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Research fields:

Development Economics, Health Economics, Environmental Economics.

EDUCATION

- 2017-2022 PhD in Economics, Université PSL – Université Paris Dauphine (expected)
Dissertation: *Essays on Household Production, Human Capital and the Environment in Developing Countries*
Supervisor: Philippe De Vreyer (Dauphine – PSL)
Dissertation Committee: Tanguy Bernard (U. of Bordeaux), Michael Grimm (U. of Passau), Elise Huillery (Dauphine – PSL), Sylvie Lambert (Paris School of Economics)
- 2007-2008 MSc in Sustainable Development, HEC Paris
- 2004-2005 MSc in Comparative Politics, London School of Economics
- 2000-2004 BSc in Social Sciences, Sciences Po Grenoble – Université Grenoble Alpes

REFERENCES

Professor Philippe De Vreyer
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JOB MARKET PAPER

Saving lives with cooking gas? Unintended effects of targeted LPG subsidies in Peru

I evaluate the effect of the conversion of households from wood-fuel cooking to liquefied petroleum gas (LPG) cooking on infant mortality using data from sixteen waves of Peru's continuous Demographic and Health Survey. I exploit the sequential introduction of LPG subsidies targeting low-income households and compare early-treated districts to later or never treated districts using a staggered difference-in-difference estimation strategy. I find that infant mortality increased by 15% as a result of the massive fuel switch induced by the intervention, which corresponds to at least 6,600 additional infant deaths between 2010 and 2020. Subsidizing LPG also caused a higher incidence of symptoms of acute respiratory infections in children under five and of moderate or severe anemia among adult women, two conditions which are known to be induced by exposure to air pollution from cooking fuels. I show that these unexpected results are most likely explained by the fact that the switch to LPG led households which were previously cooking outdoors to start mainly cooking indoors, thus radically modifying the ventilation quality of their cooking area. These findings suggest that clean cooking interventions need to pay more attention to choices of cooking location and to cooking area ventilation.

WORKING PAPERS

Demand for informal caregiving and human capital accumulation: Evidence from elderly deaths in Senegal

Women carry a disproportionate share of the burden of informal caregiving to functionally dependent relatives such as old age individuals. In developing economies, this burden tends to fall on the shoulders of female adolescents in particular for cultural and economic reasons. This paper uses original panel data from Senegal to evaluate the effect of co-residence with elderly individuals on the educational attainment of female children. To identify this effect, I exploit the deaths of elderly co-residents which occur during the study period in an empirical strategy which relies on triple-differences with child fixed-effects. I show that an event of elderly death is associated with 23\% additional education completed over a period of 4 years by affected girls. I present evidence that changes in demand for informal caregiving within the household are one of the mechanisms at play. These results call for increased attention to specific forms of domestic child labor in public policies in order to reduce gender inequalities in education.

Wood fuel usage, air pollution and the prevalence of COVID-19 in Burkina Faso (with Philippe De Vreyer, Elodie Djemai, Adama Sana, Dramane Kania, Hermann Badolo and Abdramane Berthé)

Air pollution leads to higher transmission rates of some infectious diseases whose pathogens may be borne by particulate matter. This is a source of concern for public health in countries where wood fuel is the main source of cooking energy because wood combustion emits high levels of fine particulate matter ($PM_{2.5}$). This paper identifies the effect of individual exposure to $PM_{2.5}$ on the probability of being infected by the SARS-CoV-2 virus during the first peak of the COVID-19 epidemic in Burkina Faso. We instrument for exposure to $PM_{2.5}$ using a distance weighted average of wood consumption among households in the neighborhood of the individual of interest. We find that 12\% of adults tested positive to SARS-CoV-2 antibodies in our study area in June 2021. Exposure to $PM_{2.5}$ from wood fuel combustion significantly increases the risk of COVID-19. At the estimated mean 24-hour exposure of $219 \mu g/m^3$, our results predict a 7.6 percentage points increase in the probability of contracting the virus compared to a scenario without pollution. Converting households from wood to less polluting sources of energy may have benefits in terms of reduced coronavirus transmission.

