding the time-path and the impact of a climate policy

on the economy. The state of the economy and market beliefs determine the effectiveness of the mitigation plan implemented through carbon pricing. Ambitious climate actions may be frustrated in the presence of agents lacking the cognitive abilities necessary to form rational expectations. Monetary policy may reduce the uncertainty surrounding the impact of climate policies and may support the greening process.

Global demographic change and climate policies

Authors

Gerlagh, Reyer, , Tilburg University

Dr. Jaimes, Richard, ,

Dr. Motavasseli, Ali, Assistant Professor,

Presenter

Dr. Jaimes, Richard, ,

Abstract

Between 1950 and 2019, world life expectancy increased from below-50 to above-70, while fertility dropped from 5 to 2.5. We develop and calibrate an analytic climate-economy model with overlapping generations to study the effect of demographic change on capital markets and climate policies. Our quantitative results show that demography matters. Accounting for demographic change raises the estimated social cost of carbon, at 2020, from 26 euro/tCO in a model that abstracts from demography to 82 euro/tCO₂ in our calibrated model. The findings also speak to a long-standing discussion about how discount rates used for the evaluation of future climate damages are based on historic returns on capital.

Optimal Carbon Prices for Carbon Dioxide Removal

Authors

Kalkuhl, Matthias, , Mercator Institute

Dr. Lessmann, Kai, Researcher,

Dr. Franks, Max, -, Potsdam Institute for Climate Impact Research and Technical University of Berlin

Presenter

Kalkuhl, Matthias, , Mercator Institute

Abstract

Carbon dioxide removal (CDR) allows to store atmospheric carbon in geological or land-based sinks. This reduces overall welfare costs of limiting global warming and the associated damages. In this paper, we take a public economics perspective and derive optimal subsidies for carbon dioxide removal. We first show that in a first-best setting with the climate externality as only market failure, subsidies for CDR equal the carbon tax, implying a common carbon price for positive and negative emissions. We then investigate various setting where optimal CDR subsidies are different than carbon taxes. (i) Under a distortive tax system, optimal subsidies for CDR differ from optimal carbon taxes because CDR requires costly public funds. (ii) If no global carbon price exists but a national government implements a unilateral climate policy, optimal CDR subsidies are always higher than carbon taxes as the latter is prone to mitigation induced carbon leakage. Nevertheless, also optimal CDR subsidies are set below marginal environmental benefits because of a newly established removal leakage channel as reduced climate damages abroad increase fossil fuel demand. (iii) If geological storage sites are an open-access resource with inefficient dynamic allocation, optimal CDR subsidies are also lower than optimal carbon taxes.

Physical and social-cost-based CO₂ equivalents for transient albedo-induced forcing

Authors

Dr. Rautiainen, Aapo, Researcher, Finnish Meteorological Institute

Dr. Lintunen, Jussi, Researcher, ETLA Economic Research

Presenter

Dr. Rautiainen, Aapo, Researcher, Finnish Meteorological Institute

Abstract

Economic analyses of land-based climate mitigation measures require the joint examination of multiple forcing agents

Mitigation

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Fiscal tools to reduce transition costs of climate change mitigation (PRESENTER: Lorenzo Forni ; DISCUSSANT: Calvin Atewamba)
2. Balancing climate change and income inequality in the quest for inclusive green growth (PRESENTER: Calvin Atewamba ; DISCUSSANT: Katsumasa Tanaka)
3. Cost-effective implementation of the Paris Agreement using flexible greenhouse gas metrics (PRESENTER: Katsumasa Tanaka ; DISCUSSANT: Julia Anna Bingler)
4. Cristal Balls or Snow Globes? Convergence and Divergence of Climate Transition Risk Metrics (PRESENTER: Julia Anna Bingler ; DISCUSSANT: Lorenzo Forni)

Speakers

Prof. Forni, Lorenzo, ,
Dr. Atewamba, Calvin, ,
Dr. Tanaka, Katsumasa, ,
Ms Bingler, Julia, ,

Presentations

Fiscal tools to reduce transition costs of climate change mitigation

Authors

Prof. Forni, Lorenzo, ,
Dr. Catalano, Michele, Specialist, Prometeia
Dr. Pezzolla, Emilia, Specialist, Prometeia

Presenter

Prof. Forni, Lorenzo, ,

Abstract

What will be the cost to the economy of a green transition to reduce greenhouse gas emissions? Current estimates di

Balancing climate change and income inequality in the quest for inclusive green growth

Authors

Dr. Nkuiya, Bruno, Assistant Professor of Economics , University of Alberta
Dr. Atewamba, Calvin, ,

Presenter

Dr. Atewamba, Calvin, ,

Abstract

Income and wealth disparity, and climate change are pressing issues in the global society over the next decades. This paper develops a Dynamic Inclusive Green Economic (DIGE) model to analyze the nexus between climate change, growth and income inequality at the global level. Both theoretical and empirical analysis demonstrate that climate change enriches the growth-inequality nexuses, whilst economic distributions enhance climate-growth relations. Specifically, we show that the global economy is not always on a balanced growth path, and income inequality decreases under global warming. Using data on environmental and economic variables to evaluate the DIGE model, we find that the model exhibits a high predictive accuracy. Monte Carlo simulations reveal that the global economy is on a green growth path; however, much needs to be done to reduce income inequality and to stimulate economic growth in order to sustain inclusive green growth in the long run. Although climate adaptation and mitigation policies may lead to higher income disparity, they both contribute positively to inclusive green growth. Finally, the DIGE model is applied to estimate the social cost of carbon and its redistribution and growth components.

Cost-effective implementation of the Paris Agreement using flexible greenhouse gas metrics

Authors

Dr. Tanaka, Katsumasa, ,

Dr. Boucher, Olivier, Researcher, Institut Pierre-Simon Laplace (IPSL)

Dr. Ciais, Philippe, Researcher, Laboratoire des Sciences du Climat et de l'Environnement (LSCE)

Prof. Johansson, Daniel, Researcher, Chalmers University of Technology

Dr. Morfeldt, Johannes, Researcher, Chalmers University of Technology

Presenter

Dr. Tanaka, Katsumasa, ,

Abstract

Greenhouse gas (GHG) metrics, that is, conversion factors to evaluate the emissions of non-CO₂ climate forcers on a common scale with CO₂, serve crucial functions upon the implementation of the Paris Agreement. While different metrics have been proposed, their economic cost-effectiveness has not been investigated under a range of pathways, including those temporarily missing or significantly overshooting the temperature targets of the Paris Agreement. Here we show that cost-effective metrics for methane that minimize the overall cost of climate mitigation are time-dependent, primarily determined by the pathway, and strongly influenced by temperature overshoot. The Paris Agreement will implement the conventional 100-year Global Warming Potential (GWP100), a good approximation of cost-effective metrics for the coming decades. In the longer term, however, we suggest that parties consider adapting the choice of common metrics to the future pathway as it unfolds, as part of the global stocktake, if cost-effectiveness is a key consideration.

Cristal Balls or Snow Globes? Convergence and Divergence of Climate Transition Risk Metrics

Authors

Ms Bingler, Julia, ,

Ms Colesanti Senni, Chiara, PhD, CEP

Mr. Monnin, Pierre, PhD, CEP

Presenter

Ms Bingler, Julia, ,

Abstract

Climate risks are now fully recognized as financial risks by asset managers, investors, central banks, and financial supervisors. As a result, the integration of climate risk metrics into risk management processes is moving up agendas worldwide. In that context, a rapidly growing number of researchers, market participants and financial authorities are exploring which metrics to use to capture climate risks, and to what extent the use of different metrics delivers heterogeneous results. Our analysis takes a first step in assessing the convergence in assessments of climate-related transition risks across metrics providers, based on the ECB corporate bond portfolio. Our findings show that firms

Thematic Session: The value of safety in context

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. What VSL Should Be Used in Heat Wave Adaptation Policies? Evidence from Surveys in Spain and the UK
2. How does the Value of a Life Year (VOLY) depend on the timing of risk reductions?
3. Can Preferences for Reducing Mortality Risks Related to Air Pollution be Nudged? -- Evidence from a Discrete Choice Experiment
4. Valuing mortality and morbidity risk reductions using non-marginal changes

Speakers

Alberini, Anna , , University of Maryland

Dr. Arroyos-Calvera, Danae, Lecturer in economics, University of Birmingham

Andersson, Henrik, , Toulouse School of Economics

Prof. Herrera, Daniel, Professor of Economics, -

Presentations

Valuing mortality and morbidity risk reductions using non-marginal changes

Authors

Prof. Herrera, Daniel, Professor of Economics, -

Mr. Rheinberger, Christoph, -, European Chemicals Agency

Prof. Hammitt, James, Professor of economics and decision science, -

Presenter

Prof. Herrera, Daniel, Professor of Economics, -

Abstract

Many stated preference studies that seek to estimate the value per statistical life (VSL) suffer from a lack of scope sensitivity. One conceivable reason for scope insensitivity is that the risk reductions typically presented to respondents are too small to be meaningful. Indeed, there is a wealth of evidence in both economics and psychology suggesting that people have a limited comprehension of small probabilities. Given the lack of understanding of marginal risk changes, survey responses may not accurately reflect respondents

What VSL Should Be Used in Heat Wave Adaptation Policies? Evidence from Surveys in Spain and the UK

Authors

Alberini, Anna , , University of Maryland
Scasny, Milan, , Charles University in Prague

Presenter

Alberini, Anna , , University of Maryland

Abstract

This paper reports on a contingent valuation survey that was conducted in two countries. In addition, we ask respondents to engage in a series of choices between Program A and Program B, where program A saves lives that would be lost during heat waves and B saves lives that would be lost to one of three possible causes of death (cancer, cardiovascular causes, and road-traffic accidents). The results from this exercise broadly confirm the VSL figures: Our respondents appear to value a heat wave death approximately the same as a cancer death, slightly more than a generic death from cardiovascular causes, and 37-64% more than a traffic accident death.

How does the Value of a Life Year (VOLY) depend on the timing of risk reductions?

Authors

Chilton, Susan, , University of Newcastle upon Tyne Business School
Dr. McDonald, Rebecca, ,
Dr. Arroyos-Calvera, Danae, Lecturer in economics, University of Birmingham
Dr. Seested Nielsen, Jytte, Senior Lecturer, Newcastle University
Dr. Metcalf, Hugh, Retired,

Presenter

Dr. Arroyos-Calvera, Danae, Lecturer in economics, University of Birmingham

Abstract

The aim of this paper is to establish whether the rate at which individuals discount future utility can explain individual differences in VOLY (Value of a Life Year) preferences. Using a large (n=1664) survey of the representative of the UK population on age and gender, we derive personal discount factor estimates underpinning the VOLY and establish how preferences for different VOLY types (one-off risk reductions, ongoing risk reductions and risk reductions that grow over time) depend on these discount factors. The survey includes a substantial learning phase to familiarize participants with conditional risk sequences. Armed with this understanding, participants complete a series of iterated choices between hypothetical policy options, personalised to their age and gender, that reduce their risks of dying in a given future decade. The options are differentiated by the decade in which the risk reductions would occur. We contribute to the growing empirical research on direct elicitation of preferences over life expectancy gains (e.g. Nielsen et al., 2010; Hammitt and Tuncel, 2015) and provide further evidence that people differ in their preferred VOLY type, showing how time preferences explain some of this variation in preferences. Our contribution is important for three reasons: it sheds light on the reasons for preferences over different VOLY types; generates evidence about the time preference rate and functional form for policy analysis; and provides a means of empirically bridging between Value of Statistical Life (VSL) and the VOLY.

Can Preferences for Reducing Mortality Risks Related to Air Pollution be Nudged? --
Evidence from a Discrete Choice Experiment

Authors

Andersson, Henrik, , Toulouse School of Economics

Mr. OUVRARD, Benjamin, ,

Presenter

Andersson, Henrik, , Toulouse School of Economics

Abstract

Using a discrete choice experiment this study examines whether nudges may influence the respondents

The Thematic Session: Spatial analysis of development and conservation policies related to deforestation: Studies on Brazil and Indonesia

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. On the Role of Transportation Infrastructure in Development and Deforestation
2. Can Conservation Policy Shape Development? Protected Areas Affect Road Growth in the Brazilian Amazon
3. Targeting market-based incentives to curb deforestation: Evidence from Indonesian palm oil mills.
4. Carbon emissions reductions from Indonesia's REDD+ Moratorium on forest concessions are cost-effective yet contribute little to Paris commitments

Speakers

Dr. Wolfersberger, Julien, ,
Mr. Herrera, Diego, ,
Mr. Guye, Valentin, ,
Groom, Ben, , London School of Economics

Presentations

On the Role of Transportation Infrastructure in Development and Deforestation

Author

Dr. Wolfersberger, Julien, ,

Presenter

Dr. Wolfersberger, Julien, ,

Abstract

We build a quantitative spatial model to study the impact of a policy of transportation infrastructure on forest losses in the Brazilian Amazon. We examine how new roads (or the modernization of existing ones) in regions endowed with forests change the spatial equilibrium of agriculture and cause deforestation. To do this, we use a novel data-set combining agricultural census data and satellite-data on both forest cover and road networks. We find that a decrease in transport costs by 20% between the states of the so-called

Can Conservation Policy Shape Development? Protected Areas Affect Road Growth in the Brazilian Amazon

Authors

Pfaff, Alexander, , Duke University

Mr. Herrera, Diego, ,

Presenter

Mr. Herrera, Diego, ,

Abstract

Countries must understand how policies interact within any landscape to exploit synergies and minimize tradeoffs across conservation and development goals (e.g., SDGs). While it is well known that the presence of roads dissuades siting of protected areas (PAs), we examine whether the presence of PAs affects the location of roads and, thereby, economic development. We test whether PAs

Targeting market-based incentives to curb deforestation: Evidence from Indonesian palm oil mills.

Authors

Mr. Guye, Valentin, ,

Mr. Kraus, Sebastian, PhD candidate, Mercator Research Institute Berlin

Presenter

Mr. Guye, Valentin, ,

Abstract

We estimate price elasticities of deforestation across the Indonesian oil palm sector. This is the first study to relate deforestation to observations of the actual prices paid at palm oil mill gates. In the palm oil value chain, mills are pivotal: they have strong influence over deforestation decisions and can be monitored by downstream and public actors. We create a novel, spatially explicit dataset of mill-level input and output prices, ownership and export shares from 1998 to 2015. We model the plantation-mill relationships and isolate local, exogenous differences in price incentives at plantation sites. We find that deforestation in industrial, smallholder and illegal plantations is price elastic. This shows that market-based instruments can disincentivize deforestation in the Indonesian palm oil sector, and in particular where it is most difficult to monitor. Our finding that legal deforestation is contrastingly not price elastic suggests that economic opportunities encourage regulation bypassing. This implies that price instruments can help regulations be more effective in this context.

Carbon emissions reductions from Indonesia's REDD+ Moratorium on forest concessions are cost-effective yet contribute little to Paris commitments

Authors

Groom, Ben, , London School of Economics

Dr. Palmer, Charles, Economist, LSE

Mr. Sileci, Lorenzo, PHD Student, LSE

Presenter

Groom, Ben, , London School of Economics

Abstract

International initiatives for reducing carbon emissions from deforestation and forest degradation (REDD+) could make critical, cost-effective contributions to tropical countries

Thematic Session: Heat, health and adaptation to climate change

24th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Labor Market Friction and Adaptation to Environmental Change: Evidence from Workplace Safety
2. Ambient heat and human sleep: a global natural experiment
3. Individual and regional risk factors for heat-related hospitalization in the elderly population in Germany

Speakers

Dr. Park, R. Jisung, ,
Mr. Minor, Kelton, ,
Ms Klauber, Hannah, ,

Presentations

Labor Market Friction and Adaptation to Environmental Change: Evidence from Workplace Safety

Authors

Dr. Park, R. Jisung, ,
Dr. Behrer, A. Patrick, Post-Doctoral Fellow, Stanford University
Dr. Pankratz, Nora, Post-Doctoral Research Fellow, UCLA

Presenter

Dr. Park, R. Jisung, ,

Abstract

Technologies to mitigate the effects of climate change on worker health and productivity exist, but will employers adopt them? This depends on how labor markets work. Using confidential claims data from the California worker's compensation system and high-frequency weather data (2000-2018), we explore the relationship between heat and workplace safety, as well as the role of adaptation investments in mitigating this relationship. We find that hotter temperature increases workplace injury risk substantially, with days above 90F leading to 6 to 9% more injury claims relative to a day in the 50s. Consistent with a model in which adaptation is technically feasible but costly, we find evidence for elevated accident risk in both indoor (manufacturing, warehousing) and outdoor (construction, agriculture) industries and for types of injuries that are ostensibly unrelated to direct heat exposure (e.g. falling from heights, mishandling heavy equipment). We also find suggestive evidence of larger impacts in more concentrated labor markets. Exploiting variation in what is to our knowledge the first workplace heat safety mandate, we provide evidence that firms and workers may not operate at the Pareto adaptation frontier in private equilibrium. We estimate that current official statistics may understate heat-related injury burdens by a factor of four or more.

Ambient heat and human sleep: a global natural experiment

Authors

Mr. Minor, Kelton, ,

Dr. Bjerre-Nielsen, Andreas, Assistant Professor, University of Copenhagen

Ms Jonasdottir, Sigga, PhD Student, Technical University of Denmark

Prof. Lehmann, Sune, Professor, Technical University of Denmark

Dr. Obradovich, Nick, Research Scientist, Max Planck Institute for Human Development

Presenter

Mr. Minor, Kelton, ,

Abstract

Ambient temperatures are rising globally, with the greatest increases recorded at night. Concurrently, the prevalence of insufficient sleep is increasing in many populations, with substantial costs to human health and well-being. Even though nearly a third of the human lifespan is spent asleep, it remains unknown whether temperature and weather impact objective measures of sleep in real-world settings, globally. Here we link billions of sleep measurements from wearable devices comprising over 7 million nighttime sleep records across 68 countries to local daily meteorological data from 2015 to 2017. Higher than average minimum temperatures reduced sleep duration across the observed temperature distribution. Within-person sleep duration declined by 0.61 minutes (95% CI -0.54

Individual and regional risk factors for heat-related hospitalization in the elderly population in Germany

Authors

Dr. Koch, Nicolas, Head Policy Evaluation Lab, Mercator Research Institute on Global Commons and Climate Change (MCC)

Ms Klauber, Hannah, ,

Presenter

Ms Klauber, Hannah, ,

Abstract

Efficient adaptation to more frequent heat events in the course of climate change requires knowledge about the determinants of heat-related health hazards. This paper identifies individual and regional risk factors for hospitalizations caused by heat within the German population over 65 years of age. Using administrative insurance claims data and a machine-learning-based regression model, we classify the vulnerability of individuals and explore the geographic, morbidity, and socioeconomic correlates of vulnerability to heat exposure. We find that about a quarter of the insured individuals face a significantly higher risk of heat-induced hospitalization. The most vulnerable are, on average, more likely male and suffer more from dementia and Alzheimer's disease, among other chronic conditions. They live more often in rural areas with more old-age poverty and less capacity or utilization of outpatient and inpatient care. While these areas with vulnerable populations are affected less by heat today, climate projections suggest much greater exposure in the future. We project that unabated climate change leads to a five-fold increase in heat-related hospitalization by 2100.

Policy Session: Changing food habits: Exploring policy options to enable the transition from animal- to plant-based protein

24th June 2021, 05:30 PM - 07:30 PM

Description

Meat and dairy products have been estimated to be responsible for 24% of the environmental impacts caused by total final consumption in the EU, while contributing only around 6% of the economic value. Although reducing animal protein consumption has been an action item of the Seventh Environment Action Programme (7th EAP) to 2020, European per-capita meat consumption has been steady or even rising.

This session will explore various policy options for shifting food choices from animal- to plant-based protein.

This shift is desirable for both environmental and public health reasons: meat and dairy consumption has a large ecological footprint, both in terms of global greenhouse gas emissions and biodiversity loss, and in terms of air, soil and water pollution. Overconsumption of animal protein also has important health consequences, manifested in increased risks of developing cardiovascular diseases, diabetes and some forms of cancer.

EU agricultural policy has paid more attention to objectives of food security than to the public health and environmental externalities of food consumption. However, livestock farming is an important driver of climate change and biodiversity loss, and with the global demand for meat and dairy products increasing, it is important to pay attention to the externalities of food consumption and explore the options for developing more environmentally effective food policies.

Food consumption behavior is notoriously difficult to change. Food habits are ingrained in culture and perceived as part of one's identity. These roots partly explain why price elasticities for food, and more specifically for meat and meat substitutes, vary greatly between countries. Overall, food consumption tends to be relatively inelastic, implying that pricing policies in this domain may be less effective than in other contexts. In addition, pricing policies may have distributional implications: in developed countries, the less affluent households are the ones consuming too much (processed) meat, which makes "sin taxes" in the food domain rather unpopular. The question is, what types of policy interventions can effectively influence food choice behavior, and in what contexts? Some hints to answer this question are offered by the public health literature, which suggests that policy mixes directed at influencing both individual consumption choices and social consumption practices work best. Still, questions of how to scale up behavioral interventions and effectively influence the behavior of different social groups, as well as how to balance national policy trade-offs between addressing local environmental problems caused by livestock farming, and attaining the global objectives of mitigating climate change and halting biodiversity loss, remain. These knowledge gaps only increase the relevance of a session on policy options to shift food consumption patterns from animal- to plant-based protein.

This session will address the following key questions:

1. Why is it so difficult to shift consumer food choices from animal- to plant-based protein? What behavioral factors play a role? (Nicolas Treich)
2. To what extent can we effectively influence food choice behavior with price incentives, labeling and awareness campaigns? How can we shape policy mixes that pay attention to behavioral, economic and social factors? (Jayson Lusk)
3. What are the pros and cons of alternative policy instruments/mixes that can be used to shift consumption from animal- to plant-based protein? (Wilma Waterlander)
4. What policies have been put in place to enable this transition? What challenges have policymakers faced in designing and implementing these policies, and how have they addressed them? (François Dessart)
5. What opportunities and challenges does the food industry see in this transition, and what concrete actions does it take to stimulate consumers to shift from animal to plant protein? (Jaap Korteweg)

Session organizers:

Jetske Bouma and Alexandros Dimitropoulos

Speakers:

François Dessart

Jaap Korteweg

Jayson Lusk

Nicolas Treich

Wilma Waterlander

Speakers

Bouma, Jetske, , PBL - Netherlands Environmental Assessment Agency

Dr. Dimitropoulos, Alexandros, ,

Dr. Dessart, François , Policy Analyst, European Commission

van der Kaa, Hille, -, Those Vegan Cowboys

Prof. Lusk, Jayson, Professor, Ecole Polytechnique Federale de Lausanne

Mr. Treich, Nicolas, Senior Researcher in Economics, INRAE - TSE

Dr. Waterlander, Wilma, Assistant Professor, University of Amsterdam

Presentation

EAERE Award for Outstanding Publication in the Journal Environmental and Resource Economics (ERE)

24th June 2021, 05:30 PM - 07:30 PM

Description

This thematic session is dedicated to the EAERE Award for Outstanding Publication in the journal Environmental and Resource Economics (ERE). This award recognizes exemplary research published in ERE during the past year.

This year's award recipients are:

- Stefan Borsky, Hannah Hennighausen, Andrea Leiter and Keith Williges, CITES and the Zoonotic Disease Content in International Wildlife Trade - Environmental and Resource Economics 76, 1001–1017 (2020) - (open access article)
- and
- Dana C. Andersen, Default Risk, Productivity, and the Environment: Theory and Evidence from U.S. Manufacturing - Environmental and Resource Economics 75, 677–710 (2020) - (Free access until July 27th, 2021)

The 2021 Award Nominating Committee recognises also the excellence of these papers:

- Beck, U., Kruse-Andersen, P.K., Endogenizing the Cap in a Cap-and-Trade System: Assessing the Agreement on EU ETS Phase 4. Environmental and Resource Economics 77, 781–811 (2020). (Free access until July 27th, 2021)
- Best, R., Burke, P.J. & Jotzo, F., Carbon Pricing Efficacy: Cross-Country Evidence. Environmental and Resource Economics 77, 69–94 (2020). (Free access until July 27th, 2021)
- Hagem, C., Hoel, M. & Sterner, T., Refunding Emission Payments: Output-Based Versus Expenditure-Based Refunding. Environmental and Resource Economics 77, 641–667 (2020). (Open access article)

EAERE is grateful to the Award Nominating Committee composed by Phoebe Koundouri (Chair), Astrid Dannenberg, and Alistair Munro for the service rendered to EAERE, and to Springer for supporting this Award.

Awarded and commended papers are presented in this session, in the following order:

1. Stefan Borsky, Hannah Hennighausen, Andrea Leiter and Keith Williges, CITES and the Zoonotic Disease Content in International Wildlife Trade, Environmental and Resource Economics 76, 1001–1017 (2020)
2. Beck, U., Kruse-Andersen, P.K. Endogenizing the Cap in a Cap-and-Trade System: Assessing the Agreement on EU ETS Phase 4. Environmental and Resource Economics 77, 781–811 (2020).
3. Best, R., Burke, P.J. & Jotzo, F. Carbon Pricing Efficacy: Cross-Country Evidence. Environmental and Resource Economics 77, 69–94 (2020).
4. Hagem, C., Hoel, M. & Sterner, T. Refunding Emission Payments: Output-Based Versus Expenditure-Based Refunding. Environmental and Resource Economics 77, 641–667 (2020).
5. Dana C. Andersen, Default Risk, Productivity, and the Environment: Theory and Evidence from U.S. Manufacturing, Environmental and Resource Economics 75, 677–710 (2020)

The session is chaired by Alistair Munro and Phoebe Koundouri.

Speakers

Prof. Munro, Alistair, Professor, University of Oxford

Presentation

Impacts of Covid-19 I

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Assessing the impact of COVID-19 on global fossil fuel consumption and CO2 emissions (PRESENTER: Takashi Yamagata ; DISCUSSANT: Lotanna Emediegwu)

2. Health Impacts of Daily Weather Fluctuations: Empirical Evidence from Covid-19 in U.S. Counties (PRESENTER: Lotanna Emediegwu ; DISCUSSANT: Elke D. Groh)

3. The COVID-19 health shock and the stability of environmental behaviors – Panel evidence from discrete choice experiments in Chile (PRESENTER: Elke D. Groh ; DISCUSSANT: Meriem Hamdi-Cherif)

4. Assessing short-term and long-term economic and environmental effects of the COVID-19 crisis in France (PRESENTER: Meriem Hamdi-Cherif ; DISCUSSANT: Takashi Yamagata)

Speakers

Prof. Yamagata, Takashi, ,
Mr. Emediegwu, Lotanna, ,
Ms Groh, Elke D., Research associate, University of Kassel
Hamdi-Cherif, Meriem, -, OFCE Sciences Po

Presentations

Assessing the impact of COVID-19 on global fossil fuel consumption and CO2 emissions

Authors

Tarui, Nori, , Dep. of Economics, University of Hawaii
Prof. Yamagata, Takashi, ,
Dr. Smith, L. Vanessa, Econometrics,

Presenter

Prof. Yamagata, Takashi, ,

Abstract

We assess the effect of the COVID-19 pandemic on global fossil fuel consumption and CO2 emissions over the two-year horizon 2020Q1-2021Q4. We apply a global vector autoregressive (GVAR) model, which captures complex spatial-temporal interdependencies across countries associated with the international propagation of economic impact due to the virus spread. The model makes use of a unique quarterly data set of coal, natural gas, and oil consumption, output, exchange rates and equity prices, including global fossil fuel prices for 32 major CO2 emitting countries in 1984-2019. We produce forecasts of coal, natural gas and oil consumption, conditional on GDP growth scenarios based on alternative IMF World Economic Outlook forecasts that were made before and after the outbreak. We also simulate the effect of a relative price change in fossil fuels, due to global scale carbon pricing, on

consumption and output. Our results predict fossil fuel consumption and CO2 emissions to return to their pre-crisis levels, and even exceed them, within the two-year horizon despite the large reductions in the first quarter following the outbreak. Our forecasts anticipate more robust growth for emerging than for advanced economies. The model predicts recovery to the pre-crisis levels even if another wave of pandemic occurs within a year. Our counterfactual carbon pricing scenario indicates that an increase in coal prices is expected to have a smaller impact on GDP than on fossil fuel consumption. Thus, the COVID-19 pandemic would not provide countries with a strong reason to delay climate change mitigation efforts.

HEALTH IMPACTS OF DAILY WEATHER FLUCTUATIONS: EMPIRICAL EVIDENCE FROM COVID-19 IN U.S. COUNTIES

Author

Mr. Emediegwu, Lotanna, ,

Presenter

Mr. Emediegwu, Lotanna, ,

Abstract

The emergence of the novel coronavirus virus has necessitated immense research efforts to understand how several non-environmental and environmental factors affect transmission. With the United States leading the path in terms of case incidence, it is important to investigate how weather variables influence the spread of the disease in the country. This paper assembles a detailed and comprehensive dataset comprising COVID-19 cases and climatological variables for all counties in the continental U.S. and uses a developed econometric approach to estimate the causal effect of certain weather factors on the growth rate of infection. Our results indicate a non-linear and significant negative relationship between the individual weather measures and the growth rate of COVID-19 in the U.S. Specifically, we find that a 1oC rise in daily temperature will reduce daily covid growth rate in the U.S. by 5 percent in the following week, while a marginal increase in relative humidity reduces the same outcome by 1 percent over a similar period. In comparison, a 1 meter/sec increase in daily wind speed will bring about an 8 percent drop in daily growth rate of COVID-19 in the country. These results differ by location and are robust to several sensitivity checks, so large deviations are unexpected.

The COVID-19 health shock and the stability of environmental behaviors – Panel evidence from discrete choice experiments in Chile

Authors

Dr. Köbrich León, Anja, , University Kassel

Ms Groh, Elke D., Research associate, University of Kassel

Dr. Schobin, Janosch, Post-Doc, University of Kassel

Presenter

Ms Groh, Elke D., Research associate, University of Kassel

Abstract

Stability of climate-related preferences is a crucial assumption in economic models. To evaluate whether the stability of climate-relevant individual preferences is affected by the health and income shock induced by the COVID-19 pandemic, we employ a longitudinal stated choice experiment survey in Chile. The key finding from our analysis with mixed logit models is that preferences for low-carbon food consumption are not stable in view of an

exogenous shock. Preferences for a reduction of the food climate impact are increasing in the light of the COVID-19 pandemic. Investigating heterogeneity in responses to the health shock and economic crisis by various split samples, we can show that the strength of the initial shock effect on the importance of the low-carbon attribute is moderated by gender, individual resources, and environmental preferences. Our results suggest that the COVID-19 pandemic triggers an increase in awareness of the necessity for climate action and individual behavioral change.

Assessing short-term and long-term economic and environmental effects of the COVID-19 crisis in France

Authors

Hamdi-Cherif, Meriem, -, OFCE Sciences Po

Mr. Malliet, Paul, ,

Ms Landa, Gissela, researcher, OFCE Sciences Po

Dr. Reynes, Frederic, Researcher, OFCE SciencesPo - NEO

Dr. Saussay, Aurelien, Researcher, London School of Economics

Presenter

Hamdi-Cherif, Meriem, -, OFCE Sciences Po

Abstract

In response to the COVID-19 health crisis, the French government has imposed drastic lockdown measures for a period of 55 days. This paper provides a quantitative assessment of the economic and environmental impacts of these measures in the short and long term. We use a Computable General Equilibrium model designed to assess environmental and energy policies impacts at the macroeconomic and sectoral levels. We find that the lockdown has led to a significant decrease in economic output of 5% of GDP, but a positive environmental impact with a 6.6% reduction in CO2 emissions in 2020. Both decreases are temporary: economic and environmental indicators return to their baseline trajectory after a few years. CO2 emissions even end up significantly higher after the COVID-19 crisis when we account for persistently low oil prices. We then investigate whether implementing carbon pricing can still yield positive macroeconomic dividends in the post-COVID recovery. We find that implementing ambitious carbon pricing speeds up economic recovery while significantly reducing CO2 emissions. By maintaining high fossil fuel prices, carbon taxation reduces the imports of fossil energy and stimulates energy efficiency investments while the full redistribution of tax proceeds does not hamper the recovery.

Food production and consumption

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Evaluating the regional impacts of climate change on women's well-being, domestic burdens and food security in Bolivia (PRESENTER: Luis Enrique Escalante Ochoa; DISCUSSANT: Franziska Funke)
2. The distributional effects of meat taxation in the EU (PRESENTER: Franziska Funke ; DISCUSSANT: Alkis Blanz)
3. Climate Change and Inequality in General Equilibrium: The Role of Rising Food Prices in the Developing World (PRESENTER: Alkis Blanz ; DISCUSSANT: Silvia Ferrini)
4. Are consumers willing to support sustainable cacao farming? A cross-country analysis in times of pandemic (PRESENTER: Silvia Ferrini ; DISCUSSANT: Luis Enrique Escalante Ochoa)

Speakers

Mr. Escalante, Luis Enrique, ,

Ms Funke, Franziska, Pre-doctoral researcher, University of Oxford (Environmental Change Institute at the School of Geography and the Environment and Institute for New Economic Thinking at the Oxford Martin School)

Mr. Blanz, Alkis, ,

Ferrini, Silvia, , University of Siena & CSERGE (University of East Anglia)

Presentations

Evaluating the regional impacts of climate change on women's well-being, domestic burdens and food security in Bolivia

Authors

Mr. Escalante, Luis Enrique, ,

Prof. Maisonnave, Helene, Professor,

Presenter

Mr. Escalante, Luis Enrique, ,

Abstract

Throughout Bolivia, the vulnerability of women and men to the impact of climate change is not equal due to regional and gender related differences and varying levels of exposition to climatic events. This study uses a macro-micro model with a gender focus to assess the impact of climate change on food security and women poverty. We analyse a scenario in which specific regional damage occurs in the agricultural and livestock sector, as well as in the non-agricultural ones, due to adverse climatic events.

The simulation reveals negative impacts on the Bolivian economy, with the agricultural sector being the most affected. Food availability is reduced, which ultimately leads to greater

food insecurity and food poverty with female-headed households suffering the most. The results also reveal negative effects on employment and increased domestic burdens, especially among women, which increases their vulnerability with women in the highlands being the most affected.

The distributional effects of meat taxation in the EU

Authors

Dr. Klenert, David, ,

Ms Funke, Franziska, Pre-doctoral researcher, University of Oxford (Environmental Change Institute at the School of Geography and the Environment and Institute for New Economic Thinking at the Oxford Martin School)

Dr. Cai, Mattia, Economist, Joint Research Centre, European Commission

Presenter

Ms Funke, Franziska, Pre-doctoral researcher, University of Oxford (Environmental Change Institute at the School of Geography and the Environment and Institute for New Economic Thinking at the Oxford Martin School)

Abstract

Livestock farming is associated with several urgent environmental challenges, including climate change, biodiversity loss, deforestation and nitrogen pollution. Meat consumption itself has come under scrutiny due to its health impacts and out of concerns for animal welfare. Meat taxes are a powerful demand side lever to regulate meat consumption and have recently been discussed in a number of European countries. However, one major concern is that their burden might fall disproportionately on poor households. We analyse these claims by comparing different meat tax scenarios in terms of their distributional impacts in a large sample of European countries. We find that, whether as a flat tax or greenhouse gas-based, a meat tax is slightly regressive. However, if the revenue is returned to households on an equal per-capita basis, the overall impact becomes progressive in a large majority of countries.

Climate Change and Inequality in General Equilibrium: The Role of Rising Food Prices in the Developing World

Authors

Kalkuhl, Matthias, , Mercator Institute

Mr. Blanz, Alkis, ,

Presenter

Mr. Blanz, Alkis, ,

Abstract

In this paper, we analyze the distributive impact of climate change through rising food prices in general equilibrium. Existing work estimated mainly short-term welfare effects based on household data. By including the saving decision of households, we aim to understand how the poor fall into or escape from poverty in this context and how climate change affects the wealth distribution in the long-run. We use a general equilibrium model with heterogeneous agents and non-homothetic preferences. We calibrate our model to household data from 92 developing countries, representing 4.5 billion people. First, we find that initial shares of food in consumption expenditures capture only qualitatively the distributive impact of the partial equilibrium outcome. Second, considering general equilibrium effects additionally increases wealth rather than consumption inequality. The results indicate that the distributive impact of

climate change through rising food prices is dynamic and may be larger and more persistent than anticipated.

Are consumers willing to support sustainable cacao farming? A cross-country analysis in times of pandemic

Authors

Ferrini, Silvia, , University of Siena & CSERGE (University of East Anglia)

Dr. Grilli, Gaetano, ,

- Erazo, Jaime, Senior Research Assistant, CSERGE (University of East Anglia)

Di Maria, Corrado, , University of East Anglia

- Cantillo Garcia, Tatiana, Research Assistant, CSERGE (University of East Anglia)

Turner, R. Kerry, , University of East Anglia

Presenter

Ferrini, Silvia, , University of Siena & CSERGE (University of East Anglia)

Abstract

The sustainability of food production and supply chain is crucial for a resilient and equitable development, especially for lower income food producing countries. Consumers

Forests II

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Facilitating landowner's voluntary provision of ecosystem services: The effectiveness of non-pecuniary interventions in voluntary incentive design for private forest conservation (PRESENTER: Yohei Mitani ; DISCUSSANT: Lara Bartels)
2. The Demand for Voluntary Carbon Sequestration – Experimental Evidence from a Reforestation Project in Germany (PRESENTER: Lara Bartels ; DISCUSSANT: Sidney Michelini)
3. Using Machine Learning to Improve Conflict Predictions in a Changing Climate (PRESENTER: Sidney Michelini ; DISCUSSANT: Goytom Abraha Kahsay)
4. Women participation in decision-making and participatory forest management: An empirical evidence from Ethiopia (PRESENTER: Goytom Abraha Kahsay ; DISCUSSANT: Yohei Mitani)

Speakers

Dr. Mitani, Yohei, ,
Ms Bartels, Lara, ,
Mr. Michelini, Sidney, ,
Dr. Kahsay, Goytom Abraha, ,

Presentations

Facilitating landowner's voluntary provision of ecosystem services: The effectiveness of non-pecuniary interventions in voluntary incentive design for private forest conservation

Authors

Prof. Kipperberg, Gorm, Associate Professor, University of Stavanger
Mr. Shimada, Hideki, ,
Dr. Mitani, Yohei, ,

Presenter

Dr. Mitani, Yohei, ,

Abstract

Given tight government budgets, the role of non-pecuniary incentives in payment for ecosystem services (PES) scheme design has received increasing attention in recent years. Promoting voluntary provision and facilitating spatial coordination are two major challenges. This paper studies how the design of a voluntary contribution mechanism can help promoting landowners

The Demand for Voluntary Carbon Sequestration – Experimental Evidence from a Reforestation Project in Germany

Authors

Prof. Löschel, Andreas, Professor, University of Münster

Ms Bartels, Lara, ,

Prof. Kesternich, Martin, Researcher, ZEW – Leibniz Centre for European Economic Research

Presenter

Ms Bartels, Lara, ,

Abstract

While the neoclassical benchmark usually predicts non-cooperative behavior, experimental and empirical research reveal that subjects in many settings voluntarily provide public goods. An important example for the voluntary provision of public goods are donations to charitable organizations. Our paper provides valuable knowledge and new insights for deepening our understanding of the individual behaviors that generate environmental public goods. We conduct a framed-field experiment to explore the individuals

Using Machine Learning to Improve Conflict Predictions in a Changing Climate

Authors

Mr. Michelini, Sidney, ,

Mr. Sedova, Barbora, Researcher, Potsdam Institute for Climate Impact Research

Dr. Schewe, Jacob, Researcher, Potsdam Institute for Climate Impact Research

Dr. Frieler, Katja, Researcher, Potsdam Institute for Climate Impact Research

Presenter

Mr. Michelini, Sidney, ,

Abstract

This paper comments on two streams of current scientific literature. First we contribute to the literature on forecasting conflict with machine learning by using a random forest model to explicitly check whether high quality climate variable data from the ISIMIP project improve conflict forecasts. Second, we address the literature on how and when climate-related events cause conflict with a causal forest approach that is specifically tailored to testing for heterogeneous effects. We find that natural disasters, crops, and a number of other indicators improve conflict forecasts compared to previous conflicts-currently the strongest predictors of conflict incidence. However, climate impact data does not seem to improve conflict predictions substantially when further socio-economic and political variables are included.

Women participation in decision-making and participatory forest management: An empirical evidence from Ethiopia

Authors

Bulte, Erwin, , Tilburg University and Wageningen University

Dr. Kahsay, Goytom Abraha, ,

Dr. Norden, Anna, Assistant Professor, Jönköping University

Presenter

Dr. Kahsay, Goytom Abraha, ,

Abstract

Amid growing emphasis on community-based approaches to forest management, there are concerns related to lack of women participation in decision-making and leadership. This paper analyzes how women participation in decision-making (proxied by the number female executive committee (EC) members, share of female members who participate in general assembly meetings and members

Intellectual property rights

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Patent Protection and the Transition to Clean Technology (PRESENTER: Isabel Hovdahl ; DISCUSSANT: Aneeq Sarwar)

2. How does IPR protection affect the relationship between environmental policy and innovation? (PRESENTER: Aneeq Sarwar ; DISCUSSANT: Justyna Tomala)

3. Eco-Innovation in the transition to sustainable development: Evidence from patents in environmental technologies (PRESENTER: Justyna Tomala ; DISCUSSANT: Nicholas Tyack)

4. The diffusion of genetic resources and yield gaps in the developing world (PRESENTER: Nicholas Tyack ; DISCUSSANT: Isabel Hovdahl)

Speakers

Dr. Hovdahl, Isabel, ,
Sarwar, Aneeq, -, Swinburne University of Technology
Ms Tomala, Justyna, Researcher, Cracow University of Economics
Mr. Tyack, Nicholas, ,

Presentations

Patent Protection and the Transition to Clean Technology

Authors

Ms. Alsina-Pujols, Maria, , University of Zurich
Dr. Hovdahl, Isabel, ,

Presenter

Dr. Hovdahl, Isabel, ,

Abstract

We investigate the use of patent policy to induce the transition to clean technology. It is well established that optimal climate policy should not only price emissions, but also induce innovation in clean technology. Although the combination of a price on emissions and a subsidy to clean innovation has been shown to be first-best, we argue that this policy is unattainable. First, the magnitude of the necessary carbon tax seems unfeasible, and second, there can be large efficiency losses associated with public research funding. Using an endogenous growth model with directed technical change, we show that reducing patent protection on dirty technology can improve second-best outcomes. In numerical simulations, we find that combining environmental policy with patent policy can recover a substantial amount of the welfare loss in second-best, and at a lower carbon tax and clean innovation subsidy than in first-best.

How does IPR protection affect the relationship between environmental policy and innovation?

Author

Sarwar, Aneeq, -, Swinburne University of Technology

Presenter

Sarwar, Aneeq, -, Swinburne University of Technology

Abstract

This paper empirically analyzes the causal relationship between the interaction of environmental policy and intellectual property rights (IPR) on environmental innovation. Because environmental innovation uniquely faces the double externality problem: knowledge externality and environmental externality. Two different policy instruments, each addressing the market failure associated with one of the externalities, might be required to ensure a socially optimal level of innovation

Eco-Innovation in the transition to sustainable development: Evidence from patents in environmental technologies

Authors

Prof. Urbaniec, Maria, , Cracow University of Economics

Ms Tomala, Justyna, Researcher, Cracow University of Economics

Mr. Martinez, Sergio, Researcher, World Trade Organization

Presenter

Ms Tomala, Justyna, Researcher, Cracow University of Economics

Abstract

Eco-innovation is a type of innovation that can not only have benefits for consumers and businesses, but can also significantly reduce negative environmental impacts. As an integral part of innovation, green technologies are receiving more and more attention due to growing environmental concerns. Patent data is often used for measuring technological innovation. Patent data provides a wealth of information about the nature of the invention, the inventors and the applicant. However, understanding the patenting of eco-innovation comes with challenges. The aim of this paper is to analyse the development of green technology innovation by employing a range of data collection techniques based on the patent data from leading countries such as China, Korea, Japan, USA and Germany. It can be concluded that, between the year 2000 and 2017, green technological innovations in the examined countries made great improvements and came to occupy a leading position in green technology growth. Patent analysis indicates growing interest in the selected technologies. In particular, impressive progress has been made in the areas of environmental technologies and climate change mitigation technologies related to energy generation, transmission or distribution. While the importance of environmental technologies has been increasing in recent years, climate change technologies related to energy generation, transmission or distribution dominated compared to other technology domains in the past, e.g. 2008-2011 in China, 2009-2012 in Germany, 2009-2010 in Japan, 2007-2016 in South Korea, and 2007-2013 in United States. Germany and Japan showed a relatively high position in climate change mitigation technologies related to transporting. These technologies are closely linked to international environmental policies such as climate change mitigation and green industry transformation. The results for environmental management technologies show that patenting activity of China is considered lower in comparison to countries such as Germany, Japan and United States. However, the findings on the development of environmental technologies in the leading

countries in patenting suggest that a complete reliance on green technologies is still at an earlier stage despite some progress observed in the last two decades.

The diffusion of genetic resources and yield gaps in the developing world

Author

Mr. Tyack, Nicholas, ,

Presenter

Mr. Tyack, Nicholas, ,

Abstract

The Green Revolution was a major public sector investment in the development of improved crop varieties, especially for rice and wheat, that led to the uptake in many countries of high-yielding modern varieties (along with other inputs such as fertilizer). This analysis aims to examine how these investments in the development and dissemination of improved crop varieties contributed (or did not contribute) to yield convergence and reductions in yield gaps for a number of crops across the developing world. This approach fits into the Hayami-Ruttan theory of induced technical change in agriculture, in which innovations in agricultural technology are seen as a primary driver of productivity growth in the sector (Hayami and Ruttan 1970). I investigate this question using a cross-country database on agricultural productivity, crop yields and modern variety adoption rates including 77 developing countries between 1960 and 2005. I employ dynamic panel data methods (namely the two-step system GMM estimator) to address endogeneity concerns, and include a number of variables to disentangle other drivers of productivity growth such as increased use of inputs per hectare of fertilizers, machinery, livestock, and labor. I further investigate the role played by country-level investments in agricultural research and development, the protection of intellectual property rights, and hybrid technology in aiding or restricting the diffusion of innovation.

Financing energy

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. A recipe for fast-growing wind financial markets (PRESENTER: Jamie Rickman ; DISCUSSANT: Iman Salem)
2. Individual investments in renewable energy sources and Peer-to-Peer trading (PRESENTER: Iman Salem ; DISCUSSANT: Panika Jain)
3. Sustainable energy transition through energy aid: An application of dynamic GMM and panel quantile regression (PRESENTER: Panika Jain ; DISCUSSANT: Yeong Jae Kim)
4. Local and Global Experience Curves for Lumpy and Granular Energy Technologies in Korea (PRESENTER: Yeong Jae Kim ; DISCUSSANT: Jamie Rickman)

Speakers

Dr. Rickman, Jamie, ,

Ms Salem, Iman, ,

Ms Jain, Panika, ,

Dr. Kim, Yeong Jae, , RFF-CMCC European Institute on Economics and the Environment

Presentations

A recipe for fast-growing wind financial markets

Authors

Ms Larosa, Francesca, Researcher, Fondazione CMCC

Dr. Ameli, Nadia, ,

Dr. Rickman, Jamie, ,

Presenter

Dr. Rickman, Jamie, ,

Abstract

Rapidly mobilising finance to scale-up wind deployment is crucial for the sustainable energy transition. It is often assumed that financial markets will spontaneously grow in response to the right market incentives, but little attention has been paid to the endogenous processes which align with rapid growth. A realistic model of how investors behave in wind financial markets is missing. This study shows how internal market dynamics matter for the pace of growth: fast-growing markets contain a set of highly active debt investors who support investment activity and are the favoured partners of new market entrants. These critical debt investors ascend to prominent positions as they gain experience, suggesting a

Individual investments in renewable energy sources and Peer-to-Peer trading

Authors

Ms Salem, Iman, ,
Mr. Gautier, Axel, Professor,

Presenter

Ms Salem, Iman, ,

Abstract

Peer-to-peer (P2P) trading allows prosumers and consumers of electricity to exchange energy with each other outside the traditional centralised system. In this article, we consider an eco-neighborhood in which households can invest in decentralised production units (DPUs) and sell their excess power to the energy system at a given price, the feed-in-tariff (FiT), or to their neighbors on a P2P exchange platform. We show that in the absence of investment externalities, an appropriate FiT is sufficient to induce the first-best investment and trade level, and that in such case P2P trading has no value added. On the contrary, when investment externalities exist, P2P trading is necessary to restore the efficiency of the energy system.

Sustainable energy transition through energy aid: An application of dynamic GMM and panel quantile regression

Authors

Ms Jain, Panika, ,
Dr. Bardhan, Samaresh, Associate Professor , Indian Institute of Technology Ropar

Presenter

Ms Jain, Panika, ,

Abstract

Energy aid strengthens energy infrastructure in recipient countries through financial and technical assistance for energy generation, distribution, and appropriate policy adoption. Given this, the study focuses on the effectiveness of energy aid and its composition in fostering the transition from fossil fuels to renewable electricity (RE) sources. We employ system GMM and panel quantile regression models to examine the individual and combined effect of energy aid and its composition on the proportion of total and non-hydro RE capacity to total electricity capacity in 67 developing countries between 2002 and 2017. With system GMM, we find a positive effect of energy aid and its renewable generation component on sustainable energy transition measures. Whereas energy aid for non-renewable energy generation hinders sustainable energy transition. The joint impact of energy aid for renewable electricity generation, policy, and distribution appears to be productive for the sustainable energy transition. The results with panel quantile regression reveal that total energy aid and its renewable electricity component induces hydro electricity capacity among lower quantiles and non-hydro electricity capacity among upper quantiles. Energy policy and distribution aid individually and homogenously augment shift to hydro sources. While we observe the contrasting effect of these energy aid components on non-hydro sources. Based on these results, the study provides policy implications to design and disburse energy aid to build low-carbon energy infrastructure in the developing world.

Local and Global Experience Curves for Lumpy and Granular Energy Technologies in Korea

Authors

Dr. Kim, Yeong Jae, , RFF-CMCC European Institute on Economics and the Environment

Mr. Choi, Donghyun, Ph.D. student, Georgia Institute of Technology

Presenter

Dr. Kim, Yeong Jae, , RFF-CMCC European Institute on Economics and the Environment

Abstract

Current electricity generation systems have been dominated by lumpy energy technologies (e.g., coal-fired and nuclear plants) because the electricity they create has been cheaper than that generated from granular technologies (e.g., solar and wind). Accelerating the development and deployment of low-carbon technologies to mitigate climate change will require better understanding how lumpy and granular technological innovations work to reduce domestic and foreign technology costs. We estimated one-factor and two-factor learning experience curves to identify drivers and assess the relative importance of local and global learning experiences in Korea

Energy efficiency

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Measuring Energy-saving Technological Change: International Trends and Differences (PRESENTER: Emiko Inoue ; DISCUSSANT: Filippo Pavanello)
2. Air-Conditioning and the Adaptation Cooling Deficit in Emerging Economies (PRESENTER: Filippo Pavanello ; DISCUSSANT: Puja Singhal)
3. The Distribution of Energy Efficiency and Regional Inequality (PRESENTER: Puja Singhal ; DISCUSSANT: Claire Gavard)
4. Supporting Residential Energy Conservation under Constrained Public Budget: Cost-effectiveness and Redistribution Analysis of Public Financial Schemes in France (PRESENTER: Claire Gavard ; DISCUSSANT: Emiko Inoue)

Speakers

Dr. Inoue, Emiko, ,
Mr. Pavanello, Filippo, PhD student,
Singhal, Puja, Postdoc, Potsdam Institute For Climate Impact Research
Dr. Gavard, Claire, ,

Presentations

Measuring Energy-saving Technological Change: International Trends and Differences

Authors

Dr. Inoue, Emiko, ,
Prof. Yamada, Ken, Professor,
Mr. Taniguchi, Hiroya, PhD student,

Presenter

Dr. Inoue, Emiko, ,

Abstract

Technological change is essential for balancing economic growth and environmental sustainability.

This study measures and documents energy-saving technological change to understand its trends in advanced countries over recent decades. We estimate sector-level production functions with factor-augmenting technology using cross-country and cross-industry panel data and shift

Our results show how energy-saving technological change varies across sectors, countries, and time
and the extent to which it contributes to economic growth and its differences across countries.

Air-Conditioning and the Adaptation Cooling Deficit in Emerging Economies

Authors

Marinella, Davide, Researcher, Foundation Euro-Mediterranean Centre on Climate Change (CMCC)
Prof. DE CIAN, ENRICA, ,
Ms. Bezerra, Paula, , Energy Planning Program - Graduate School of Engineering - COPPE - Universidade Federal do Rio de Janeiro
Prof. Schaeffer, Roberto, -, COPPE
Mr. Pavanello, Filippo, PhD student,
Dr. Mistry, Malcolm, researcher,
Ms Borges, Talita, PhD student,
Prof. Lucena, André, professor,
Mr. Jagu, Dattakiran, Consultant,
Dr. Renner, Sebastian, researcher,

Presenter

Mr. Pavanello, Filippo, PhD student,

Abstract

Higher temperatures due to climate change make space cooling more important for comfort and health, and rising income levels will allow more people to purchase and run air conditioners. Here we show that, in Brazil, India, Indonesia, and Mexico, income and humidity-adjusted temperature have comparatively similar role in increased adoption and use of air-conditioning. Adoption rates are higher among households in urban areas, among those with higher levels of education and with elderly family members. Air-conditioning is unevenly distributed across geography and income levels, bringing evidence to the existence of unequal opportunities to adapt that we characterize in terms of an adaptation cooling gap. Although air-conditioning adoption is expected to face between a twofold and sixteen-fold increase by 2040, the adaptation cooling gap will persist. Almost a hundred million of less wealthy families will face a cooling deficit and will not be able to adequately satisfy their thermal comfort needs.

The Distribution of Energy Efficiency and Regional Inequality

Authors

Singhal, Puja, Postdoc, Potsdam Institute For Climate Impact Research
- Hobbs, Andrew, Assistant Professor, University of San Francisco

Presenter

Singhal, Puja, Postdoc, Potsdam Institute For Climate Impact Research

Abstract

This paper studies the long-term distribution of energy-efficiency outcomes in the German residential sector. To uncover the underlying energy efficiency of buildings, we estimate the causal response of building-level heat energy demand to variability in heating degree days. We examine heterogeneity in temperature response using both panel fixed-effects and causal forests. Our results suggest that the distribution of energy-efficiency is not equitable in the West of Germany, with buildings located in the South attaining the best energy performance

standards. Although the housing stock in the East is significantly older and thus less subject to building standards, they perform better than the West counterpart, likely as a result of large investments in retrofitting post-reunification. Finally, we show that the regional distribution of energy-efficiency reflects differences in heating needs -- thus, the poorer energy performance of buildings in the North-West should be weighed against the warmer climatic zone.

Supporting Residential Energy Conservation under Constrained Public Budget: Cost-effectiveness and Redistribution Analysis of Public Financial Schemes in France

Authors

Dr. Gavard, Claire, ,

- Chlond, Bettina, Researcher, ZEW Mannheim

Presenter

Dr. Gavard, Claire, ,

Abstract

In the context of tight public budgets and increasingly ambitious climate objectives, the performance of the support policies for residential energy conservation works needs to be assessed. We compare the performance of five types of support schemes in France, namely the income tax credit, a grant scheme, the reduction of the value-added tax, free-interest loans and White Certificates. The analysis employs a dataset covering close to 14,000 French households who conducted conservation works in France. To address self-selection bias and potential endogeneity concerns, we use a double-robust inverse probability weighting estimator, a method mostly used in epidemiology so far. We assess the effect of the adoption of each scheme on the funding acquired, the private investment, total investment and the reduction of the household energy expenses. We deduct metrics of cost-effectiveness, redistribution, ability to trigger private investment and additional total investment. We find public funding to reduce energy expenses most cost-effectively via the grant. The redistribution of public funds is most progressive with the grant scheme and the VAT reduction. Adopting the VAT reduction induces most additional private and total investment.

Green Finance: Institutional investors and investments

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Institutional investors, climate policy risk, and directed innovation (PRESENTER: Marie-Theres von Schickfus ; DISCUSSANT: Jingbo Cui)
2. Institutional Investors and Corporate Environmental Innovation (PRESENTER: Jingbo Cui ; DISCUSSANT: Avril Pauline)
3. Natural Disasters and Financial Stress : Can Prudential Regulation Tame Green Swans? (PRESENTER: Avril Pauline ; DISCUSSANT: Aleksandar Zaklan)
4. The Impact of the ECB Corporate Sector Purchase Programme on the European Green Bond Market (PRESENTER: Aleksandar Zaklan ; DISCUSSANT: Marie-Theres von Schickfus)

Speakers

Dr. von Schickfus, Marie-Theres, ,
Prof. Cui, Jingbo, Associate Professor, Duke Kunshan University
Ms AVRIL, Pauline, ,
Dr. Zaklan, Aleksandar, , DIW Berlin

Presentations

Institutional investors, climate policy risk, and directed innovation

Author

Dr. von Schickfus, Marie-Theres, ,

Presenter

Dr. von Schickfus, Marie-Theres, ,

Abstract

The tightening of climate policies may cause technologies based on fossil fuels to lose value compared to

Institutional Investors and Corporate Environmental Innovation

Authors

Dr. Xu, Jia, ,
Prof. Qi, Shaozhou, Professor, Climate Change and Energy Economics Study Center, Economics and Management School, Wuhan University and Center of Hubei Cooperative Innovation for Emissions Trading System, Hubei University of Economics.

Dr. Zeng, Shu, Assistant Professor, School of Accounting at Zhongnan University of Economics and Law, China.

Prof. Cui, Jingbo, Associate Professor, Duke Kunshan University

Presenter

Prof. Cui, Jingbo, Associate Professor, Duke Kunshan University

Abstract

This paper addresses whether institutional investors drive the innovation direction of corporates toward environmentally friendly technologies. Using environmental patents filed by Chinese publicly-listed firms in the manufacturing and public utility sectors during the 2003-2010 period, we find the positive relationship between shareholding ratios of institutional investors and corporate environmental innovation. Institutional investors lead to a higher ratio of environmental patents in total patents for corporates in the pollution-intensive sector than those in the non-pollution-intensive sector. Institutional investors exert the roles of financial support and corporate governance in pursuit of monitoring corporate

Natural Disasters and Financial Stress : Can Prudential Regulation Tame Green Swans?

Authors

Prof. Turcu, Camelia, ,

Ms AVRIL, Pauline, ,

Prof. Levieuge, Grégory, Professor, Banque de France

Presenter

Ms AVRIL, Pauline, ,

Abstract

The objective of this paper is to empirically investigate whether storms and floods trigger financial stress, conditional on the degree of stringency of macroprudential frameworks. We first describe the transmission channels through which such climate events could impact the financial sector. Then, we construct an original and comprehensive dataset of storm and flood geophysical intensities, from different sources, and estimate the impact of these exogenous events on external financial premiums (EFP) in 88 countries, over 1996-2016, using local projection method. The results indicate that EFP increase in countries with lax prudential regulation in the wake of storms. On the contrary, countries with a stringent prudential framework can benefit from lower premiums, as a better lenders and borrowers

The Impact of the ECB Corporate Sector Purchase Programme on the European Green Bond Market

Authors

Dr. Zaklan, Aleksandar, , DIW Berlin

Dr. Bremus, Franziska, Research Associate,

Dr. Schütze, Franziska, Research Associate,

Presenter

Dr. Zaklan, Aleksandar, , DIW Berlin

Abstract

We identify the causal effect of the ECB's Corporate Sector Purchase Program (CSPP) on the yields of green bonds using a difference-in-differences strategy. Our comparison groups include ineligible green and conventional bonds. The empirical analysis yields three main results. First, compared to euro-issued green and conventional government bonds, yields of

CSPP-eligible green bonds decline significantly - by more than 25 basis points - after the announcement of the CSPP. Second, these effects persist more than one year after the exogenous policy event. Third, compared to the yields of non-eligible corporate green bonds, yields on eligible green bonds do not seem to evolve much differently in response to the CSPP. Our analysis informs both the debate on intended and unintended effects of asset purchase programs and on the role of monetary policy for a smooth transition towards a less carbon-intensive economy.

Transportation

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Clear Roads and Dirty Air? The indirect effects of reduced private traffic congestion on high-emissive vehicles (PRESENTER: Christin Hoffmann ; DISCUSSANT: Shiva Sikdar)
2. Trade, Transport and Multimarket Collusion: Environmental and Welfare Implications (PRESENTER: Shiva Sikdar ; DISCUSSANT: Madeline Werthschulte)
3. Congestion, stress and its effect on moral decision-making (PRESENTER: Madeline Werthschulte ; DISCUSSANT: Victor Von Loessl)
4. Do climate framings increase pro-environmental engagement? Evidence from a survey experiment on public transport (PRESENTER: Victor Von Loessl ; DISCUSSANT: Christin Hoffmann)

Speakers

Dr. Hoffmann, Christin, ,
Dr. Sikdar, Shiva, ,
Werthschulte, Madeline, , ZEW – Leibniz Centre for European Economic Research
Mr. von Loessl, Victor, ,

Presentations

Clear Roads and Dirty Air? Large The indirect effects of reduced private traffic congestion on high-emissive vehicles

Authors

Dr. Hoffmann, Christin, ,
Prof. Thommes, Kirsten, Experimental Economist, University of Paderborn

Presenter

Dr. Hoffmann, Christin, ,

Abstract

Heavy goods vehicle (HGV) transportation is a major source of Greenhouse Gas (GHG) emissions, but its volume is difficult to diminish. Therefore, governments aim at reducing private traffic. Although this reduces GHG emissions of private vehicles, there might also be an indirect effect on the remaining HGV: Less traffic density may lead to substantial changes in driving behavior. We make use of the halving of private traffic volumes on German highways during the COVID-19 related measures between March and May 2020. Using a unique data set from a large logistics fleet, we find that less private traffic volume results in improved fuel-efficient driving and reduced overall GHG emissions. Additionally, we found a selection effect. In the first weeks of the pandemic, particularly less-efficient drivers did not

work. In this situation, removing these drivers from the streets had the same effect in terms of magnitude as reducing private traffic congestion.

Trade, Transport and Multimarket Collusion: Environmental and Welfare Implications

Author

Dr. Sikdar, Shiva, ,

Presenter

Dr. Sikdar, Shiva, ,

Abstract

We analyze the impact of trade on environmental outcomes and welfare when

Congestion, stress and its effect on moral decision-making

Authors

Loeschel, Andreas, , University Muenster

Werthschulte, Madeline, , ZEW – Leibniz Centre for European Economic Research

- Price, Michael, -,

- Razzolini, Laura, -,

Presenter

Werthschulte, Madeline, , ZEW – Leibniz Centre for European Economic Research

Abstract

We use a unique event, the closure of Interstate 59/20, to shed light on the non-monetary costs of congestion. We investigate the spillover effects of congestion-induced stress levels on moral decision-making. Utilizing a pro-longed, naturally occurring stressor and experiments in the field, we are able to uncover the relation between congestion and real-life stress, and real-life stress and moral behavior. We show that stress, as caused by congestion, decreases pro-sociality, but not honesty in moral dilemmas.

Do climate framings increase pro-environmental engagement? Evidence from a survey experiment on public transport

Authors

Dr. Zitzelsberger, Sonja, ,

Mr. von Loessl, Victor, ,

Ms Weingärtner, Eva, -,

Presenter

Mr. von Loessl, Victor, ,

Abstract

Human behavior often contributes to global climate change and simultaneously causes local problems such as air pollution and land-use conflicts. Highlighting environmental consequences, especially on the local level, has been proposed as a mean to increase proenvironmental engagement and thus mitigate these negative effects. In this paper, we present results from a survey experiment on the possible inclusion of public transport fares in cinema tickets among art house cinema visitors in the city of Kassel, Germany. We investigate whether different environmental framings increase subjects' willingness to pay (WTP) for a combined ticket as well as their intentions to increase public transport usage. Based on previous findings, we expected emphasizing the positive impact of public transport

usage on the local level to have a greater effect on subjects' preferences for public transport than a message that highlights the global consequences. Contrary to these expectations, our results show that the global framing increases subjects' WTP, while the local message does not. Both treatments increase intended usage. Interestingly, many visitors are willing to contribute to a combined ticket while already owning a seasonal public transport ticket. This highlights the importance of non-monetary preferences in this context.

Uncertainty and expectations in international agreements

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Subjective Beliefs in International Agreements (PRESENTER: Hyeonggyun Ko ; DISCUSSANT: Alessio D'Amato)
2. Relational Environmental Agreements (PRESENTER: Alessio D'Amato ; DISCUSSANT: Suha Kim)
3. Reciprocal Preferences and Expectations in International Agreements (PRESENTER: Suha Kim ; DISCUSSANT: Hiroaki Sakamoto)
4. Efficiency of self-enforcing agreements (PRESENTER: Hiroaki Sakamoto ; DISCUSSANT: Hyeonggyun Ko)

Speakers

Mr. Ko, Hyeonggyun, ,
D'Amato, Alessio, , University of Rome Tor Vergata
Ms Kim, Suha, ,
Dr. Sakamoto, Hiroaki, , Graduate School of Economics, Kobe University

Presentations

Subjective Beliefs in International Agreements

Authors

Dr. Iris, Doruk, , Sogang University
Mr. Ko, Hyeonggyun, ,
Mr. Im, Sungwoo, Graduate Student, Sogang University

Presenter

Mr. Ko, Hyeonggyun, ,

Abstract

We study the impact of countries

To formally answer these questions, we build a model in which countries face a public goods dilemma and can participate in a coalition to take collective action. To this end, we extend the coalition formation game with uncertainty on the benefits of efforts and risk-averse preferences studied in Boucher and Bramoull

Under linear payoffs, we find that while pessimism could decrease signatories

Relational Environmental Agreements

Authors

D'Amato, Alessio, , University of Rome Tor Vergata

Dr. Cesi, Bernardino, Assistant Professor, University of Rome Tor Vergata

Presenter

D'Amato, Alessio, , University of Rome Tor Vergata

Abstract

This paper examines a policy context in which a regulator is willing to implement an environmental policy tool in order to reduce the aggregate emissions level of a specific pollutant. We use a repeated games approach to elaborate a dynamic multiple-firms model and develop a policy proposal involving an open-participation voluntary agreement. Our model is characterised by a regulator with complete information and perfect observability of emissions, but we assume that emissions are unverifiable, i.e. the costs to verify them in front of a court are prohibitively high. We apply the concept of relational contracting to design a Relational Voluntary Environmental Agreement (REA) as an alternative policy instrument to an environmental tax. We show that free riding by some firms poses a limitation to the possibility that such policy is profitable for firms and desirable for the regulator, in line with the literature. Nonetheless, we prove that, if firms are sufficiently patient, a self-enforcing equilibrium, under which the environmental objective is voluntarily met, exists. Finally, the policy analysis reveals that our REA is welfare-improving with respect to a tax regime, and also with respect to a "static" VEA as the one proposed in McEvoy and Stranlund (2010).

Reciprocal Preferences and Expectations in International Agreements

Authors

Dr. Iris, Doruk, , Sogang University

Ms Kim, Suha, ,

Presenter

Ms Kim, Suha, ,

Abstract

This paper explores the implications of reciprocal preferences and countries' expectations towards others on international agreements to supply global public goods (e.g., tackling environmental problems and eradicating epidemics). There is ample evidence that individuals have reciprocal preferences, i.e., the desire to be kind towards kind and unkind towards unkind behavior. Assuming that such preferences exist for countries, we answer these questions: How do they affect international agreements to provide global public goods? How do countries

We extend and incorporate a model of reciprocal preferences from Rabin (1993, 2013) into a coalition formation model from Barrett (1994) by generalizing the cutoff point for the kind or the unkind behavior's perception. We introduce a model where countries decide not only to participate or not but also how much effort to exert. For the sake of tractability, we intentionally construct our model as close as possible to Nyborg's (2017) model, which may help with better understanding and transparency. Our model differs from Nyborg (2017) in two ways: 1) effort choice is not binary but continuous and 2) effort costs are not linear but quadratic. These changes would improve the realism of the model since in most international agreements to supply public goods, the decision is not only about participation but also about the degree of contribution.

We demonstrate that reciprocal preferences could have both positive and negative impact on the effort exerted by the signatories and non-signatories of a treaty, depending on the expectations towards others. We also show that there are two thresholds of the expectations--one for signatories and the other for non-signatories. If the fair effort threshold is lower (higher) than the respective threshold, then the impact of reciprocity on the respective player's effort level is positive (negative). Furthermore, participation in a stable treaty does either remain the same or shrink due to reciprocal preferences. Especially, the participation can only shrink if countries have moderate expectations towards others in which reciprocal concerns lower signatories and increase non-signatories' indirect utilities.

Efficiency of self-enforcing agreements

Authors

Dr. Sakamoto, Hiroaki, , Graduate School of Economics, Kobe University

Prof. Traeger, Christian, Economist, Department of Economics, the University of Oslo

Presenter

Dr. Sakamoto, Hiroaki, , Graduate School of Economics, Kobe University

Abstract

We consider a coalition-formation game with externalities in which participation is voluntary and non-binding. In such a self-enforcing setting, punishments are often recommended to mitigate free riding. This paper emphasizes the role of rational expectations, which require deviating parties to look ahead and predict what they would eventually end up with, and shows that Pareto efficient coalitions are the only stable outcomes of the game. In this sense, building rational expectations is an important prerequisite for the Coase Theorem to hold in a self-enforcing environment. Applied to climate change agreements, our framework offers predictions fairly consistent with reality.

Sustainable development

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Advancing Testing of the Genuine Savings Hypothesis: The Use of Long Run Time Series Data and Model-Consistent Measures of Technical Change for Ireland. (PRESENTER: Luke McGrath ; DISCUSSANT: Bjoern Soergel)
2. Climate action within the 2030 Agenda: A holistic sustainable development pathway (PRESENTER: Bjoern Soergel ; DISCUSSANT: Rintaro Yamaguchi)
3. Population, amenity values, and sustainable development (PRESENTER: Rintaro Yamaguchi ; DISCUSSANT: Wei Jin)
4. Do We Still Need Carbon-Intensive Capital when Transitioning to a Green Economy? (PRESENTER: Wei Jin ; DISCUSSANT: Luke McGrath)

Speakers

Mr. McGrath, Luke, ,
Dr. Soergel, Bjoern, , Potsdam Institute for Climate Impact Research
Dr. Yamaguchi, Rintaro, ,
Dr. Jin, Wei, ,

Presentations

Advancing Testing of the Genuine Savings Hypothesis: The Use of Long Run Time Series Data and Model-Consistent Measures of Technical Change for Ireland.

Authors

Mr. McGrath, Luke, ,
Dr. Hynes, Stephen, Economist,
Prof. McHale, John, Economist,

Presenter

Mr. McGrath, Luke, ,

Abstract

The strong theoretical framework provided by the

Climate action within the UN 2030 Agenda: A sustainable development pathway

Authors

Dr. Soergel, Bjoern, , Potsdam Institute for Climate Impact Research
Dr. Kriegler, Elmar, -, PIK

Dr. Weindl, Isabelle, ,
Dr. Rauner, Sebastian, ,
Dr. Dirnaichner, Alois, ,
Dr. Ruhe, Constantin, ,
Dr. Hofmann, Matthias, ,

Presenter

Dr. Soergel, Bjoern, , Potsdam Institute for Climate Impact Research

Abstract

Ambitious climate policies, as well as economic development, education, technological progress, and less resource-intensive lifestyles, are crucial elements for progress towards the UN Sustainable Development Goals (SDGs). Using an integrated modelling framework covering 58 indicators or proxies across all 17 SDGs, we however show that they are insufficient to reach the targets. An additional sustainable development package including international climate finance, progressive redistribution of carbon pricing revenues, sufficient and healthy nutrition, and improved access to modern energy enables a more comprehensive sustainable development pathway. We quantify climate and SDG outcomes, showing that these interventions substantially boost progress towards many aspects of the Agenda 2030 and simultaneously facilitate reaching ambitious climate targets. Nonetheless several important gaps remain, for example with respect to the eradication of extreme poverty (180 million people remaining in 2030). These gaps can be closed until 2050 for many SDGs, while also respecting the 1.5

Population, amenity, and genuine savings in the generalized Hartwick rule

Author

Dr. Yamaguchi, Rintaro, ,

Presenter

Dr. Yamaguchi, Rintaro, ,

Abstract

In the capital-based sustainability analysis, the population as a capital asset and amenity values of the environment are two empirically neglected aspects even though human and natural capital are the highlights of practical accounting. In this paper, we explicitly model population as a capital asset and the amenity values of natural capital, and study how the Hotelling, Hartwick, and non-declining wealth rules can be extended. On the empirical front, we apply this to the relationship between genuine savings in 1990--2010 and subsequent growth in consumption per capita. Some results can be explained not only by non-declining wealth but also by its interaction with the real interest rate, genuine savings growth, population, and amenity.

Do We Still Need Carbon-Intensive Capital when Transitioning to a Green Economy?

Authors

van der Ploeg, Rick, , University of Oxford

Dr. Jin, Wei, ,

Dr. Zhang, Lin, Academics, City University of Hong Kong

Presenter

Dr. Jin, Wei, ,

Abstract

This paper presents a two-sector green endogenous growth model to explore a mechanism that explains why carbon-intensive capital is not necessarily shut down during transition to a green economy. Without accumulating clean capital to offset carbon emissions, a tightening of climate regulation leads to the running down of carbon-intensive capital. However, if climate regulations induce stepping-up of carbon-free capital to offset warming damages, the economic value of carbon-intensive capital can be protected and the running down of carbon-intensive assets can be mitigated. The use of carbon-intensive capital gives the economic means to enhance clean capital accumulation and sustain endogenous growth. Both carbon-intensive and carbon-free capital may thus be needed for an efficient transition to green growth.

Behaviour, economics, and nature - evidence from the field

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The effect of providing monetary information on energy savings for household appliances: a field trial in Spain (PRESENTER: Maria del Mar Sola ; DISCUSSANT: Sanval Nasim)
2. Forecasts: Consumption, Production, and Behavioral Responses (PRESENTER: Sanval Nasim ; DISCUSSANT: Anja Koebrich Leon)
3. Do good and (don't) talk about it – On the relevance of social image motivation for online giving (PRESENTER: Anja Koebrich Leon ; DISCUSSANT: Julie Metta)
4. Promoting discount schemes as a nudge strategy to enhance environmental behaviour (PRESENTER: Julie Metta ; DISCUSSANT: Maria del Mar Sola)

Speakers

- SOLÀ, MARIA DEL MAR, ,
Dr. Nasim, Sanval, ,
Dr. Köbrich León, Anja, , University Kassel
Ms Metta, Julie, ,

Presentations

The effect of providing monetary information on energy savings for household appliances: a field trial in Spain

Authors

- SOLÀ, MARIA DEL MAR, ,
Dr. de Ayala, Amaia, Assistant Professor, University of the Basque Country
Dr. Galarraga, Ibon, Professor, BC3-BASQUE CENTRE FOR CLIMATE CHANGE

Presenter

- SOLÀ, MARIA DEL MAR, ,

Abstract

Energy labels are one of the most widely used policies in the EU for increasing the energy efficiency of household appliances. However, their effectiveness in promoting energy-efficient purchases has sometimes been called into question. One of the reasons for this is that consumers may have difficulties in fully understanding the energy consumption information provided on labels (in kWh/year). Some authors argue that to avoid this problem energy consumption information should be converted into monetary information. We analyse whether providing monetary information on lifetime energy savings can significantly increase purchases of energy-efficient appliances. To that end, a field experiment was carried out with

small retailers in Spain. The experiment involved three types of appliance: washing machines, fridges and dishwashers. The impact of monetary information on actual purchases of appliances was tested in different ways: (i) by including a monetary label to display energy savings during the lifetime of the product; (ii) by the monetary information provided by sales staff; and (iii) by combining (i) and (ii). We find that the effectiveness of providing monetary information depends on the appliance and the specific way in which the information is provided. For washing machines, providing monetary information through a monetary label seems effective in promoting the purchase of highly energy-efficient appliances. However, for fridges both monetary information provided by staff alone and the combination of the monetary label and information from sales staff seem to be effective in promoting purchases of A+++ fridges. Surprisingly, no effect is found for dishwashers.

Forecasts: Consumption, Production, and Behavioral Responses

Authors

Dr. Nasim, Sanval, ,

Dr. Fateh, Husnain, Assistant Professor of Economics, Sewanee: The University of the South

Dr. Gibson, Matthew, Assistant Professor of Economics, Williams College

Mr. Nadeem, Fatiq, PhD Student, University of California, Santa Barbara

Dr. Rezaee, Arman, Assistant Professor of Economics, University of California, Davis

Presenter

Dr. Nasim, Sanval, ,

Abstract

Economic theory predicts forecasts are an important determinant of welfare. In developing countries, however, limited information and human capital may make it difficult for agents to produce accurate, precise forecasts. This plausibly limits the scope for optimal responses to uncertain future events. We study the effects on forecast consumption, production, and behavioral responses from two randomized interventions in Lahore, Pakistan: 1) provision of one-day ahead air pollution forecasts; and 2) general forecasting training aimed at reducing behavioral biases. On average, subjects exposed to forecasts were willing to pay roughly 60 percent of the cost of mobile internet access to continue receiving them. Both interventions reduced air pollution forecast error, and receipt of forecasts increased demand for protective masks. These results document substantial demand for forecasts among urban residents in the developing world. They suggest that modest educational interventions may durably improve forecasting-relevant human capital.

Do good and (don't) talk about it – On the relevance of social image motivation for online giving

Authors

Dr. Köbrich León, Anja, , University Kassel

Dr. Schobin, Janosch, Post-Doc, University of Kassel

Presenter

Dr. Köbrich León, Anja, , University Kassel

Abstract

It is already well-established that social image issues, i.e. the desire to be perceived by others in a certain way, are crucial in charitable giving. However, so far, there is limited evidence on whether donors value and respond differently to social image concerns. We investigate the

associations between social signaling and charitable giving in the field of online giving via crowdfunding. Drawing on a unique data set linking observational survey data with giving behavior in an incentivized experiment and process-generated giving data from a crowdfunding platform in Germany, we can demonstrate that social signaling is negatively related to the extensive margin of crowdfunding projects, but not to the amount contributed. The econometric analysis also provides evidence of a crowding-out of social image motivation given strong moral obligations. We further show that the value of social image concerns depends on social role models perceived in the social environment.

Promoting discount schemes as a nudge strategy to enhance environmental behaviour

Author

Ms Metta, Julie, ,

Presenter

Ms Metta, Julie, ,

Abstract

This paper presents the effects of nudging and of direct instruments on the consumer choice for reusable cups instead of disposable cups. The instruments include a financial incentive (discount schemes for consumers bringing their own cup) and communication about the scheme. The required conditions for the shop policy to be effective (i.e. induce a change in consumer behaviour through direct and indirect communication) are also evaluated. An original database was compiled from structured observations over 223 Hong Kong coffee shops, where 522 data points were collected. The research questions are answered using two strategies. First, logistic econometric approaches estimate the effects of the policies on consumer behaviour. Secondly, a qualitative comparative analysis identifies the required conditions for the consumers to use reusable cups. The results show no significant effect of the financial incentive on the targeted consumers but positive and significant effects on the other consumers who switch to in-shop reusable cups instead of disposable cups. Through effective communication about the

Applying machine learning to climate change issues

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Heterogeneous effects of waste pricing policies (PRESENTER: Marica Valente ; DISCUSSANT: Angelika Vogt)
2. Predictors of climate policy stringency - A machine learning approach (PRESENTER: Angelika Vogt ; DISCUSSANT: Raphaela Andrea Kotsch)
3. The end of the Kyoto Protocol era: What can we learn from the global trade of Emissions Reduction Units applying network analysis? (PRESENTER: Raphaela Andrea Kotsch ; DISCUSSANT: Aurelien Saussay)
4. Building Skills for the Low-Carbon Transition: evidence from job ads data (PRESENTER: Aurelien Saussay ; DISCUSSANT: Marica Valente)

Speakers

- Valente, Marica, ,
Vogt, Angelika, -, Humboldt-Universität zu Berlin
Ms Kotsch, Raphaela, ,
Dr. Saussay, Aurelien, Researcher, London School of Economics

Presentations

Heterogeneous effects of waste pricing policies

Author

- Valente, Marica, ,

Presenter

- Valente, Marica, ,

Abstract

Using machine learning methods in a quasi-experimental setting, I study the heterogeneous effects of introducing waste prices - unit prices on household unsorted waste disposal - on waste demands and social welfare. First, using a unique panel of Italian municipalities with large variation in prices and observables, I show that waste demands are nonlinear. I find evidence of nudge effects at low prices, and increasing elasticities at high prices driven by income effects and waste habits before policy. Second, I estimate policy impacts on pollution and municipal management costs, and compute the overall social cost savings for each municipality. Social welfare effects become positive for most municipalities after three years of adoption, when waste prices cause significant waste avoidance.

Predictors of climate policy stringency - A machine learning approach

Authors

Dr. Hagen, Achim, ,
Vogt, Angelika, -, Humboldt-Universität zu Berlin

Presenter

Vogt, Angelika, -, Humboldt-Universität zu Berlin

Abstract

Despite the urgent need for ambitious national climate policies to reduce carbon emissions, their implementation lacks stringency. This lack of policy stringency is driven by a complex combination of a country institutional and socio-economic characteristics. While extant studies aim at estimating causal effects between such characteristics and policy stringency, we focus on evaluating the assumptions underlying such empirical models and testing relevant theories. For this purpose, we employ machine learning methods on a large data set covering 95 countries and 31 potential predictors of policy stringency. Conditional random forests suggest that the most important predictors of policy stringency are regulatory quality, environmental awareness, and governmental effectiveness. Further, accumulated local effects plots suggest that the relationship between some predictors, e.g. environmental awareness, and policy stringency is highly non-linear. Finally, we find strong interactions between some of the drivers, e.g. education and regulatory quality.

The end of the Kyoto Protocol era: What can we learn from the global trade of Emissions Reduction Units applying network analysis?

Authors

Betz, Regina, , ZHAW School of Management and Law
Dr. Abrell, Jan, Senior Researcher,
Ms Kotsch, Raphaela, ,
Prof. Schwendner, Peter, Researcher,

Presenter

Ms Kotsch, Raphaela, ,

Abstract

In this paper, we examine the global carbon market for emission reduction units (ERUs). ERUs are created through Joint Implementation, one of the two offset mechanisms of the Kyoto Protocol. We construct a unique dataset and apply network analysis to identify important traders and to better understand the roles of different market actors. Preliminary results suggest that ERUs changed accounts several times before being surrendered for compliance. This means that there are long trading chains involving countries such as Jersey or Switzerland outside the main issuing countries (e.g. Ukraine and Russia) and surrendering countries (e.g. Germany, New Zealand). The financial sector and wholesale trade score high on betweenness measures, suggesting that they act as intermediaries in the market. The high scores of tax havens such as Jersey appear suspicious and suggest that the ERU market has been used for tax avoidance in addition to

Building Skills for the Low-Carbon Transition: evidence from job ads data

Authors

Sato, Misato, , London School of Economics

Vona, Francesco, , OFCE Sciences-Po

Dr. Saussay, Aurelien, Researcher, London School of Economics

Presenter

Dr. Saussay, Aurelien, Researcher, London School of Economics

Abstract

The transition to a carbon-neutral economy involves a substantial growth and reallocation of employment in so-called green sectors, such as energy-efficient building, electric mobility and clean energy. Retraining the workforce is a key, but still under-explored, aspect of such transition. Using a large dataset of nearly 200 million job ads published in the U.S. over the past decade, we examine the skill requirements of green job ads in very specific occupations. Our result underscores highly heterogeneous patterns across occupations in terms of the set of skills needed in low-carbon activities. While the skill gaps between green and non-green job ads are large also within the same occupation, we do not find systematic evidence of a wage premium for green skills.

Market-based instruments

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Investment Incentives in Tradable Emissions Markets with Price Floors (PRESENTER: Frans de Vries ; DISCUSSANT: Pauli Lappi)
2. Lobbying for size and slice of the quota (PRESENTER: Pauli Lappi ; DISCUSSANT: Banban Wang)
3. Price Stabilization Mechanisms and Green Innovation in Emissions Trading Systems: Evidence from China's Carbon Market Pilots (PRESENTER: Banban Wang ; DISCUSSANT: Anthony Wiskich)
4. Environmental taxes versus research subsidies as suboptimal policy (PRESENTER: Anthony Wiskich ; DISCUSSANT: Frans de Vries)

Speakers

de Vries, Frans, , University of Stirling

Lappi, Pauli, , University of Helsinki

Dr. Wang, Banban, ,

Mr. Wiskich, Anthony, ,

Presentations

Investment Incentives in Tradable Emissions Markets with Price Floors

Authors

de Vries, Frans, , University of Stirling

Stranlund, John, , University of Massachusetts Amherst

Prof. Cason, Timothy, Professor of Economics, Purdue University

Presenter

de Vries, Frans, , University of Stirling

Abstract

Emissions uncertainty has led regulators to include price controls in many cap-and-trade markets. We study how these controls affect firms

Lobbying for size and slice of the quota

Author

Lappi, Pauli, , University of Helsinki

Presenter

Lappi, Pauli, , University of Helsinki

Abstract

The formation and allocation of an emission quota is analyzed in a common agency framework with two stages. First, the principals lobby for the size of the aggregate quota. Second, the principals lobby for the individual slices of the quota. Although the slices are allocated such that the marginal profits of the principals are equalized, the size of the aggregate quota is distorted from the social optimum characterized by the Samuelson's rule for public goods. This quota is set such that the aggregate marginal profit is less than the marginal damage, resulting in an overallocation of individual and aggregate quotas. The results are extended to cover tradable emission permits.

Price Stabilization Mechanisms and Green Innovation in Emissions Trading Systems: Evidence from China's Carbon Market Pilots

Authors

Dr. Wang, Banban, ,

Prof. Song, Deyong, Professor, School of Economics, Huazhong University of Science and Technology

Ms Zhu, Wenbo, Ph.D. Student, School of Economics, Huazhong University of Science and Technology

Presenter

Dr. Wang, Banban, ,

Abstract

Price stabilization mechanisms (PSMs) are a series of important policy elements in the theory and practice of the Emission Trading System (ETS). They include direct price limits in a narrow sense, as well as intensity cap/indexed regulation and inter-temporal flexible measures including updating cap and banking/borrowing in a broad sense that can influence permit prices by adjusting supply in response to demand shocks . Their main purpose includes reducing the impact of uncertainties on ETS, therefore, avoiding intensive price spikes and falls. To achieve a stable price signal, PSMs are essential for R&D and investment in green technologies. However, it is difficult to evaluate the effect of PSMs in empirical analysis. Nevertheless, China

Environmental taxes versus research subsidies as suboptimal policy

Author

Mr. Wiskich, Anthony, ,

Presenter

Mr. Wiskich, Anthony, ,

Abstract

Given a choice between a carbon tax and a clean research subsidy, which one performs better and under what conditions? This paper argues that the absence of a non-energy sector has led some previous literature to find that subsidies outperform taxes. An integrated assessment model with endogenous technology is described. Numerical exercises find that a permanent global tax-only policy outperforms a permanent subsidy-only policy and this result is robust to many different parameter settings and assumptions. However, in the more optimistic case where optimal policy begins in 2050, the performances of subsidy-only and tax-only policies in the interim are closer.

Pollution

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Are international climate aid really climate-related ? An empirical analysis on the reporting of donor countries (PRESENTER: Neumann Noel Lucille ; DISCUSSANT: Fezzi Carlo)
2. The impact of the EU ETS on CO2 emissions: a counterfactual approach (PRESENTER: Fezzi Carlo ; DISCUSSANT: Anna Risch)
3. Limiting Local Chinese Pollution for Education and Growth (PRESENTER: Anna Risch ; DISCUSSANT: Daniele Malerba)
4. Impact patterns of Carbon Taxation over time: changes, drivers and policies. A Peruvian case study (PRESENTER: Daniele Malerba ; DISCUSSANT: Neumann Noel Lucille)

Speakers

Ms Neumann Noel, Lucille, ,
Dr. Fezzi, Carlo, Associate Professor, University of Trento
Ms Risch, Anna, Maître de conférence,
Mr. malerba, danielle, ,

Presentations

Are international climate aid really climate-related ? An empirical analysis on the reporting of donor countries

Authors

Ms Neumann Noel, Lucille, ,
Dr. Bayramoglu, Basak, Researcher, INRAE
Ms Dequet, Aliette, Student,

Presenter

Ms Neumann Noel, Lucille, ,

Abstract

Since Copenhagen climate negotiations in 2009, developed countries have pledged to make financial transfers to help developing countries reduce their greenhouse gas (GHG) emissions and adapt to the adverse impacts of climate change. Actual climate assistance received for climate change mitigation and adaptation is deemed incomplete by recipient countries, contrary to donor

projects. In this article, we analyse the international climate projects funded in a more recent period between 2012 and 2018 and assess the share of misclassified projects in a systematic way. Undertaking a textual analysis with Python programming, we first determine for each

project if it is mitigation-related, adaptation-related or not climate-related at all. Using project-level climate aid data from the OECD Bilateral Development Aid Database, and country-level economic, environmental and political data for 28 DAC donors from 2002 to 2018, we estimate the factors that may affect the number and amount of misreported climate projects by donor countries. Econometric results show that some economic, environmental and political factors have an influence upon the donor

The impact of the EU ETS on CO2 emissions: a counterfactual approach

Authors

Dr. Fezzi, Carlo, Associate Professor, University of Trento

Mr. Tomasi, Marco, PhD student, Università degli studi di Trento

Presenter

Dr. Fezzi, Carlo, Associate Professor, University of Trento

Abstract

The EU Emission Trading Scheme (ETS) is arguably the most important policy launched by the European Union (EU) in order to meet the Kyoto

Limiting Local Chinese Pollution for Education and Growth

Authors

Pommeret, Aude, , IREGES USMB

Dr. Charlier, Dorothée, Assistant Professor, IREGES, Université Savoie Mont Blanc

Ms Risch, Anna, Maître de conférence,

Presenter

Ms Risch, Anna, Maître de conférence,

Abstract

In this paper, we study both theoretically and empirically the nexus between air pollution, education and households' earnings in China. We account for air pollution in two ways: first, via the number of pollution peaks, measured as the number of days per year above grade 2, second, via the average daily PM concentrations. Using a conditional mixed-process to tackle endogeneity on both education and particulate matters, we demonstrate that attainment in education is affected by pollution peaks. We obtain that in turn, the agent's wealth is affected by education -therefore indirectly by pollution peaks- and

by PM concentration through long term health effects. Finally, we also show that there is a non linearity effect of air pollution on wealth.

We exploit these results for our theoretical setting in continuous time, where the agent's wealth is affected not only by PM concentration through health's effects but also by pollution peaks through their effect on education. We show that in such a setting, both pollution effects influence the optimal education level. Results of the calibrated theoretical model suggest that on the basis of the effect of pollution on assets, public policy should focus on pollution peaks rather than

long term high pollution levels.

Impact patterns of Carbon Taxation over time: changes, drivers and policies. A Peruvian case study

Authors

Dr. Ward, Hauke, Assistant professor,
Mr. malerba, danielle, ,
Dr. Gaentzsch, Anja, Researcher,

Presenter

Mr. malerba, danielle, ,

Abstract

Distributional concerns and, in turn, acceptability of carbon pricing is of critical importance. A growing body of research has explored the potential effect of these market mechanisms on poverty and inequality, and how to address them with recycling schemes. While some studies also focus on developing countries, all existing research is based on a single year. This means that no study looks at the evolution over time of the implications potential carbon tax. This is critical as structural transformations, driven by economic growth, may affect income inequality, consumption patterns and in turn, the distributional effects of a carbon tax. In addition, recycling revenues may need to be adjusted to take these changes into account. As the first study of its kind, we explore these issues in the context of Peru, aiming to answer to the following research questions: i) How have the distributional patterns of a potential carbon tax changed over time? ii) What were the drivers of this change? How have optimal recycling schemes changed over time? iii) We merge micro and macro data for several years and simulate different scenarios. Our results and findings will be critical for all developing countries that are pursuing carbon pricing mechanisms and want to address its distributional impacts in a changing economy.

The analysis is being conducted now. We have finished one of the three years, and in the next month we will finish all the analysis. Therefore we are submitting a long abstract

Thematic Session: The economic costs of climate policy: how important is the substitutability between clean and dirty inputs?

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. On the Role of Endogenous Substitutability between Clean and Dirty Inputs in Climate Policy Costs
2. The Macroeconomic Cost of Divesting from Fossil Fuels with Heterogeneous Energy Demands
3. Technology, Growth, Pollution

Speakers

Dr. Miftakhova, Alena, , ETH Zurich

Mr. Baccianti, Claudio, ,

Smulders, Sjak, , Tilburg University

Presentations

On the Role of Endogenous Substitutability between Clean and Dirty Inputs in Climate Policy Costs

Authors

Dr. Miftakhova, Alena, , ETH Zurich

Dr. Jo, Ara, ,

Presenter

Dr. Miftakhova, Alena, , ETH Zurich

Abstract

In this paper, we challenge the assumption of the constant substitution elasticity between clean and dirty inputs that is ubiquitous in the climate change economics literature. We first empirically document the intertemporal variation in this key parameter and show the empirical relevance of a variable elasticity of substitution that depends on the share of clean inputs. Next, we use a dynamic computable general equilibrium model with endogenous growth to examine the implications of the feedback effect from rising shares of clean energy that further improves the substitution possibilities. The results show that taking this dynamics into account leads to substantially lower economic costs of climate change mitigation.

The Macroeconomic Cost of Divesting from Fossil Fuels with Heterogeneous Energy Demands

Author

Mr. Baccianti, Claudio, ,

Presenter

Mr. Baccianti, Claudio, ,

Abstract

Climate policy is a drag on economic growth when the economy has limited flexibility in switching between low-carbon energy and fossil fuels. I estimate good supply-side substitution between energy inputs. However, using an endogenous growth model with multiple and complementary energy end-uses, I show that heterogeneity in carbon intensity across demands lowers the economy-wide degree of substitution and raises the economic cost of climate change mitigation. Second-best regulation increasing heterogeneity, i.e. being biased towards specific sectors or technologies as renewable electricity generation, heightens demand complementarities and leaves a costly inheritance to future intervention to limit the rise of global temperatures.

Technology, Growth, Pollution

Authors

Smulders, Sjak, , Tilburg University
Mr. Baccianti, Claudio, Researcher,

Presenter

Smulders, Sjak, , Tilburg University

Abstract

Over time, both energy intensity and carbon intensity have changed, resulting in weak decoupling of emissions growth from economic growth. We investigate how sectoral change drive decoupling. In our dynamic model, income growth and differential technical change cause intersectoral shifts between sectors with different energy productivity. Growth, sectoral shifts, and technology co-evolve due to Directed Technical Change. We study decoupling with and without policy. The cost of environmental policy is governed by the endogenous aggregate elasticity of substitution between clean and dirty inputs. The calibrated model predicts long-run decoupling and the effects of the transition to the carbon-neutral economy.

Egg-Timer: Industrial Organization, Behaviour

25th June 2021, 10:00 AM - 12:00 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Are the Green Bond market and the Carbon market in Europe complements or substitutes? The case of power firms
2. Are Public Firms Resource Guzzlers? On Resource Productivity and Public Ownership
3. Empirical estimates of the elasticity of substitution of a KLEM production function without nesting constraints: The case of the Variable Output Elasticity-Cobb Douglas
4. and yet they help - a theoretical model analyzing how German tenancy law and subsidies for environmentally desirable investments counterintuitively interact and offer pareto-improvements for landlords, tenants, and society
5. Bidding behaviour in 2nd-price, BDM, and random nth-price auctions with interval private values
6. The Swedish consumer market for organic and conventional milk: A demand system analysis
7. Get the Happiness Out – A Framed Field Experiment on the Causal Effects of Positive Emotions on Online Giving
8. Nudging pro-environmental behaviours without crowding-out subsequent ones: micro-foundations to behavioural interventions

Speakers

Dr. BOUTABBA, Mohamed Amine, ,
Mr. Steinbrunner, Philipp, ,
Mr. Malliet, Paul, ,
Mr. Reutter, Leo, ,
Dr. Datta, Souvik, Assit, Fachhochschule Nordwestschweiz
Ms Lindström, Hanna, ,
Dr. Schobin, Janosch, Post-Doc, University of Kassel
Mr. Picard, Julien, ,

Presentations

**Are the Green Bond market and the Carbon market in Europe complements or substitutes?
Insights from the activity of power firms**

Authors

Dr. BOUTABBA, Mohamed Amine, ,
Dr. Rannou, Yves, Associate professor, ESC Clermont Business School

Prof. Barneto, Pascal, Professor, Institut d'Administration des Entreprises (IAE) de Bordeaux

Presenter

Dr. BOUTABBA, Mohamed Amine, ,

Abstract

This paper is the first to study the interactions between the European carbon and green bond markets from the perspective of the power firms

Are Public Firms Resource Guzzlers? On Resource Productivity and Public Ownership

Author

Mr. Steinbrunner, Philipp, ,

Presenter

Mr. Steinbrunner, Philipp, ,

Abstract

Next to climate change, growing resource consumption is a major environmental problem affecting the economy. One important tool of achieving environmental goals is public ownership, because governments can influence production processes of publicly owned companies more easily. This study examines the effects of public ownership on material efficiency, using a dataset on Central European firms, operating in industries of general interest, from 2009 to 2017. The overall results highlight that public firms do not operate less material-efficiently per se, but it depends on the industry whether public or private firms are more material productive. In the electricity industry, public ownership does not impact material intensity due to the already heavy regulation, while, in the steam and air conditioning industry, publicly owned firms are less resource productive than their private pendants. Firms becoming newly covered by the EU ETS between the second and third phase suffer from losses of resource efficiency.

Empirical estimates of the elasticity of substitution of a KLEM production function without nesting constraints: The case of the Variable Output Elasticity-Cobb Douglas

Authors

Mr. Malliet, Paul, ,

Dr. Reynès, Frédéric, Economist, Netherland Economic Observatory

Presenter

Mr. Malliet, Paul, ,

Abstract

Computable General Equilibrium models applied to climate change usually rely on elasticities of substitution for which estimations can be crucial in terms of outcome. We use a generalized production function that overcomes the constraint imposed by a nesting structure of the production function adopted in the Constant Elasticity of Substitution (CES) specification, generally adopted in most CGE models. Constructing a panel of 44 countries and 14 periods from the World Input-Output Database (WIOD) tables, we estimate the production functions for 54 sectors using

a Seemingly Unrelated Regression model. We compare these results to two famous KLEM nesting structures from the CES specification and find direct implications on the estimation results, especially for Capital-Energy substitutability. The more general form of the CES production function on which we rely, the Variable Output Elasticity-Cobb Douglas (VOE-CB) supports substitution between these two inputs.

and yet they help - a theoretical model analyzing how German tenancy law and subsidies for environmentally desirable investments counterintuitively interact and offer pareto-improvements for landlords, tenants, and society

Authors

Mr. Reutter, Leo, ,

Prof. Wangenheim, Georg, Professor for Law and Economics, Institute for Economic Law, University of Kassel

Presenter

Mr. Reutter, Leo, ,

Abstract

To increase energy efficiency in the residential building stock despite the wellknown landlord-tenant dilemma, German tenancy law allows landlords to increase rents in proportion to modernization costs after increasing energy efficiency. In addition, the government grants subsidies to homeowners investing in energy efficiency. However, landlords must deduct these subsidies from modernization costs before calculating the permissible rent increase. In this paper we model the interaction of these two policies. We find that despite the obligation to deduct them, subsidies prove to be profitable and achieve increases in the landlord

Bidding behaviour in 2nd-price, BDM, and random nth-price auctions with interval private values

Authors

Banerjee, Prasenjit, , University of Manchester

Dr. Datta, Souvik, Assit, Fachhochschule Nordwestschweiz

Presenter

Dr. Datta, Souvik, Assit, Fachhochschule Nordwestschweiz

Abstract

This paper investigates what happens if we treat people as being rational but exhibiting coherently arbitrary preferences, in particular, having an interval value instead of a point estimate, in a lab experiment using demand revealing auction mechanisms. Given independent private values over intervals, we examine bidding behaviour in induced value experiments with second price, BDM and random nth-price auction mechanisms. We also examine whether bidders play in shaping their bidding behaviour as both private values and market prices are uncertain. Results suggest that, given interval private values, the random nth-price auction (i) can induce sincere bidding and (ii) can also perform better than the 2nd-price and the

BDM auction. Our bidders overbid in the 2nd-price, underbid in the BDM, and bid more sincerely, compared to the other two, in the random nth-price auction.

The Swedish consumer market for organic and conventional milk: A demand system analysis

Author

Ms Lindström, Hanna, ,

Presenter

Ms Lindström, Hanna, ,

Abstract

Increasing the production and consumption of organic food are important targets within governments

Get the Happiness Out – A Framed Field Experiment on the Causal Effects of Positive Emotions on Online Giving

Authors

Dr. Schobin, Janosch, Post-Doc, University of Kassel

Dr. Köbrich León, Anja, , University Kassel

Presenter

Dr. Schobin, Janosch, Post-Doc, University of Kassel

Abstract

In a framed field experiment, we investigate the causal effect of incidental emotions on individual charitable giving in a multi-charity context. In cooperation with a German crowdfunding platform and an environmental organization, participants play an

Nudging pro-environmental behaviours without deterring other ones: micro-foundations to behavioural interventions

Author

Mr. Picard, Julien, ,

Presenter

Mr. Picard, Julien, ,

Abstract

Nudges have become a popular instrument in the toolbox of policymakers. Yet, a growing number of evidence suggests some of them could influence other decisions than those targeted, raising the risk to inadvertently deter virtuous behaviours. To analyse such spillover effects, I develop micro-foundations to three behavioural interventions and the potential causal mechanisms leading to behavioural changes. The nudges I consider affect individuals' perception of themselves (personal norms), their perception of what is socially appropriate (social norms), and the perception of their ability to achieve an outcome with a given action (outcome-oriented motivation). I model individuals as consuming goods to achieve different goals, such as preserving the environment. As such, goods are represented as combinations of attributes (e.g., carbon footprint). Decisions are influenced by individuals' personal norms defining the importance attached to goals, their outcome-oriented motivation to achieve these goals and social norms determining the morality of their actions. I show that nudges influencing these three elements can yield spillover effects on other non-targeted choices. Policymakers seeking to maximise these spillover effects should endeavour to influence

individuals' personal norms. The direct effects of behavioural interventions are influenced by whether individuals anticipate these non-targeted choices in their current decision-making. If they do, nudges affecting personal norms or/and social norms are strictly dominated when individuals perceive the targeted and the non-targeted choices as substitutes. When individuals perceive them as complements, combining nudges playing on social norms and on personal norms strictly dominates any other policy combining either one or two instruments.

Policy Session: Adaptation to climate change: Learning and innovation

25th June 2021, 10:00 AM - 12:00 PM

Description

The climate is changing, requiring solutions to adapt to its adverse effects. Human societies have always adapted to their environment but the speed and intensity of the change taking place now makes adaptation more complicated

People will have to find and implement new solutions and innovate. Using what they have learned in the past and dealing with important uncertainties about future climate conditions, stakeholders, in many sectors of the economy, will innovate. The way people reacted to past climatic shocks, as well as how science predicted climate change will modify future environmental conditions contribute to a growing stock of knowledge. Information extracted from current knowledge allow stakeholders to identify gaps and needs in adaptation preparedness that guide innovation in adaptation to climate change. Obviously, due to the growing awareness of climate change threats, learning and innovation around adaptation to climate change have particularly increased in recent years. Studying the impact of learning on innovation in adaptation to climate change became so a major field of investigations for researchers in environmental economics, but also policy makers and the private sector. Financial tools, institutional organizations, policy design and technology invention constitute fields in which innovation and knowledge diffusion are keys to efficiently adapt to climate change. Private and public stakeholders, from local actions to international decisions, all have a role to play in adaptation to climate change. Understanding what are the available tools to increase knowledge production and diffusion, but also how stakeholders take hold of what they learn to innovate is crucial to be best prepared to our future with climate change.

This policy session will bring together researchers and policy makers from PSL University, Oxford University, the World Bank, the OECD, and the EU Commission to discuss recent findings and policy options promoting learning, innovation, and dissemination of knowledge. The session will seek to address the following questions:

- Are countries innovating in adaptation technologies if they faced extreme events or are supposed to be particularly exposed to climate change consequences?
- What do countries learn from past extreme events? How do these events influence countries' innovation behavior?
- Is adaptation finance innovating to ensure adaptation to climate change? How can finance offset climate change uncertainties to encourage innovation?
- What are the characteristics of policies specially designed to foster learning in climate change adaptation? How innovative are they?

Organizers and Speakers:

Simon TOUBOUL and Matthieu GLACHANT

Speakers:

Nicola Ranger

Julie Rozenberg

Mikaela Rambali

Liviu Stirbat

Matthieu GLACHANT

Speakers

Mr. TOUBOUL, Simon, ,

Prof. Glachant, Matthieu, Professor , MINES Paristech, PSL University, LSE

Dr. Ranger, Nicola, Visiting Senior Fellow, LSE
Dr. Rozenberg, Julie, Senior Economist, The World Bank
Rambali, Mikaela, Policy Analyst, OECD
Mr. Stirbat, Liviu, Deputy Head of unit, European Commission

Presentation

Policy Session: China's Transition towards a carbon-neutral economy

25th June 2021, 10:00 AM - 12:00 PM

Description

The transition to a climate-neutral economy is both an urgent challenge and an opportunity to build a better future for all. On 22 September 2020 at the United Nations General Assembly, President Xi Jinping announced China's ambitious goals to achieve carbon neutrality by 2060 and to reach emission peak before 2030. This strong commitment provides a timely boost to global commitments on climate action, especially during these unprecedented, uncertain, and challenging times.

The proposed policy session brings experts to discuss China's transition towards a carbon-neutral economy, and possible implications for the future of fossil fuels and low-carbon technologies. Prof. Zhang Xiliang will present the scenario analysis on the energy and economic implications of reaching carbon neutrality by 2050, 2060 or 2070. Renewables such as solar and wind are expected to play a significant role; policies to accelerate renewables and sector coupling will be critical to achieving the goal. The implications of such pathways to carbon neutrality will be discussed with stakeholders, policymakers and researchers from China, the EU (incl. Germany) and Australia. Practitioners from the industry are invited to discuss the latest trends in renewable technologies, and share the experience and knowledge gained from the low-carbon transition to date, and the expected challenges for the future.

The proposed policy session aims to connect the state-of-the-art research on decarbonization with a focus on China with the demands and specific needs of policymakers and industrial partners. It is expected to contribute to the evidence-based policy-making in climate change mitigation. The policy session will build on a network associated with the INTERGATE project, a Sino-German joint project on climate research.

Organizers and Speakers:

Prof. Xiliang Zhang
Prof. Andreas Löschel

Speakers:

Prof. Frank Jotzo
Prof. Jiang Kejun
Prof. Gunnar Luderer

Speakers

Prof. Löschel, Andreas, Professor, University of Münster

Prof. Luderer, Gunnar, Deputy Head of Research Department, Potsdam Institute for Climate Impact Research

Presentation

EAERE Award for ERC Grants laureates in the field of environmental and resource economics 2021

25th June 2021, 10:00 AM - 12:00 PM

Description

This thematic session is dedicated to the “EAERE Award for ERC Grants laureates in the field of environmental and resource economics”. This award intends to recognize the scientific excellence of ERC grantees (Starting Grants, Consolidator Grants, Advanced Grants, Synergy Grants) in the field of environmental and resource economics.

This year's awardees are:

- Patrick BOLTON, Imperial College London, Business School - ERC Advanced Grant
- Phoebe KOUNDOURI, Athens University of Economics and Business - ERC Synergy Grant
- Mar REGUANT RIDO, Barcelona Graduate School of Economics - ERC Consolidator Grant

The award session will be chaired by Maria Loureiro.

Speakers

Loureiro, Maria, , Universidade de Santiago de Compostela

Presentation

Agent-based modeling in resource economics

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Incentivising Biodiversity Net Gain with an Offset Market (PRESENTER: Katherine Simpson ; DISCUSSANT: Ridwan Rusli)
2. Transboundary Haze Games: Local Capture and Common Agency (PRESENTER: Ridwan Rusli ; DISCUSSANT: Thiago Fonseca Morello)
3. An agri-environmental scheme to replace fire-based land preparation: design and agent-based simulation with data from Acre state, Brazilian Amazon. (PRESENTER: Thiago Fonseca Morello ; DISCUSSANT: Andries Richter)
4. Path dependencies and institutional traps in water governance— Evidence from Cambodia (PRESENTER: Andries Richter ; DISCUSSANT: Katherine Simpson)

Speakers

Dr. Simpson, Katherine, academic,
Prof. Rusli, Ridwan, ,
Prof. Morello, Thiago, ,
Richter, Andries, , Wageningen University

Presentations

Incentivising Biodiversity Net Gain with an Offset Market

Authors

de Vries, Frans, , University of Stirling
Hanley, Nick, , University of St Andrews
Dr. Needham, Katherine, ,
Prof. Armsworth, Paul R, Professor,
Dr. Dallimer, Martin, Senior Lecturer,

Presenter

Dr. Needham, Katherine, ,

Abstract

We investigate the use of private funding for biodiversity conservation through an offset market. The environmental objective is to increase some measure of biodiversity in a region (

Transboundary Haze Games: Local Capture and Common Agency

Authors

Prof. Rusli, Ridwan, ,

Prof. Chang, Youngho, Professor, Singapore University of Social Sciences

Presenter

Prof. Rusli, Ridwan, ,

Abstract

We study how transboundary, intergovernmental fire and haze negotiations interact with local, subnational government collusion and capture in a decentralized country. The local government collusion and capture problem is modelled as a competing principals and common agency problem that interacts with the central government's game of chicken. The results show that the central government can persuade farmers and prevent burning when the incremental benefits from slashing and burning are lower, the total direct and indirect costs and damages of fire and haze are higher and the required enforcement and abatement costs are not too high. Neighbouring governments can help mitigate the central government's budget constraint and help deter violating multinational companies. We develop a multitask multiprincipal framework to expand our solutions set to include partial burning outcomes and negative compensations. The results inform on a set of policy solutions to these complex transboundary fire and haze negotiation and local capture problems.

[An agri-environmental scheme to replace fire-based land preparation: design and agent-based simulation with data from Acre state, Brazilian Amazon.](#)

Author

Prof. Morello, Thiago, ,

Presenter

Prof. Morello, Thiago, ,

Abstract

Seeking to generate policy-useful and refutable knowledge, a contract-based agri-environmental scheme (AES) to replace agricultural fires is designed and simulated under adverse selection, moral hazard and loss aversion. Numerical analysis based on survey and satellite data from Acre state, western Amazon, revealed that 99% of first-best efficiency was achieved and contract terms and performance were roughly similar to the risk-neutral case. Subsequently, contract uptake and compliance by agents' was simulated as part of an agent-based model in which opportunity cost was both dynamic and spatial. A real landscape with 415 landholders and 10,000 land parcels from Acre state, together with empirical data was taken as the background. Results revealed both a fast and big impact in terms of replacement of burnings for mechanization, but also adverse selection, minor shirking and substantial non-additional contracting. The main implication is that the contract design here proposed should be empirically tested with a randomized controlled trial, before implementation, and a list of six key hypotheses for guiding such endeavour is formulated. Lastly, the integration of standard optimization and computer simulation models proved effective in detecting design issues that would be ignored whether the two models were studied separately.

[Path dependencies and institutional traps in water governance– Evidence from Cambodia](#)

Authors

Richter, Andries, , Wageningen University

Mr. Nhim, Tum, PhD candidate, Wageningen University

Presenter

Richter, Andries, , Wageningen University

Abstract

In many parts of the world, water governance is in the hands of local communities. Typically, social norms of cooperation are important mechanisms to ensure sufficient contributions to maintain a certain water infrastructure, and also to restrain excessive water use. Field work in Kampong Chhnang (Cambodia) documents a mixed picture regarding the success of self-governance. While some villages have well-functioning water infrastructure systems and high levels of cooperation, others are left with dysfunctional infrastructure and low cooperation. We hypothesize that this outcome may be the result of an institutional trap, where poor infrastructure leads to scarcity and low revenues, undermining cooperation further, essentially creating a vicious cycle. We also hypothesize that conditional cooperation may explain why some communities can overcome such an institutional trap. We develop an agent-based model, in which users have to decide how much to contribute to common water infrastructure and how much water to extract. This decision is based on economic considerations, but also reputational concerns, where the own decision is evaluated against the social norm, formalized as the mechanism of conditional cooperation. We find that the system features alternative stable states, depending on initial conditions. If the system has a functioning water system initially and a high level of cooperation, prosperity can be created, which facilitates further investments in water infrastructure, fostering cooperation further. If the community features initial scarcity, cooperation is relatively costly, undermining investments in water infrastructure.

Water markets III

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. A latent class framework to control for decision inertia in revealed and stated recreation trips (PRESENTER: Tobias Boerger ; DISCUSSANT: Kathrin Schmitt)
2. Pro-environmental spillover effects in the resource conservation domain: Evidence from a randomized controlled field trial in Singapore (PRESENTER: Kathrin Schmitt ; DISCUSSANT: Yann Kervinio)
3. Managing the commons fairly: a survey among French irrigators (PRESENTER: Yann Kervinio ; DISCUSSANT: Tung Nguyen Huy)
4. Incentivizing Social Learning for the Diffusion of Climate-Smart Agricultural Techniques (PRESENTER: Tung Nguyen Huy ; DISCUSSANT: Tobias Boerger)

Speakers

Prof. Börger, Tobias, ,
Ms Schmitt, Kathrin, , Friedrich-Alexander-University Erlangen-Nuremberg
Dr. Kervinio, Yann, ,
Mr. Nguyen Huy, Tung, ,

Presentations

A latent class framework to control for decision inertia in revealed and stated recreation trips

Authors

Campbell, Danny, , Queen's University Belfast
Dr. Hynes, Stephen, Economist,
Prof. Börger, Tobias, ,
Dr. White, Mathew, Senior Scientist, University of Vienna
Dr. Elliott, Lewis R., Lecturer, University of Exeter

Presenter

Prof. Börger, Tobias, ,

Abstract

In this paper, we explore how potential changes due to improvements and deteriorations in water quality affect the recreational benefits provided at 'blue' space sites in eleven European countries. To do so, we make use of both observed recreational behaviour and stated recreational behaviour contingent on changes in water quality at the site. More specifically, we propose a latent class framework for pooling the revealed and stated recreation trips to account for the inherent propensity to state the same number of trips in contingent behaviour question irrespective of the proposed changes. This leads to improved model fits and different welfare estimates. Our findings, thus, emphasize the importance of

controlling for decision inertia when augmenting travel cost models with contingent behaviour data.

Pro-environmental spillover effects in the resource conservation domain: Evidence from a randomized controlled field trial in Singapore

Authors

Ms Schmitt, Kathrin, , Friedrich-Alexander-University Erlangen-Nuremberg
Prof. Tiefenbeck, Verena, Professor, Friedrich-Alexander-University Erlangen-Nuremberg
Prof. Sing, Tien Foo, Professor, National University of Singapore
Prof. Agarwal, Sumit, Professor, National University of Singapore
Prof. Goette, Lorenz Fabian, Professor, National University of Singapore
Mr. Fang, Ximeng, Doctoral Student, University of Bonn
Dr. Wang, Davin, Researcher, Singapore Management University
Prof. Staake, Thorsten, Professor, University of Bamberg

Presenter

Ms Schmitt, Kathrin, , Friedrich-Alexander-University Erlangen-Nuremberg

Abstract

Many policymakers and environmental campaigners promote small pro-environmental actions in the hope that these changes will lead to larger behavioral changes. However, the empirical and theoretical literature on pro-environmental spillover effects yields mixed results. Yet, to evaluate the net benefits of a program, it is important to consider the side effects of an intervention. In a randomized controlled field trial with a fairly representative sample over 4 to 6 months with real-world data from 525 households (2,220 individuals), we analyze whether real-time feedback on water consumption in the shower induces spillover effects on other domestic water uses. Overall, our findings show no significant reductions in water consumption beyond the directly targeted behavior even under fairly good conditions for pro-environmental spillover effects as predicted by the literature. However, we find that spillover effects are less likely to occur when an initial intervention on the directly targeted behavior is difficult to achieve. Moreover, we find positive spillover effects on overall resource conservation for individuals with above-average water consumption in the shower during the baseline period.

Managing the commons fairly: a survey among French irrigators

Authors

Mr. OUVRARD, Benjamin, ,
Mr. Reynaud, Arnaud, Researcher, TSE-R, INRAE
Dr. Kervinio, Yann, ,

Presenter

Dr. Kervinio, Yann, ,

Abstract

In a simple axiomatic framework, we demonstrate how different conceptions of common property over a natural resource and private property of one

Incentivizing Social Learning for the Diffusion of Climate-Smart Agricultural Techniques

Authors

Van Soest, Daan, , Tilburg University

Mr. Nguyen Huy, Tung, ,

Dr. Adjognon, Guignon Serge, Economist, World Bank

Mr. Guthoff, Jonas Christoph , Research Assistant, World Bank

Presenter

Mr. Nguyen Huy, Tung, ,

Abstract

Unsustainable land use is a key threat to both economic development and environmental conservation in developing countries. We implement a randomized controlled trial in arid Burkina Faso to test the effectiveness of payments conditional on the adoption of sustainable land management practices (SLMPs). We do so in the context of a so-called cascade training program, in which some farmers are trained in SLMP implementation, who are asked to subsequently disseminate their newly acquired knowledge and expertise in their social networks. Offering adoption payments is expected to mitigate two of the most important barriers for SLMP adoption -

Impacts of Covid-19 II

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Environment, public debt and epidemics (PRESENTER: Thomas Seegmuller ; DISCUSSANT: Christoph Boehringer)
2. Will COVID-19 change the calculus of climate policy? (PRESENTER: Christoph Boehringer ; DISCUSSANT: Bart Lahcen)
3. Green Recovery Policies for the COVID-19 Crisis: Modelling the Impact on the Economy and Greenhouse Gas Emissions (PRESENTER: Bart Lahcen ; DISCUSSANT: Soheil Shayegh)
4. Lessons from the past: how health crises impede economic growth (PRESENTER: Soheil Shayegh ; DISCUSSANT: Thomas Seegmuller)

Speakers

Prof. Seegmuller, Thomas, ,
Boehringer, Christoph, , University of Oldenburg
Mr. Lahcen, Bart, ,
Dr. Shayegh, Soheil, Researcher, EIEE

Presentations

Environment, public debt and epidemics

Authors

Fodha, Mouez, , Université de Paris I
Dr. Davin, Marion, Assistant professor,
Prof. Seegmuller, Thomas, ,

Presenter

Prof. Seegmuller, Thomas, ,

Abstract

We study whether fiscal policy, especially public debt, can improve the macroeconomic and sanitary consequences of epidemics and pollution. The severity of infection depends on the pollution intensity and on the age profile. Our approach is based on three main features: we introduce the dynamics of epidemics in an OLG model to take into account that old people are more vulnerable; agents are more easily infected in a more polluting economy; public debt and fiscal instruments can be used to manage the consequences of epidemics. We emphasize situations in which the transmission rate of epidemics exceeds the recovery rate such that the economy cannot achieve a state without epidemics. An appropriate choice of public debt and income transfer can address such unfavorable situations by allowing the economy to converge to a state without infected people and with a higher level of capital per

capita. In a context in which public policy cannot be managed to remove entirely the epidemic, it could however be used to reduce the number of infected people and increase capital per capita. As a prerequisite, pollution intensity should not be too high.

Will COVID-19 change the calculus of climate policy?

Authors

Boehringer, Christoph , , University of Oldenburg
Rutherford, Thomas, , University of Wisconsin-Madison
Mr. Richels, Rich, Researcher,

Presenter

Boehringer, Christoph , , University of Oldenburg

Abstract

Public health experts caution that global warming increases the likelihood of novel coronaviruses and amplifies their impacts. Such contagions are virtually unique in their ability to inflict catastrophic worldwide harm. Even more alarming is the forecast that future coronavirus pandemics will be more frequent and potent. If the public comes to recognize that the pain and suffering they are currently experiencing are but another symptom of global warming, the motivation for urgent action to limit temperature rise may reach a tipping point. Navigating the current situation will require considering both existential threats jointly. Here, we present results from an integrated assessment model adapted to examine the implications of current and future pandemics for climate policy. We find that the threat of pandemics can lead to tighter temperature targets than might otherwise be justified. In a world of shrinking economic resources for reducing harm to public health and wellbeing, global warming and pandemics must be recognized as interconnected threats.

Green Recovery Policies for the COVID-19 Crisis: Modelling the Impact on the Economy and Greenhouse Gas Emissions

Authors

Eyckmans, Johan, , KU Leuven, Faculty of Economics and Business, campus Brussels
Prof. Rousseau, Sandra, , KU Leuven
Mr. Lahcen, Bart, ,
Dr. Brusselaers, Jan, Researcher, VITO
Dr. Vrancken, Karl, Research Manager, VITO
Ms Dams, Yoko, Researcher, VITO
Ms Da Silva Paes, Carolina, Student,

Presenter

Mr. Lahcen, Bart, ,

Abstract

The COVID-19 pandemic induces the worst economic downturn since the Second World War, requiring governments to design large-scale recovery plans to overcome this crisis. This paper quantitatively assesses the potential of government investments in eco-friendly construction projects to boost the economy and simultaneously realise environmental gains through reduced energy consumption and related greenhouse gas emissions. The analysis uses a Computable General Equilibrium model that examines the macroeconomic impact of the COVID-19 crisis in a small open economy (Belgium). Subsequently, the impact of the proposed policy is assessed through comparative analysis for macroeconomic parameters as

well as CO2 equivalent emissions for four scenarios. Our findings demonstrate that the COVID-19 pandemic damages economies considerably, however, the reduction in emissions is less than proportionate. Still, well-designed public policies can reverse this trend, achieving both economic growth and a disproportionately large decrease in emissions. Moreover, the positive effect of such a decoupling policy on GDP is even stronger during the pandemic than compared to the pre-COVID-19 period. This is the result of a targeted, investment-induced green transition towards low energy-intensive economic activities. Finally, this paper describes how the net effect on the government budget is positive through the indirect gains of the economic uptake.

Lessons from the past: how health crises impede economic growth

Authors

Dr. Shayegh, Soheil, Researcher, EIEE

Dr. Malpede, Maurizio, Postdoctoral researcher, Bocconi University

Dr. Falchetta, Giacomo, Researcher, FEEM

Presenter

Dr. Shayegh, Soheil, Researcher, EIEE

Abstract

The economic fallout of the current pandemic has been felt globally across many economic sectors. While the long term impact of the COVID-19 crisis on the economy is not known yet, history can show us how public health crises in the past have impeded economic productivity and growth. Here we examine the impact of malaria on potato's contribution to population and urbanization. We exploit regional variation in suitability of cultivating potato along with exogenous variation in stability of malaria transmission to estimate the joint impact of malaria endemic and potato on population and urbanization. We show that the presence of weather conditions suitable for stable transmission of malaria counteracted the significant benefits of the introduction of potato in Old World countries during the eighteenth and nineteenth centuries. Robustness checks from geographic variations in malaria stability and suitability of potato cultivation at a disaggregated level along with placebo treatments reinforce the positive effects of the eradication of malaria on population and urbanization in potato suitable areas after 1900.

Land use II

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Economic, environmental, and land efficiency considering natural conditions: Implications for high-quality development in the Yellow River Basin, China (PRESENTER: Xiaojie Wen ; DISCUSSANT: Anne Nobel)
2. What drives the designation of protected areas? A pairwise composite marginal likelihood approach (PRESENTER: Anne Nobel ; DISCUSSANT: Jaune Vaitkeviciute)
3. European agricultural crop production adaptation mechanisms to short-term climate variations (PRESENTER: Jaune Vaitkeviciute ; DISCUSSANT: Raushan Bokusheva)
4. State-contingent stochastic production technology: Mapping production uncertainty using reduced form models of crop yields (PRESENTER: Raushan Bokusheva ; DISCUSSANT: Xiaojie Wen)

Speakers

Ms. Wen, Xiaojie, , Technical University of Munich

Mr. Nobel, Anne, Researcher, Hasselt University

Dr. Vaitkeviciute, Jaune, ,

Prof. Bokusheva, Raushan, ,

Presentations

Economic, environmental, and land efficiency considering natural conditions: Implications for high-quality development in the Yellow River Basin, China

Authors

Prof. Sauer, Johannes, Professor, TUM

Ms. Wen, Xiaojie, , Technical University of Munich

Dr. Zhou, Xun, Postdoc, Technische Universität München

Presenter

Ms. Wen, Xiaojie, , Technical University of Munich

Abstract

With the increasingly serious environmental deterioration and the growing scarcity of resources, sustainable development has become one of the most significant global issues in past decades. The Chinese government has proposed a national strategy aimed at promoting ecological conservation and high-quality, sustainable development in the Yellow River Basin, an ecologically fragile and economically less-developed region in China. Using a unique panel dataset of 326 counties in the Yellow River Basin from 2005 to 2015, we estimate economic, environmental, and land efficiency with natural conditions explicitly taken into account. The efficiency analysis presents an overall picture of the relationship between economic growth and environmental protection as well as land use pattern in the entire

region. Our findings offer important implications not only for the central government to assess its zoned development strategy but for local governments to identify the most feasible and suitable pathways to achieve high-quality, sustainable development.

What drives the designation of protected areas? A pairwise composite marginal likelihood approach

Authors

Mr. Nobel, Anne, Researcher, Hasselt University

Prof. Lizin, Sebastien, Assistant professor, Hasselt University

Prof. Malina, Robert, Professor, Hasselt University

Presenter

Prof. Malina, Robert, Professor, Hasselt University

Abstract

Previous research indicates that protected areas do not contribute sufficiently to biodiversity conservation because decision-makers protect those areas where the opportunity costs are lowest. However, previous research relied on aggregated biodiversity data and did not consider spatial dependence and heteroscedasticity in observed conservation decisions. In this paper, we estimate conservation choice models that include fine-resolution indicators of biodiversity conservation benefits and opportunity costs, and for spatial dependence and heteroscedasticity using a pairwise composite marginal likelihood approach. We find evidence of spatial dependence and heteroscedasticity. Furthermore, we find that for the preferred model specifications a one percent increase in species richness levels is associated with increases in the probability of protection of between 0.22 and 0.59 percent. We also found that this elasticity effect is up to 67 percent lower when estimated based on lower-resolution data. Our findings suggest that protected area designations may be more socially efficient than implied previously.

European agricultural crop production adaptation mechanisms to short-term climate variations

Authors

Dr. Chakir, Raja, Researcher, INRAE

Dr. Vaitkeviciute, Jaunė, ,

Dr. Martin, Elsa, Lecturer, Agrosup Dijon - INRAE

Presenter

Dr. Vaitkeviciute, Jaunė, ,

Abstract

The objective of this paper is shed some light on adaptation mechanisms of European agriculture and to propose a quantitative assessment of climate-induced changes in farmers' choices using an original structural econometric multi-output framework. We estimate a multi-output model and analyse how weather can impact production output, input use and land allocations. Our model is used to estimate weather impacts on European agriculture at the regional NUTS2 level observed during the period 2004-2012. We compare different estimators (within, between, pooled) and calculate the elasticities of wheat and maize production, fertilizer use and land allocation with respect to output prices, input price and weather variables in different seasons. Our preliminary results show that wheat output is

more dependent on climate variations than maize output, also, that climate in different seasons plays the inverse role to land allocation between wheat and maize.

State-contingent stochastic production technology: Mapping production uncertainty using reduced form models of crop yields

Authors

Prof. Bokusheva, Raushan, ,

Dr. Barath, Lajos, Senior Research Associate , Institute of Economics of the Hungarian Academy of Sciences, Research Center for Economic and Regional Studies

Presenter

Prof. Bokusheva, Raushan, ,

Abstract

The state-contingent approach presents a consistent conceptual framework for analyzing producers decision under production risk and other sources of uncertainty. There have been, however, only relatively a few empirical applications of this approach to modelling a stochastic technology in the literature. An important part of the empirical implementation of the approach is consistent mapping of stochastic output to particular uncertain events or a single uncertain event in the context of a multi-output production technology. Using consistent mapping rules is particularly critical in panel data analyses when the effect of uncertainty may be confounded by firm heterogeneity. In this paper, we present an empirical strategy to formulating states of nature in an environment characterized by considerable production risk using reduced form fixed effects models of crop yields. Specifically, we propose to formulate states of nature by identifying weather-related yield losses in Hungarian cereals production using statistical inferences about yield responses to interannual weather variation. The paper presents also an explorative analysis to evaluate the impact of both production and price uncertainty on study farms

Regional renewables impacts

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The Impact of Green Technologies on Regional Performance: Evidence from European Regions (PRESENTER: Philip Kerner ; DISCUSSANT: Sacha den Nijs)
2. The Impact of Decarbonisation Investments on EU Regions: A Spatial Computable General Equilibrium Analysis (PRESENTER: Sacha den Nijs ; DISCUSSANT: Jan-Philipp Sasse)
3. Regional impacts of electricity system transition in Central Europe until 2035 (PRESENTER: Jan-Philipp Sasse ; DISCUSSANT: Stephen Jarvis)
4. The Economic Costs of NIMBYism: Evidence from Renewable Energy Projects (PRESENTER: Stephen Jarvis ; DISCUSSANT: Philip Kerner)

Speakers

Mr. Kerner, Philip, PhD Candidate,
Ms den Nijs, Sacha, ,
Mr. Sasse, Jan-Philipp, , University of Geneva
Mr. Jarvis, Stephen, ,

Presentations

The Impact of Green Technologies on Regional Performance: Evidence from European Regions

Authors

Dr. Wendler, Tobias, ,
Mr. Kerner, Philip, PhD Candidate,
Prof. Klarl, Torben, Professor,

Presenter

Mr. Kerner, Philip, PhD Candidate,

Abstract

Green technologies are sometimes attributed an important role in combining both positive environmental effects with opportunities for economic returns. In this paper, we focus on the role of green technology development to stimulate regional growth and estimate the economic returns to green technologies for a sample of 270 European regions over 25 years. Thereby, we choose a flexible empirical approach to appropriately control for cross-sectional dependence due to unobservables, such as knowledge spillovers, and the potential heterogeneity in the impact of green technologies on output. Our results based on regional production functions suggest that there are on average no positive regional economic returns to green technologies but decent returns to non-green technologies. These results hold true for

various extensions to the main estimation, including an approach in which we allow the returns to depend on the state of environmental regulation and an exercise in which we consider relevant subgroups of general green technologies.

The Impact of Decarbonisation Investments on EU Regions: A Spatial Computable General Equilibrium Analysis

Authors

Ivanova, Olga, , PBL Netherlands Environmental Assessment Agency
Ms den Nijs, Sacha, ,

Presenter

Ms den Nijs, Sacha, ,

Abstract

The European Commission sets ambitious targets to transform the energy system to reduce its reliance on fossil fuels and greenhouse gas emissions. This study analyses the effects of the required investments for EU decarbonisation ambitions until 2050 on EU NUTS 2 regions, using the spatial computable general equilibrium (SCGE) model EU-EMS. As energy sector activity varies greatly among regions, the required decarbonisation has led to discussions regarding the vulnerability of regional economies and the effects on regional employment and production. Applying a general equilibrium framework allows us to analyse the effects on regional economies in the EU beyond the energy sector. Different scenarios are simulated using estimated required investments for decarbonisation from a bottom-up energy-systems model. The required investments are regionalised to a NUTS 2 level using indicators such as renewable energy potential and used as inputs in the model EU-EMS. The dynamic recursive model consists of 271 EU NUTS 2 regions and distinguishes 8 sectors. The required investments shock regional demand for goods and services, resulting from investments in new technologies, and changes the allocation of capital across regions. Regions with high potential for solar and wind energy experience an increase in demand and a capital inflow in this setup. Results from the simulations are compared to a steady-state baseline, assuming no required investments for decarbonisation. While effects on total EU GDP, output and employment are small, the results show significant within-country variation. Some regions

Regional impacts of electricity system transition in Central Europe until 2035

Authors

Prof. Trutnevyte, Evelina, , University of Geneva
Mr. Sasse, Jan-Philipp, , University of Geneva

Presenter

Mr. Sasse, Jan-Philipp, , University of Geneva

Abstract

Achieving current electricity sector targets in Central Europe (Austria, Denmark, France, Germany, Poland and Switzerland) will redistribute regional benefits and burdens at sub-national level. Limiting emerging regional inequalities would foster the implementation success. We model one hundred scenarios of electricity generation, storage and transmission for 2035 in these countries for 650 regions and quantify associated regional impacts on system costs, employment, greenhouse gas and particulate matter emissions, and land use. We highlight tradeoffs among the scenarios that minimize system costs, maximize regional equality, and maximize renewable electricity generation. Here, we show that these three aims have vastly different implementation pathways as well as associated regional impacts and

cannot be optimized simultaneously. Minimizing system costs leads to spatially-concentrated impacts. Maximizing regional equality of system costs has higher, but more evenly distributed impacts. Maximizing renewable electricity generation contributes to minimizing regional inequalities, although comes at higher costs and land use impacts.

The Economic Costs of NIMBYism: Evidence from Renewable Energy Projects

Author

Mr. Jarvis, Stephen, ,

Presenter

Mr. Jarvis, Stephen, ,

Abstract

Large infrastructure projects can create widespread societal benefits and are often critical to tackling major national or global challenges. However, they also frequently prompt strong opposition from local residents and businesses. This is sometimes pejoratively labeled NIMBY (Not In My Backyard) behavior, and while it is thought to be common in many settings the economic costs it imposes are poorly understood. In this paper I estimate the economic costs of so-called NIMBYism. To do this I examine the case of renewable energy in the United Kingdom, where I draw on detailed planning data for all renewable energy projects spanning three decades, including projects that were proposed but not approved. I first use hedonic methods to estimate how the construction of a wind or solar project is capitalized into local property values. I find that wind projects have significant negative local impacts whilst solar projects do not. I then quantify the weight that planning officials place on various factors during the planning process and find evidence that they are indeed particularly responsive to local impacts. The result has been a systematic refusal of societally beneficial projects. Ultimately misallocated investment due to the planning process may have increased the cost of the UK's deployment of wind power by 10-25%. A significant portion of this can plausibly be attributed to NIMBYism.

Policy dimensions of transportation

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Decarbonization potentialities of peer-to-peer carsharing in less densely populated areas: an empirical analysis. (PRESENTER: Lucia Rotaris ; DISCUSSANT: Charles Collet)
2. An attribute's valence framing to promote pro-environmental behavior in the transport field: application of the choice experiment method (PRESENTER: Charles Collet ; DISCUSSANT: Adriaan Soetevent)
3. I'd Like to Move It! Consumption Rivalry in the EV Public Charging Market: Demand Estimation with Deterministic Choice Set Variation (PRESENTER: Adriaan Soetevent ; DISCUSSANT: Disa Asplund)
4. Optimal pricing of car use in a small city: A case study of Uppsala (PRESENTER: Disa Asplund ; DISCUSSANT: Lucia Rotaris)

Speakers

Prof. Rotaris, Lucia, ,
Mr. Collet, Charles, ,
Prof. Soetevent, Adriaan, ,
Dr. Asplund, Disa, ,

Presentations

Decarbonization potentialities of peer-to-peer carsharing in less densely populated areas: an empirical analysis.

Author

Prof. Rotaris, Lucia, ,

Presenter

Prof. Rotaris, Lucia, ,

Abstract

Mobility plays a crucial role in wellbeing and quality of life. It enables to access services and resources necessary for economic and cultural development and is essential for social inclusion. Peer-to-peer carsharing (P2PCS) represents an effective solution with respect to the sustainability goals indicated by the European New Green Deal and in light of the accessibility objectives of the National Strategy for Internal Areas. For this reason, we estimated the potential supply and demand of P2PCS in Friuli Venezia Giulia (FVG), an Italian region characterized by less-densely populated areas. We interviewed 200 individuals to test if they would rent a car and 249 car owners to test if they would rent out their car. We found that 10% of the sample would use a P2PCS service if the hourly rental rate were

Key words: peer-to-peer carsharing; travel behavior; decarbonization
JEL classification: R41; R48; Q54

An attribute's valence framing to promote pro-environmental behavior in the transport field: application of the choice experiment method

Authors

Dr. Chèze, Benoît, ,
Mr. Collet, Charles, ,
- Gastineau, Pascal, -,
Dr. Martinez, Frédéric, Researcher, Université Gustave Eiffel
Dr. Mahieu, Pierre-Alexandre, Researcher, Université de Nantes

Presenter

Mr. Collet, Charles, ,

Abstract

The transport sector is one of the main contributors to CO2 emissions. Several tools have been developed by economists to limit CO2 emissions. In this paper, we propose to rely on an attribute

I'd Like to Move It! Consumption Rivalry in the EV Public Charging Market: Demand Estimation with Deterministic Choice Set Variation

Author

Prof. Soetevent, Adriaan, ,

Presenter

Prof. Soetevent, Adriaan, ,

Abstract

Consumption rivalry generates variation in the choice sets decision-makers face. Neglecting such variation may bias demand estimates. To correct this bias, researchers have used aggregated data on stockouts and information from periodic inventory systems to impose probabilistic constraints on the choice set.

I use new data from a real-time inventory system that records all public charging sessions of electric vehicles. Per transaction, this identifies a user

Optimal pricing of car use in a small city: A case study of Uppsala

Authors

Dr. Asplund, Disa, ,
Mr. Pyddoke, Roger, Senior Researcher, VTI

Presenter

Dr. Asplund, Disa, ,

Abstract

Studies of cities that have successfully shifted demand from cars to more sustainable modes suggest that coordinated packages of mutually reinforcing policy instruments are needed. Congestion charges and parking fees can be important parts of such packages. This paper

examines the introduction of welfare-optimal congestion charges and parking fees in a model calibrated to Uppsala, a small city in Sweden. These effects are modeled with a simple transport demand model for the welfare optimization of parking fees, congestion charges, and public transport provision. The results suggest that welfare-optimal congestion charges in Uppsala are as high as EUR 2.8 in peak hours and EUR 1.4 in off-peak hours. A rough cost

Firm level analyses of environmental impacts and policies

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Energy prices, generators, and the (environmental) performance of manufacturing firms: Evidence from Indonesia (PRESENTER: Hannes Greve ; DISCUSSANT: Sugandha Srivastav)
2. Innovation for Social Progress: When Imperfect Appropriability Meets Incorrect Prices (PRESENTER: Sugandha Srivastav ; DISCUSSANT: Jeanne Tschopp)
3. In the Eye of the Storm: Firms and Capital Destruction in India (PRESENTER: Jeanne Tschopp ; DISCUSSANT: Prasenjit Banerjee)
4. Honor, Stigma, and Mechanisms for Environmental Protection (PRESENTER: Prasenjit Banerjee ; DISCUSSANT: Hannes Greve)

Speakers

Mr. Greve, Hannes, ,
Ms Srivastav, Sugandha, ,
Dr. Tschopp, Jeanne, ,
Banerjee, Prasenjit, , University of Manchester

Presentations

Energy prices, generators, and the (environmental) performance of manufacturing firms: Evidence from Indonesia

Authors

Dr. Renner, Sebastian, researcher,
Mr. Greve, Hannes, ,
Prof. Kis-Katos, Krisztina, Professor,

Presenter

Mr. Greve, Hannes, ,

Abstract

Generator use is widespread among firms in developing and emerging economies, including Indonesia, shielding them from unreliable and insufficient electricity supply. This, however, makes these firms more vulnerable to fuel price increases, as well as more emission intensive. We exploit variation in policy-induced fossil fuel and electricity tariff adjustments using a rich panel data set of large manufacturing firms to estimate the impact of energy price increases on generator-reliant firms versus those not relying on generators. We find that generator-reliant firms reduce output and value added by around 0.6--0.8 percent in response to a ten percent fossil fuel price increase, and adjust inputs flexibly: Material input and labor

demand fall by 0.7 and 0.5 percent, respectively. Because firms dis-adopt generator use in response to higher fuel prices, emission and energy intensity of production declines by around 0.7--0.8 percent on average. Electricity price increases, in contrast, are absorbed and do not lead to differential input adjustments in the short term. As firms that use generators also have a higher cost share of grid electricity, value added and labor productivity decline to a greater extent compared to other firms. In addition, rising electricity prices further incentivize inefficient generator use.

Innovation for Social Progress: When Imperfect Appropriability Meets Incorrect Prices

Authors

Ms Srivastav, Sugandha, ,

Ms Pless, Jacquelyn , Assistant Professor, MIT

Presenter

Ms Srivastav, Sugandha, ,

Abstract

Estimating the causal joint effect of two policies is rare yet increasingly important in a world where firms simultaneously face multiple, overlapping policies. This is especially true for the energy sector. Environmental policies aiming to reduce emissions often interact with non-environmental interventions, such as innovation incentives. Hundreds of billions of dollars

In the Eye of the Storm: Firms and Capital Destruction in India

Authors

Prof. Pelli, Martino, , University of Sherbrooke

Dr. Tschopp, Jeanne, ,

Dr. Bezmaternykh, Natalia, Lecturer,

Dr. Eklou, Kodjovi, Researcher,

Presenter

Dr. Tschopp, Jeanne, ,

Abstract

This paper examines the response of firms to capital destruction, using a new measure of firm exposure to tropical storms as a negative exogenous shock on firms' capital stock. Drawing on a panel of Indian manufacturing firms between 1995 and 2006, we establish that, depending on their strength, storms destroy up to 75.3% of the fixed assets of the median firm (in terms of its productivity and industry performance). We quantify the response of firm sales within and across industries and find effects akin to Schumpeterian creative destruction, where surviving firms build back better. Within an industry, the sales of less productive firms decrease disproportionately more, while across industries capital destruction leads to a shift in sales towards more performing industries. This build-back better effect is driven by firms active in multiple industries and, to a large extent, by shifts in the firm-level production mix within a firm's active set of industries. Finally, while there is no evidence that firms adjust by investing in new industry lines, firms tend to abandon production in industries that exhibit lower comparative advantage.

Honor, Stigma, and Mechanisms for Environmental Protection

Authors

Banerjee, Prasenjiit, , University of Manchester

Shogren, Jason, , University of Wyoming

Prof. Pal, Rupayan, Professor of Economics, Indira Gandhi Institute of Development Research, Mumbai, India

Presenter

Banerjee, Prasenjiit, , University of Manchester

Abstract

Honor and stigma play a role in environmental protection. Environmental honors are bestowed on people and firms who go out of their way to do right by the environment. Similarly, environmental stigma is put on people or firms who are publicly taken to task for their poor environmental record. We design a voluntary incentive mechanism by incorporating honor and stigma to induce heterogeneous firms to protect the environment at less cost. We encounter a motivational costs incurred by the green firm

Trade

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Trade and Trees (PRESENTER: Bård Harstad ; DISCUSSANT: Mark Schopf)
2. Green Protection for Sale: The Impact of Industrial Lobbying on International Cooperation in the Presence of Border Carbon Adjustment (PRESENTER: Mark Schopf ; DISCUSSANT: Emmanuel Asane-Otoo)
3. Trade in Carbon and Carbon Tariffs (PRESENTER: Emmanuel Asane-Otoo ; DISCUSSANT: Birgit Bednar-Friedl)
4. Adaptation to transboundary climate risks in trade: Investigating actors and strategies for an emerging challenge (PRESENTER: Birgit Bednar-Friedl ; DISCUSSANT: Bård Harstad)

Speakers

Harstad, Bård, , University Of Oslo

Dr. Schopf, Mark, Lecturer,

Dr. Asane-Otoo, Emmanuel, ,

Bednar-Friedl, Birgit, , University Graz

Presentations

Trade and Trees

Author

Harstad, Bård, , University Of Oslo

Presenter

Harstad, Bård, , University Of Oslo

Abstract

Free trade can often lead to resource depletion, such as deforestation in the tropics. This paper first presents a dynamic model whereby the South (S) depletes to export the extracted units (timber) or the produce (beef) from land available after depletion. Because of the damages, the North benefits from trade liberalization only if the remaining stock is, in any case, diminished. For that reason, S speeds up exploitation.

The negative results are reversed if the parties can negotiate a contingent trade agreement, whereby the allocation of gains from trade, and thus the location on the Pareto frontier, is sensitive to the size of the remaining stock. In equilibrium, S conserves to maintain its favorable terms of trade, S conserves more than in autarky, and more when the gains from trade are large. The parties cannot commit to future policies, but they obtain the same outcome as if they could.

Green Protection for Sale: The Impact of Industrial Lobbying on International Cooperation in the Presence of Border Carbon Adjustment

Authors

Dr. Hagen, Achim, ,
Dr. Schopf, Mark, Lecturer,

Presenter

Dr. Schopf, Mark, Lecturer,

Abstract

We study the influence of producer firm lobby groups on the choice of national emission reduction policies and the formation of a climate coalition if members of the coalition use border carbon adjustments (BCA). Coalition countries regulate emissions from commodity production with a production tax. The commodity is traded on an international market. We find that lobbying leads to a reduction of the price difference between coalition countries and outsiders and can thereby help to stabilize larger coalitions. We contribute to the literature by providing novel insights how, in the presence of BCA, industry lobbies can improve the prospects for climate cooperation. In this case,

Trade in Carbon and Carbon Tariffs

Authors

Dr. Asane-Otoo, Emmanuel, ,
Dr. Schneider, Jan , Research Scientist, University of Oldenburg
Prof. Böhringer, Christoph, Professor, University of Oldenburg

Presenter

Dr. Asane-Otoo, Emmanuel, ,

Abstract

Carbon-based import tariffs are proposed as a policy measure to reduce carbon leakage and increase the global cost-effectiveness of unilateral CO₂ emission pricing. We investigate the case for carbon tariffs. For our assessment, we combine multi-region input-output and computable general equilibrium analyses

based on data from the World Input-Output Database for the period 2000 to 2014. The multi-region input-output analysis confirms that carbon embodied in trade has increased during this period, but trade flows from Non-OECD to OECD countries became less important in relative terms since the 2007-2008 financial crisis. The computable general equilibrium analysis suggests that carbon tariffs' efficacy in combating leakage increases in periods when trade in carbon increases. However, its potential to improve the global cost effectiveness of unilateral emission pricing remains modest. On the other hand, we find that the potential of carbon tariffs to shift the economic burden of CO₂ emission reduction from abating developed regions to non-abating developing regions increases sharply between 2000 and 2007, but declines after the financial crisis.

Adaptation to transboundary climate risks in trade: Investigating actors and strategies for an emerging challenge

Authors

Bednar-Friedl, Birgit, , University Graz
Ms Knittel, Nina, researcher,

Mr. Raich, Joachim, researcher,
Mr. Adams, Kevin, researcher,

Presenter

Bednar-Friedl, Birgit, , University Graz

Abstract

There is growing recognition in the scholarly and policy communities that international trade can transmit climate risks across borders, requiring new forms of and approaches to adaptation. This systematic review synthesizes the knowledge found in the academic and grey literature on emerging approaches to adaptation for these transboundary climate risks (TCRs). We find a material difference in the literature on TCRs in agriculture as compared to industrial supply chains. While there is relatively more knowledge about how climate hazards translate into risks for specific crops and regions, research on industrial supply chains often identifies a set of climate hazards and risks but struggles to describe the transmission from hazards to risks. In terms of adaptation, the most commonly cited adaptation options in the agriculture sector include leveraging trade policy, adaptation planning and coordination, and knowledge creation. In industry, knowledge creation, research and development, and risk management are seen as essential, while adaptation planning and coordination are considered to be less relevant. For agriculture, governments and the international community are identified as key actors, while for industry, businesses and research are also seen as critical players. In both samples, the international governance structure is a major target of adaptation action, but measures also address the country of origin of the risk (source), the trade pathway, or the country of destination (sink). More research is needed on the effectiveness of the proposed adaptation actions, challenges associated with their implementation, and potential trade-offs with other policy goals.

Demography

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Climate change and rural-urban migration: Evidence from Turkish provinces (PRESENTER: Nathan Delacretaz ; DISCUSSANT: Julian Roeckert)
2. Extreme Weather Events and Permanent Internal Migration: Evidence from Mongolia (PRESENTER: Julian Roeckert ; DISCUSSANT: Roman Hoffmann)
3. Improving the Evidence Base on Climate Migration: Methodological Insights from Two Meta-Analyses (PRESENTER: Roman Hoffmann ; DISCUSSANT: Evgenij Komarov)
4. Untimely Destruction: Pestilence, War and Accumulation in the Long Run (PRESENTER: Evgenij Komarov ; DISCUSSANT: Nathan Delacretaz)

Speakers

Mr. Delacrétaz, Nathan, ,
Mr. Röckert, Julian, ,
Dr. Hoffmann, Roman, ,
Mr. Komarov, Evgenij, ,

Presentations

Climate change and rural-urban migration: Evidence from Turkish provinces

Authors

Mr. Delacrétaz, Nathan, ,
Prof. Lanz, Bruno, Assistant Professor, University of Neuchâtel
Prof. Piguet, Etienne, Full professor, University of Neuchâtel
Mr. Delju, Amir, Senior Scientific Officer, World Meteorological Organization

Presenter

Mr. Delacrétaz, Nathan, ,

Abstract

We quantify the relationship between drought and net migration rate in Turkey focusing on agricultural impacts inducing a displacement of rural population to urban provinces. We employ a rich dataset for 71 Turkish provinces from 2008 to 2018 together with precipitation records for more than 30 years to construct 12-month Standard Precipitation Index (SPI). Based on a set of fixed effect regressions, we study how random drought events affect net migration across a rural-urban typology of provinces. Results suggest that an increased prevalence of below-average precipitation at the provincial level is associated with a reduction of net migration rate (emigration) in rural areas. By contrast lower SPI tends to

increase net migration rate (immigration) in urban provinces. We conclude on the role of climate change in the process of urbanization and more generally on its impacts for population who rely on agricultural for subsistence.

Extreme Weather Events and Permanent Internal Migration: Evidence from Mongolia

Authors

Mr. Röckert, Julian, ,

Dr. Kraehnert, Kati, postdoc researcher, Potsdam Institute for Climate Impact Research (PIK)

Presenter

Mr. Röckert, Julian, ,

Abstract

In this article we study the effect of extremely harsh winter events on internal migration in Mongolia. The causal impact of extreme weather events on domestic migration dynamics are identified by utilizing exogenous variation in their intensity across time and space. We exploit an unusually long time series of province-level migration data, spanning the 1991-2018 period, in a two-way fixed-effects panel estimator. Results show that extreme winter events cause significant and sizeable permanent out-migration from affected areas. These effects are also mirrored in the overall population figures on the provincial as well as the district-level of Mongolia. In addition, the occurrence of extreme weather events is a strong predictor for reductions in the local population of pastoralist households. This suggests that the abandonment of traditional livelihoods is one channel through which climate affects permanent within-country migration.

Improving the Evidence Base on Climate Migration: Methodological Insights from Two Meta-Analyses

Authors

Dr. Hoffmann, Roman, ,

Ms Sedova, Barbora, Future Lab Leader, Potsdam Institute for Climate Impact Research

Dr. Vinke, Kira, Project Lead, Potsdam Institute for Climate Impact Research

Presenter

Dr. Hoffmann, Roman, ,

Abstract

The question whether and how climatic factors influence human migration has gained both academic and public interest in the past years. Based on two recently completed meta-analyses, this paper examines the quantitative literature on climate-related migration from a methodological perspective. In total, information from 127 original macro- and micro-level studies is retrieved to assess how different concepts and analytical methods shape our understanding of climate migration. We provide an overview of common methodological approaches and present evidence on their potential implications for the estimation of climate-related impacts. We identify five challenges, which relate to the i) measurement of migration and ii) climatic events, iii) integration and aggregation of data, iv) identification of causal relationships, and v) exploration of contextual factors and mechanisms. Advances in research and modelling are discussed together with best cases to provide guidance to researchers studying the climate-migration nexus.

Untimely Destruction: Pestilence, War and Accumulation in the Long Run

Authors

Mr. Komarov, Evgenij, ,
Prof. Gersbach, Hans, Professor,
Prof. Bell, Clive, Professor,

Presenter

Mr. Komarov, Evgenij, ,

Abstract

This paper analyses the effects of disease and war on the accumulation of human and physical capital. We employ an overlapping-generations framework in which young adults, motivated by old-age provision and altruism, make decisions about investments in schooling and reproducible capital. A poverty trap exists for a wide range of stationary war losses and premature adult mortality. If parents are altruistic and their sub-utility function for own consumption is more concave than that for the children's full income in adulthood, the only possible steady-state growth path involves full education. Otherwise, steady-state paths with incomplete schooling may exist, some of them stationary ones. We also examine, analytically and with numerical examples, a growing economy's robustness in a stochastic environment. The initial boundary conditions have a strong influence on outcomes in response to a limited sequence of destructive shocks.

Climate change and intertemporal trade-offs

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The Intergenerational Political Economy of Climate Change (PRESENTER: Arnaud Goussebaile ; DISCUSSANT: Oliver Kalsbach)
2. A Single Carbon Price: Really? (PRESENTER: Oliver Kalsbach ; DISCUSSANT: Christian Traeger)
3. Analytic Discussion of Emissions in IAMs (PRESENTER: Christian Traeger ; DISCUSSANT: Armon Rezai)
4. Optimal Carbon Pricing in General Equilibrium: Temperature caps and stranded assets in an extended annual DSGE model (PRESENTER: Armon Rezai ; DISCUSSANT: Arnaud Goussebaile)

Speakers

Dr. Goussebaile, Arnaud, ,

Mr. Kalsbach, Oliver, ,

Prof. Traeger, Christian, Economist, Department of Economics, the University of Oslo

Rezai, Armon, , Vienna University of Economics and Business

Presentations

The Intergenerational Political Economy of Climate Change

Author

Dr. Goussebaile, Arnaud, ,

Presenter

Dr. Goussebaile, Arnaud, ,

Abstract

Our modern society struggles to implement public policies limiting long-term global environmental externalities such as climate change. While the lack of international cooperation is a well known reason for this policy failure, the lack of intergenerational cooperation is hardly evoked. To deal with the latter issue, the present paper develops an overlapping generation model in a political economy setting with a long-term environmental externality. The presence of young generation voting power leads the government to implement time inconsistent policies, with environmental policies below their efficient level. On the other hand, the absence of young generation voting power leads to fairness issues when individual altruism toward descendants is low. In this case, environmental policies are efficient but weak. In a world with low individual altruism, the increase of young generation voting power promotes fairness between generations. It leads to the increase of transfer policies toward young generations within each period, the decrease of market interest rate and the strengthening of environmental policies.

A Single Carbon Price: Really?

Authors

Prof. Rausch, Sebastian, ,
Mr. Kalsbach, Oliver , ,

Presenter

Mr. Kalsbach, Oliver , ,

Abstract

This paper uses theoretical and numerical general equilibrium analyses to examine optimal carbon pricing policies when society values the well-being of future generations more than private agents do. We develop a Ramsey-type multi-sector growth model where output is produced from heterogeneous technologies. Technologies differ with regard to carbon intensity, the substitutability between and productivity of

Analytic Discussion of Emissions in IAMs

Author

Prof. Traeger, Christian, Economist, Department of Economics, the University of Oslo

Presenter

Prof. Traeger, Christian, Economist, Department of Economics, the University of Oslo

Abstract

The paper presents an analytic discussion of the core drivers of CO₂ emissions in several integrated assessment models of climate change (IAMs). I derive an approximate analytic solution for emissions in the widespread DICE model (conditional on the SCC). I compare its emission dynamics to the model of Golosov et al. (2014), whose numeric emission simulation and results I analyzed in detail. Finally, I analyze emissions in the Analytic Climate Economy (ACE) model (Traeger 2018), which relies on a variety of energy sectors that rely on capital, labor, and primary energy sources whose substitutability can differ across sectors and over time.

OPTIMAL CARBON PRICING IN GENERAL EQUILIBRIUM: Temperature caps and stranded assets in an extended annual DSGE model

Authors

Rezai, Armon, , Vienna University of Economics and Business
van der Ploeg, Rick, , University of Oxford

Presenter

Rezai, Armon, , Vienna University of Economics and Business

Abstract

The general equilibrium model developed by Golosov et al. (2014), GHKT for short, is modified to allow for additional negative impacts of global warming on utility and productivity growth, mean reversion in the ratio of climate damages to production, labour-augmenting technical progress, and population growth. We also replace the GHKT assumption of full depreciation of capital each decade by annual logarithmic depreciation. Furthermore, we allow the government to use a lower discount rate than the private sector. We derive a tractable rule for the optimal carbon price for each of these extensions. We then simplify the GHKT model by modelling temperature as cumulative emissions and calibrating it to Burke et al. (2015) damages. Finally, we consider how the rule for the optimal carbon price must be modified to allow for a temperature cap, and what this implies for stranded oil

and gas reserves. We illustrate our analytical results with a range of optimal policy simulations.

Behaviour, economics, and nature in the lab I

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The Behavioral Effects of Carbon Taxes -- Experimental Evidence (PRESENTER: Manuel Grieder ; DISCUSSANT: Tobias Vorlauffer)
2. Do PES affect social interactions in the long-run? (PRESENTER: Tobias Vorlauffer ; DISCUSSANT: Markus Ohndorf)
3. Expressive Voting vs. Self-Serving Ignorance (PRESENTER: Markus Ohndorf ; DISCUSSANT: Marius Alt)
4. Committing to behave pro-environmentally - An assessment of the demand for environmental regulation as commitment devices (PRESENTER: Marius Alt ; DISCUSSANT: Manuel Grieder)

Speakers

Dr. Grieder, Manuel, ,
Dr. Vorlauffer, Tobias, Mitarbeiter, Universität Osnabrück
Dr. Ohndorf, Markus, ,
Mr. Alt, Marius, ,

Presentations

The Behavioral Effects of Carbon Taxes -- Experimental Evidence

Authors

Dr. Grieder, Manuel, ,
Ms Baerenbold, Rebekka, PhD Candidate, University of Basel
Dr. Schmitz, Jan, Assistant Professor, Radboud University
Prof. Schubert, Renate, Professor, ETH Zurich

Presenter

Dr. Grieder, Manuel, ,

Abstract

Carbon taxes are a prominent policy instrument for decreasing the consumption of CO₂-intensive goods in order to reduce the negative external effects involved in the production or consumption of such goods. A tax leads to higher consumer prices, which typically lowers consumption. In this paper we provide evidence from laboratory experiments showing that for directly lowering consumption, carbon taxes may be less effective than assumed because of unintended behavioral effects. Especially earmarking the revenues of a carbon tax for environmental purposes---a practice that is popular with voters and policy makers---can crowd out consumers' intrinsic motivation to avoid negative externalities. If this is the case, a carbon tax not only increases consumer prices but also raises consumers' willingness to pay

for the taxed good, thus partly offsetting the price effect and lowering the consumption-reducing effect of the tax.

Do PES affect forest access and social preferences in the long-run? Randomized evidence from Uganda

Authors

Dr. Vorlaufer, Tobias, Mitarbeiter, Universität Osnabrück
Prof. Engel, Stefanie, Economist, Osnabruck University
Prof. de Laat, Joost, Economist, Utrecht University

Presenter

Dr. Vorlaufer, Tobias, Mitarbeiter, Universität Osnabrück

Abstract

This study analyzes the long-term impacts of a Payments for Environmental Services (PES) program in Uganda on forest resource sharing, associated norms and social preferences. While PES programs in the Global South are often seen as a conservation instrument that can also reduce poverty, little is known about how PES affect social interactions at the community level. Yet, monetary PES incentives for landowner beneficiaries may shift practices and social norms around natural resource sharing with neighbors, possibly causing conflict within communities. The studied PES program was implemented as a randomized control trial in western Uganda. An earlier study showed that the program substantially reduced deforestation, and that PES beneficiaries restricted forest access to neighbors while the program was in place. We collected survey and experimental data six years after the last payments were made. We find that the PES program did not lead to a lasting shift in resource sharing practices. Yet, social norms prescribing forest resource sharing are stronger in treatment than control villages. Moreover, we find that land owners in former PES villages exhibit more egalitarian social preferences than land owners in control villages.

Expressive Voting vs. Self-Serving Ignorance

Authors

Dr. Ohndorf, Markus, ,
Dr. Momsen, Katharina, ,

Presenter

Dr. Ohndorf, Markus, ,

Abstract

We experimentally examine the effect of self-serving information avoidance on democratic and individual decisions in the context of climate change mitigation. Subjects need to choose

between two allocations which differ in own payoffs and contributions to carbon offsets. In a between-subjects design, we vary the observability of the offset contribution, as well as the institutional decision context: individual consumption, dictatorship, and majority voting in small and large groups. If information is directly observable, we find robust evidence for expressive voting. However, in cases where information is initially unobservable but revealable without cost, there is no significant difference in selfish decisions between institutional decision contexts. We also find robust evidence for the exploitation of moral wiggle room via self-serving information avoidance in our consumption context, as well as with voting in large groups. Our results indicate that information avoidance effectively substitutes expressive ethical voting as an instrument to manage self-image on the part of the voter. This suggests that moral biases might be less likely in elections than previously thought.

Committing to behave pro-environmentally - An assessment of the demand for environmental regulation as commitment devices

Author

Mr. Alt, Marius, ,

Presenter

Mr. Alt, Marius, ,

Abstract

In this experiment, I analyze the demand for commitment to pro-environmental behavior, and assess if this demand is variable in the timing of the pro-environmental behavior and the regulatee size. Given that favoring environmental policies is driven by a motive to commit to consistent pro-environmental behavior, I assess this demand for three commitment devices, comprising of nudges, monetary incentives and punishments, by the means of a consequential real-effort task. Through exogenous treatment variation, I further test whether the demand for commitment is affected a) by the time gap between decision and behavior, and b) by variations in the regulatee size. The findings show a large heterogeneity in demand for commitment devices across participants, which can be explained by behavioral drivers based on individual characteristics. The treatment variation shows that delaying the pro-environmental behavior increases demand particularly for time inconsistent participants. Increasing the regulatee size of commitment devices has the largest impact on the demand of conditional cooperative individuals, who are not averse to impose restrictions on others' behavior.

Revealed preferences

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Valuation of urban biodiversity as an environmental good (PRESENTER: Leonie Ratzke ; DISCUSSANT: Marie Lautrup)
2. Perceived flood risk and its effect on house prices (PRESENTER: Marie Lautrup ; DISCUSSANT: Anna Maccagnan)
3. Was the Trip Worth It? Do the travel costs of recreational visits to green/blue spaces predict experienced utility? (PRESENTER: Anna Maccagnan ; DISCUSSANT: Antonia Schwarz)
4. Capturing Heterogeneity in Individual Temperature Valuations: A Two-Stage Random Utility Approach (PRESENTER: Antonia Schwarz ; DISCUSSANT: Leonie Ratzke)

Speakers

Ms Ratzke, Leonie, ,
Ms. Lautrup, Marie, Ph.D.-student, University of Copenhagen
Dr. Maccagnan, Anna, ,
Dr. Schwarz, Antonia, ,

Presentations

Valuation of urban biodiversity as an environmental good

Author

Ms Ratzke, Leonie, ,

Presenter

Ms Ratzke, Leonie, ,

Abstract

Biodiversity influences human well-being through multiple pathways. The role of biodiversity can range from a regulator, which underpins ecosystem processes, over biodiversity as final ecosystem service to a final good that creates well-being directly.

Despite a rapid urbanization trend, relatively little research on the subject has been carried out in an urban context, where it is of special importance to disentangle the amenity value of biodiversity from its functional role. Information on Willingness to Pay (WTP) for biodiversity can help to identify potential synergies and trade-offs and to provide efficient urban biodiversity policies and management.

Thus, I investigate heterogeneous preferences for biodiversity as an environmental good and apply a revealed preference approach by combining a novel satellite based biodiversity indicator and conventional ground based biodiversity indicators with a real estate dataset

comprising around 200,000 unique entries of rental and sales transactions of apartments in a hedonic pricing analysis.

I find that WTP for biodiversity as environmental good is positive, economically relevant and higher for urban dwellers above the age of 60 than for younger residents. Urban biodiversity conservation and enhancement might thus result in co-benefits for the local urban population.

Perceived flood risk and its effect on house prices

Authors

Ms. Lautrup, Marie, Ph.D.-student, University of Copenhagen

Mr. Matthiesen, Lasse, Ph.D.-student, University of Copenhagen

Prof. Jacobsen, Jette Bredahl, Professor, University of Copenhagen

Mr. Panduro, Toke Emil, Senior Researcher , Aarhus University

Presenter

Ms. Lautrup, Marie, Ph.D.-student, University of Copenhagen

Abstract

In this paper, we investigate changes in risk perception due to information changes regarding coastal flood risk and how that effects house prices. The risk is not easily observed and people may use a multitude of information sources to form a perception of the flood risk. We suggest that it is this risk perception rather than an objective risk that influences house prices. The analysis is based on a quasi-experimental difference-in-difference design, in which the publication of detailed public flood maps in 2012 and a storm flood event in 2013 in Denmark are used as events to compare flooded and non-flooded houses and houses in flood risk, before and after the events.

We find that flood prone houses located from zero to two meters above sea level have a 9.7 % price reduction compared to non-flood prone houses in the same municipality. Estimates show that publications of flood maps do not in itself impact house prices. The information of flood risk is updated when a storm flood event takes place and then house prices drop 22% for flooded houses. The flood event information effect vanishes after three years.

We conclude that that house prices are effected by different pieces of information regarding flood risk, and these jointly form a risk perception.

Was the Trip Worth It? Do the travel costs of recreational visits to green/blue spaces predict experienced utility?

Authors

Prof. Börger, Tobias, ,

Dr. Maccagnan, Anna, ,

Dr. White, Mathew, Senior Scientist, University of Vienna

Dr. Elliott, Lewis R., Lecturer, University of Exeter

Dr. Taylor, Tim, Senior Lecturer, University of Exeter

Presenter

Dr. Maccagnan, Anna, ,

Abstract

This paper uses data on 3,675 recreational visits to green/blue spaces in England to compare visit travel costs with self-reported experienced utility. Data were collected as part of the nationally representative Monitor of Engagement with the Natural Environment (MENE)

survey (2014/15-2017/18). Analyses explored whether travel costs, which reflect the predicted utility of a visit, are a good predictor of ex-post experienced utility operationalised as visit satisfaction. Travel costs take into account both vehicle running costs and the opportunity cost of time, and analyses controlled for visit frequency and personal characteristics. Results found a positive association between travel cost and visit satisfaction for visits involving motorised transport, but no association for visits where people walked to the destination. Given that these represented 52% of all visits, results question the use of the TCM in valuing local green/blue spaces where most visits involve walking to the destination.

Capturing Heterogeneity in Individual Temperature Valuations: A Two-Stage Random Utility Approach

Author

Dr. Schwarz, Antonia, ,

Presenter

Dr. Schwarz, Antonia, ,

Abstract

This paper investigates the importance of preference heterogeneity in driving individuals' temperature valuations and their willingness to pay (WTP) for mitigation of global warming. I apply a two-stage random utility sorting model to analyse location-choice decisions, drawing on survey data of Mexican migration to the United States (U.S.) The econometric model captures both observed heterogeneity related to clinal (long-term acclimatisation) and demographic characteristics of the migrant and unobserved preference heterogeneity in temperatures. The first stage consists of a mixed logit model of the discrete-location choice, controlling for the cost of migration, the prevalence of migrant networks and Metropolitan Statistical Area (MSA) fixed effects. Heterogeneous preferences are modelled using interaction effects and allowing for random individual variation in climate regressors, capturing unexplained individual-taste variation. Evaluation of the mixed logit model follows a Bayesian estimation procedure. In the second stage, estimated MSA-specific fixed effects, capturing destination-specific mean utility, are regressed on local amenities. On average, I find migrants to value warmer winters and cooler summers. Further, the results demonstrate significant differences in the marginal willingness to pay (MWTP) for friendlier summer temperatures across both demographic and clinal characteristics, lending support to the hypothesis of clinal preference heterogeneity playing an important part in forming individuals' temperature valuations. I supplement these results with estimates of the WTP for projected future temperature changes. Increases in summer temperatures are estimated to cause welfare losses of between US\$1,245 and \$1,755 per person per year. At the same time, warmer winter temperatures increase people's welfare only by between \$102 and \$193 (per person and year). Moreover, the predictions highlight that heterogeneity plays an important part in driving individuals' WTP for climate change. Insofar as the WTP for the abatement of global warming is largest among individuals aware of the negative impacts of heat, measurements derived from populations with access to air conditioning and relatively moderate temperatures will underestimate the WTP for climate change mitigation.

Climate policies

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Lobbying, Time Preferences and Emission Tax Policy (PRESENTER: Teun Schrieke ; DISCUSSANT: Robert Ritz)
2. Overlapping Climate Policies (PRESENTER: Robert Ritz ; DISCUSSANT: Simon Feindt)
3. Understanding Regressivity: Challenges and Opportunities of European Carbon Pricing (PRESENTER: Simon Feindt ; DISCUSSANT: Carolyn Fischer)
4. Intensity-based rebating of emissions revenues (PRESENTER: Carolyn Fischer ; DISCUSSANT: Teun Schrieke)

Speakers

Mr. Schrieke, Teun, ,
Dr. Ritz, Robert, ,
- Feindt, Simon, ,
Professor Fischer, Carolyn, , Vrije Universiteit Amsterdam

Presentations

Lobbying, Time Preferences and Emission Tax Policy

Authors

Mr. Schrieke, Teun, ,
Dr. Swart, Julia, assistant professor, Utrecht University School of Economics
Prof. Botzen, Wouter, Full professor, Institute for Environmental Studies, Vrije Universiteit Amsterdam

Presenter

Mr. Schrieke, Teun, ,

Abstract

We develop a theoretical model to study the combined effect of lobbying and time preferences on emission tax policies. With a two-period model, we show that the influence of lobbying, by both dirty industries and environmental organizations, on the equilibrium tax decreases with the time horizon of the policymakers. An extension of the model to four periods shows that social welfare maximizing policymakers may implement

a tax higher than the marginal cost in the first period to speed up the transition to green technology. A

policymaker influenced by lobby groups may, however, do the opposite, because this government wants to

extract future lobby contributions and future lobbying decreases when more firms invest in green technology. The results of this study indicate that countries with powerful lobby groups and a short-sighted government are not likely to implement the optimal carbon tax. The influence of lobbying in combination with time preferences may explain some of the diversity in carbon taxes that we observe in practice. The results lead to the policy suggestion to create climate clubs in which carbon taxes are combined with trade policies. The immediate economic implications of trade policies can create an incentive for short-sighted governments to participate.

Overlapping Climate Policies

Authors

Perino, Grisha, , University Hamburg

van Benthem, Arthur, , The Wharton School

Dr. Ritz, Robert, ,

Presenter

Dr. Ritz, Robert, ,

Abstract

Major carbon-pricing systems in Europe and North America involve multiple jurisdictions (countries or states). Individual jurisdictions often pursue additional initiatives

Understanding Regressivity: Challenges and Opportunities of European Carbon Pricing

Authors

Kornek, Ulrike, , Mercator Institute

Prof. Sterner, Thomas, Professor of Environmental Economics, EfD Environment for Development initiative, University of Gothenburg

- Feindt, Simon, ,

- Labeaga, José, Professor,

Dr. Ward, Hauke, Assistant professor,

Presenter

- Feindt, Simon, ,

Abstract

We examine how a European carbon price will affect citizens by studying the carbon tax incidence in 23 countries of the EU. At the national level, the distributional impact prior to revenue recycling is largely neutral, sometimes progressive. At an aggregate EU level, however, the impact is regressive because some low-income countries would be highly impacted if subjected to a common EU carbon price. While national redistribution can do much to make EU incidence progressive, we show that European-wide redistribution is more effective for especially affected households. We offer two indicators to offset regressive distributional effects of EU climate policy such as the recently proposed Green Deal. The first renders the tax burden proportional; the second focuses on compensating the households most seriously affected. Including both indicators in European redistribution makes for a

better representation of the initial burden of carbon pricing and could make the policy more salient for citizens.

Intensity-based rebating of emissions revenues

Authors

Professor Fischer, Carolyn, , Vrije Universiteit Amsterdam

Prof. Böhringer, Christoph, Researcher, University of Oldenburg

Prof. Rivers, Nic, Canada Research Chair, University of Ottawa

Presenter

Professor Fischer, Carolyn, , Vrije Universiteit Amsterdam

Abstract

Carbon pricing policies worldwide are increasingly coupled with direct or indirect subsidies for emission-intensive and trade-exposed firms. We analyze the incentives created by two novel forms of rebating that reward additional emissions intensity reductions---one given in proportion to output (intensity-based output rebating, IBOR) and another that rebates a share of emissions payments made (intensity-based emissions rebating, IBER). We contrast them with more common approaches like output-based rebating (OBR), abatement-based rebating (ABR), or lump-sum rebating (LSR). We rank the different rebate schemes in terms of output protection, emission intensity reduction, and emissions price pressure. Comparing revenue-neutral schemes, given the same emissions price, IBOR incentivizes the most intensity reductions, while ABR incentivizes the most output reductions, and OBR puts the least pressure on output (and emissions); IBER lies somewhat in between, offering some output protection but introducing an additional distortion by implicitly subsidizing emissions while incentivizing intensity reductions. Given the same sectoral emissions target, IBOR and IBER lead to the same output and intensity as conventional OBR, but with lower emissions prices. We supplement partial equilibrium theoretical analysis with numerical simulations to assess the performance of different mechanisms in a multi-sector general equilibrium model that accounts for economy-wide market interactions.

Climate and innovation

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Climate Protection Potentials of Digitalized Production Processes: Microeconometric Evidence? (PRESENTER: Janna Axenbeck ; DISCUSSANT: Snorre Kverndokk)
2. Transition to Carbon Capture and Storage Technologies (PRESENTER: Snorre Kverndokk ; DISCUSSANT: Prudence Dato)
3. Optimal Mix of Policy Instruments and Green Technology Transitions (PRESENTER: Prudence Dato ; DISCUSSANT: Luc Rouge)
4. Climate and directed technology transfers with a Hotellian resource (PRESENTER: Luc Rouge ; DISCUSSANT: Janna Axenbeck)

Speakers

Ms Axenbeck, Janna, ,
Dr. Kverndokk, Snorre, , Frisch Centre
Dr. Dato, Prudence, ,
Dr. ROUGE, Luc, ,

Presentations

Climate Protection Potentials of Digitalized Production Processes: Microeconometric Evidence?

Authors

Ms Axenbeck, Janna, ,
Dr. Niebel, Thomas, Senior Researcher, ZEW Mannheim

Presenter

Ms Axenbeck, Janna, ,

Abstract

Although information and communication technologies (ICT) consume energy themselves, they are considered to have the potential to improve overall energy efficiency within economic sectors. While previous empirical evidence is based on aggregated data, this is the first large-scale empirical study on the relationship between ICT and energy efficiency at the firm level. For this purpose, we employ administrative panel data on 28,734 manufacturing firms from German Statistical Offices of the Federation and the Federal States collected between 2009 and 2017. Using software capital intensity as an indicator for the firm-level degree of digitalization, we analyze whether an increase thereof relates to energy efficiency improvements. Results confirm the statistically significant negative link between software

capital and energy use. However, the relationship is highly inelastic and does not suggest economic relevance. Therefore, we conclude that effects of ICT on energy use are not large enough to substantially improve energy efficiency.

Transition to Carbon Capture and Storage Technologies

Authors

Golombek, Rolf, , Frisch Centre

Greaker, Mads, , OsloMet University

Dr. Kverndokk, Snorre, , Frisch Centre

Dr. Ma, Lin, Researcher, Cicero

Presenter

Dr. Kverndokk, Snorre, , Frisch Centre

Abstract

According to the IPCC and IEA, Carbon Capture and Storage (CCS) is a key technology in the battle to reduce CO₂ emissions from power and industrial sources. Investments in CCS have, however, not been in line with neither IPCC

Optimal Mix of Policy Instruments and Green Technology Transitions

Authors

Krysiak, Frank, , University of Basel

Dr. Dato, Prudence, ,

Presenter

Dr. Dato, Prudence, ,

Abstract

Although technological innovation is a key solution to fighting climate change, there are several challenges that need to be addressed for a green technology transition including market failures and the dynamic of the market structure. In the absence of public policies, markets alone are not sufficient to provide the right incentives for the investment and diffusion of green technologies. In this context, what is the optimal combination of policy instruments that provides the right incentives to invest in green technologies? In this paper, we address this question by studying the interrelations between market structure, r&d policy, and environmental policy to find the optimal mix of policy instruments. First, we conduct a welfare comparison and find that the socially desirable market structure is not a single solution and depends on the levels of damage and innovation. Second, given the socially desirable market structure, we analyse the optimal policy instruments that need to be implemented. We show that the taxation and subsidisation scheme is different depending on the market structure and the environmental damages. Finally, we study the fiscal implications of the optimal policy instruments. We show that both the market structure and the level of environmental damages influences the budget surplus or deficit. The regulator can use the fiscal implications in addition to social welfare, to decide on which market structure to implement, and at which stage of the green technology transition process. As policy implications, we would suggest that the regulator should implement a mix of policy instruments that should change over time depending on how the incumbents and entrants behave in the technology market. Therefore, the regulator should not commit to a static combination of policy instruments.

Climate and directed technology transfers with a Hotellian resource

Authors

Grimaud, André, , University of Toulouse

Dr. ROUGE, Luc, ,

Presenter

Dr. ROUGE, Luc, ,

Abstract

Transferring renewable energy technologies to poor countries is considered a way to struggle against climate change. This paper, however, shows that, under usual assumptions of the growth and climate literature, this may accelerate global warming.

We use an endogenous growth framework with directed technical change in a Hotellian context. Two production sectors coexist: one is fossil-based and yields carbon emissions, the other one uses a clean renewable resource. The economy benefits from a renewable-oriented technology transfer. This yields complex intertemporal reallocations. In the general case, whether the production sectors are complements or substitutes, the transfer accelerates carbon emissions and hence may reduce welfare as it is bad for the climate. One exception occurs when the fossil and renewable sectors are good substitutes and the transfer is of relatively low magnitude; here, emissions can be slowed down.

Thematic Session: Risk and sustainability governance in international crop value chains

25th June 2021, 12:30 PM - 02:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Agrarian Change, Livelihood Dynamics and Welfare Outcomes in Plantation Farm Households: Evidence from Indonesia
2. New insights on the use of the Fairtrade social premium
3. Health Effects of the Amazon Soy Moratorium
4. Coping with locusts and COVID-19 in rural Africa: An analysis of household-level coping strategies to food insecurity in Kenya, Namibia and Tanzania

Speakers

Dr. Sibhatu, Kibrom, ,

Dr. Sellare, Jorge, ,

- Damm, Yannic Rudá, ,

Dr. Rukundo, Emmanuel , Senior Researcher, University of Bonn

Dr. Gerber, Nicolas, Senior Researcher, Center for Development Research, University of Bonn

Presentations

Agrarian Change, Livelihood Dynamics and Welfare Outcomes in Plantation Farm Households: Evidence from Indonesia

Authors

Dr. Sibhatu, Kibrom, ,

- Kühling, Marlene, Researcher, AFC Agriculture and Finance Consultants GmbH

Prof. Alamsyah, Zulkifli, Professor, Department of Agribusiness, University of Jambi, Jambi 36361, Indonesia

Presenter

Dr. Sibhatu, Kibrom, ,

Abstract

Millions of farm households in the tropics are experiencing rapid agrarian change by converting traditional land-uses for high-value plantation crops. Recent studies examined rural livelihood dynamics under the traditional peasant environment, where the production of annual crops is the primary means of living. Using three-wave panel data of oil palm and rubber farmers from Jambi, Indonesia, we expand this literature by providing the first quantitative evidence on the dynamics, transitions, and determinants of livelihood strategies in highly specialized and commercial smallholder farm households. El Ni

New insights on the use of the Fairtrade social premium

Author

Dr. Sellare, Jorge, ,

Presenter

Dr. Sellare, Jorge, ,

Abstract

Fairtrade standards differentiate themselves from other sustainability standards such as Rainforest Alliance and UTZ by demanding that buyers pay to farmers at least a minimum price and a Fairtrade social premium

Health Effects of the Amazon Soy Moratorium

Authors

- Damm, Yannic Rudá, ,

Dr. Gerber, Nicolas, Senior Researcher, Center for Development Research, University of Bonn

Prof. Börner, Jan, Professor, Institute for Food and Resource Economics, Center for Development Research, University of Bonn

Presenter

- Damm, Yannic Rudá, ,

Abstract

The Amazon Soy Moratorium (ASM) created in 2006 is a private-sector initiative to reduce deforestation for soy plantations in the Amazon biome. It has proven successful in that regard, with deforestation for soy decreasing to about 1% until 2014. The agreement does not apply to the neighboring Cerrado biome though, where soy expansion into native vegetation ranged up to 40% in some states from 2007-2013.

This zero-deforestation commitment therefore introduces a spatial discontinuity, establishing a natural experiment, where some rules apply on one side of the biome border but not on the other. Using data at close distance to the discontinuity, we estimate human health externalities of this conservation policy. We show that the change in deforestation pressure from the ASM translates into number of fires measured, which is part of the primary forest-to-cropland conversion through slash-and-burn. As a consequence, particulate matter concentrations in the air, which is a main component in fire smoke responsible for adverse health effects, also decreased. This has positive health benefits for the population living in the Amazon biome.

Coping with locusts and COVID-19 in rural Africa: An analysis of household-level coping strategies to food insecurity in Kenya, Namibia and Tanzania

Authors

Dr. Rukundo, Emmanuel , Senior Researcher, University of Bonn

Prof. Börner, Jan, Professor, Institute for Food and Resource Economics, Center for Development Research, University of Bonn

Mr. Tabe-Ojong, Martin Paul Jr, Doctoral Student, University of Bonn

Dr. Gebrekidan, Bisrat Haile, Agricultural Economist, University of Bonn

Prof. Heckeleei, Thomas , Professor, University of Bonn

Presenter

Dr. Rukundo, Emmanuel , Senior Researcher, University of Bonn

Abstract

COVID
across
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Policy Session: We need removals for net zero, but to what extent do we want them in the ETSs?

25th June 2021, 12:30 PM - 02:30 PM

Description

Governments are increasingly adopting targets to reach net-zero GHG emissions by mid-century in line with the goals of the Paris Agreement. Achieving these targets will require drastic emissions abatement across all sectors, some of which will likely face significant challenges based on the availability of mitigation technologies and significantly higher costs, raising competitiveness and distributional concerns. In addition, the IPCC Special Report on 1.5 Degrees finds that large-scale removals through negative emissions technologies (NETs) will be required to compensate for residual emissions from hard-to-abate sectors and for emissions overshoots that would otherwise take the planet beyond the carbon budgets consistent with the temperature targets of the Paris Agreement. The growing reliance on emissions trading systems (ETSs) as a central instrument to achieve reduction targets and the potential need for large-scale use of removals, particularly in the second half of the century, raise the question of interactions between ETS and the emerging market for removal units. What determines the ideal balance between abatement and removals on the decarbonisation path to net zero? Can/Should ETSs play a role in incentivising the R&D and upscaling of NETs, and if so how? Is it possible to harmonize the use of removals across different ETSs so as to better align existing carbon markets? Are all NETs created equal or should there be a distinction between nature-based versus technological options? Where does carbon capture utilisation and storage fit in this landscape?

The policy session will explore these questions with presentations from the EUI and ICAP followed by further inputs and discussion from a group of panellists who are engaged with these themes as academics and policymakers. Questions and comments from the audience will be actively encouraged throughout the session.

Organisers and Co-Chairs:
Simone Borghesi and Baran Doda

Panellists:
Sabine Fuss
Wilfried Rickels,
Henry Dieudonné-Demaria,
Damien Meadows

Speakers

Dr. Doda, Baran, Senior Advisor, International Carbon Action Partnership (ICAP)
Borghesi, Simone, , European University Institute
Prof. Fuss, Sabine , Head of working group Sustainable Resource Management and Global Change, Mercator Research Institute on Global Commons and Climate Change
Dr. Rickels, Wilfried, Direktor , Kiel Institute for the World Economy

Presentation

Keynote by Valentina Bosetti - David Pearce Lecture: What can Environmental Economics Contribute to the Energy Transition Debate? The Complex Landscape of Integrated Assessment Modelling

25th June 2021, 03:30 PM - 05:00 PM

Description

Prof. Valentina Bosetti, Bocconi University and Euro-Mediterranean Center on Climate Change

Valentina Bosetti is Full Professor at Bocconi University teaching environmental and climate change economics. She is senior scientist at the RFF CMCC European Institute on Economics and the Environment and collaborated with Fondazione Enrico Mattei from 2003 to 2018. Her main research interests are Natural Resources and Environmental Economics, Climate Change Economics and Innovation in Green Technologies. Currently she is working on a ERC project on Uncertainty and Climate Change (RISICO). This project aims at advancing substantially the way to model and to frame the climate change policy making process, focusing on the central role of uncertainty.

The session is hosted by Klaus Eisenack.

Speakers

Prof. Bosetti, Valentina, Full Professor, Bocconi University

Prof. Eisenack, Klaus, , Humboldt-Universität zu Berlin

Presentation

Biodiversity III

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. A PES scheme promoting forest biodiversity and carbon sequestration (PRESENTER: Johanna Kangas ; DISCUSSANT: Katarina Elofsson)
2. Ecological compensation of stochastic wetland biodiversity: national or regional policy schemes? (PRESENTER: Katarina Elofsson ; DISCUSSANT: Kira Lancker)
3. Consumers' love for marine biodiversity (PRESENTER: Kira Lancker ; DISCUSSANT: Melina Kourantidou)
4. Bioeconomic analysis accounting for environmental effects in data-poor fisheries: The Northern Labrador Arctic Charr (PRESENTER: Melina Kourantidou ; DISCUSSANT: Johanna Kangas)

Speakers

Ms Kangas, Johanna, ,
Prof. Elofsson, Katarina, Professor,
Dr. Lancker, Kira, ,
Dr. Kourantidou, Melina, ,

Presentations

A PES scheme promoting forest biodiversity and carbon sequestration

Authors

Ollikainen, Markku, , University of Helsinki
Ms Kangas, Johanna, ,

Presenter

Ms Kangas, Johanna, ,

Abstract

Forests can play a significant role both in halting biodiversity loss and in mitigating climate change. A variety of payments for ecosystem services (PES) schemes exists to promote biodiversity conservation in forests. These schemes could be used to strengthen the role of forests as carbon sinks as well. This paper analyzes the implications of supplementing a PES scheme that targets boreal forest biodiversity with a carbon premium that is paid to landowners for providing carbon benefits in addition to biodiversity conservation. We use a site selection framework to examine how the proposed payment scheme impacts the promotion of both targets. We compare a case where the enrolment is done solely based on biodiversity values to a case where the enrolment is done based on both biodiversity and carbon benefits with an increased conservation budget. Furthermore, we examine the choice under both constant and price-elastic supply. We find that with constant supply, including carbon sequestration in the optimization favors sites with good carbon sequestration potential

at the expense of biodiversity values, but the implications to site enrolment are rather minor. The conservation network is of higher quality, both ecologically and in terms of carbon storage, when the supply of sites increases with higher financial incentives. Younger stands may be slightly preferred at the expense of old-growth stands. Overall, risks to losing significant ecological values from the conservation network due to the premium are negligible.

Ecological compensation of stochastic wetland biodiversity: national or regional policy schemes?

Authors

Prof. Elofsson, Katarina, Professor,

Dr. Hiron, Matthew, Researcher, Swedish University of Agricultural Sciences

Prof. Pärt, Tomas, Professor, Swedish University of Agricultural Sciences

Presenter

Prof. Elofsson, Katarina, Professor,

Abstract

The aim of this study is to compare policy schemes for ecological compensation of exploited wetlands, applied at national and regional level. We study whether uncertainty, due to natural variability and measurement difficulties, motivates that compensation must be implemented in the same region as that of the exploited site, or whether it rather motivates nation-wide compensation schemes. For this purpose, we develop an empirical, chance-constrained programming model of cost-effective wetland management. The model is spatially differentiated, and accounts for heterogeneity in habitat quality across wetland types and regions. Habitat quality is measured by three alternative indices, estimated from voluntarily reported data on breeding bird species observations. The model is used to identify trading ratios between exploitation, restoration and creation of wetlands in different regions. The theoretical analysis shows that regionally restricted schemes are more expensive, and can imply that national conservation aims are not met because habitat quality correlation across regions is neglected. Empirical results confirm the higher costs of regional schemes, in particular when the decision maker wants to avoid uncertainty and, at the same time, prioritize rarer species. Contrary to expectation, regionalized schemes would overachieve in relation to national targets. The reason is that regional schemes prevent cost-effectiveness and risk reduction across regions, necessitating expensive efforts to increase expected aggregate habitat quality.

Consumers' love for marine biodiversity

Authors

Dr. Lancker, Kira, ,

Dr. Bronnmann, Julia, Assistant Professor, University of Southern Denmark (SDU)

Presenter

Dr. Lancker, Kira, ,

Abstract

In a marine multi-species environment, consumers' decisions may introduce interactions between species beyond biological ecosystem links. The theoretical literature shows that consumer preferences for variety can trigger a sequential collapse of fish stocks. However, consumer preferences are not yet fully understood empirically: It is uncertain how variety-loving consumers are.

In this article, we present an aggregation procedure to study consumer preferences in a highly diverse marine system. In a first step, we use co-integration analysis to find groups of species that consumers find substitutable. In a second step, we use a quadratic almost ideal demand system (QUAIDS) to estimate price elasticities between these groups. We use these to quantify and compare welfare losses and spillovers from species-specific price shocks that may for example result from restoration efforts. Our case study from Senegal across 28 species reveals evidence that consumers value the ocean as a source of diversity on their plates. Thus, efforts to maintain biodiversity are justified by economic reasons in addition to ethical ones.

Bioeconomic analysis accounting for environmental effects in data-poor fisheries: The Northern Labrador Arctic Charr

Author

Dr. Kourantidou, Melina, ,

Presenter

Dr. Kourantidou, Melina, ,

Abstract

Fisheries managers are calling for more nuanced understandings of the complex interactions between exploitation and environmental variability. In data poor settings, this need is even larger. In this paper we develop a bioeconomic model for the Northern Labrador Arctic Charr out of Nain bay, a data-deficient fishery, where only catch and effort data are available. We expand the standard bioeconomic model to incorporate climate variability into growth, using the Newfoundland and Labrador composite climate index anomaly. We use an optimization procedure to derive key parameters necessary for the bioeconomic analysis and identify the optimal equilibrium conditions for the model with and without climate variability.

