

A photograph of a white cow with black spots on its face and legs, leaning its head against the hood of a silver car. A small penguin is perched on the cow's head. The background shows a forest of tall evergreen trees under a cloudy sky. The word 'CERE' is written in white on a black rectangle in the top left, and '2020' is written in white in the bottom right.

CERE

2020

2020

books

journal articles

book chapters

reports &
working papers

seminars

unique visitors on web each month

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Research Director's Welcome

2020 has been a year we are not likely to forget. The pandemic hit us hard in late February, resulting in more or less, a complete close down of activities that involved physical meetings related to education and research. This has certainly been challenging also for us at CERE since essentially all activities had to be either cancelled or swiftly become digital.

Despite the new challenges we have been working hard at trying to maintain our usual activities such as seminars and research meetings in a digital environment instead and I salute every one's quick response in adapting to the new times. This is certainly true about our three PhD's who defended their theses during the pandemic; Aemiro Melkamu Daniel, Alejandro Egüez and Golnaz Amjadi. To illustrate how rapid the Covid situation hit, we could all be present for the nailing of Aemiro's thesis but when the defense took place merely weeks later – it was aired online with many empty seats in the room. We are proud of the work they have done, and particularly how they managed the very specific circumstances related to their public defense. We wish them all luck in their future career.

We also congratulate Camilla Widmark, who became Associate Professor (docent). As part of her appointment, she gave a docent lecture on "Forest and people – policy and economics of ecosystem services". Tommy Lundgren and Göran Bostedt were appointed Guest Professors at Luleå Technical

University, and Tommy together with Moriah Bostian will serve as editors in chief for an Encyclopedia that will be published by Elsevier. Concerning our own Journal, Journal of Forest Economics, the switch to Now Publishers proved successful with record breaking submissions. In 2020 we also awarded the Sören Wibe prize for the "best article" in the Journal of Forest Economics the last two years. This year's prize went to Shyamani Siriwardena, Kelly Cobourn, Gregory Amacher and Robert Haight, for their article Cooperative bargaining to manage invasive species in jurisdictions with public and private lands. The prize ceremony is postponed until 2021 due to the pandemic.

Finally, I would like to welcome Tommy as the Deputy Research Director. Although Tommy has been involved in the CERE leadership already from the start, his new formal position as deputy will strengthen CERE. We have also new scientific secretaries in Adan Martinez Cruz (SLU) and Mattias Vesterberg (umu). This very strong line-up, together with a very committed board, ensures a bright future for CERE.


We thank Parisa Pakrooh a PhD student within the field of energy economics and climate change at the University of Tabriz, Iran who managed to visit us during 2020. Hopefully things will go back to normal during the second half of 2021, so we thereby can meet each other face to face.

Runar Brännlund

Håll avstånd!



Keep distance!

 region
västerbotten

Personnel and Visitors

Professors

Francisco X. Aguilar
Runar Brännlund
Peichen Gong
Bengt Kriström
Magnus Lindmark
Karl-Gustaf Löfgren
Bo Ranneby

Associate Professors

Ann-Kristin Bergquist
Göran Bostedt
Jurate Jaraite
Tommy Lundgren
Lars Persson
Camilla Widmark

Other Researchers

Thomas Broberg
Ola Carlén
Amare Teklay Hailu
Chandra Kiran B Krishnamurthy
Adan L. Martinez-Cruz
Marco Persichina
Mattias Vesterberg
Wenchao Zhou

Graduate Students

Golnaz Amjadi
Victoria S Ayubu
Brian Danley
Aemiro Melkamu Daniel
Alejandro Egúez
Sef Meens-Eriksson
Xiao Hu
Sandra Schusser
Anders Vesterberg

Communication

Mona Bonta Bergman

Guest Researchers

Brent Sohngen, Professor
The Ohio State University, USA
Parisa Pakrooh, PhD student
University of Tabriz, Iran

Associates

Maria Arvaniti, Doctor
ETH Zürich, Switzerland
Moriah Bostian, Associate Professor
Lewis & Clark College, United States of America
Shawna Grosskopf, Professor Emerita
Oregon State University, USA
Per-Olov Johansson, Professor Emeritus
Stockholm School of Economics, Sweden
Amin Karimu, Doctor
University of Ghana Business School, Ghana
Andrius Kazukauskas, Doctor
Vilnius University, Lithuania
Anton Knutsson, PhD student
Swedish University of Agricultural Sciences, Sweden
Klarizze Puzon, Research Associates
United Nations University, Finland
Erlend Dancke Sandorf, Doctor
Norwegian University of Life Sciences, Norway

Visitors

Jan Abrell, Senio
Centre for Energy Policy and Economics, ETH Zurich, Switzerland
Torben Mideksa, Assistant Professor
Uppsala University, Sweden
Mats Nilsson, Lecturer
Södertörn University, Sweden
Aapo Rautiainen, PhD
LUKE natural resources institute, Finland



Board Members 2020

Board of Directors

The Board of Directors oversees the Centre's activities and review the Strategic Plan. It consists of researchers from across the environmental science and economic disciplines in Umeå.

Chair: Sofia Lundberg - Professor, and Dean at Umeå School of Business and Economics and Statistics (USB), Umeå University

Ove Nilsson - Professor, Department of Forest Genetics and Plant Physiology, Swedish University of Agricultural Sciences (SLU) Umeå and Director of Umeå Plant Science Centre

Carina Keskitalo - Professor, Department of Geography, Umeå University

Göran Ericsson - Professor, and Head of Department of Wildlife, Fish and Environmental Studies, SLU Umeå

Johan Fransson - Associate Professor, and Head of Department of Forest Resource Management, SLU Umeå

Vice Chair: Camilla Widmark - Associate Professor, and Head of Department of Forest Economics, SLU Umeå

Research Director of CERE:

Runar Brännlund - Professor, USB, Umeå University, Adjunct board member

Deputy Research Director of CERE:

Francisco X. Aguilar - Professor, Department of Forest Economics, SLU Umeå, Adjunct board member

Scientific Secretaries of CERE:

Jūratė Jaraitė - Assistant Professor, USB, Umeå University, Adjunct board member
Thomas Broberg - Assistant Professor, USB, Umeå University, Adjunct board member

Our Advisory Board for Strategic Issues

The Advisory Board provides invaluable knowledge, experience and advice from their respective industries and areas of expertise. They visit CERE biannually. Hibernating 2020 due to Covid.

Lars Bergman - Professor, Former President, Stockholm School of Economics

Torbjörn Fagerström - Professor, Former CEO, Swedish Foundation for Strategic Research

Yvonne Fredriksson - Former Director General, Swedish Energy Markets Inspectorate, Founder of WHYWE consulting AB

Kjell Jansson - Former CEO, Swedenergy

Anders Kristoffersson - Former Senior Advisor, Ministry of Finance

Mårten Larsson - Head of Industrial Policy Department, Swedish Forest Industries Federation

Top from left:

Sofia Lundberg, Chair and Dean at Umeå School of Business and Economics and Statistics, Umeå university. Photo: Umeå University.

Ove Nilsson, Professor, Department of Forest Genetics and Plant Physiology, SLU Umeå and Director of Umeå Plant Science Centre. Photo: Julio Gonzalez.

Camilla Widmark, Doctor and Head of Department of Forest Economics, SLU Umeå. Photo: Mona Bonta Bergman

Bottom from left:

Carina Keskitalo, Professor, Department of Social and Economic Geography, Umeå University. Photo: Umeå University.

Göran Ericsson, Professor, and Head of Department of Wildlife, Fish and Environmental Studies, SLU Umeå. Photo: Jenny Svénnås-Gillner.

Johan Fransson, Associate Professor, and Head of Department of Forest Resource Management, SLU Umeå. Photo: Mona Bonta Bergman.



CERE Activities

Even though 2020 was an abnormal year tinged by the pandemic we managed to keep up activities and various happenings despite having to cancel both the Ammarnäs meeting and the Ulvön meeting. Here are a few highlights from 2020.

CERE Director Runar Brännlund was as usual active in the public debate. Most read was his critique of the plastic bag tax, which he deems as political symbolism: “Our plastic bags do not end up in the Pacific or in China, they are used for carrying and as garbage disposals. They end up in heat and power stations becoming heat or electricity. Furthermore, the majority of the Swedish plastic carrier bags are made by renewable sources.”

More on our three successful PhD defenses this year: The thesis by Aemiro Melkamu Daniel provides attributes that demand flexibility contract providers can use to design compensation schemes and effectively market contracts for people willing to offer electricity demand flexibility. In his thesis, Alejandro Egüez, have examined how different incentives affect three fundamental sectors for a more circular economy: energy efficiency, district heating, and waste management. Golnaz Amjadi has studied the impacts of energy efficiency improvements in Swedish manufacturing firms using a detailed firm-level dataset for the Swedish manufacturing industry consisting of 14 sectors spanning the period 1997–2008.

Apart from being appointed editor-in-chiefs for the second edition of a major reference work Encyclopedia, Tommy Lundgren and Moriah Bostian were also involved in an OECD project as experts on incorporating ecosystem services into agricultural TFP.

Mattias Vesterberg took a closer look at demand flexibility in an SNS report and on Dagens industry. “Trusting in the households’ willingness to adapt are often unrealistic”, says Mattias Vesterberg.

CERE and USBE together with Övik Energi, Umeå Energi and Skellefteå Kraft are in the process of starting a new competence center – Energy North - that will focus on solving energy issues that could arise in a future, sustainable energy landscape.

