



The 2024 WORKSHOP ON CLIMATE ECONOMICS

September 13th, 2024
Nantes University

Contents

About	3
The 2024 Workshop on Climate Economics	3
Scientific Committee	3
Organizing committee	3
Participants	3
Timetable	4
List of Abstracts - Talks	5
Useful Information	9
How to get to Chateau du Tertre	9
Partner Institutions and Sponsors	11

The 2024 Workshop on Climate Economics

The 2024 Workshop on Climate Economics aims to bring together theoretical and experimental researchers working on any field of Climate Economics

Scientific Committee

Olivier Deschenes	University of California, Santa Barbara
Eugenie Dugoua	London School of Economics
Gauthier Vermandel	Ecole Polytechnique

Organizing committee

Hamza Bennani	Nantes University
Oussama Houari	Nantes University

Participants

Olivier Deschenes olivier@econ.ucsb.edu	University of California, Santa Barbara
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Damiano Di Francesco Damiano.DiFrancesco@santannapisa.it	Sant'Anna School of Advanced Studies

Timetable

CT: Contributed Talk, IS: Invited Speaker.

8:30–9:00	Welcome Coffee		
9:00–10:00	CT	Maximilian Huppertz University of Michigan	Climate change increases bilateral trade cost (<i>Discussant</i> : Geoffrey Barrows)
14:00–15:00	CT	Geoffrey Barrows ENSAE Paris	Weather Shocks as Local Cost Shocks: Estimating their Effects when Regions Trade (<i>Discussant</i> : Maximilian Huppertz)
11:00–11:30	Coffee		
11:30–12:30	IS	Olivier Deschenes University of California, Santa Barbara	The Health Impacts of Climate Change: Benefits and Costs of Adaptation
12:30–14:00	Lunch		
10:00–11:00	CT	Tiphaine Guillet Mines Paris, PSL	The Impact of Rising Temperatures on Tangible Investments: Evidence from French Firms (<i>Discussant</i> : Eric Monnet)
15:00–16:00	CT	Eric Monnet PSE	High Temperature Shocks as Supply Shocks. Evidence from One Century of Monthly Data (<i>Discussant</i> : Tiphaine Guillet)
16:00–16:30	Coffee		
16:30–17:30	CT	Damiano Di Francesco Sant'Anna School of Advanced Studies	Climate Growth-at-Risk (<i>Discussant</i> : Mariana Bernad)
17:30–18:30	CT	Mariana Bernad Royal Holloway, University of London	Walking the Talk? Green Management and Green Lending by Banks (<i>Discussant</i> : Damiano Di Francesco)
20:00–22:00	Diner at La Cigale		

List of Abstracts – Talks

The Health Impacts of Climate Change: Benefits and Costs of Adaptation

O. Deschenes

IS

University of California, Santa Barbara

This paper reviews and extends the recent empirical literature on the impact of climate change on mortality and adaptation in the United States. The analysis produces several new facts. First, the reductions in the impact of extreme heat on mortality risk previously documented up to 2004 have continued up to 2019, consistent with continued investments in health-protecting adaptations to high temperatures. The second part of the paper examines the private and external costs of electricity generation and consumption related to high temperatures, a commonly used proxy for measuring the consumption of adaptation services. Extreme temperatures increase electricity demand in the residential sector (relative to moderate temperatures), but not in the commercial, industrial and transportation end-use sectors. The additional electricity demand in response to high temperatures results in significant external costs due to the release of local and global pollutants caused by the combustion of fossil fuels in order to produce electricity. These external costs, documented for the first time in this paper, are one order of magnitude larger than the private cost of adaptation associated with electricity consumption..

Climate change increases bilateral trade cost

M. Huppertz

CT

University of Michigan, Ann Arbor

It is well established that climate change affects economic production, but its effects on trade networks, especially trade costs, have not been studied. I use international trade and weather data covering almost 200 years to show that climate change increases trade costs. Estimating a simple augmented gravity framework, I find that rising temperatures at the origin or destination country increase bilateral trade cost. I use a standard trade model to quantify the welfare impact of increased trade cost, finding that the impact of climate change on trade cost over the preceding 100 years reduced welfare in the 2010s by 0.75 percent. This effect depends not only on countries' own climate trends, but importantly on the climate trends of countries they export to and import from. Looking at the distribution of gains, poor and rich countries are equally harmed by trade cost increases due to climate change. Smaller economies, which are more reliant on international trade, are especially affected. My methodology can easily be embedded in studies of the impact of climate change using models of international trade.

The Impact of Rising Temperatures on Tangible Investments: Evidence from French Firms

T. Guillet

CT

Mines Paris, PSL

Rising temperatures due to climate change have both long- and short-term negative effects on business performance. Timely and appropriate adaptation by the private sector can mitigate the loss of business productivity and protect their physical assets. Using administrative data on the universe of French firms for the period 2009 to 2019, we find that firms invest on average €80,000 per year in climate-related tangible assets, which represents 7.4% of the yearly total tangible investments. Looking specifically at Small and Medium-sized Enterprises (SMEs) our findings suggest climate change related investments differ substantially across industries. Moreover, we find evidence that young firms are significantly quicker in adjusting their investment strategies to climate change than older firms. We also find that firms exposed to warmer temperatures are more likely to invest than those facing milder weather conditions. Finally, we provide the first large-sample empirical evidence of tangible assets adaptation to the physical risks of climate change.

Weather Shocks as Local Cost Shocks: Estimating their Effects when Regions Trade

J. Astier¹, G. Barrows¹, R. Calel², H. Ollivier³

CT

¹ Center for Research in Economics and Statistics (CREST), Institut Polytechnique de Paris

² McCourt School of Public Policy, Georgetown University

³ Paris School of Economics - CNRS

This paper presents a method for estimating treatment effects of local cost shocks when regions trade with each other. Because of spillovers induced by trade flows, comparing the evolution of outcomes between pre-shock and postshock periods in regions exposed versus unexposed to local shocks leads to a biased estimate of treatment effect. We model these across-region dependencies using standard assumptions from international trade theory. We use our model-consistent estimation strategy to revisit the literature on the evaluation of impacts from climate change onto country-level gross output using year-to-year variation in temperature and precipitation.

High Temperature Shocks as Supply Shocks. Evidence from One Century of Monthly Data

*J. Baleyte*¹, *G. Bazot*², *E. Monnet*³, *M. Morys*⁴

CT

¹ INSEE and PSE

² LED, University Paris 8

³ Paris School of economics, EHESS & CEPR

⁴ University of York

We investigate the impact of high temperature shocks on key macroeconomic variables, relying on a new historical dataset covering a full century and accounting for nonlinearities via state-dependent impulse response functions à la Auerbach and Gorodnichenko (2012). We use monthly data on temperature anomalies, industrial production, consumer prices and central bank interest rates since 1920 for a sample of 14 European countries. We establish the following facts: 1) a high temperature shock is unambiguously a supply shock (lower output and higher inflation); 2) the impact is more persistent on prices than on production; 3) since the 1980s, central banks have begun to take these shocks into account by lowering interest rates, as the immediate impact on output was greater than on prices; 4) the macroeconomic impact of individual high temperature shocks has diminished over time, but their frequency has increased, so that the cumulative effect of these shocks is now increasing; 5) the effects are less pronounced or absent in countries with lower average high temperature anomalies.

Walking the Talk? Green Management and Green Lending by Banks

*M. Bernad*¹, *R. de Haas*² and *J. P. Rud*¹

CT

¹ Royal Holloway, University of London

² European Bank for Reconstruction and Development

We analyze whether signatory banks of climate change initiatives implement greener management and lending practices and whether firms borrowing from these banks are more likely to undergo greener investments. We build two unique indices on green practices based on confidential information from banks provided in a survey. We find that banks committing to climate change principles tend to have greener management and lending practices. We also find that firms with loans from climate-committed banks are more likely to undertake green investments and that firms borrowing from banks that claim to provide energy-efficiency loans are more likely to invest in energy-related projects. Additionally, we do a geographical analysis. We find that green-managed firms are 1% more likely to borrow from a committed bank in a 5km radius compared to brown-managed firms. It is also around 8% more likely for a green-managed firm to have a loan, conditional on applying, when there is at least one green-managed or green-lending bank in their locality.