Accounting for climate variability results in a slightly higher optimal harvest, effort and stock level. The most recently available index anomaly for 2014, yields a socially optimal effort level of 591 fishing weeks, corresponding to a harvest of 156,920 kg, suggesting that the stock was largely underharvested in that year and that fishing effort was way below optimal. In examining how shifts in temperature affect equilibrium conditions we find that a temperature increase leads to a higher optimal effort level and higher net benefits at steady state. Despite the fact that a number of uncertainties and data and knowledge gaps limit the accuracy of our estimates, this is the first effort to identify the equilibrium harvesting conditions for this, currently non-profitable, fishery that has a large social, cultural and potential economic value for the region. The methodology developed can be applicable to other data-deficient fisheries with similar challenges and unknowns, to advance the understanding of socially optimal harvesting and interactions with environmental variability.

Water II

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Estimating the Total Economic Costs of Nutrient Emission Reduction Policies to Halt Eutrophication in the Great Lakes (PRESENTER: Jorge Garcia ; DISCUSSANT: Nick Hanley)
2. Increasing the cost-effectiveness of water quality improvements through pollution abatement target-setting at different spatial scales (PRESENTER: Nick Hanley ; DISCUSSANT: Daniel Crespo Estage)
3. Integrating ecosystem benefits for sustainable water allocation in hydroeconomic modeling (PRESENTER: Daniel Crespo Estage ; DISCUSSANT: Davide Bazzana)
4. Impact of water and energy infrastructure on local well-being: an agent-based analysis of the water-energy-food nexus (PRESENTER: Davide Bazzana ; DISCUSSANT: Jorge Garcia)

Speakers

Dr. Garcia, Jorge, ,
Hanley, Nick, , University of St Andrews
Mr. Crespo Estage, Daniel, ,
Dr. Bazzana, Davide, ,

Presentations

Estimating the Total Economic Costs of Nutrient Emission Reduction Policies to Halt Eutrophication in the Great Lakes

Authors

Brouwer, Roy, , University of Waterloo
Dr. Garcia, Jorge, ,
Dr. Pinto, Rute, Post-doctoral fellow, University of Waterloo

Presenter

Dr. Garcia, Jorge, ,

Abstract

The Great Lakes (GL) in North America are among the largest freshwater resources on this planet facing serious eutrophication problems as a result of excessive nutrient loadings due to population and economic growth. More than a third of Canada

Increasing the cost-effectiveness of water quality improvements through pollution abatement target-setting at different spatial scales

Authors

Czajkowski, Mikołaj, , University of Warsaw

Hanley, Nick, , University of St Andrews
Zylicz, Tomasz, , Warsaw University
Mr. Budziński, Wiktor, PhD student,
Dr. Andersen, Hans, Researcher,
Dr. Blicher-Mathiesen, Gitte, Researcher,
Prof. Elofsson, Katarina, Professor,
Prof. Hagemeyer, Jan, Professor,
Prof. Waś, Adam, Professor,
Dr. Wilamowski, Maciej, Researcher,
Dr. Thodsen, Hans, Researcher,
Prof. Hasler, Berit, Professor,
Prof. Humborg, Christoph, Professor,
Prof. Smart, James, Professor,
Dr. Smedberg, Erik, Researcher,

Presenter

Hanley, Nick, , University of St Andrews

Abstract

We investigate the potential gains in cost-effectiveness from changing the spatial scale at which nutrient reduction targets are set for the Baltic Sea, focusing on nutrient loadings associated with agriculture. Costs of achieving loadings reductions are compared across five levels of spatial scale, namely the entire Baltic Sea; the marine basin level; the country level; the watershed level; and the grid square level. A novel highly disaggregated model, which represents decreases in agricultural profits, changes in root zone N concentrations and transport to the Baltic Sea is proposed, and is then used to estimate the gains in cost-effectiveness from changing the spatial scale of nutrient reduction targets. The model includes 14 Baltic Sea marine basins, 14 countries, 117 watersheds and 19,023 10-by-10 km grid squares. Grid square-level interactions between the reductions of mineral fertilizer and manure application to each of 10 crop types are considered

Integrating ecosystem benefits for sustainable water allocation in hydroeconomic modeling

Authors

Albiac, José, , CITA-University of Zaragoza
Dinar, Ariel, , University of California, Riverside
Dr. Kahil, Taher, Researcher, IIASA
Dr. Esteban, Encarna, Economist, University of Zaragoza
Mr. Crespo Estage, Daniel, ,

Presenter

Mr. Crespo Estage, Daniel, ,

Abstract

The increasing concern about the degradation of water-dependent ecosystems calls for considering ecosystems benefits in water management decision-making. Sustainable water management requires adequate economic and biophysical information on water systems supporting both human activities and natural ecosystems. This information is essential for assessing the social welfare of water allocation options. This paper evaluates various alternative water management policies by including the spatial and sectoral interrelationships between the economic and environmental uses of water. A hydroeconomic model is developed to analyze water management policies under a range of water availability

situations in the Ebro Basin of Spain. The results show that policies accounting for environmental benefits achieve higher social welfare levels. The introduction of water markets is a policy that maximizes the private benefits of economic activities, but disregards environmental benefits. The results show that the current institutional policy where stakeholders cooperate inside the water authority, provides lower private benefits but higher environmental benefits than markets, especially under severe droughts. However, the water authority is not allocating enough environmental flows to optimize social welfare. The protection of environmental flows in the Ebro Basin is a compelling strategic decision because of the imminent climate change impacts on water availability in coming decades.

Impact of water and energy infrastructure on local well-being: an agent-based analysis of the water-energy-food nexus

Authors

Dr. Bazzana, Davide, ,
Prof. Gilioli, Gianni, Professor, Università degli Studi di Brescia
Prof. Zaitchik, Benjamin, Professor, Johns Hopkins University

Presenter

Dr. Bazzana, Davide, ,

Abstract

Investments in infrastructure development are considered a key for economic growth, but their impact on well-being of rural populations is controversial. We propose an agent-based model to study the impact that water canals and electric grid development have on the Water-Energy-Food (WEF) nexus in a rural area. The analysis addresses the effect of infrastructure construction on basic needs satisfaction and shows the emergence of a competition for land between rural communities and water and energy sectors. Environmental heterogeneity is found to play a critical role, because physical exclusion and economic constraints may reduce the benefits for government planning processes, as they emphasize the potential for infrastructure to cause appreciable, even if unintended, harm to local rural communities. The use of agent-based analysis like that presented here, can help to minimize unintended consequences and to inform compensation policies.

Choice models II

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Nudging and Subsidizing Farmers to Foster Smart Water Meter Adoption (PRESENTER: Benjamin Ouvrard ; DISCUSSANT: Thomas Lundhede)
2. Assessing the value of surface water and groundwater quality improvements when time lags and outcome uncertainty exist (PRESENTER: Thomas Lundhede ; DISCUSSANT: Søren Bøye Olsen)
3. Incorporating time lags and uncertainty in cost-benefit analysis of water quality improvements – a case study of Limfjorden, Denmark (PRESENTER: Søren Bøye Olsen ; DISCUSSANT: George Gardner)
4. Is Shoreline Armoring a Response to Marsh Migration? Modeling the Influence of Coastal Marshes on Private Adaptation Decisions (PRESENTER: George Gardner ; DISCUSSANT: Benjamin Ouvrard)

Speakers

Mr. OUVRARD, Benjamin, ,
Dr. Lundhede, Thomas, Associate Professor,
Prof. Olsen, Søren Bøye, , University of Copenhagen
Dr. Gardner, George, Economic Analyst, ICF

Presentations

Nudging and Subsidizing Farmers to Foster Smart Water Meter Adoption

Authors

Mr. OUVRARD, Benjamin, ,
Ms Préget, Raphaële, Researcher, INRAE, CEEM
Mr. Reynaud, Arnaud, Researcher, TSE-R, INRAE
Ms Tuffery, Laetitia, Postdoc, INRAE, CEEM

Presenter

Mr. OUVRARD, Benjamin, ,

Abstract

In a global context of increasing water scarcity, reducing water use in the agricultural sector is one of the spearheads of sustainable agricultural and environmental policies. New technologies such as smart water meters are promising tools for addressing this issue, but their voluntary adoption by farmers has been limited. Conducting a discrete choice experiment with randomized treatments, we test two policy instruments designed to foster the voluntary adoption of smart water meters: a conditional subsidy and green nudges. The conditional subsidy is offered to farmers who adopt a smart meter only if the rate of adoption in their geographic area is sufficiently high (25%, 50% or 75%). In addition, we implement informational nudges by providing farmers specific messages regarding water scarcity and

water management. With the responses of 1,272 French farmers, we show that both policy instruments are effective tools for fostering smart water meter adoption. Surprisingly, our results show that the willingness to pay for the conditional subsidy does not depend on the collective adoption threshold. We also demonstrate that farmers who receive an informational nudge are more likely to opt for a smart water meter. This result calls for a careful joint design of these two policy instruments.

Assessing the value of surface water and groundwater quality improvements when time lags and outcome uncertainty exist

Authors

Brouwer, Roy, , University of Waterloo
Prof. Olsen, Søren Bøye, , University of Copenhagen
Prof. Van Cappelen, Philippe, Professor,
Mr. Holmsgaard Larsen, Tobias, Research assistant,
Dr. Lundhede, Thomas, Associate Professor,
Dr. Jacobsen, Brian, Senior Researcher,
Dr. Cunha, Maria, Professor,
Dr. Dessirier, Benoit, Professor,
Prof. Jarsjö, Jerker, Professor,
Prof. Basu, Nandita, Professor,
Prof. Van Meter, Kim, Professor,

Presenter

Dr. Lundhede, Thomas, Associate Professor,

Abstract

This report summarizes the main results from a choice experiment survey addressing peoples

Incorporating time lags and uncertainty in cost-benefit analysis of water quality improvements – a case study of Limfjorden, Denmark

Authors

Prof. Olsen, Søren Bøye, , University of Copenhagen
Mr. Holmsgaard Larsen, Tobias, Research assistant,
Dr. Lundhede, Thomas, Associate Professor,
Dr. Jacobsen, Brian, Senior Researcher,

Presenter

Prof. Olsen, Søren Bøye, , University of Copenhagen

Abstract

Cost-benefit analyses are commonly applied to assess the net welfare effects of policies to improve surface water quality. These analyses often disregard the biophysical fact that from implementation of policy measures to resulting improvements on water quality there will typically be considerable time lags, and in many cases there is a risk that the measures will not actually lead to the expected improvement. Based on a case study, we show that explicitly accounting for such time lags and outcome uncertainty in the benefit estimation can have non-negligible impacts on cost-benefit analysis findings. Our analysis indicates that reaching the EU Water Framework Directive target for our case study will lead to large and robust welfare increases. Even if the target proves more difficult or more costly to reach than expected with known policy measures, our results suggest that attempting to do so will still

lead to a net welfare gain to society. Increasing time lags and uncertainty regarding water quality improvements do decrease the benefits, but the benefits still outweigh the aggregate costs of policy measures. Only in the worst case scenario, combining a long time lag and a high level of outcome uncertainty for the water quality improvement with relatively high costs of policy measures, we are close to a break-even. Hence, we hence do not find evidence supporting a case for disproportional cost exemption from the WFD target being relevant for the Limfjorden case.

Is Shoreline Armoring a Response to Marsh Migration? Modeling the Influence of Coastal Marshes on Private Adaptation Decisions

Authors

Dr. Gardner, George, Economic Analyst, ICF

Dr. Johnston, Robert, Professor of Economics, Clark University

Presenter

Dr. Gardner, George, Economic Analyst, ICF

Abstract

The value and vulnerability of salt marshes has led to efforts to ensure their preservation, including the preservation of marsh transgression zones (uplands onto which marshes can migrate) and restrictions on shoreline armoring. Coastal armoring involves the placement of hardened structures such as revetments and bulkheads along the shoreline. These structures can prevent coastal marshes from migrating onto adjacent uplands as sea levels rise, thereby causing marsh loss over time. Hence, efficient targeting of efforts to ensure marsh sustainability requires an understanding of where and why coastal armoring is likely to occur. This article develops a model that characterizes residential landowners

Energy storage

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Innovation Trends in Electricity Storage: What Drives Global Innovation? (PRESENTER: Siyu Feng ; DISCUSSANT: Mario Liebensteiner)
2. Do Subsidized Renewables Suppress Energy Storages and can Carbon Pricing be a Solution? (PRESENTER: Mario Liebensteiner ; DISCUSSANT: Schill Wolf-Peter)
3. The Economics of Variable Renewables and Electricity Storage (PRESENTER: Schill Wolf-Peter ; DISCUSSANT: Filippo Beltrami)
4. The impact of hydroelectric storage in the Italian power market (PRESENTER: Filippo Beltrami ; DISCUSSANT: Siyu Feng)

Speakers

Ms Feng, Siyu, ,
Dr. Liebensteiner, Mario, ,
Dr. Schill, Wolf-Peter, ,
Dr. Beltrami, Filippo, ,

Presentations

Innovation Trends in Electricity Storage: What Drives Global Innovation?

Authors

Ms Feng, Siyu, ,
Lazkano, Itziar, , University of Wisconsin - Milwaukee

Presenter

Ms Feng, Siyu, ,

Abstract

We study innovation trends and the determinants of innovation in energy storage using patent data from 1978 to 2019. We have constructed our unique novel dataset of patents in energy storage across 1,881 regions to conduct the analysis. We found that, as a percentage over total electricity patents, patenting in storage has kept increasing overall and overtaken patenting in electricity generation in the late 1990s. Based on induced innovation, our most significant result is the importance of the usefulness of knowledge stocks. Using simple accumulated knowledge stock overestimates the lag structure of exogenous shocks. We also showed that innovation in electricity storage and generation stimulates each other by the existing base of knowledge.

Do Subsidized Renewables Suppress Energy Storages and can Carbon Pricing be a Solution?

Authors

Dr. Liebensteiner, Mario, ,

Dr. Haxhimusa, Adhurim, Economist, University of Applied Sciences of the Grisons

Mr. Naumann, Fabian, Economist, TU Kaiserslautern

Presenter

Dr. Liebensteiner, Mario, ,

Abstract

Large-scale energy storages receive increasing global attention because of their vital role of balancing the intermittency of renewable energies, which experience a surge from the current transition towards a low-carbon energy system. Yet, financial support for renewables may lead to adverse effects, as for example undermining the business model of energy storages by depressing wholesale electricity prices, especially during peak load. We estimate the causal effect of renewable energies via the wholesale spot price on the profitability of pumped-storage power plants. Our case is for Austrian storages, operating in the German-Austrian electricity market. The findings are alarming, because renewables already significantly depress storage profitability. With a further rollout of renewables, this effect will intensify and may eventually hinder their successful system integration. This is a relevant example of an adverse effect of state intervention. As a solution, carbon pricing would maintain investment into storage capacity and ensure effective climate policy.

The Economics of Variable Renewables and Electricity Storage

Authors

Dr. Schill, Wolf-Peter, ,

Dr. López-Prol, Javier, Researcher,

Presenter

Dr. Schill, Wolf-Peter, ,

Abstract

The transformation of the electricity sector is a main element of the transition to a decarbonized economy. Conventional generators powered by fossil fuels have to be replaced by variable renewable energy (VRE) sources in combination with electricity storage and other options for providing temporal flexibility. We discuss the market dynamics of increasing VRE penetration and their integration in the electricity system. We describe the merit-order effect (decline of wholesale electricity prices as VRE penetration increases) and the cannibalization effect (decline of VRE value as their penetration increases). We further review the role of electricity storage and other flexibility options for integrating variable renewables, and how storage can contribute to mitigating the two mentioned effects. We also use a stylized open-source model to provide some graphical intuition on this. While relatively high shares of VRE are achievable with moderate amounts of electricity storage, the role of long-term storage increases as the VRE share approaches 100%.

The impact of hydroelectric storage in the Italian power market

Author

Dr. Beltrami, Filippo, ,

Presenter

Dr. Beltrami, Filippo, ,

Abstract

The literature highlights ambiguity in the effect of storage from hydroelectric power production over the levels of carbon emissions. This paper examines the external benefit related to charge and discharge operations of hydroelectric storage power plants, applied to the case of the Northern area of the Italian wholesale electricity market. The OLS estimations based on data for year 2018 indicate that storage generation reduces carbon emissions in aggregate terms, being the estimated storage marginal emission factor (MEF) equal to 0.13 tCO₂/MWh. This finding is largely explained by the value of the MEF during off-peak hours (0.17 tCO₂/MWh), thus showing effectiveness of storage in the displacement of the carbon-intensive baseload generation acting on the margin during night-hours. However, the calculation of the MEF for peak-demand hours indicates that storage generation, individually taken, is not able to affect the structure of marginal generation in the considered area. Finally, the use of a simulation approach indicates that pumped hydroelectric storage (PHS) contributed to reduce carbon emissions into the atmosphere by 471 ktCO₂. The obtained result is consistent with the typical coefficient of round-trip efficiency of PHS documented in the literature, which amounts to 74%.

Energy finance in institutional context

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Heard the News? Environmental Policy and Clean Investments (PRESENTER: Matthias van den Heuvel ; DISCUSSANT: Tobias Wendler)
2. The Dynamic Relationship Between Institutions and Resource Productivity (PRESENTER: Tobias Wendler ; DISCUSSANT: Gregor Semieniuk)
3. Quality of finance in low-carbon technology deployment (PRESENTER: Gregor Semieniuk ; DISCUSSANT: Joseph Wilson)
4. Institutional Quality and Technical Efficiency of Renewable Electricity Production in Sub-Saharan Africa (PRESENTER: Joseph Wilson ; DISCUSSANT: Matthias van den Heuvel)

Speakers

Mr. van den Heuvel, Matthias, PhD Student, EPFL
Dr. Wendler, Tobias, ,
Dr. Semieniuk, Gregor, ,
Mr. Wilson, Joseph, ,

Presentations

Heard the News? Environmental Policy and Clean Investments

Authors

Noailly, Joelle, , Graduate Institute of International and Development Studies, Geneva
Ms Nowzohour, Laura, PhD Student, IHEID
Mr. van den Heuvel, Matthias, PhD Student, EPFL

Presenter

Mr. van den Heuvel, Matthias, PhD Student, EPFL

Abstract

This article aims to construct various novel newspaper-based indexes of US environmental policy and to examine how they relate to clean investments. Extracting text from ten leading US newspapers over the last three decades, we use text-mining algorithms to build 1) a general index of US environmental policy history, 2) topic-specific components of environmental and climate regulations. We verify the added-value of these indexes by examining whether they capture meaningful policy shocks and how they are associated with proxies for clean investments, such as cleantech venture capital deals and stock returns. Our study shows that a lot of substantial information on environmental policy can be extracted from newspaper articles, providing promising avenues for future research.

The Dynamic Relationship Between Institutions and Resource Productivity

Authors

Dr. Wendler, Tobias, ,
Dr. Kalthaus, Martin, Post-doc,
Mr. Kerner, Philip, PhD Candidate,

Presenter

Dr. Wendler, Tobias, ,

Abstract

We examine the dynamic relationship between institutional quality and resource productivity for a panel of 165 countries over the period 1992 until 2010. In order to get a comprehensive view, we analyse the cross-section variation as well as the within dimension in a dynamic panel approach. Furthermore, we examine total resource productivity as well as the subgroup fossil resource productivity. Although there is a decent correlation between total resource productivity levels and levels of institutional quality in the cross-country dimension, we find little evidence of a causal effect of institutional quality on resource productivity, once fixed effects are controlled for in a dynamic panel setting. Specifically, considering various specifications, long-run effects are usually insignificantly different from zero and, if at all, negative. We provide an extensive discussion on reasons for these findings.

Quality of finance in low-carbon technology deployment

Authors

Dr. Semieniuk, Gregor, ,
Dr. Coronado, Jose, Academica, UCL
Prof. Mazzucato, Mariana, Academia, UCL

Presenter

Dr. Semieniuk, Gregor, ,

Abstract

Funding the large upfront investments needed for deploying low-carbon technologies at scale is now one of the key bottlenecks in accelerating the low carbon transition. Many of the required investments sit in the

Institutional Quality and Technical Efficiency of Renewable Electricity Production in Sub-Saharan Africa

Author

Mr. Wilson, Joseph, ,

Presenter

Mr. Wilson, Joseph, ,

Abstract

Though institutional quality has been identified to improve economic performance, the literature on renewable energy has conspicuously neglected the role institutional quality plays in ensuring the efficiency of production of renewable energy in developing countries, especially in sub-Saharan Africa (SSA). This paper addresses this gap by investigating the role of economic and political institutional quality in efficiency of production of renewable

electricity. Using stochastic frontier model, the paper found that technical efficiency of production of renewable electricity is 57% suggesting that most countries in SSA are farther away from their production frontier. Both economic and political institutional quality were found to reduce technical inefficiency of production of renewable electricity. The paper recommends for enforcement of existing laws that enhance economic and political institutional quality to raise the efficiency of production of renewable electricity.

Food and consumption trends

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Non-hypothetical Willingness-to-pay for Cultured Meat (PRESENTER: Romain Espinosa ; DISCUSSANT: Christopher Bryant)
2. Consumer Acceptance of Cultured Meat: An Updated Review (2018–2020) (PRESENTER: Christopher Bryant ; DISCUSSANT: Lanza Castillo Gracia Maria)
3. On the perils of environmentally friendly alternatives (PRESENTER: Lanza Castillo Gracia Maria ; DISCUSSANT: Erlend Dancke Sandorf)
4. Consumer demand and willingness-to-pay for sustainably produced shrimp in Vietnam (PRESENTER: Erlend Dancke Sandorf ; DISCUSSANT: Romain Espinosa)

Speakers

Mr. Espinosa, Romain, ,
Dr. Bryant, Christopher, ,
Dr. Lanza Castillo, Gracia Maria, , CATIE
Dr. Sandorf, Erlend Dancke, ,

Presentations

Non-hypothetical Willingness-to-pay for Cultured Meat

Authors

Mr. Espinosa, Romain, ,
Mr. Treich, Nicolas, Senior Researcher in Economics, INRAE - TSE

Presenter

Mr. Espinosa, Romain, ,

Abstract

The success of cultured meat depends on its acceptance by consumers. Previous studies on consumers

Consumer Acceptance of Cultured Meat: An Updated Review (2018–2020)

Author

Dr. Bryant, Christopher, ,

Presenter

Dr. Bryant, Christopher, ,

Abstract

This review synthesizes knowledge on consumer acceptance of cultured meat from 26 peer reviewed empirical studies published between 2018 and 2020. We find evidence for substantial markets for cultured meat in multiple countries, and further identify groups of consumers especially open to the concept. We also identify major motivators and barriers for consumer engagement including food safety and benefits to animals and the environment, as well as strategies for increasing acceptance through positive information and framing. Food neophobia and norms provide a barrier to overcome in the near-term, whilst price and taste will be key determinants of long-term adoption/.

On the perils of environmentally friendly alternatives

Authors

Dr. Lanza Castillo, Gracia Maria, , CATIE

Prof. Carlsson, Fredrik , Professor, University of Gothenburg

Prof. Alpizar, Francisco , Professor, Wageningen University and Research Center

Presenter

Dr. Lanza Castillo, Gracia Maria, , CATIE

Abstract

Environmentally friendly alternatives (EFA) are increasingly becoming a frequent sight in the consumption basket of households, irrespective of their pro-environmental preferences. Indeed, in an attempt to reduce the environmental footprint on the planet

Consumer demand and willingness-to-pay for sustainably produced shrimp in Vietnam

Authors

Dr. Sandorf, Erlend Dancke, ,

Dr. Xuan, Bui Bich , Researcher, Nha Trang University

Dr. Ngoc, Quach Thi Khanh, Researcher, Nha Trang University

Presenter

Dr. Sandorf, Erlend Dancke, ,

Abstract

In this paper we look at Vietnamese consumers willingness-to-pay for sustainably labeled shrimp. We use a novel discrete choice experiment where we first ask respondents to choose which shrimp to buy (or none) and then how much they would buy at the stated price. We contrast results from the multinomial logit model with interactions and the multiple discrete continuous extreme value (MDCEV) model. Results show that consumers are willing to pay a substantial price premium for shrimp with the local VietGAP logo and that older consumers are significantly more likely to consume VietGAP labeled shrimp relative to younger consumers. It is likely that people

Pathways for energy transitions

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The multi-level economic impacts of deep decarbonization strategies for the energy system (PRESENTER: Julien Lefèvre ; DISCUSSANT: Waldemar Marz)
2. Telecommuting, Carbon Emissions, and Urban Form (PRESENTER: Waldemar Marz ; DISCUSSANT: Emilien Ravigne)
3. From Factor-Four Mitigation to Zero-Net Emissions: Is a fair energy transition possible? Evidence from the French Low-Carbon Strategy (PRESENTER: Emilien Ravigne ; DISCUSSANT: Emanuele Campiglio)
4. Heterogeneous transition expectations and capital investment choices (PRESENTER: Emanuele Campiglio ; DISCUSSANT: Julien Lefèvre)

Speakers

Dr. Lefèvre, Julien, , AgroParisTech - CIRED
Dr. Marz, Waldemar, ,
Mr. Ravigné, Emilien, ,
Dr. Campiglio, Emanuele, ,

Presentations

The multi-level economic impacts of deep decarbonization strategies for the energy system

Authors

Dr. Lefèvre, Julien, , AgroParisTech - CIRED
Prof. Lallana, Fran, -, Fundacion Bariloche
Dr. Le Treut, Gaëlle, ,
Prof. Bravo, Gonzalo, Economist, Fundacion Bariloche

Presenter

Dr. Le Treut, Gaëlle, ,

Abstract

To cap global warming below 2

deep decarbonization (DD) strategies for the energy system. But, fast and deep transformations will have wideranging economic implications at the macroeconomic level, in energy industries, and also in other sectors. Such impacts need to be understood by policy-makers. This paper develops an original integrated approach based on loading consolidated energy pathways into a multi-sector economy-wide model to assess within a consistent

framework the multi-level economic impacts of the DD strategies. The method is applied to Argentina and gives representative insights into the global challenge to move towards a low-carbon economy. Our results show key multi-level impacts of shifting from a and employment shift from fossil fuel to low-carbon power industries. Aggregated GDP and welfare impacts are limited but incremental investments are significant at the macroeconomic level, with indirect and induced impacts across the economy. It includes net job creations in upstream industries that supply low-carbon infrastructures, but also risks of job losses in exposed sectors. Eventually, our approach highlights enabling conditions and possible block points to lift to trigger the transition.

Telecommuting, Carbon Emissions, and Urban Form

Authors

Dr. Marz, Waldemar, ,
Dr. Sen, Suphi, Assistant professor, Ozyegin University

Presenter

Dr. Marz, Waldemar, ,

Abstract

The long-term trend toward more work from home due to digitization has found a strong new driver the Covid-19 pandemic. The profound change in urban mobility patterns supports the often-held view that reducing the number of commuting trips can lower carbon emissions to a relevant degree. We investigate this optimistic view from a long-run perspective in a monocentric urban model with household-level vehicle choice based on fuel efficiency. In the medium run, fewer trips lead to the choice of less fuel-efficient vehicles. In addition, with lower annual driving costs to the city center, households change their location in the long run toward longer commuting trips, but cheaper housing, implying an adjustment in the real-estate market. These changes in vehicle choice and the urban form eliminate about 80 per cent of the initial environmental benefits. Binding fuel economy standards completely prevent the medium-run drop in fuel efficiency, but slightly exacerbate the long-term increase in commuting trip length.

From Factor-Four Mitigation to Zero-Net Emissions: Is a fair energy transition possible? Evidence from the French Low-Carbon Strategy

Authors

Mr. Ravigné, Emilien, ,
Dr. Gherzi, Frédéric, Researcher, CNRS
Dr. Nadaud, Franck, Research, CNRS

Presenter

Mr. Ravigné, Emilien, ,

Abstract

The distributional consequences of environmental policies are a major issue for the public acceptability of energy transitions, as the recent Yellow-vest demonstrations highlighted. Our research objective is to assess the short and mid-term distributional cross impacts of different policy tools. We compare two successive versions of the official French low-carbon strategy, to assess whether its rise in ambition

To that end, we develop a numerical method that combines micro-simulation and computable general equilibrium techniques. We explicitly model the heterogeneity of households

Focusing the efficiency gains from such technologies on the largest energy consumers to maximise emission reductions reduces the discrepancy of impacts between rural and urban households. However, it aggravates the regressivity of carbon taxation if households are not rebated their carbon tax payments. Recycling schemes favouring poorer households are powerful means to offset carbon taxation regressivity in the short term. In parallel, policies supporting electric vehicles and thermal renovation are effective in reducing households

Heterogeneous transition expectations and capital investment choices

Authors

Dr. Campiglio, Emanuele, ,

Dr. Cahen-Fourot, Louison, Post-doctoral researcher, Vienna University of Economics and Business

Dr. Miess, Michael, Post-doctoral researcher, Vienna University of Economics and Business

Mr. Daumas, Louis, PhD student, CIRED

Mr. Yardley, Andrew, Researcher, Vienna University of Economics and Business

Presenter

Dr. Campiglio, Emanuele, ,

Abstract

The aim of this article is to study how heterogeneous expectations concerning the low-carbon technological transition affect aggregate capital investment choices in the electricity sector.

We develop a simple model where firms choose between two technological options by evaluating their future profitability prospects, within a finite planning horizon. Profit expectations are affected by beliefs about the speed of the technological transition and the associated stranding of existing high-carbon capital stocks. We assume firms' transition expectations to be distributed around a central expectation scenario characterised by 'rational stranding', and heterogeneity of opinions to increase non linearly in psychological time.

We then explore the space defined by our set of behavioural parameters, and study how central transition expectations, opinion diversity and planning horizons affect the allocation of physical investments between the two technologies.

International cooperation on climate

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Technology beats capital --- Sharing the carbon price burden in federal Europe (PRESENTER: Christina Roelfs ; DISCUSSANT: Mohammad Mohammadi Khabbazan)
2. Implication of the Paris Targets for the Middle East Through Different Cooperation Option (PRESENTER: Mohammad Mohammadi Khabbazan ; DISCUSSANT: Taran Faehn)
3. Carbon policy options for a small, ambitious country: An analysis of social costs and distributional impacts (PRESENTER: Taran Faehn ; DISCUSSANT: Matt Woerman)
4. Linking Carbon Markets with Different Initial Conditions (PRESENTER: Matt Woerman ; DISCUSSANT: Christina Roelfs)

Speakers

Dr. Roelfs, Christina, Researcher, Mercator Research Institute on Global Commons and Climate Change (MCC), Berlin, Germany

Dr. Khabbazan, Mohammad, Economist, TU Berlin

Ms Faehn, Taran, ,

Dr. Woerman, Matt, ,

Presentations

Technology beats capital --- Sharing the carbon price burden in federal Europe

Authors

Dr. Roelfs, Christina, Researcher, Mercator Research Institute on Global Commons and Climate Change (MCC), Berlin, Germany

Dr. Gaitan, Beatriz, Researcher,

Prof. Edenhofer, Ottmar , Director , PIK, MCC

Dr. Lessmann, Kai, Researcher,

Presenter

Dr. Roelfs, Christina, Researcher, Mercator Research Institute on Global Commons and Climate Change (MCC), Berlin, Germany

Abstract

Passing federal environmental policy reform is a challenge as the approval of interest groups such as consumers and state-level governments is often a prerequisite. Among others, the burden sharing's progressivity has a large impact on reform approval. We investigate how carbon tax payments by states to a federal authority are influenced

by differences in technological emission intensity and wealth and show how they can turn out to be at the expense of poor states. We show that a uniform federal carbon tax that is endorsed by all states with equal per capita transfers can theoretically put a higher burden on poorer states than richer states. The opposite applies for transfers based on historical emissions (sovereignty transfers) which reduce the burden of emission-intensive states. We test our results numerically in a general equilibrium model with a vertical federalism governance structure calibrated to the European Union. Our simulations show that a federal minimum emissions tax with sovereignty transfers is twice as high as for equal per capita transfers and also has a progressive effect.

Implication of the Paris Targets for the Middle East Through Different Cooperation Option

Authors

von Hirschhausen, Christian, , Technical University Berlin
Dr. Khabbazan, Mohammad, Economist, TU Berlin

Presenter

Dr. Khabbazan, Mohammad, Economist, TU Berlin

Abstract

The core of the 36th round of Energy Modeling Forum project shows that it is more likely that major fossil-fuel exporters, such as the Middle East, are highly affected because of the decrease in fossil-fuel extractions required for the worldwide fulfillment of the Paris agreement. To analyze these general findings in-depth, we employ a multi-region, multi-sector computable general equilibrium model of global trade and energy to examine the effects of implementing the Paris agreement with a focus on the Middle East which is further disaggregated into Iran, Saudi Arabia, the rest of net fossil fuel exporting countries (XFE), and the rest of countries (XNE). After examining the abatement costs for the regions, we apply four emission reduction targets, ranging from a low ambition level to a high ambition level. We develop comprehensive scenarios covering several cooperation options within the Middle East and between the Middle East and regions outside. The results show that Iran has the lowest marginal abatement cost in the Middle East, followed by XNE, XFE, and Saudi Arabia. If the Middle East does not implement any climate policy, the welfare losses can be slightly compensated due to a carbon leakage to the Middle East. The cooperations within the Middle East are not welfare increasing for the region as a whole when Iran mostly benefits from such a cooperation whereas Saudi Arabia loses welfare. The Middle East benefits from a global cooperation and the cooperation with Europe, but the cooperation with China, India, or Russia can be welfare decreasing.

Carbon policy options for a small, ambitious country: An analysis of social costs and distributional impacts

Authors

Ms Fæhn, Taran, ,
Dr. Yonezawa, Hidemichi, Senior Researcher, Statistics Norway

Presenter

Ms Fæhn, Taran, ,

Abstract

This is a theoretical and numerical analysis of the impacts for a small, open country with carbon abatement ambitions of joining a coalition with allowance trading. Besides welfare impacts for both the coalition and the small, open economy joining the coalition, we scrutinise how the studied policy options differ with respect to their distributional impacts across domestic income groups. Our example is the EU 2030 policies and Norway

Linking Carbon Markets with Different Initial Conditions

Authors

Burtraw, Dallas, , Resources for the Future

Mr. Munnings, Clayton, Consultant, Self

Dr. Woerman, Matt, ,

Dr. Palmer, Karen, Senior Fellow, Resources for the Future

Presenter

Dr. Woerman, Matt, ,

Abstract

Linkage of emissions trading systems theoretically minimizes total abatement costs by allowing fungibility of emissions reductions across jurisdictions. We develop a theoretical framework to investigate the implications of linking systems with unique designs. We find that a uniform price is rarely socially optimal when linking bilaterally; instead, an allowance exchange rate, which results in different allowance prices in each trading system, yields a socially preferred outcome by bringing total abatement closer to the socially optimal level. Thus, the choice of the exchange rate is important for environmental outcomes and the distributional outcomes across the linked systems. We also qualitatively assess the California and the Regional Greenhouse Gas Initiative systems, which we find to be nearly ready to link despite some differences in their initial conditions, including design and stringency. We use a simulation model of regional electricity markets to investigate market outcomes under such a linked system. We consider possible exchange rates for allowances to adjust for differences in program stringency, and we examine how they interact with price floors and ceilings while explicitly representing other program features (e.g., leakage policies, companion policies, and allowance allocation). We find that aggregate emissions and emissions in each jurisdiction change in ways predicted by theory but that efficiency gains can be distributed in nuanced and nonintuitive ways.

Trade theory

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Cournot, Pigou, and Ricardo walk in a bar -- Unilateral environmental policy, leakage, market power and firm heterogeneity. (PRESENTER: Oliver Schenker ; DISCUSSANT: Daniel Haerle)
2. Climate Policy and Endogenous Intellectual Property Rights Enforcement in a North-South Model (PRESENTER: Daniel Haerle ; DISCUSSANT: Peter Birch Sorensen)
3. Optimal carbon taxation with carbon leakage at the extensive and the intensive margin (PRESENTER: Peter Birch Sorensen ; DISCUSSANT: Xiting Zhuang)
4. Global Trade Effects of Tightening Environmental Standards in China (PRESENTER: Xiting Zhuang ; DISCUSSANT: Oliver Schenker)

Speakers

Dr. Schenker, Oliver, ,
Mr. Haerle, Daniel, ,
Prof. Birch Sørensen, Peter, ,
Mr. Zhuang, Xiting, ,

Presentations

Cournot, Pigou, and Ricardo walk in a bar -- Unilateral environmental policy, leakage, market power and firm heterogeneity.

Authors

Dr. Schenker, Oliver, ,
Mr. Baccianti, Claudio, Researcher,

Presenter

Dr. Schenker, Oliver, ,

Abstract

Policymakers who aim for unilateral regulation of transboundary pollutants, such as greenhouse gases, fear as a consequence a rise in the emissions of non-regulating countries, reducing the effectiveness of own domestic emission reduction. This so-called pollution haven or carbon leakage effect is of particular concern in emission-intensive and trade-exposed sectors such as steel, aluminum or chemical production. While these industries are often characterized by market concentration, most models that study the effectiveness of unilateral environmental policies operate under perfect or monopolistic competition, ruling out the adjustment of markups and cost pass-through rates. We study the determinants of emission leakage using a two-country general equilibrium model with heterogeneous product

varieties and Cournot competition. We show that firms from the non-regulating country respond to the implementation of Pigouvian emission taxes of their competitors abroad and the subsequent gain in comparative advantage by increasing markups rather than output. We find that this effect, jointly with the exit of the least productive firms, can provoke a reduction of emissions in the non-regulating country and thus increase the effectiveness of unilateral emission regulation. Positive welfare effects from selection in non-regulating countries, found in the literature, are offset by the use of market power by local firms.

Climate Policy and Endogenous Intellectual Property Rights Enforcement in a North-South Model

Author

Mr. Haerle, Daniel, ,

Presenter

Mr. Haerle, Daniel, ,

Abstract

How will climate change affect intellectual property rights (IPR) enforcement and what does this imply for unilaterally optimal climate policy? I develop a North-South model with carbon taxation and endogenous innovation in a clean and a dirty sector, in which both countries enforce IPR endogenously. I find that (1) in the presence of climate damages, domestic IPR enforcement can be both a strategic substitute and a complement to foreign enforcement, (2) climate change may have a significant influence on the evolution of IPR protection, lowering the regions' willingness to enforce patents except if innovation in the clean sector is much more productive than in the dirty sector, (3) endogenous IPR protection may imply substantially higher optimal carbon taxation than under a fixed regime, especially when tax policy is unilateral and (4) environmental tax policy may increase the gains from international cooperation on IPR enforcement.

Optimal carbon taxation with carbon leakage at the extensive and the intensive margin

Authors

Prof. Birch Sørensen, Peter, ,

Dr. Kruse-Andersen, Peter, ,

Presenter

Prof. Birch Sørensen, Peter, ,

Abstract

We analyse the optimal design of carbon taxation in an open economy where the government is committed to a target for reduction of CO₂ emissions from domestic territory but where it is also concerned about carbon leakage. We highlight the importance of distinguishing between leakage at the extensive margin where firms relocate to a foreign country to avoid the domestic carbon tax, and leakage at the intensive margin where domestic firms lose world market shares to foreign competitors due to the tax. The optimal carbon tax scheme includes taxes on emissions and on final consumption goods differentiated according to their marginal effects on foreign emissions as well as a tax rebate for domestic firms to counteract carbon leakage at the extensive margin. However, simulation experiments indicate that the social welfare gain attained by moving from a single uniform emissions tax to the optimally differentiated tax scheme is likely to be modest.

Global Trade Effects of Tightening Environmental Standards in China

Authors

Mr. Zhuang, Xiting, ,
Prof. Steinbach, Sandro, Professor, University of Connecticut

Presenter

Mr. Zhuang, Xiting, ,

Abstract

The considerable increase in global waste trade and its negative impact on human health and the environment have become central policy issues. As one of the leading waste importing countries, China has recognized these issues and started to tighten its environmental policies by introducing import standards and enforcing special campaigns. This paper estimates the effects of these policies on global waste trade using detailed monthly trade flow data at the product-level from 2002 to 2020. We use difference-in-differences techniques to evaluate the counterfactual effects of these policy changes. Our empirical analysis is motivated by an oligopolistic trade model that anticipates trade destruction and deflection effects for binding environmental trade policies. The results indicate that Chinese import standards significantly impacted China

Climate change and migration

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Climate change increases resource-constrained immobility (PRESENTER: Helene Benveniste ; DISCUSSANT: Lucas Bretschger)
2. Climate Change and Global Migration: Adopting a Dynamic North-South Perspective (PRESENTER: Lucas Bretschger ; DISCUSSANT: Maria Alsina Pujols)
3. Climate Refugees and Carbon Prices (PRESENTER: Maria Alsina Pujols ; DISCUSSANT: Timothy Foreman)
4. Environmental Shocks and the Decision to Migrate (PRESENTER: Timothy Foreman ; DISCUSSANT: Helene Benveniste)

Speakers

Ms. Benveniste, Hélène, , Princeton University, School of Public and International Affairs
Bretschger, Lucas, , ETH Zurich
Ms. Alsina-Pujols, Maria, , University of Zurich
Dr. Foreman, Timothy, ,

Presentations

Climate change increases resource-constrained immobility

Authors

Ms. Benveniste, Hélène, , Princeton University, School of Public and International Affairs
Prof. Oppenheimer, Michael, Professor, Princeton University
Prof. Fleurbaey, Marc, Professor, Paris School of Economics / CNRS

Presenter

Ms. Benveniste, Hélène, , Princeton University, School of Public and International Affairs

Abstract

Migration is a widely used adaptation strategy to climate change impacts. Yet resource constraints caused by such impacts may limit the ability to migrate, thereby leading to immobility. Here, we provide a quantitative, global analysis of reduced international mobility due to resource deprivation caused by climate change. We incorporate both migration dynamics and within-region income distributions in an Integrated Assessment Model. We show that climate change induces decreases in emigration of lowest income levels by over 10% in 2100 for medium development and climate scenarios compared to no climate change, and by up to 35% for more pessimistic scenarios including catastrophic damages. This effect

would leave resource-constrained populations extremely vulnerable to both subsequent climate change impacts and increased poverty.

Climate Change and Global Migration: Adopting a Dynamic North-South Perspective

Authors

Bretschger, Lucas, , ETH Zurich

Xepapadeas, Anastasios, , Athens University of Economics and Business

Presenter

Bretschger, Lucas, , ETH Zurich

Abstract

We develop an endogenous growth model for a world with developed and less developed countries. Climate change has a regional impact; it affects incomes and induces international migration. We derive analytical solutions for the migration stock in market equilibrium and social optimum and calculate its effects on income and development. We find that international migration raises welfare at a global level and at the aggregate level in North. Migration augments average welfare in South but reduces welfare per capita in North. When returns to knowledge capital are decreasing, steady migration can support a constant consumption growth rate at the world level. Climate policy implemented by North reduces migration and improves global welfare. In the quantitative part we illustrate long-run development under different parameter constellations.

Climate Refugees and Carbon Prices

Author

Ms. Alsina-Pujols, Maria, , University of Zurich

Presenter

Ms. Alsina-Pujols, Maria, , University of Zurich

Abstract

The IPCC reports have identified forced human displacement as one of the main impacts of climate change. The threat of large population flows resulting from global warming worries both developed and developing countries. Yet, the literature on carbon pricing abstracts from this phenomenon. This paper explores the consequences of climate refugees on optimal and unilateral carbon pricing. It first provides empirical evidence on the migration response to natural disasters in developing countries. It then uses an Integrated Assessment Model framework to derive analytical expressions for optimal and unilateral carbon prices in a context with climate refugees, taking into account the impact on labor force and political conflict. The quantitative results show that forced migration enhances the incentives of host regions to fight climate change (20% increase in the carbon price), even when immigration political conflict is not accounted for. However, it has the opposite effect on origin and less economically developed areas. The results highlight the importance of accounting for the differentiated local effects of forced migration in designing carbon prices.

Environmental Shocks and the Decision to Migrate

Author

Dr. Foreman, Timothy, ,

Presenter

Dr. Foreman, Timothy, ,

Abstract

Poverty and environment

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Do improved cookstoves save time and improve gender outcomes? Evidence from six developing countries. (PRESENTER: Krishnapriya Perumbillissery ; DISCUSSANT: Federica Cappelli)
2. The trap of climate change-induced "natural" disasters and inequality (PRESENTER: Federica Cappelli ; DISCUSSANT: Johannes Emmerling)
3. Inequality and growth impacts from climate change - insights from South Africa (PRESENTER: Johannes Emmerling ; DISCUSSANT: Raavi Aggarwal)
4. Carbon pricing and household welfare: Evidence from Uganda (PRESENTER: Raavi Aggarwal ; DISCUSSANT: Krishnapriya Perumbillissery)

Speakers

Dr. Perumbillissery, Krishnapriya, ,
Dr. Cappelli, Federica, ,
Emmerling, Johannes, , EIEE
Ms Aggarwal, Raavi, ,

Presentations

Do improved cookstoves save time and improve gender outcomes? Evidence from six developing countries.

Authors

Dr. Jeuland, Marc, Associate Professor, Duke University
Dr. Perumbillissery, Krishnapriya, ,
Ms Chandrasekaran, Maya, Student, Duke University
Prof. Pattanayak, Subhrendu, Professor, Duke University

Presenter

Dr. Perumbillissery, Krishnapriya, ,

Abstract

Three billion people around the world lack access to affordable and reliable clean cooking energy. The case for clean energy has largely been built around health and or environmental benefits, neglecting potentially sizeable benefit(s): when households have clean energy, they can save time and reduce drudgery. But how large are time savings from the adoption and use of improved cookstoves (ICS)? Are these benefits especially for women? To answer these questions, we develop a conceptual framework based on household production, and then employ two methods. First, we review the impact evaluation literature that estimates time

savings from use of various ICS. Second, we conduct multivariable regression analysis of Multi-Tier Framework (MTF) Data from six countries to estimate the impacts of ICS on time savings. The review and econometric estimation offer consistent evidence that ICS can help households save time, but estimated savings vary across locations, technologies, and study methods. Time savings vary substantially across studies and locations, appear to be consistent in (i) both rural and urban areas, (ii) for fuel collection and preparation (rather than cooking), (iii) accrue to both women and men, and (iv) are highest for more advanced technologies and clean fuels (like electricity, LPG, and biogas). Overall, our pooled econometric estimates suggest that households save about 35 minutes per day. These estimates are considerably lower than the average of estimates reported in the literature (68 min/day), but not so different from the average among a lower cluster of estimates (29 min/day). While our work illuminates some shortcomings inherent in current research on this topic, our results constitute an important first step towards advancing the practice of quantification and valuation of time savings from improved household energy interventions.

The trap of climate change-induced “natural” disasters and inequality

Authors

Dr. Cappelli, Federica, ,
Prof. Costantini, Valeria, Full Professor, Roma Tre University
Prof. Consoli, Davide, Research fellow, INGENIO CSIC-UPV

Presenter

Dr. Cappelli, Federica, ,

Abstract

The purpose of the present paper is to disentangle the mutual mechanisms that connect climate change-induced disasters, inequality and vulnerability by jointly accounting for both directions of causality. We explore these issues with a simultaneous equations approach on a panel of 149 countries from 1992 to 2018. The empirical analysis indicates that countries with higher levels of income inequality suffer greater damages when hit by a natural disaster. At the same time, inequality is found to increase the higher the number of people affected by disasters. Our analysis discloses the existence of a vicious cycle that keeps some countries stuck in a disasters-inequality trap.

Inequality and growth impacts from climate change - insights from South Africa

Authors

Dasgupta, Shouro, , Fondazione CMCC - Euro-Mediterranean Center on Climate Change
Emmerling, Johannes, , EIEE
Dr. Shayegh, Soheil, Researcher, EIEE

Presenter

Emmerling, Johannes, , EIEE

Abstract

The impact of climate change on economic growth has received considerable attention in recent years based on several macro-econometric studies estimating the impact of country-level temperatures on GDP growth rates. We build on this literature, but instead of per-capita GDP, we consider inequality (and poverty) at the country and sub-national panel levels with a focus on South Africa. Our analysis on both scales suggests a significant [-shaped relationship between inequality indices

and local mean temperature. Inequality hence tends to be lowest at moderate temperatures (11

of the poorer parts of the population drop while the impact on the richer parts is not as significant due to their adaptive capabilities. In terms of social welfare, we show that global warming hence has two detrimental effects in hot countries; reducing average growth and increasing inequality. Based on the moderate RCP4.5 projection, our results suggest an increase of the Gini index by 12

a scenario without warming, while under RCP2.6 the increase is around 2

Combined with the impact on GDP growth, this implies a possible welfare loss of about half of its reference value under RCP4.5, which is reduced by more than two thirds under RCP2.6.

Carbon pricing and household welfare: Evidence from Uganda

Authors

Ms Aggarwal, Raavi, ,

Dr. Ayhan, Sinem, Researcher, Mercator Research Institute on Global Commons and Climate Change

Dr. Jakob, Michael, Senior Researcher, Mercator Research Institute on Global Commons and Climate Change

Dr. Steckel, Jan, Head, Climate and Development Working Group, Mercator Research Institute on Global Commons and Climate Change

Presenter

Ms Aggarwal, Raavi, ,

Abstract

Carbon pricing is widely regarded as an efficient instrument for emissions reduction. However, policy makers frequently voice concerns that carbon pricing could impair economic development in the short-run, especially in low-income countries such as Uganda. We estimate a quadratic almost ideal demand system (QUAIDS) for energy and food items to assess how consumers

Ecosystem services II

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Vulnerabilities of a Socio-Ecological System through the Lens of a Bio-Economic Model (PRESENTER: Emily Quiroga Gomez ; DISCUSSANT: Jan Philipp Schägner)
2. Apples and Oranges or Commodity Consistency within Global Meta-Analytic Value Transfer for Consulting Policies: The Case of Mangrove Ecosystem Services (PRESENTER: Jan Philipp Schägner ; DISCUSSANT: Ahmet Ozkardas)
3. Multilateral negotiations over the provision of wetland ecosystem services (PRESENTER: Ahmet Ozkardas ; DISCUSSANT: Zandersen Marianne)
4. A meta-analysis regression of water quality valuation in the Nordic countries: A new tool for applied benefit function transfer (PRESENTER: Zandersen Marianne ; DISCUSSANT: Emily Quiroga Gomez)

Speakers

Ms Quiroga, Emily, ,
Dr. Schägner, Jan Philipp, ,
Dr. OZKARDAS, AHMET, Postdoctoral Fellow, University of Waterloo
Dr. Zandersen, Marianne, Professor,

Presentations

VULNERABILITIES OF A SOCIO-ECOLOGICAL SYSTEM TROUGH THE LENS OF A BIO-ECONOMIC MODEL

Authors

Ms Quiroga, Emily, ,
Mr. Blanz, Benjamin, PhD Candidate, University of Hamburg

Presenter

Ms Quiroga, Emily, ,

Abstract

We develop an analytical framework to assess the vulnerabilities of a socio-ecological system (SES) and apply it to a bio-economic model. Our framework allows us to quantify the impact that multiple threats have on an SES. It also enables us to distinguish between impacts of positive and negative exposure to a threat. This distinction allows us to find the effects that improve well-being, as well as those that decrease it. Our findings provide valuable insight how to focus resources to counteract negative impacts. We apply this framework to a bio-economic model calibrated to the North Sea flatfish fishery. We quantify the vulnerabilities of fishers

Apples and Oranges or Commodity Consistency within Global Meta-Analytic Value Transfer for Consulting Policies: The Case of Mangrove Ecosystem Services

Authors

Dr. Schägner, Jan Philipp, ,
Prof. Brander, Luke, Researcher,
Prof. Signorello, Giovanni, Researcher,
Prof. de Groot, Dolf, Researcher,
Dr. Solomonides, Stefanos, Researcher,

Presenter

Dr. Schägner, Jan Philipp, ,

Abstract

In this paper we aim at contributing to the discussion on the right level of commodity consistency with meta-analytic regression models (MRM). Even though neither economic theory nor economic intuition may justify the inclusion of dissimilar commodities within the same MRM, it may sometime be required and desirable. First, commodity consistency is hampered by the huge variety of valued commodities which would requires a similar number of MRM, if comprehensive benefit transfer is needed for policy consolation. However, time and resources are limited. Second, the number of valuation studies is limited, and not sufficient primary data is available to compute robust MRM for all individual environmental commodities. Third, whether to include inconsistent commodities within the MRM depends on the differences in the individual underlying value functions (value distribution) and to what extend such differences can be accounted for effectively by additional covariates and interactions. If underlying value functions differ greatly, models may become too complex and/or the statistical performance may decrease. However, if only very consistent commodities are included in the MRM poor model performances and simplistic models may be implied by a small sample size for each commodity.

Within this paper we compare MRM with very different levels of commodity consistency in order to shed light on determining the appropriate level of commodity consistency given a certain purpose. We compare each MRM by the statistical performance, model fit and accuracy in benefit transfer application. We conclude that commodity consistency is not a clear-cut and that the right level of commodity consistency depends on various factors including the sample size, available resources as well as the specific policy and research question.

Multilateral negotiations over the provision of wetland ecosystem services

Authors

Prof. Pereau, Jean-Christophe, Professor Economics, University of Bordeaux
Dr. OZKARDAS, AHMET, Postdoctoral Fellow, University of Waterloo
Prof. Nimubona, Alain-Désiré, Associate Professor, University of Waterloo

Presenter

Dr. OZKARDAS, AHMET, Postdoctoral Fellow, University of Waterloo

Abstract

This paper analyses the provision of two wetland ecosystem services by several farmers and the negotiation process over their payments by two groups of beneficiaries. We determine under which conditions beneficiaries and providers prefer to negotiate separately or form a coalition. These conditions are the number of providers, the marginal productivity from

wetland creation, and the size of the total surplus generated through the PES scheme. Using Nash-in-Nash bargaining, we show that two Nash equilibria can emerge. In the first equilibrium, both the beneficiaries and providers negotiate separately over the PES. The second equilibrium obtains when beneficiaries negotiate as a coalition with separate providers.

A meta-analysis regression of water quality valuation in the Nordic countries: A new tool for applied benefit function transfer

Authors

Prof. Olsen, Søren Bøye, , University of Copenhagen
Prof. Hasler, Berit, Professor,
Ms Martinsen, Louise, Academic staff member, Aarhus University
Mr. Panduro, Toke Emil, Senior Researcher , Aarhus University
Dr. Zandersen, Marianne, Professor,
Dr. Zemo, Kahsay, Professor,

Presenter

Dr. Zandersen, Marianne, Professor,

Abstract

We develop a benefit transfer function using meta-regression analysis, which can be used to estimate the value of water quality improvements in the Nordic countries. We first present the constructed dataset in terms of a comprehensive collection of meta-data covering all the relevant water quality valuation studies conducted in the Nordic countries over the last 25 years. This is followed by an econometric meta-regression analysis leading to identification of a value function. We test the precision of the function in a leave-one-out analysis and find transfer errors to be well within the range usually considered acceptable for benefit transfer. We conclude that the meta-regression function will be useful for future assessments of welfare values associated with water quality improvements in the Nordic countries. Finally, to exemplify the potential use of the function in practice, we apply it in a Danish policy context, using it to estimate the benefits of achieving the Water Framework Directive target of

Growth

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Climate Change Impact on Economic Growth: Regional Climate Policy under Cooperation and Noncooperation (PRESENTER: Yongyang Cai ; DISCUSSANT: Swaroop Rao)
2. Can you have your growth and eat it too?: Trade-offs between green growth and pro-poor growth in Brazil (PRESENTER: Swaroop Rao ; DISCUSSANT: Mateus Souza)
3. The implicit cost of carbon abatement during the COVID-19 pandemic (PRESENTER: Mateus Souza ; DISCUSSANT: Arsham Reisinezhad)
4. The Dutch Disease Revisited: Theory and Evidence (PRESENTER: Arsham Reisinezhad ; DISCUSSANT: Yongyang Cai)

Speakers

Prof. Cai, Yongyang, ,

Mr. Rao, Swaroop, ,

Dr. Souza, Mateus, ,

Mr. Reisinezhad, Arsham, Assistant Lecturer (ATER) , at the University of Paris1 (Panthéon-Sorbonne)

Presentations

Climate Change Impact on Economic Growth: Regional Climate Policy under Cooperation and Noncooperation

Authors

Prof. Cai, Yongyang, ,

Prof. Brock, William, professor, University of Wisconsin-Madison

Xepapadeas, Anastasios, , Athens University of Economics and Business

Presenter

Prof. Cai, Yongyang, ,

Abstract

We compute regional social cost of carbon (SCC) in the face of climate change impact on regional economic growth under cooperation and noncooperation between regions with heat transport dynamics. Climate damage on economic growth incurs serious challenges for many countries, particularly in the tropic region. Heat transport plays a major role in polar amplification, meaning that warming in the high latitudes increases faster than in the tropic region. We find that in the presence of climate damage to economic growth regional SCC is very high in a cooperative world, but the developed countries in the high northern latitudes have negative regional SCC in the initial periods in a noncooperative world. Moreover,

relatively to cooperation, noncooperation makes the developed countries in the high northern latitudes to gain only little gross domestic product but leads to significant loss for the developing countries in the tropic region.

Can you have your growth and eat it too?: Trade-offs between green growth and pro-poor growth in Brazil

Authors

Mr. Rao, Swaroop, ,

Dr. Charlier, Dorothée, Assistant Professor, IREGE, Université Savoie Mont Blanc

Dr. Grover, David, Associate Professor, Grenoble Ecole de Management

Presenter

Mr. Rao, Swaroop, ,

Abstract

There is much debate in the academic and public spheres about

The implicit cost of carbon abatement during the COVID-19 pandemic

Authors

Dr. Souza, Mateus, ,

Dr. Fabra, Natalia, Professor, Universidad Carlos III de Madrid

Dr. Lacuesta, Aitor, Division Head - Structural Analysis Division, Bank of Spain

Presenter

Dr. Souza, Mateus, ,

Abstract

There is scientific consensus on the urgency to reduce global carbon emissions, but there is less agreement on the best strategies to follow. This paper contributes to this debate by (a) providing novel estimates of the implicit cost of carbon from the COVID-19 crisis and (b) comparing that to the implicit cost of carbon from a "decoupling" strategy based on renewables

The Dutch Disease Revisited: Theory and Evidence

Author

Mr. Reisinezhad, Arsham, Assistant Lecturer (ATER) , at the University of Paris1 (Panthéon-Sorbonne)

Presenter

Mr. Reisinezhad, Arsham, Assistant Lecturer (ATER) , at the University of Paris1 (Panthéon-Sorbonne)

Abstract

Contrary to empirical evidence, the Dutch disease hypothesis, driven by Learning By Doing (LBD), does not predict the steady-state real exchange rate appreciation and economic growth deceleration due to a resource boom. To do so, I first represent a simple model to fill the theory's gap, and then adopt a dynamic panel data approach for a sample of 132 countries over the period 1970-2014 to re-evaluate both symptoms of the hypothesis in systematic analysis. The main findings are threefold. First, a resource boom appreciates the real exchange rate. Second, the real exchange rate appreciation decelerates the rate of growth in both sectors such that the shrinkage is larger in the manufacturing sector than in the service sector. This, in turn, makes the relative output level of the manufacturing sector to the service

sector be smaller and economic growth be slower. Third, these effects are more intensive in resource-rich countries than in resource-poor countries.

Behaviour, economics, and nature in the lab II

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. The Effect of Information and Social Nudges Under Heterogeneous Returns to Public Goods and Bads (PRESENTER: Anna Lou Abatayo ; DISCUSSANT: Julia Amelie Hoppe)
2. Faster, Harder, Greener? Experimental Evidence on How the Individual Pace of Life Affects Productivity and Pro-Environmental Behavior (PRESENTER: Julia Amelie Hoppe ; DISCUSSANT: Luis Fernando Silva e Silva)
3. Garnering support for Pigouvian tax with revenue earmarking: a lab experiment (PRESENTER: Luis Fernando Silva e Silva ; DISCUSSANT: Ann-Kathrin Koessler)
4. Structuring communication effectively - The causal effects of communication elements on cooperation in social dilemmas (PRESENTER: Ann-Kathrin Koessler ; DISCUSSANT: Anna Lou Abatayo)

Speakers

Abatayo, Anna Lou, , Bocconi University

Hoppe, Julia Amelie, Economics , Organizational Behavior, University of Paderborn, Germany

Mr. Silva e Silva, Luís, Economist, Federal University of ABC, Brazil

Dr. Koessler, Ann-Kathrin, ,

Presentations

The Effect of Information and Social Nudges Under Heterogeneous Returns to Public Goods and Bads

Authors

Abatayo, Anna Lou, , Bocconi University

Dr. Li, Tongzhe, Assistant Professor, University of Guelph

Presenter

Abatayo, Anna Lou, , Bocconi University

Abstract

In everyday life, heterogeneous returns to public goods and bads are more often the rule rather than the exception: the effect of sea level rise is more pernicious to coastal communities, climate change is more disastrous to individuals in developing countries, and, more recently, defying lockdown and quarantine regulations are more detrimental to vulnerable individuals. We consider such a setup in this paper and build upon the standard public goods game in the experimental economics literature and its equivalent public bads game by giving the individuals most affected by the provisions to the public pool marginal per capita returns (MPCRs) greater than 100%. We investigate whether differences in

information - no information regarding the asymmetry of returns, information on the asymmetry of returns, and information on the asymmetry of returns with a plea to help those who are affected by the public pool the most - changes economic cooperation by comparing these to a baseline with homogeneous MPCRs. Our results show that information regarding the heterogeneity in returns do not change individual behavior, in both the public goods and public bads games. However, a social plea to help vulnerable individuals significantly increases the cooperation of individuals with higher than baseline returns in the public goods game and of all individuals in public bads game. Those with MPCRs greater than 100% are more cooperative but not as completely as theoretically predicted. The exact same individual is also more cooperative under a public goods game than under a public bads game; a result that remains unchanged whether MPCRs are homogeneous or not. Our results have significant implications on the effects of information dissemination and framing on cooperation.

Faster, Harder, Greener? Experimental Evidence on How the Individual Pace of Life Affects Productivity and Pro-Environmental Behavior

Authors

Dr. Hoffmann, Christin, ,

- Ziemann, Niklas, Economics, Chair of Economics, especially Markets, Competition and Institutions. University of Potsdam

Hoppe, Julia Amelie, Economics , Organizational Behavior, University of Paderborn, Germany

Presenter

Hoppe, Julia Amelie, Economics , Organizational Behavior, University of Paderborn, Germany

Abstract

Against the background of the current

Garnering support for Pigouvian taxation with tax return: a lab experiment

Authors

Prof. Morello, Thiago, ,

Mr. Silva e Silva, Luís, Economist, Federal University of ABC, Brazil

Presenter

Mr. Silva e Silva, Luís, Economist, Federal University of ABC, Brazil

Abstract

To test if tax return can effectively and efficiently increase the acceptance of externality taxing, a laboratory experiment with negative externalities was conducted. Three treatments were applied as fractions of own tax payment returned to the taxpayer. The acceptance-efficiency trade-off predicted by theory proved empirically compatible with increases of 60 and 73 percent points in acceptance and efficiency, respectively, with a 50% return. However, the upgrade to a 80% return rate failed to increase acceptance and reduced efficiency due, probably, to participants expecting the tax to have a small effect on the externality generated by the other participants. Tax return thus proved socially justified but only in a limited extent, challenging the emerging consensus in experimental literature on effectiveness of pre-informed tax revenue recycling. Also, deviations from both rational and profit-based voting were evidenced, what calls for more research to unveil the actual behavioural model, as input to design a tax-return-based mechanism to incentivize acceptance.

Structuring communication effectively - The causal effects of communication elements on cooperation in social dilemmas

Authors

Dr. Koessler, Ann-Kathrin, ,
Prof. Engel, Stefanie, Economist, Osnabruck University
Dr. Ortiz-Riomalo, Juan Felipe, , Uni Osnabrück

Presenter

Dr. Koessler, Ann-Kathrin, ,

Abstract

Many environmental problems represent social dilemma situations where individually rational behaviour leads to collectively suboptimal outcomes. Communication has been found to alleviate the dilemma and stimulate cooperation in these situations. Yet, the knowledge of the basic elements, i.e. the types of information that need to be provided and exchanged to make communication effective, is still incomplete. Previous research relies on ex post methods, i.e. after conducting an experiment researchers analyse what information was shared during the communication phase. By nature, this ex post categorization is endogenous. In this study, we identify the basic elements of effective communication ex ante and evaluate their impact in a more controlled way. Based on the findings of previous studies, we identify four cooperation-enhancing elements of communication: (i) problem awareness, (ii) identification of strategies, (iii) agreement, and (iv) ratification. In a laboratory experiment with 560 participants, we implement interventions representing these components and contrast the resulting levels of cooperation with the outcomes under free (unstructured) or no communication. We find that the intervention facilitating agreement on a common strategy (combination of (ii) and (iii)) is particularly powerful in boosting cooperation. And if this is combined with interventions promoting problem awareness and ratification, similar cooperation levels as in settings with free-form communication can be reached. Our results are relevant not only from an analytical perspective, but also provide insights for social dilemma situations in which effective communication processes cannot be successfully self-organized, calling for some form of external, structured facilitation or moderation.

Environmental policy design

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Public or Private Abatement? The Impact of Fiscal Policy Constraints (PRESENTER: Maximilian Kellner ; DISCUSSANT: Ross McKittrick)
2. Understanding the Pigovian and Sandmo Principles of Emission Pricing (PRESENTER: Ross McKittrick ; DISCUSSANT: Meunier Guy)
3. Coordination of abatement and policies with sector coupling technologies (PRESENTER: Meunier Guy ; DISCUSSANT: Rob Hart)
4. Working hours, status consumption, and optimal taxation (PRESENTER: Rob Hart ; DISCUSSANT: Maximilian Kellner)

Speakers

Mr. Kellner, Maximilian, , MCC Berlin
Prof. McKittrick, Ross, ,
Dr. Meunier, Guy, Researcher, INRAE
Hart, Robert, , Dep. of Economics, Swedish University of Agricultural Sciences

Presentations

Public or Private Abatement? The Impact of Fiscal Policy Constraints

Author

Mr. Kellner, Maximilian, , MCC Berlin

Presenter

Mr. Kellner, Maximilian, , MCC Berlin

Abstract

This paper extends the canonical literature on public incentives for firm-level abatement by introducing fiscal policy constraints and public abatement technologies. To increase acceptance of the emission tax policy, tax revenues are earmarked for public abatement or public good provision and no longer redistributed as welfare-neutral lump-sum transfers. The analysis reveals that partially substituting emission taxation with public abatement increases welfare in markets with imperfect competition. It is always optimal to cut the tax rate when public abatement is possible. This effect can be even more pronounced if the public sector invests in durable technologies such as afforestation. In this case, additional welfare gains are possible when public abatement is partially debt-funded. To service debt in later periods, the regulator should levy a higher emission tax rate as time progresses.

Understanding the Pigovian and Sandmo Principles of Emission Pricing

Author

Prof. McKittrick, Ross, ,

Presenter

Prof. McKittrick, Ross, ,

Abstract

The classical Pigovian rule is attractively simple: the optimal pollution level occurs where marginal abatement costs (MACs) equal marginal damages (MD) and can be attained using the latter as a unit charge on emissions. But beginning with Sandmo (1975), numerous economists have shown that the optimal emissions tax should equal MD deflated by the marginal cost of public funds, which implies the Pigovian rule is sub-optimal. Here I show that the apparent discrepancy can be reconciled by noting that tax distortions cause firms

Coordination of abatement and policies with sector coupling technologies

Authors

Dr. Hoarau, Quentin, ,

Dr. Meunier, Guy, Researcher, INRAE

Presenter

Dr. Meunier, Guy, Researcher, INRAE

Abstract

To drastically reduce greenhouse gas emissions (GHG), numerous specific measures are required in all sectors of the economy. These measures, and the GHG consequences of their implementations, are not independent from each other because of sectoral linkages. For instance, the carbon footprint of electric vehicles depends on the electricity mix, an issue that have received considerable attention but few economic analysis. The present paper addresses the issue of sectoral policy coordination, especially when pigovian carbon pricing is unavailable.

It analyzes the optimal allocation of mitigation effort among two vertically connected sectors, an upstream (e.g. electricity) and a downstream (e.g. transportation) one.

The clean downstream technology (e.g. electric vehicle) consumes the upstream production and may shift production to that sector.

Using a simple partial equilibrium model, we connect the concept of Marginal Abatement Cost (MAC) and Life-Cycle-Assessment. We propose a characterization that indicates the order of options implementations, which is relevant for policy making.

The decentralized version of the model allows us to characterize optimal second-best policy in presence of imperfect GHG taxation. We find conditions of policy coordination for various price and quantity instruments settings.

Working hours, status consumption, and optimal taxation

Author

Hart, Robert, , Dep. of Economics, Swedish University of Agricultural Sciences

Presenter

Hart, Robert, , Dep. of Economics, Swedish University of Agricultural Sciences

Abstract

We build a growth model focusing exclusively on household choices, including both pollution and consumption externalities. The consumption of status goods helps to motivate labour supply, and the importance of this effect increases as productivity increases. This accounts for two stylized facts: firstly, although labour supply declines with income at low incomes (both for time series and cross-sectional country data, and for cross-sectional individual data), the decline levels off at high incomes; and secondly, that expenditure tends to shift towards energy- and resource-intensive goods with rising income. To achieve first best

Health and pollution III

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Costs of particulate matter air pollution generated by road traffic in the Lima Metropolitan Area (PRESENTER: Carlos Orihuela ; DISCUSSANT: Klaus Moeltner)
2. Harmful algal blooms and toxic air: The economic value of improved forecasts (PRESENTER: Klaus Moeltner ; DISCUSSANT: André Sant'Anna)
3. Winds of Fire and Smoke: Air Pollution and Health in the Brazilian Amazon (PRESENTER: André Sant'Anna ; DISCUSSANT: Marion Davin)
4. Pollution, children's health and the evolution of human capital inequality (PRESENTER: Marion Davin ; DISCUSSANT: Carlos Orihuela)

Speakers

Dr. Orihuela, Carlos, ,
Prof. Moeltner, Klaus, ,
Dr. Sant'Anna, André, Researcher, Washington University
Dr. Davin, Marion, Assistant professor,

Presentations

Costs of particulate matter air pollution generated by road traffic in the Lima Metropolitan Area

Authors

Dr. Orihuela, Carlos, ,
Ms Silva, Cindy, Lecturer, Universidad Nacional Agraria La Molina
Ms Diaz, Sabrina, Lecturer, Universidad Nacional Agraria La Molina
Mr. Mogollon, Raymundo, Student, Universidad Nacional Agraria La Molina

Presenter

Dr. Orihuela, Carlos, ,

Abstract

The high concentrations of particulate matter (PM) in the Lima Metropolitan Area (LMA), mostly generated by its road traffic, pose a health hazard to its population. This has led to several regulatory steps being implemented in order to mitigate this pollution problem. As far as we know, there are no published studies on costs of air pollution associated to PM10 and PM2.5 in LMA. This article aims to estimate those costs generated by vehicular transport. This is important as the starting point for the design and implementation of policy measures based on efficiency criteria for road transport sector. To this aim, we use concentration-

response functions to estimate the number of cases associated with PM that resulted in death or disease. The results show that the costs were between 0.41% and 0.56% of LMA

Harmful algal blooms and toxic air: The economic value of improved forecasts

Authors

Prof. Moeltner, Klaus, ,

Dr. Fanara, Tracy, Environmental scientist, IOOS / NOAA

Prof. Foroutan, Hosein, University professor, Virginia Tech

Ms Hanlon, Regina, Senior research associate, Virginia Tech

Dr. Lovko, Vince, Senior scientist & program manager, Mote Marine Laboratory & Aquarium

Prof. Ross, Shane, University professor, Virginia Tech

Prof. Schmale III, David, University professor, Virginia Tech

Presenter

Prof. Moeltner, Klaus, ,

Abstract

The adverse economic impacts of harmful algal blooms can be mitigated via tailored forecasting methods. Adequate provision of these services requires knowledge of the losses avoided, or, in other words, the economic benefits they generate. The latter can be difficult to measure for broader population segments, especially if forecasting services or features do not yet exist. We illustrate how Stated Preference tools and Choice Experiments, commonly used for the economic valuation of health and ecosystem services, are well-suited for this case. Using as example forecasts of respiratory irritation levels associated with airborne toxins caused by Florida red tide, we show that 24-hour predictions of spatially and temporally refined air quality conditions are valued highly by the underlying population. This reflects the numerous channels and magnitude of red tide impacts on locals' life and activities, which are also highlighted by our study. Our value estimates constitute an important input to determine the societal net benefits of implementing an improved forecasting system along the lines suggested in our experiment. Our approach is broadly applicable to any type of air quality impediment with risk of human exposure.

Winds of Fire and Smoke: Air Pollution and Health in the Brazilian Amazon

Authors

Dr. Sant'Anna, André, Researcher, Washington University

Prof. Rocha, Rudi, Professor, Fundação Getúlio Vargas

Presenter

Dr. Sant'Anna, André, Researcher, Washington University

Abstract

In this paper we assess the effects of fire-related smoke on population health in the Brazilian Amazon. Our empirical strategy is based on a municipality-by-month fixed effects model, coupled with an instrumental variables approach that explores wind direction and smoke in surrounding areas in order to exogenously shift exposure to smoke at the locality. We find that exposure to smoke, measured by PM_{2.5} concentration levels, is robustly associated with an increase in hospital admissions for respiratory conditions. The effects are higher among children and the elderly, and increase non-linearly with pollution levels. Our benchmark estimates indicate that an increase of one standard deviation in PM_{2.5} is related to an increase of 1.5% of the monthly hospitalization rate for respiratory conditions. The latter estimate

reaches 14% if monthly average PM2.5 crosses thresholds as high as 75 $\mu\text{g}/\text{m}^3$. We do not observe significant effects on hospitalization rates related to other health conditions nor on mortality rates.

Pollution, children's health and the evolution of human capital inequality

Authors

Dr. Davin, Marion, Assistant professor,
Dr. Constant, Karine, Assistant professor,

Presenter

Dr. Davin, Marion, Assistant professor,

Abstract

This article examines how pollution and its health effects during childhood can affect the dynamics of inequalities among households. In a model in which children endogenously determined by pollution and the health investments of parents, we show that the economy may exhibit inequality in the long run and be stuck in an inequality trap with steadily increasing disparities, because of pollution. We investigate if an environmental policy, consisting in taxing the polluting production to fund pollution abatement, can address this issue. We find that it can decrease inequality in the long run and enable to escape from the trap if the emission intensity is not too high and if initial disparities are not too wide. Otherwise, we reveal that a policy mix with an additional subsidy to health expenditure may be a better option, at least if parental investment on children sufficiently efficient.

Land use III

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Valuing externalities of outdoor advertising in an urban setting – the case of Warsaw (PRESENTER: Mikolaj Czajkowski ; DISCUSSANT: Laure Bamiere)
2. Storing carbon in French agricultural soils: potential and cost of additionnal storage (PRESENTER: Laure Bamiere ; DISCUSSANT: Ilias Mokas)
3. Prediction and Interpretation of People's Preferences for Urban Space: A Deep Neural Network Informed Choice Modelling Approach (PRESENTER: Ilias Mokas ; DISCUSSANT: Robert Johnston)
4. Modeling Transaction Costs within Household Adoption Behaviors: A Case Study of Landscape Best Management Practices (PRESENTER: Robert Johnston ; DISCUSSANT: Mikolaj Czajkowski)

Speakers

Czajkowski, Mikołaj, , University of Warsaw

Dr. BAMIERE, Laure, ,

Mr. Mokas, Ilias, ,

Dr. Johnston, Robert, Professor of Economics, Clark University

Presentations

Valuing externalities of outdoor advertising in an urban setting – the case of Warsaw

Authors

Czajkowski, Mikołaj, , University of Warsaw

Mr. Bylicki, Michał, PhD student,

Mr. Budziński, Wiktor, PhD student,

Mr. Buczyński, Mateusz, PhD student,

Presenter

Czajkowski, Mikołaj, , University of Warsaw

Abstract

Outdoor advertising (OA) produces externalities, such as access to information and visual pollution, that have to be considered in cityscape planning. We propose a theoretical model of demand for OA that considers positive and negative externalities, as well as consumers income and advertising space they can rent. We then present the results of a stated preference study aimed at estimating the value that people attach to the reductions of OA in Warsaw, the capital of Poland. We considered two types of OA mediums: free-standing ads and on-building ads, alongside five levels of advertising reduction. We find that inhabitants of Warsaw prefer regulating and limiting the amount of OA and we quantify their willingness to

pay for such a policy. In total, the people of Warsaw were willing to pay from 1.7 to 4.1 million EUR per year for limiting the number of free-standing ads and 5.5

Storing carbon in French agricultural soils: potential and cost of additional storage

Authors

Ms Letort, Elodie, Researcher, INRAE
Dr. BAMIERE, Laure, ,
Dr. Bellassen, Valentin, senior scientist, INRAE
Ms Delame, Nathalie, scientist, INRAE
Dr. Mosnier, Claire, researcher, INRAE
Mr. Schiavo, Michele, scientists, IDDRI

Presenter

Dr. BAMIERE, Laure, ,

Abstract

Following the Paris agreement (COP21), France set a carbon neutrality objective by 2050. The French agricultural sector can contribute as a carbon sink through carbon storage in biomass and soil. The objective of this study is to quantitatively assess the additional storage potential and cost of a set of nine carbon-storing practices. The impacts of these practices on soil carbon storage and crop production are assessed at a very fine spatial scale, using crop and grassland models. The economic model BANCO is used to build the marginal soil carbon storage cost curve for France and identify the combination of storing practice that minimizes the total cost of achieving a given national storage target. We find a potential for additional carbon storage of about 8.15 Mt C/year, which would offset 39% of the agricultural sector GHG emissions. Moreover, 96% of this potential can be achieved at a lower cost than 250

Prediction and Interpretation of People's Preferences for Urban Space: A Deep Neural Network Informed Choice Modelling Approach

Authors

Prof. Lizin, Sebastien, Assistant professor, Hasselt University
Prof. Malina, Robert, Professor, Hasselt University
Mr. Mokas, Ilias, ,
Mr. Athanasiadis, Ioannis, Researcher, Imec
Prof. Bruns, Stephan, Professor, U Hasselt

Presenter

Mr. Mokas, Ilias, ,

Abstract

We analyze human preferences for urban space in cities. To that end, we use a large dataset (N= 96,417) of stated binary choices being informed by Google Street View (GSV) images, and we combine (i) image segmentation based on deep neural networks (DNNs) and (ii) traditional choice models. Specifically, we use the DNN-subclass of so-called "convolutional neural networks" (CNN) for image segmentation to automatically extract high-level attributes of urban space (i.e., green, blue, grey attributes) by visual cues, similar to a pictorial discrete choice questionnaire format. Next, the extracted attributes are used as independent variables in a conditional logit choice model, allowing us to interpret peoples

Moreover, we compare the predictive power of our neural-network-informed choice model with the predictive power of an approach entirely based on deep neural networks. Comparing the evaluation metrics (i.e., accuracy) between the two methodologies, we find that the DNN approach only marginally outperforms (2% percent higher in accuracy metric) the neural network-informed choice model. Therefore, our study

Modeling Transaction Costs within Household Adoption Behaviors: A Case Study of Landscape Best Management Practices

Authors

Dr. Johnston, Robert, Professor of Economics, Clark University

Dr. Ndebele, Tom, Post Doctoral Research Associate, Clark University

Prof. Newburn, David, Professor, University of Maryland

Presenter

Dr. Johnston, Robert, Professor of Economics, Clark University

Abstract

Many types of conservation-incentive programs provide economic incentives for adoption of landscape best management practices (BMPs) by non-agricultural households, such as landscape designs that prevent stormwater runoff. These programs typically include multiple administrative barriers that impose transaction costs, such as requirements for project design and inspection. The literature provides little insight on how these transaction costs influence adoption, particularly for conservation on residential land. This paper develops a model to estimate the simultaneous effects of transaction costs linked to common administrative requirements within residential cost-share incentive programs. The model decomposes the magnitudes and effects of different types of transaction costs that vary in magnitude across agents, as a function of requirements for project design, contracting, inspections, and payments. It further identifies the types of program changes that would cause the greatest increases in efficiency due to transaction cost attenuation, as reflected by reductions in agents

Stated preferences

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. A new shifted log-normal distribution for mitigating 'exploding' implicit prices in mixed multinomial logit models (PRESENTER: Romain Crastes dit Sourd ; DISCUSSANT: Ewa Zawajska)
2. On the inference about willingness to pay distribution using contingent valuation data (PRESENTER: Ewa Zawajska ; DISCUSSANT: Carmelo J. Leon)
3. A Bayesian Averaging Approach to Model Uncertainty in Discrete Choice Experiments (PRESENTER: Carmelo J. Leon ; DISCUSSANT: Wangwei Wu)
4. On assignment to classes in latent class logit models (PRESENTER: Wangwei Wu ; DISCUSSANT: Romain Crastes dit Sourd)

Speakers

Dr. Crastes dit Sourd, Romain, ,
Zawajska, Ewa, ,
Prof. Leon, Carmelo J., ,
Mr. Wu, Wangwei, Student,

Presentations

A new shifted log-normal distribution for mitigating 'exploding' implicit prices in mixed multinomial logit models

Author

Dr. Crastes dit Sourd, Romain, ,

Presenter

Dr. Crastes dit Sourd, Romain, ,

Abstract

This paper introduces a new shifted negative log-normal distribution for the price parameter in Mixed Multinomial logit models. The new distribution, labelled as the u-shifted negative log-normal distribution, has desirable properties for welfare analysis and in particular a point-mass which is further away from zero than the negative log-normal distribution. This contributes to mitigating the 'exploding' implicit prices issue commonly found when the price parameter is specified as negative log-normal and the model is in preference space. The new distribution is tested on 10 stated preference datasets. Comparisons are made with standard alternative approaches such as the willingness-to-pay space approach. It is found that the new u-shifted distribution yields much lower mean marginal WTP estimates compared to the negative log-normal specification (up to 99% lower) and similar to the values derived from a

multinomial logit while at the same time fitting the data as well as the negative log-normal specification and much better than the willingness-to-pay space approach

On the inference about willingness to pay distribution using contingent valuation data

Authors

Czajkowski, Mikołaj, , University of Warsaw

Zawojka, Ewa, ,

Presenter

Zawojka, Ewa, ,

Abstract

Although contingent valuation (CV) is one of the main sources of estimates for non-market values of environmental goods, little guidance exists regarding robust econometric approaches for modelling CV data, which would reliably estimate willingness-to-pay (WTP) values based on binary choice, payment card or open-ended elicitation data, among others. CV studies typically use relatively simple approaches to modeling survey responses, which may lead to a bias. Conservative (lower-bound) non-parametric estimates seem to be preferred in legal cases, while studies that apply parametric approaches rarely go beyond logit, probit or tobit. To enhance the reliability of CV-based WTP estimates, we propose a flexible approach to parametric modelling of WTP distribution based on CV data, by considering a wide range of parametric model specifications. We demonstrate the advantages of the proposed approach using databases from two flagship CV studies: the eutrophication reduction valuation for the Baltic Sea Action Plan and the Deepwater Horizon natural resource damage assessment. We find non-negligible differences in value estimates across models with different assumed parametric distributions, and we observe the variation in WTP values to be smaller when only better-fitting models are considered. This emphasizes the need for cautiously identifying the model best-fitting to the data, instead of choosing a specification ad hoc without considering many parametric distributions.

A Bayesian Averaging Approach to Model Uncertainty in Discrete Choice Experiments

Authors

Prof. Leon, Carmelo J., ,

Prof. Araña, Jorge E., Professor,

Presenter

Prof. Leon, Carmelo J., ,

Abstract

Discrete Choice Experiments (DCE) has been extensively employed to estimate environmental values and guide public policies in this context (Hoyos, 2010). Despite its extensive use, there is some concern regarding the robustness of the method, in the sense that elicited preferences (e.g. WTP) can be very sensitive to some experimental design aspects like scope of the good, vehicle payment, number of attributes and levels, among others (Hausman, 2014). This paper is aimed at dealing with a somehow unexplored issued name econometric model uncertainty. Model uncertainty comes from the fact that researchers needs to choose an econometric model specification when implementing a DCE, and different

choices are likely to lead to very significant different elicited values (Kragt, 2014; Keane and Wassi, 2012). This paper proposes the use of a Bayesian Model Averaging (BMA) approach to account for model uncertainty in DCE applications. The results show that BMA provides robust results for estimation of environmental values. In particular, results show that the observed discrepancy between single and joint evaluation methods (dichotomous choice and multiple discrete choice methods) reduces significantly when a BMA model is considered.

On assignment to classes in latent class logit models

Authors

Mr. Daziano, Ricardo, ,
Mr. Wu, Wangwei, Student,

Presenter

Mr. Daziano, Ricardo, ,

Abstract

Random parameter logit models address unobserved preference heterogeneity in discrete choice analysis. The latent class logit model assumes a discrete heterogeneity distribution, by combining a conditional logit model of economic choices with a multinomial logit for stochastic assignment to classes. Whereas point estimation of latent class logit models is widely applied in practice, stochastic assignment of individuals to classes needs further analysis. In this paper we analyze the statistical behavior of six competing class assignment strategies, namely: maximum prior multinomial logit probabilities, class drawn from prior multinomial logit probabilities, maximum posterior assignment, drawn posterior assignment, conditional individual-specific estimates, and conditional individual estimates combined with Krinsky-Robb. Using both a Monte Carlo study and two empirical case studies, we show that assigning individuals to classes based on maximum multinomial logit probabilities behaves better than randomly drawn classes in market share predictions. However, randomly drawn classes have higher accuracy in predicted class shares. Finally, more accurate preference estimates are achieved via conditional individual-specific estimates.

Energy demand

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. What Drives Energy demand? The Role of Economic Development and Manufacturing Across Centuries (PRESENTER: Christian Bogmans ; DISCUSSANT: Leonard Missbach)
2. Appliance Uptake Across Low and Middle Income Countries - Evidence from Micro Household Data (PRESENTER: Leonard Missbach ; DISCUSSANT: Xavier Pautrel)
3. Residential and industrial energy efficiency improvements: A dynamic general equilibrium analysis of the rebound effect (PRESENTER: Xavier Pautrel ; DISCUSSANT: Marcos Marcolino)
4. ICT and Energy Use: A Macroeconomic Approach (PRESENTER: Marcos Marcolino ; DISCUSSANT: Christian Bogmans)

Speakers

Dr. Bogmans, Christian, ,
- Missbach, Leonard, ,
Prof. Pautrel, Xavier, ,
Dr. Marcolino, Marcos, , Potsdam Institute for Climate Impact Research

Presentations

What Drives Energy demand? The Role of Economic Development and Manufacturing Across Centuries

Authors

Dr. Bogmans, Christian, ,
Dr. Pescatori, Andrea, Economist, International Monetary Fund
Ms Kiyasseh, Lama, Economist, IFC
Dr. Matsumoto, Akito, Economist, International Monetary Fund

Presenter

Dr. Bogmans, Christian, ,

Abstract

Using a novel dataset covering 127 countries over two centuries, we uncover an energy Kuznets curve, with an initial decline of energy demand at low income levels followed by stages of acceleration and then saturation at high-income levels. Historical trends in energy efficiency have reduced energy demand, globally, by about 1.2 percent annually helping bring forward a plateau in energy demand for high income countries. At middle incomes energy and income move in lockstep. The decline (rise) of the manufacturing sector has

reduced (increased) US (China) energy demand by 4.1 (10.7) percent between 1990 and 2017.

Appliance Uptake Across Low and Middle Income Countries - Evidence from Micro Household Data

Authors

- Missbach, Leonard, ,

Dr. Steckel, Jan, Head, Climate and Development Working Group, Mercator Research Institute on Global Commons and Climate Change

Presenter

- Missbach, Leonard, ,

Abstract

Global energy demand is likely to grow considerably throughout this decade. This follows partially from households in low- and middle-income countries, which will eventually meet the budgetary requirements to purchase household appliances, such as refrigerators, TVs or washing machines. In this study, we use cross-sectional household data from 15 low- and middle-income countries to investigate characteristics, patterns and implications of appliance ownership. We find that appliance ownership is positively associated with income, living in urban areas, higher education or being part of an ethnic majority. Appliance acquisition, which follows heterogeneous national sequences, correlates with shifts in consumption among poor households. Our results facilitate the development of prospective energy systems and point towards promising avenues for deploying energy-efficient technology.

Residential and industrial energy efficiency improvements: A dynamic general equilibrium analysis of the rebound effect

Authors

Prof. Pautrel, Xavier, ,

Dr. Kahouli, Sondes, Assistant Professor,

Presenter

Prof. Pautrel, Xavier, ,

Abstract

The aim of this paper is to investigate bi-directional spillovers into residential and industrial sectors induced by energy efficiency improvement (EEI) in both the short- and long-term, and the impact of nesting structure as well as the size of elasticities of substitution of production and utility functions on the magnitude and the transitional dynamic of rebound effect.

Developing a dynamic general equilibrium model, we demonstrate that residential EEIs spillovers into the industrial sector through the labor supply channel and industrial EEIs spillovers into the residential sector through the conventional income channel. Numerical simulations calibrated on the U.S. suggest that not taking into account these spillover effects could lead to mis-estimate the rebound effect especially of residential sector EEIs. We also demonstrate how the size and the duration of the rebound effect depend on the value of elasticities of substitution. Especially, the elasticity of substitution between energy and non-energy consumption in household utility and the elasticity of substitution between physical capital and labor in production play a major role. Numerical simulations suggest that alternative sets of value for the elasticities of substitution may give sizable different patterns of rebound effects in both the short- and long-term.

In policy terms, our results suggest that energy efficiency policies should be implemented simultaneously with rebound effect offsetting policies by considering short- and long-term wide-economy feedbacks. As a consequence, they recall for considering debates about what type of policy path- ways is more effective in mitigating the rebound effect.

ICT and Energy Use: A Macroeconomic Approach

Author

Dr. Marcolino, Marcos, , Potsdam Institute for Climate Impact Research

Presenter

Dr. Marcolino, Marcos, , Potsdam Institute for Climate Impact Research

Abstract

Since the 1960s, there has been a fast accumulation of information and communication technology (ICT) capital. A key difference between ICT and non-ICT capital is that ICT only requires electricity to operate while non-ICT requires both electric and non-electric energy. In this paper, I quantify the impact of the falling price of ICT (relative to non-ICT) in the composition of capital and in the aggregate demand for energy. I find that the decline in the price of ICT and its fast adoption has caused a significant reduction in the aggregate use of energy. While it had essentially no impact on electricity demand, the reduction comes entirely from lower demand for non-electric energy. As the price of ICT declines, firms substitute non-ICT for ICT as input of production which reduces the demand for non-electric energy.

Thematic Session: The economics of the solar PV market: New empirical evidence

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Solar Trade Wars: U.S. versus China
2. Equilibrium Effects of Competition on Solar Photovoltaic Demand and Pricing
3. Demanding Innovation: The Impact of Consumer Subsidies on Solar Panel Production Costs
4. The Heterogeneous Value of Solar and Wind Energy: Empirical Evidence from the United States and Europe

Speakers

Houde, Sebastien, , ETHZ, Zurich

Mr. Lamp, Stefan, ,

Gerarden, Todd, , Harvard University

Dr. Gillingham, Kenneth, Associate Professor, Yale University

Presentations

Solar Trade Wars: U.S. versus China

Authors

Houde, Sebastien, , ETHZ, Zurich

Dr. Wang, Wenjun, Researcher, Agricultural Bank of China

Presenter

Houde, Sebastien, , ETHZ, Zurich

Abstract

This paper investigates the welfare effects of the recent trade war in the solar sector where the U.S. government initiated anti-dumping policies against Chinese solar manufacturers. We estimate a structural econometric model with a differentiated demand system and a supply-side that incorporates the vertical structure between upstream solar manufacturers and downstream solar installers. Our counterfactual simulations show that: 1) removing the anti-dumping policies increases the demand for solar PV in the U.S. by 20.3%; and 2) compared with large losses in profits for Chinese manufacturers, U.S. manufacturers gains in profits are small whereas U.S. installers suffer significant losses.

Equilibrium Effects of Competition on Solar Photovoltaic Demand and Pricing

Authors

Dr. Gillingham, Kenneth, Associate Professor, Yale University

Mr. Lamp, Stefan, ,

Mr. Bollinger, Bryan, Associate Professor of Marketing, New York University

Presenter

Mr. Lamp, Stefan, ,

Abstract

The relationship between market structure and economic outcomes is a first order question in economics with important implications for welfare and policy design. This study presents the results of a field experiment in which we experimentally vary the competitive environment during a large-scale behavioral intervention in the market for residential solar. We show that an increase in competition lowers prices and increases demand, both during the intervention and afterwards. By estimating a structural model of demand and installers

Demanding Innovation: The Impact of Consumer Subsidies on Solar Panel Production Costs

Author

Gerarden, Todd, , Harvard University

Presenter

Gerarden, Todd, , Harvard University

Abstract

This paper analyzes the short- and long-run impacts of consumer subsidies in the global market for solar panels. I estimate a dynamic structural model of competition among solar panel manufacturers to quantify the impacts of consumer subsidies on solar adoption and innovation. The model produces two key insights. First, ignoring long-run supply responses can generate biased estimates of the effects of government policy. Second, decentralized government intervention in a global market generates spillovers: a subsidy in one country causes international firms to innovate more, increasing adoption elsewhere. This spillover underscores the need for international coordination to address climate change.

The Heterogeneous Value of Solar and Wind Energy: Empirical Evidence from the United States and Europe

Authors

Dr. Gillingham, Kenneth, Associate Professor, Yale University

Dr. Ovaere, Marten, Doctor Assistant, Ghent University

Presenter

Dr. Gillingham, Kenneth, Associate Professor, Yale University

Abstract

We develop a methodology to quantify the marginal costs and benefits of intermittent renewables in all stages of the electricity supply chain. Using an extensive and novel hourly 2014-2018 dataset, we estimate the marginal value of solar and wind generation in all liberalized electricity markets in the United States and nine European countries, covering around a third of installed worldwide renewable capacity. We find considerable heterogeneity between countries, which implies that investment focused on high-value regions would have increased annual surplus by 5 to 13 billion dollars. In most of Europe, the estimated value of utility-scale solar is below its cost, while it is above its cost for wind. In all U.S. regions, the estimated values of solar and wind are above their costs. We also find that a percentage point increase in the share of renewable generation decreases its total value by more than \$1.5 per MWh. Lastly, if we were to replace current feed-in and net metering policies for distributed solar generation with a tariff equal to its value to the electricity system, investment in distributed solar would decrease significantly in almost all regions.

Thematic Session: Results from the Energy Modeling Forum on Post-Paris Carbon Pricing (EMF36)

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Climate Policies after Paris: Pledge, Trade, and Recycle Overview of Results from EMF 36
2. A model intercomparison of the welfare effects of regional cooperation for ambitious climate mitigation targets
3. Climate policy design, competitiveness and income distribution

Speakers

Peterson , Sonja , , Kiel Institute for the World Economy

Dr. AKIN OLCUM, Gokce, Economist, Environmental Defense Fund

Dr. Vandyck, Toon, , European Commission, Joint Research Centre

Presentations

Climate Policies after Paris: Pledge, Trade, and Recycle Overview of Results from EMF 36

Authors

Peterson , Sonja , , Kiel Institute for the World Economy

Schneider, Jan, , ETH Zurich

Mr. Winkler, Malte, ,

Prof. Böhringer, Christoph, Researcher, University of Oldenburg

Presenter

Peterson , Sonja , , Kiel Institute for the World Economy

Abstract

This article summarizes the insights of a model-comparison study on the magnitude and distribution of economic adjustment costs for reaching the emission targets of the Paris Agreement. Tightening the currently pledged contributions to reach the 2

A model intercomparison of the welfare effects of regional cooperation for ambitious climate mitigation targets

Authors

Dr. Parrado, Ramiro, ,

Peterson , Sonja , , Kiel Institute for the World Economy

Mr. Ghosh, Madanmohan , , Environment and Climate Change Canada

Dr. Gilmore, Elisabeth, Associate Professor / Senior Climate Policy Adviser, Clark University / Environment and Climate Change Canada

Mr. Macaluso, Nick , , Environment and Climate Change Canada

Mr. Winkler, Malte, ,

Prof. Rausch, Sebastian, ,
Dr. AKIN OLCUM, Gokce, Economist, Environmental Defense Fund
Mr. Johnston, Peter, Economist,
Dr. Khabbazan, Mohammad, Economist, TU Berlin
Dr. Lubowski, Ruben, Economist,
Ms McCallister, Margaret, Civil Engineer,
Dr. Duan, Maosheng, Professor,
Ms Li, Mengyu, Economist,

Presenter

Dr. AKIN OLCUM, Gokce, Economist, Environmental Defense Fund

Abstract

To facilitate ambitious mitigation targets, the Paris Agreement allows countries to cooperate by recognizing and transferring emission reductions - referred to as Internationally Transferred Mitigation Outcomes (ITMO). While multiple studies have confirmed that cooperation through a global emissions trading market reduces the total costs of abatement and the welfare effects, there has been less systematic analysis of the welfare effects of sub-global arrangements on countries both inside and outside the market. This paper compares the overall and distributional welfare effects of different multi-regional emission trading groups using seven computable general equilibrium (CGE) models, capturing the interactions between carbon markets, trade flows and the rest of the economy. Welfare impacts in 2030 of meeting current Paris Agreement pledges, known as the Nationally Determined Contributions (NDCs), as well as more stringent emissions reduction targets consistent with 2oC and 1.5oC are evaluated. The arrangements cover from 15 global emissions, excluding land-based emissions, depending whether trade is limited to energy intensive sectors or covers all sectors. While the welfare gains are less than the potential gains in a global market, regional arrangements have lower aggregate costs and these gains increase with the stringency of targets. However, some participants benefit more from regional arrangements than from a global market, and others may face modest losses compared to the domestic only reductions mainly due to interactions with trade in fossil fuels. Across models, the magnitude and the directionality of the welfare effects can vary, mainly due to differences in the forward projections of the energy and emissions intensity of the economy and the resulting abatement costs. The China - European Union trading arrangement is consistently favourable in overall welfare gains and to the participants across models, providing the highest economic gains per unit of

emissions mitigated.

Climate policy design, competitiveness and income distribution

Authors

Dr. Vandyck, Toon, , European Commission, Joint Research Centre

Dr. Weitzel, Matthias, , European Commission, Joint Research Centre

Mr. Wojtowicz, Krzysztof, Policy researcher, European Commission

Mr. Rey Los Santos, Luis, Policy researcher, European Commission

Ms Maftei, Anamaria, Policy researcher, Eurofound

Ms Riscado, Sara, Policy researcher, Bank of Portugal

Presenter

Dr. Vandyck, Toon, , European Commission, Joint Research Centre

Abstract

In order to get all stakeholders on board, ambitious climate policies need to strike a balance between multiple objectives. Competitiveness of industries and income distribution across households are two elements that usually feature prominently in the public debate. Specific policy measures to address these concerns, such as grandfathered allocation of permits and targeted tax recycling schemes, are typically designed and studied separately, without giving much attention to the interaction between the two. Here, we explore how policy elements designed to address competitiveness affect distributional impacts across households within 11 European countries by combining an economy-wide computable general equilibrium model with a household-level microsimulation model. Quantitative simulations indicate that climate policy with full auctioning of emission permits yields regressive effects before

Thematic Session: Pricing urban congestion

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Siting priorities for congestion-reducing projects in Dhaka: A spatiotemporal analysis of traffic congestion, travel times, air pollution, and exposure vulnerability'
2. The City-Wide Effects of Tolling Downtown Drivers: Evidence from London's Congestion Charge
3. Machine Learning from Big GPS Data about the Costs of Congestion

Speakers

Dr. Dasgupta, Susmita, ,

Mr. Herzog, Ian, ,

Dr. Koch, Nicolas, Head Policy Evaluation Lab, Mercator Research Institute on Global Commons and Climate Change (MCC)

Presentations

Siting priorities for congestion-reducing projects in Dhaka: A spatiotemporal analysis of traffic congestion, travel times, air pollution, and exposure vulnerability

Authors

Dr. Dasgupta, Susmita, ,

Dr. Wheeler, David, Consultant, World Bank

Dr. Khaliquzzaman, Md. , Consultant, World Bank

Mr. Huq, Mainul, Consultant, World Bank

Presenter

Dr. Dasgupta, Susmita, ,

Abstract

Traffic congestion increases travel time and is a major source of pollution and health damage in developing-country cities. Data scarcity frequently confines traffic improvement projects to sites where congestion can be easily measured. This paper uses spatiotemporal data from new global sources to revisit the siting problem in Dhaka, Bangladesh, where local congestion measures are augmented by estimates of citywide travel time, pollution exposure, and pollution vulnerability. We combine Google Traffic data with an econometric model linking traffic, pollution readings from a local monitoring station, and weather data to estimate the spatial distribution of vehicular pollution. We explore pollution-vulnerability implications by incorporating spatial distributions of poor households, children, and the elderly. Using the Open Source Routing Machine and OpenStreetMaps, we estimate systemwide travel-time gains from reducing congestion at each point in a grid covering the Dhaka metro area. We find a large divergence of siting priorities in single-dimensional exercises that focus exclusively on local congestion, citywide travel time, vehicular pollution, or vulnerable-resident pollution exposure. By implication, optimal siting requires a social objective function with explicit weights assigned to each of the four dimensions. The new

global information sources permit extending this multidimensional approach to many cities throughout the developing world.

The City-Wide Effects of Tolling Downtown Drivers: Evidence from London's Congestion Charge

Author

Mr. Herzog, Ian, ,

Presenter

Mr. Herzog, Ian, ,

Abstract

I study the effects of London England

Machine Learning from Big GPS Data about the Heterogeneous Costs of Congestion

Authors

Dr. Koch, Nicolas, Head Policy Evaluation Lab, Mercator Research Institute on Global Commons and Climate Change (MCC)

Dr. Ritter, Nolan, Postdoc,

Dr. Rohlf, Alexander, Postdoc,

Mr. Thies, Ben, , Mercator Research Institute on Global Commons and Climate Change (MCC)

Presenter

Dr. Koch, Nicolas, Head Policy Evaluation Lab, Mercator Research Institute on Global Commons and Climate Change (MCC)

Abstract

We provide a novel approach to estimate the heterogeneous costs of road congestion and the welfare forgone when failing to temporally differentiate corrective taxes based on 34 million GPS-coded trips from moving vehicles in Berlin. Using unsupervised machine learning, we assign anonymous trips to individual drivers and track their repeated travel behavior throughout a full year. We infer traffic density along the route taken and all potential alternatives to account for the equilibrium response of rerouting. The identification of the causal effect of traffic density on the time cost of travel relies on a new instrumental variable strategy exploiting intra-weekday traffic patterns. We find significant temporal heterogeneity in the daytime marginal external costs of congestion between 2.8 and 34

Egg-Timer: Energy, electricity

25th June 2021, 05:30 PM - 07:30 PM

Description

The titles of the papers to be presented appear below. Please click on "Presentations" to see detailed information about each paper.

1. Is Risk the Fuel of the Business Cycle?
2. Renewable Energy Targets and The Storage Cycling Trap: Unintended Effects and Implications for Power Sector Modeling
3. Adopters, potential adopters and factors driving their solar PV choices
4. Technology Adoption and the Timing of Environmental Policy: Evidence from Efficient Lighting
5. Paying More for Less in Energy Efficient Rental Properties
6. What drives Carbon Emissions in German manufacturing: Scale, Technique or Composition?
7. Potential economic impacts of wildfire-driven electricity blackouts for Europe under climate change

Speakers

Schult, Christoph, -, Halle Institute for Economic Research

Mr. Kittel, Martin, -, DIW

Dr. Ruokamo, Enni, ,

Ms Armitage, Sarah, ,

Mr. Petrov, Ivan, ,

Ms Rottner, Elisa, ,

Mr. Williges, Keith, Economist, University of Graz, Wegener Center for Climate and Global Change

Presentations

Is Risk the Fuel of the Business Cycle?

Author

Schult, Christoph, -, Halle Institute for Economic Research

Presenter

Schult, Christoph, -, Halle Institute for Economic Research

Abstract

This paper develops a dynamic stochastic general equilibrium (DSGE) model with risky capital and oil as production factors. The production function of the representative firm is a nested constant elasticity of substitution function. The model is estimated using Bayesian techniques with economic data and on oil prices, production and consumption for the United States. The interaction between risk, investment decisions of firms, and the oil market are analysed, taking the short-run elasticity of substitution between oil and capital and the propagation mechanisms between risk in capital production and oil price movements into account. The model is used to reassess the contribution of the different potential drivers to the business cycle controlling for fluctuations in oil markets. Significant findings are that the contributions of financial market frictions and oil market disturbances to the US business cycle are low and that financial market disturbances mainly drove the Great Recession. The

model can quantify the impact of climate change mitigation policies on the economy. Climate change mitigation policies, e.g. increasing oil taxes, to reduce crude oil consumption by 10% can cause a contraction of GDP by 1 to 2% and increases inflation. Monetary policy can stabilize inflation increasing the federal funds rate dependent on the degree of financial market imperfections by 0.15 to 0.40 percentage points annually.

Renewable Energy Targets and The Storage Cycling Trap: Unintended Effects and Implications for Power Sector Modeling

Authors

Mr. Kittel, Martin, -, DIW
Dr. Schill, Wolf-Peter, ,

Presenter

Mr. Kittel, Martin, -, DIW

Abstract

To decarbonize the economy, many governments have imposed a minimum share of renewable energy in total electricity supply. Implementing renewable energy targets in power sector models is a surprisingly delicate issue. They may incentivize excessive storage use, a modeling artefact, visible through contemporaneous charge and discharge of the same electrical storage facility ('unintended storage cycling'). Besides additional unintended storage use, further effects are distorted storage investment decisions, reducing the arbitrage and capacity value of storage. Exacerbating, effects on system level can result, affecting the optimal configuration of remaining system components. Decreased renewable energy integration potential, and increased emission intensity reduce renewable energy policy targets, as a means to foster the decarbonization of the economy, to absurdity. In this paper, we identify unintended storage cycling as a result of certain implementation strategies of minimum renewable targets. We use a parsimonious optimization model to numerically analyze its drivers and effects on market prices and quantities. We determine solution strategies to eradicate unintended storage cycling.

Adopters, potential adopters and factors driving their solar PV choices

Authors

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Mr. Karhinen, Santtu, Researcher, Finnish Environment Institute
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Presenter

Dr. Ruokamo, Enni, ,

Abstract

Generating electricity from solar energy is one way for households to participate in the ongoing transformation into decarbonized energy systems. A large empirical literature has examined the drivers and barriers associated with household solar photovoltaic system adoption. An emerging strand of this literature investigates what distinguishes earliest adopters from later adopters and non-adopters. Yet the understanding of the differences between earlier and later adopters remains limited, as few papers have applied formal statistical models to compare the different customer segments. The present study addresses

this gap. The purpose of this study is to examine how the factors that influence household solar PV choices differ between earlier adopters, potential adopters

Technology Adoption and the Timing of Environmental Policy: Evidence from Efficient Lighting

Author

Ms Armitage, Sarah, ,

Presenter

Ms Armitage, Sarah, ,

Abstract

Providing incentives for the deployment of earlier-generation clean technologies may result in dynamic inefficiencies in the long-run transition away from dirty technologies. Using efficient lighting as my empirical setting, I identify inter-temporal elasticities of LED demand with respect to prices of earlier-generation efficient lighting, exploiting state- and utility-level variation in subsidies and the timing of federal standards. I estimate a structural demand model and perform policy-relevant counterfactual simulations without early product subsidies or efficiency standards, to quantify the "innovation burden" from policy intervention on later-generation technologies.

Paying More for Less in Energy Efficient Rental Properties

Author

Mr. Petrov, Ivan, ,

Presenter

Mr. Petrov, Ivan, ,

Abstract

Research has suggested that there exists an

What drives Carbon Emissions in German manufacturing: Scale, Technique or Composition?

Authors

Ms Rottner, Elisa, ,

Dr. von Graevenitz, Kathrine, Researcher,

Presenter

Ms Rottner, Elisa, ,

Abstract

Carbon emissions from German manufacturing have increased over the past decade, while carbon intensity (emissions per Euro of gross output) has declined only slightly. We decompose changes in emissions between 2005 and 2014 into scale, composition (changes in the mix of goods produced) and technology (emission factors of production) effects. In accordance with concerns that stringent climate policies in Germany could lead to carbon leakage, we find evidence that the production composition in the German manufacturing sector is increasingly shifting towards less carbon-intensive products. Moreover, we find evidence to suggest that energy intensity of production has increased. These results are largely driven by a few energy intensive sectors.

Potential economic impacts of wildfire-driven electricity blackouts for Europe under climate change

Authors

Steininger, Karl, , University of Graz

Mr. Williges, Keith, Economist, University of Graz, Wegener Center for Climate and Global Change

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Presenter

Mr. Williges, Keith, Economist, University of Graz, Wegener Center for Climate and Global Change

Abstract

Beyond the expected impacts of climate change on the electricity sector, 2019 gave an indication of yet another possible impact

Policy Session: The role of firms in climate mitigation: Internal strategies, new business ethics, and the role of public policies

25th June 2021, 05:30 PM - 07:30 PM

Description

The aim of this policy session is to discuss the design and empirical evaluation of climate mitigation instruments in the business sector, with special attention to own or internal instruments.

The private sector has a key role in the transition towards a low carbon economy. First, because their contribution to GHG emissions is very relevant. Second, because the business sector has a major role to play in mobilizing and implementing resources for structural change. Third, much of the change has to do with the development and deployment of new technologies, which in large part will have to be thought out, developed, and implemented by the private sector.

In Europe, several objectives, transition paths, and regulatory instruments have been established by the European Commission. The global objectives to 2030 are detailed, taking mid-century decarbonization as a reference, and a set of EU policies have been implemented (e.g., EU ETS), or designed with framework characteristics (e.g., energy efficiency, renewables or energy taxation) whose intensity and relevance are left to the member states. Yet the change needed is so vast that, without the mobilization of sizeable resources and the involvement of the business sector, it will not be possible to achieve the desired objectives. In this sense, even in territories without intense public policies in this area, there are proactive companies in climate mitigation for several reasons. Firstly, because of the presence of "winwin" solutions in their operation, i.e., environmental improvements that lead to a direct reduction of operational costs. Very often these situations are related to processes for improving energy efficiency, a fundamental vector for achieving the objectives of the Paris Agreement. However, the business world may also be interested in acting on reputation issues to reinforce its capacity to maintain and attract end customers and investors. Finally, the challenges associated with adapting to climate change may lead to unilateral actions as, in some cases, climate adaptation and mitigation efforts are linked.

In addition to being subject to external policy objectives and instruments, companies may have their portfolio of objectives and intervention mechanisms. It is thus increasingly common for the business sector to adopt objectives linked to international agreements (i.e., science-based targets) or to those aimed by the countries in which it operates. These business objectives can be obtained through various channels: the expected action of external policies, compensation for unmitigated emissions, or the implementation of own mitigation measures (either implemented on internal operations or on external agents such as suppliers).

Organizer and Chair:

Xavier Labandeira

Speakers:

Maya Ormazabal

Antoine Dechezleprêtre

Alfred Marcus

María Mendiluce

Robert Metcalfe

Speakers

Prof. Labandeira, Xavier , Professor, University of Vigo

Ormazabal Herrero , Maya, Director of Environment and Human Rights, Telefónica

Prof. Marcus, Alfred, Professor at Carlson School of Management, University of Minnesota
Dr. Mendiluce, María , CEO, We Mean Business coalition
Prof. Metcalfe, Robert, Professor, University of Southern California

Presentation

Policy Session: Policies to promote a Just Transitions – lessons from the EU and the US

25th June 2021, 05:30 PM - 07:30 PM

Description

CMCC and RFF jointly organized a session entitled “Policies to support workers and communities in the transition to clean energy economies in the US and the EU” during the last EAERE Conference (EAERE 2020, virtual). At the session, participants laid the basis for cooperative work around the topics of how to promote an equitable clean energy transition for workers and fossil-fuel dependent communities, with particular focus on the design and implementation of specific transition policies.

Over the past year, many political and policy development were implemented. Over this period, the participants to the EAERE 2020 policy session worked to draft research papers and policy briefs analyzing how several policies both in the US and in Europe could support a Just Transition towards carbon neutral societies.

This policy session will showcase the progress made by the different research teams “one year after”, including the research jointly carried out over the past year and other activities pursued within ReNEWt (Research Network on Energy Workforce Transitions), a research network on equitable transition which was strengthened over the past months (<https://www.renewt.org/>).

The different teams will discuss their novel contributions to the understanding of, and the debate around, the principal socio-economic challenges facing coal and carbon-intensive regions today. The session will highlight successful strategies which have emerged in recent years and the principal differences between regions and countries that are coping well and those that are not. The debate will then be linked to recent policy developments, including a discussion of the Just Transition Fund and Just Transition Mechanisms within the broader context of the European Green Deal. Panelists will also highlight the implication emerging from the COVID19 pandemic on energy transition in carbon intensive regions. Discussions will further push the debate, started last year, around how to devise more effective ways of involving citizens and better understand energy-related views and attitudes, ultimately leading to greater social acceptability as well as more durable governance arrangements and socioeconomic benefits.

Organizer:

E. Verdolini - University of Brescia and RFF-CMCC European Institute on Economics and the Environment (EIEE)

Participants:

I. Petrescu - Harvard University and Simply Green Association

W. Look - Resources for the Future (RFF)

M. Dumas - London School of Economics (LSE)

H. Brauers - Technische Universität Berlin (TU Berlin)

E. Verdolini - University of Brescia and RFF-CMCC European Institute on Economics and the Environment (EIEE)

A. Śniegocki - WiseEuropa

F. Mailleux - European Trade Union Confederation Confédération Européenne des Syndicats

Speakers

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Dr. Petrescu, Ioana, -, Harvard Kennedy School

Mr. Look, Wesley, -, Resources for the Future

Prof. Dumas, Marion, Assistant Professorial Research Fellow, LSE

Ms. Brauers, Hanna, Research Associate, Europa University Flensburg

Mr. Mailleux, Felix, Advisor on climate, energy and industrial policies, European Trade Union Confederation

Mr. Sniegocki, Aleksander, -, WiseEuropa - Fundacja Warszawski Instytut Studiów Ekonomicznych i Europejskich

Presentation