WORK IN PROGRESS

REDGAS: A randomized evaluation of the demand for LPG stoves and of the associated effects on household air pollution, greenhouse gas emissions and well-being in Burkina Faso (with Philippe De Vreyer and Elodie Djemai)

[Data collection in progress]

We evaluate an intervention aimed at reducing air pollution in Burkina Faso by encouraging households to switch from wood or charcoal to liquefied petroleum gas (LPG) as their main cooking fuel. We randomize 820 households to a subsidy treatment, a credit treatment and a control group. Treated households receive an offer to purchase a gas stove from a local retailer at a discounted price or at the market price with the option to pay in three installments. We estimate the effects of these capital costs subsidies and consumption loans on the adoption and intensity of use of LPG over a six-month period following treatment. We also generate estimates of the effects of the interventions on 24-hour individual exposure to fine particulate matters (PM_{2.5}).

Poverty, preventive actions and the progression of COVID-19 in Burkina Faso (with Philippe De Vreyer, Elodie Djemai, Hermann Badolo, Abdramane Berthé, Dramane Kania and Adama Sana)

[Data collection completed]

This project investigates the determinants of COVID-19 transmission in Burkina Faso with a focus on behavioural factors. We conduct a randomized experiment in which an information treatment aimed at addressing informational market failures is cross-randomized with unconditional cash transfers designed to incentivize households to adopt preventive actions (regular handwashing, wearing face masks, etc). Rapid COVID-19 serological tests are conducted in all adult individuals belonging to the sample before and after the intervention. We estimate the effect of access to information and cash transfers on serological status at endline.

PAST PROFESSIONAL EXPERIENCE

2012 – 2017	Head of Access to Energy Unit, Entrepreneurs du Monde, Paris.
2010 – 2012	Project Manager – Access to Energy and SMEs, Entrepreneurs du Monde, Paris.
2008 – 2010	Project Manager, Kantar Added Value – Sustainable Development Practice, Paris.
2006 – 2007	Project Officer, France Volontaires, Port-au-Prince, Haïti.

TEACHING EXPERIENCE

2021-2022	Lecturer, Université Paris 1 Panthéon – Sorbonne (Graduate level). <i>“Microcredit and Development”</i>
2016-2019	Lecturer, Sciences Po - Paris School of International Affairs (Graduate level). <i>“Access to Energy in Developing Countries”</i>

PROFESSIONAL SERVICES

Referee: Fund for Innovation in Development (FID).

Co-organiser, DIAL seminar in development economics (IRD – Université Paris-Dauphine), 2018-2019.

CONFERENCES AND SEMINAR PRESENTATIONS

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| 2022 | ADRES doctoral conference, Paris School of Economics, France (online). |
| 2021 | NCDE conference, Norwegian School of Economics, Norway (online).
ICDE conference, Bordeaux School of Economics, France (online).
Journées de Microéconomie Appliquée, Université de Savoie, France (online). |
| 2020 | DIAL seminar, IRD, France.
Journées doctorales du Développement, Université Paris-Dauphine, France (online). |
| 2019 | DIAL seminar, IRD, France. |

GRANTS AND SCHOLARSHIPS

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| 2022 | Inserm – ANRS, “ <i>COVID4P: An investigation of the relationship between poverty, pollution, preventive actions and the progression of CoViD-19 in Burkina Faso</i> ”, co-PI with Adama Sana, Philippe De Vreder, Hermann Badolo, Abdramane Berthé, Elodie Djemai and Dramane Kania. | EUR 397,280 |
| 2020 | AFD - PAIRES Program, “ <i>REDGAS: A randomized evaluation of the demand for LPG stoves and of the associated effects on household air pollution, greenhouse gas emissions and well-being in Burkina Faso</i> ”, co-PI with Philippe De Vreder and Elodie Djemai. | EUR 380,000 |
| 2017 | CIFRE PhD Scholarship (4 years) | |

LANGUAGES

French (native), English (fluent), Haitian Creole (fluent), Spanish (can read), German (can read).

COMPUTER SKILLS

Stata, QGIS, LaTeX, ODK, SurveyCTO.