Climate Growth-at-Risk

*D. Di Francesco*¹, *C. Brownlees*², *G. Fagiolo*¹, and *F. Lamperti*¹

CT

¹ Sant'Anna School of Advanced Studies

² Universitat Pompeu Fabra

This study introduces the Climate Growth-at-Risk (Climate GaR) framework, a novel empirical approach designed to assess the impacts of climate-related shocks on the lower tail of the GDP growth distribution. While recent literature on the macroeconomic effects of climate change predominantly focuses on the average trajectory of GDP growth, the potential for significant downturns triggered by climate change has not been adequately addressed. Climate GaR seeks to bridge this gap by quantifying the downside risks to GDP that stem from climate change. Employing panel quantile local projections, our methodology allows us to examine the dynamic effects of weather shocks across various regions of the output distribution over different time horizons. Utilizing a comprehensive global panel dataset encompassing 167 countries from 1960 to 2019, we find suggestive evidence that climate shocks weigh negatively on the left tail of real activity outcomes, especially in the medium term. In analyzing the impacts of climate shocks on GaR across different countries, our study reveals some heterogeneity in the responses between wealthier and poorer nations, as well as between countries with low and high agricultural intensity. In doing so, our study provides novel insights into how climate change poses asymmetric risks to the economy, emphasizing the need for policy frameworks to address and mitigate these heightened vulnerabilities.

Useful Information



Talks will be held at the **Château du Tertre** of Nantes Université – Room 104. It is situated 5 min away from the tram station *Ecole centrale*.

Coffee breaks and lunch will be offered in room 103.

Wi-Fi will be available during the conference. Nantes University also provides access to an eduroam network.

The **conference dinner** will be held at “La Cigale”, located at 4 Place Graslin, 44000 Nantes

How to get to Chateau du Tertre

The building overlooks the Erdre River and can be reached by:

- **Bus:** lines 26, 2B, C2, C20
- **Tram:** line 2



Site 07

Campus Tertre

Lettres, langues, sciences humaines et sociales, droit, IAE Nantes - Économie & management, professorat et éducation (Inspé), STAPS

- | | |
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| <ul style="list-style-type: none"> 1 Château du Tertre 2 Local technique 3 Scolarité lettres, langues, sciences humaines et sociales (LLSHS)
UFR histoire, histoire de l'art et archéologie,
UFR sociologie/ Faculté de psychologie,
Service universitaire des langues
Formation continue LLSHS
Cafet' Stéphane Hessel
Bât. Nouveau Tertre 5 Géographie et aménagement régional (IGARUN)
Pôle audiovisuel multimédia (PAM) 6 Bu Lettres 7 Droit et sciences politiques/ IPAG 8 Langues et cultures étrangères 9 IAE Nantes - Bât. Erdre 10 BU Droit | <ul style="list-style-type: none"> 11 Pôle étudiant 12 Lettres et langages - Bât. Censive 13 Théâtre universitaire 14 IAE Nantes/ Entrepreneuriat étudiant - Bât. Petit-Port 15 SUAPS (Service universitaire des activités physiques et sportives) 16, 17, 18 Granges 1 et 2, dojo, vestiaire 19, 20 UFR STAPS/ Amphithéâtre 21 Inspé - Institut national supérieur du professorat et l'éducation
Site de Nantes - Launay-Violette 22 Inspé - Salles de Formation continue - Bât. CO 23 Inspé - Siège académique - Administration - Bât. EO 24 Amphi et salles de cours UFR STAPS - Bât. FO 25 Accueil site 26 Logements |
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Wifi univ-nantes ou eduroam dans tous les bâtiments universitaires

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Tramway - ligne 2	Bus - ligne 75	
Bus - ligne C20	Bus - ligne 80	Pour plus d'infos, rdv sur www.tan.fr
Bus - ligne 26	Bus - ligne 86	



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Partner Institutions and Sponsors

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