



JÖNKÖPING UNIVERSITY

*Jönköping International  
Business School*

**First Virtual African Productivity Conference**  
**December 16-18, 2021**

## Contents

Welcome to vAPC 2021!	2
Committees	3
Conference Mechanics	4
Conference Program at a Glance	5
Session Schedules	6
Thursday December 16th	6
Friday December 17th	8
Saturday December 18th	10

## Welcome to vAPC 2021!

Dear Colleagues,

Welcome to the first (virtual) African Productivity conference, co-hosted by ISEaPA and the Jönköping International Business School, Jönköping University, Sweden.

vAPC 2021 will span three days, December 16th, 17th and 18th. We are excited to have such a diverse array of excellent plenary speakers and contributed papers from across the globe.

- Conference website: [https://iseapa.org/virtual\\_apw](https://iseapa.org/virtual_apw)
- