**Eva Lyubich**

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Advisor & Reference: Reed Walker

09/09/2020

Dear Professor Zidar,

I am writing to apply to the NBER Graduate Student Workshop on Business Income Taxation. I am a 5th year PhD student at UC Berkeley. My research is broadly speaking about public goods provision, inequality, and climate and energy policy. I am hoping this workshop can be a springboard for additional research that centers the role of capital investment in mitigating the climate crisis quickly and equitably.

Thank you for your consideration,

Eva Lyubich

## Eva Lyubich


CONTACT INFORMATION

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EDUCATION

**UC Berkeley**, Berkeley, CA — 2016 - Present
Ph.D, Economics

*Graduate Coursework*: Mathematical Tools for Economics, Economic Theory (x2), Macroeconomic Theory (x2), Econometrics (x2), Survey of Research in Economics, Introduction to Economic History, Applied Econometrics, Environmental and Resource Economics, Public Economics (x2), Industrial Organization, Special Topics in Industrial Organization

**Brown University**, Providence, RI — 2010 - 2014
Sc.B with Honors, Physics

RESEARCH FIELDS

Public Finance, Energy and Environmental Economics, Industrial Organization

PUBLICATIONS

"Regulating Mismeasured Pollution: Implications of Firm Heterogeneity for Environmental Policy," with Joseph Shapiro and Reed Walker, May 2018. *AEA Papers and Proceedings*

WORKING PAPERS

"The Race Gap in Residential Energy Expenditures"

FELLOWSHIPS, GRANTS, AND AWARDS

| | |
|---|---|
| Washington Center for Equitable Growth Doctoral Grant | 2020 |
| Berkeley Opportunity Lab - Initiative on Inequality and Place Fellowship | 2020 |
| Outstanding Graduate Student Instructor Award | 2019 |
| National Science Foundation Graduate Research Fellowship | 2016 |
| Sigma Xi: Scientific Research Honor Society | 2014 |
| Undergraduate Teaching and Research Award | 2012 |

INVITED PRESENTATIONS

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|---|---|
| The Workshop in Environmental Economics and Data Science (University of Oregon), UC Berkeley Energy Camp | 2019 |
| OECD Expert Workshop on Environmental and Economic Microdata | 2018 |

RESEARCH ASSISTANCE

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| Energy Institute at Haas, Berkeley, CA | 2017 - Present |
| Microsoft Research, Cambridge, MA | 2014 - 2016 |

TEACHING

UC Berkeley Department of Economics — 2019
Undergraduate Public Economics (ECON131) with Emmanuel Saez

SERVICE

*Referee*
Energy Journal, Environmental and Resource Economics, Review of Economics and Statistics

*Other*

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| Berkeley Economists for Equity - Finance Officer and Curricular Reform Committee | 2020 - 2021 |
| Women in Economics at Berkeley - Faculty Recruitment | 2019 - 2020 |
| Graduate Admissions Student Reviewer | 2017 - 2019 |
| Berkeley Energy and Resources Collaborative (BERC): Liason | 2017 - Present |

OTHER

Special Sworn Status, US Census Bureau

Climate change is arguably the most urgent threat of our time. According to the Special Report on Global Warming released by the International Panel on Climate Change (IPCC) in late 2018, limiting global warming to 1.5 degrees Celsius requires unprecedented reductions in CO2 emissions within the next decade. Even with 1.5 degrees of warming the planet will see a significant increase in extreme weather events, population displacement, and degradation of ecosystems. Since carbon is a global externality, economists have long taken a global approach, arguing that a uniform tax at the level of the social cost of carbon (or an equivalent quantity regulation, such as a cap and trade program) is the efficient policy for reducing greenhouse gas emissions. However, rapid decarbonization requires an overhaul of existing capital stock, from buildings to transportation infrastructure to manufacturing technology. I'm interesting in developing research projects that will lend insight into how to design policy to meet this goal – how do we raise the funds to upgrade and build new clean publicly owned capital, and how do we design the right investment incentives to green private capital?

I have several ongoing projects in which I explore the relationship between inequality, capital, and carbon emissions or climate impacts, and what the relationship means for optimal climate policy.

In one project, I study the role of place (i.e. built environment) in constraining peoples' consumption choice sets and limiting the capacity of a hypothetical carbon tax to lead to rapid decarbonization without being paired with place-based infrastructure investment due to low short-run elasticities of substitution. I use a mover design to understand observed geographic heterogeneity in per-capita emissions is driven by local amenities or individual consumption preferences and sorting. My hope is to speak to what place-based public investments would have the highest pay-off in terms of carbon reduction.

In a related project, I have shown using ACS data that Black households spend statistically and economically significantly more on residential energy expenditures than white households with the same income, household size, homeowner status, and city of residence. My hypothesis is that this is driven by Black households living in lower quality housing due to persistent segregation, and having less wealth and access to credit due to persistent discrimination, which limits their capacity to make energy efficient investments. I am currently in the process of acquiring household-level billing data that I will merge to redlining maps, zillow data, and credit bureau data in order to explore these possible causal channels.

On the firm side, I have one project, joint with Karl Dunkle Werner, that explores oil and gas producers' decisions around drilling on public lands. The royalty rates for oil and gas extracted on public lands are set by a law from 1920 to 12.5%, much lower than the rates set in private leases. I explore the welfare costs of this wedge. The oil and gas sector receives a lot of subsidies from the US government, and understanding their corporate tax structure and how it relates to their incentives to produce is going to be critical to executing this project well.

Another project, joint with Joe Shapiro and Reed Walker, explores whether the observed increase in energy efficiency in the US manufacturing sector is due to energy-specific productivity improvements or hicks-neutral productivity improvements. Since manufacturing energy efficiency is highly dependent on capital stock, as with the previous project, understanding the corporate tax structure faced by manufacturing firms will be useful. Moreover corporate tax changes may serve as source of policy variation to disentangle hicks neutral from energy-biased productivity.

Last, I have a project that focuses on climate adaptation investments instead of climate mitigation investments. As the number and cost of large disasters increases, society will have to invest immense amounts of money in adaptive infrastructure. Anecdotally, rich neighborhoods have gotten more public adaptive investment, such as sea walls and good drainage systems, than poor neighborhoods. I study the relationship between income inequality and the distribution of public investment and ask whether increasing inequality leads to under-adaptation in aggregate as adaptive investments are concentrated among the wealthy.

While corporate taxation is not central in any of these projects, investment is. Moreover, I recognize the importance of corporate decision-making and corporate tax rates in mitigating this crisis, as individual decisions are not going to decrease emissions at the scale necessary. I am hoping this workshop can be a springboard for additional research that centers the role of corporate taxes and investment incentives in funding and executing a transition to a carbon-free economy.

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BUSINESS & PUBLIC POLICY & ECONOMICS
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TELEPHONE:(510) 965-3298

September 8, 2020

Dear Colleagues,

I am writing a letter in support of Eva Lyubich's application to the NBER's Graduate Student Workshop on Business Income Taxation. Eva is a 5th year PhD student at Berkeley whom I have known for the past five years. Eva is a public and IO economist by training whose work focuses primarily on issues surrounding energy and environmental economics. While I don't think she will produce tons of original research pertaining to business taxation directly, I think this program will provide her an opportunity to round out her training in public economics while also exposing her to tools and ways of thinking that may be powerful arbitrage opportunities for her own work.

She has a range of interesting projects some of which I will describe below. One project, which is likely to be her job market paper, is focused on the role of place versus preferences in contributing to the enormous heterogeneity in local $CO_2$ emissions. Using administrative data from the Census, Eva is able to decompose the spatial heterogeneity in $CO_2$ emissions into a component driven by sorting due to individual preferences, and a component driven by place. Eva is especially interested in the role of local public goods in place effects. Theory predicts that public goods are under-provided in private markets and tax competition across independent jurisdictions further drives local public good provision downward. The interaction between this public goods market failure and the $CO_2$ externality market failure is likely to be important and has not yet been studied.

Another related project is trying to better understand the future costs to society involved in adaptation to climate change vis-à-vis investments in public goods / infrastructure. Part of the study is attempting to understand the extent of complementarity or substitutability between public and private investment in adaptation.

Eva has other projects exploring U.S. oil leases on public lands, energy productivity in U.S. manufacturing, and racial disparities in $CO_2$ emissions.

Please don't hesitate to reach out with any further questions.

Best regards,

