

MARIIA MURASHEVA

NOVA School of Business and Economics

GENERAL INFORMATION

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Fields: Environmental Economics

Research topic: Impact of air pollution on health outcomes

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EDUCATION

PhD in Economics, NOVA School of Business and Economics	2015 – 2023 (expected)
Research visit, UC Berkeley, Berkeley, California, USA	January – May 2019
MSc in International Business, Graduate School of Management, Saint-Petersburg State University	2013 - 2015
BSc in Physics, Faculty of Physics, Saint-Petersburg State University	2009 - 2013

JOB MARKET PAPER

The Impact of Local Pollution Exposure on Hospital Admissions: The Case of Portugal

Air pollution is shown to significantly impact the health condition of local populations, with very negative consequences on labour productivity, and in general on cognitive abilities of all population cohorts, particularly the elderly and the youngest. Given that those effects are location-specific, it is key to develop spatially disaggregated studies to capture climate change mitigation policies and socioeconomic impacts. This paper studies the impact of daily concentrations of traffic pollutant nitrogen dioxide (NO₂) on hospital admissions at the parish level in Portugal, from January 1, 2016, to December 31, 2018. Nitrogen dioxide is known in the epidemiological literature to be both a dangerous pollutant and a source of PM₁₀ and PM_{2.5} when reacting with the atmosphere. Even though the impacted area is typically limited to 600 meters from the road dividing the population into upwind and downwind exposure, being a precursor for other pollutants makes it an important pollutant to regulate from policy perspective. I use the wind direction as the Instrumental Variable for the daily parish-level concentration of pollutants that I am interested in. As the dependent variable is the daily number of hospital admissions due to respiratory-related reasons, I use the control function approach to address the possible endogeneity between the first and the second stages of the model. I use negative binomial regression for the second step of the estimation procedure. I bootstrap standard errors using the score bootstrap approach. I find significant impact on the number of hospital admissions due to respiratory-related reasons among males between 0 and 1 years old. Hence, in the context of the transition to carbon neutrality, the results obtained can better inform sustainable public policies in Portugal.

PAPERS

The Impact of Industrial Pollution Exposure on Hospital Admissions: Evidence from a Cement Plant in Russia (with Maria A. Cunha-e-Sá)

Air pollution is the single largest environmental health risk in Europe (EEA, 2021), responsible for 307 thousand premature deaths in 2019, with very negative impact on the welfare of local populations. Several epidemiological and economic studies provide evidence of an association between ambient air pollution and human health, especially for children and elderly adults. This paper studies the effect of individual-level daily silicon dust (SiO₂) exposure from cement production on the probability of hospital admissions for respiratory-related reasons. Our unique dataset was collected at the cement plant “Malcovskii portland cement” in the city of Fokino, Bryanskii region, central Russia, on which the local economy is highly dependent. We use an aerodynamic dispersion model to calculate the level of pollutant exposure at the individual-patient level. We find evidence that an extra 1 mg/m³ inhaled concentration of silicon dust increases the probability of hospital admissions by 0,8% for children and 4% for elderly adults. A decrease in silicon dust concentration to the standard level decreases the number of hospital admissions by 9,6% among children who inhale high levels of silicon dust. Based on back-of-the-envelope calculations, the lower bound of the incurred potential savings amounts to around 0,2% of the annual health public budget allocated to the region. Moreover, by dividing the city in four different regions according to the average exposure and including a measure of persistency, our research design allows us to identify a non-linear (concave) response of the individual probability of hospital admissions to the average daily inhaled concentrations in the area where exposure is higher. Therefore, our findings may contribute to better inform policymakers when designing sustainable environmental policies aiming at reducing ambient local air pollution exposure (industrial air pollution) in Russia.

WORK IN PROGRESS

Unemployment, Environment, Inequality, and Health

Air pollution has been considered in the literature an important driving force underlying the long-lasting puzzle of the negative relationship between unemployment and mortality rates in the US. I use a newly developed satellite-based dataset on local pollutant concentrations and demographic characteristics at a county level in the US to explore the relationship between the two factors in different contexts and to identify the conditions under which this effect is present. I find evidence that the mechanism “Unemployment increases @ local pollution decreases @ mortality decreases” may partially explain the identified puzzle. Yet, as shown in this paper, it is only present when pollution levels and/or the decrease in the pollutants’ concentration exposure are close to or above the average levels. These results suggest that to better estimate the impact of economic recessions on health outcomes and to implement the appropriate environmental policies to reduce local populations’ air pollution exposure, a clear understanding of the underlying local conditions, spatially and over time, that may drive those interactions is required.

PROFESSIONAL EXPERIENCE

Course Leader

International Management course

Nova School of Business and Economics – Universidade Nova de Lisboa
Rua da Holanda 1, Carcavelos, Portugal, 2775-405

- Giving theoretical lectures in International Management (160 students) to Undergraduate level students, managing two Teaching assistants, preparing evaluation materials

*September
2023 – Present
time*

Teaching Assistant for Undergraduate and Master level programs

International Management, Applied Entrepreneurship

Nova School of Business and Economics – Universidade Nova de Lisboa

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- Organization of study materials in the electronic educational platform Moodle, supervising and grading students' midterms, assignments, and exams
 - TA for International Management (150 students) and grading exams, term papers for Applied Entrepreneurship (100 students) at the Master level
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Research Assistant

January 2017

Financial Research Project on Trade Credit

– July 2017

Nova School of Business and Economics – Universidade Nova de Lisboa

- Analysed data of 4,5 mln executives at 600 000 firms in STATA, identified trends, calculated General Ability Index
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CONFERENCES AND WORKSHOPS

American Association of Environmental and Resource Economics Summer Conference (presented) Portland, Maine, USA	<i>May 31 – June 2, 2023</i>
Stockholm Institute of Transition Economics, invited seminar presentation (presented) Stockholm, Sweden	<i>September 20, 2022</i>
23 rd Annual CU Environmental and Resource Economics Workshop (presented) Vail, Colorado	<i>September 16-17, 2022</i>
X Conference of the Spanish-Portuguese Association of Natural and Environmental Resources Economics (presented) Barcelona, Spain	<i>September 1-3, 2022</i>
European Union Health Economics Association Biannual conference (presented) Oslo, Norway	<i>July 5-8, 2022</i>
9 th Atlantic Workshop on Energy and Environmental Economics (presented) Ilha da Toja, Spain	<i>June 23-24, 2022</i>
American Association of Environmental and Resource Economics Summer Conference Miami, Florida, USA (accepted, did not present due to COVID)	<i>June 1-3, 2022</i>
Nova Environmental and Health Knowledge Centres seminars Carcavelos, Portugal	<i>November 29, 2021</i>
Spanish-Portuguese Association of Natural and Environmental Resource Economics (AERNA) Biannual Conference	<i>September 2-3, 2021</i>
European Association of Environmental and Resource Economists Annual Conference	<i>June 23, 2020</i>
American Association of Environmental and Resource Economists Annual Conference	<i>June 3-5, 2020</i>
TWEEDS Workshop	<i>October 29-30, 2020</i>

SUMMER SCHOOLS

5 th CIRED International Summer School in Economic Modelling of Environment, Energy, and Climate Paris, France	<i>June 19 – 23, 2023</i>
Econometrics of Big Data with Professor Christian B. Hansen NIPE Summer School, University of Minho Braga, Portugal	<i>June 27-30, 2022</i>
Econometrics of Survey Data, Stratification and Clustering with Professor Manuel Arellano NIPE Summer School, University of Minho Braga, Portugal	<i>June 16-19, 2021</i>
International Summer School on Geospatial Data Analysis and Modeling with R DAAD Summer School Jena, Germany	<i>August 25- September 1, 2019</i>
Panel Data Spatial Econometrics with Professor Badi H. Baltagi NIPE Summer School, University of Minho Braga, Portugal	<i>June 11-14, 2018</i>

VOLUNTEERING EXPERIENCE

Secretary Climate – KIC Alumni Association European organization, 2500 members	<i>January 2018 – January 2019</i>
<ul style="list-style-type: none">- Wrote the Association’s Business Plan and present it to the CEO of Climate – KIC- Took care of daily operations of the Association, took notes on meetings and decisions of the Board	

GRANTS AND FELLOWSHIPS

Social and Environmental Life Cycle Assessment of cement production: Case of Portuguese and Russian manufacturers FCT Fellowship, Fundação para a Ciência e a Tecnologia	<i>2017 - 2021</i>
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SKILLS

Programming skills: R, QGIS, WRDS

Languages	Speaking	Reading	Writing
English	Fluent	Fluent	Fluent
Russian	Native	Native	Native
Portuguese	Advanced	Advanced	Advanced