Some physical visits did take place in 2020: apart from PhD Parisa Pakrooh’s visit, Aapo Rautiainen from LUKE natural resources institute, Finland gave a talk “Beyond carbon – taking the albedo effect into account in forest management and climate policy design”. Mattias Vesterberg held a public lunch talk about “Active electric customers – a force to be reckoned with?” When it was clear that the pandemic had a long-time mission, the CERE-seminars turned digital inviting Mats Nilsson, Södertörn University, Sweden who gave a seminar titled: “An outlook on the Nordic electricity market - Rules of trading and market (mal)functioning” and Jan Abrell, Centre for Energy Policy and Economics, ETH Zurich who talked about “The impact of carbon prices on renewable energy support”.

Peichen Gong gave a seminar in the SLU Worth Knowing series about Multiple-use forest management - comparing apples and oranges?”. Runar Brännlund held a talk regarding his and Bengt Kriströms SNS report “Swedish Energy and Environmental Taxation – A Reform Proposal”. Both these digital lectures can be found on cere.se together with other recorded lectures, and what better time to view these than during what we hope is the final stretch of the pandemic.



Golnaz Amjadi. photo: Tommy Lundgren



Aemiro Melkamu Daniel. photo: Private



Alejandro Egúez. photo: Runar Brännlund



Parisa Pakrooh photo: Private

A Journal Article

The effects of smart-parking on transit and traffic: Evidence from SFpark

Parking is a major challenge in almost all large urban areas, with parking constituting a significant share of urban land use. Together with parking pricing being both underpriced and fixed over the day, parking leads to many externalities, in particular congestion and pollution. To alleviate many parking-related challenges, several rapidly growing cities globally are optimizing parking through “smart-parking” programs, whose main objective is to ensure that demand for parking matches available supply throughout the day. There are few rigorous empirical estimates regarding the effects of these policies, particularly regarding how these programs affect policy-relevant aspects such as public transit ridership and traffic flow. One such program in San Francisco (SFPark) involves many measures, including adjusting parking prices to demand, making parking payments significantly more convenient, and improving parking-related information dissemination. Exploiting features of the roll out of SFPark, we are able to provide rigorous estimates of its effect upon public transit usage and traffic flow.

Using a difference-in-difference strategy and a rich micro data-set on hourly transit bus ridership along with data from SFpark, we find that the SFpark program led to a significant increase in bus ridership and a reduction in traffic flow. A back-of-the-envelope calculation suggests that the economic benefits resulting from avoided pollution and reduced congestion consequent to SFpark is larger than the approximate nominal costs of the program, meaning that the program more than “paid for itself”. Overall, our results suggest that smart-parking programs can help mitigate many traffic-related externalities, yielding significant economic benefits.

Chandra Kiran B. Krishnamurthy & Nicole S. Ngoc
(2020) *Journal of Environmental Economics and Management* 99, 102273

A CERE Working Paper

The Effects of Wind Power on Electricity Markets: An Evaluation Using the Swedish Electricity Market Data.

We study the process of electricity price formation in the Swedish intraday market, given a large share of wind power in the Swedish electricity system. The role of intraday markets is likely to expand with the incremental shares of wind power generation, given that well-functioning intraday markets may well lower societal costs of intermittent renewable power integration. The recent rapid growth in wind power generation makes the Swedish intraday market, which functions alongside quite diverse power generation mixes, an interesting case to study as it has not been profoundly explored. Besides, our study is of great interest for countries with low wind power shares transitioning or considering to transition to a system with significant shares of wind power.

Adopting Karanfil and Li's (2017) approach, we investigate the performance and functioning of the Swedish intraday market and try to understand whether this market expectedly rewards its participants. To understand this, we look at price formation in the intraday market and its relation to price formation in the day-ahead market, and we analyze whether intraday price premia – calculated as differences between intraday electricity prices and day-ahead electricity prices – are responding to market fundamentals, namely imbalances caused by wind power and other power-generating technologies, as well as the interconnection system. Using Swedish electricity market data for the period 2015–2018, we find that the Swedish intraday market, despite its small trading volumes, is functioning properly.

Xiao Hu, Jurate Jaraite &
Andrius Kažukauskas
CERE WP#2020-12



Publications and Outreach 2019-2020

Books and book chapters

Aguilar, F. X., Kelly, M. C., & Danley, B. (2019). Total Economic Value, Ecosystem Services and the Role of Public Policy Instruments in the Creation and Destruction of Forest Values. In *Services in Family Forestry* (pp. 103-118). Springer, Cham

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Angelov, A. G., Ekström, M., Kriström, B., & Nilsson, M. E. (2019). Four-decision tests for stochastic dominance, with an application to environmental psychophysics. *Journal of Mathematical Psychology*, 93, 102281.

Avila-Forcada, S., Martinez-Cruz, A. L., Rodriguez-Ramirez, R., & Sanjurjo-Rivera, E. (2020). Transitioning to alternative livelihoods: The case of PACE-Vaquita. *Ocean & Coastal Management*, 183, 104984.

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- Lindmark, M., & Olsson Spjut, F. (2019). The transformation of the organic energy system: the Swedish perspective. *Historia Agraria*, 77, 59-80.
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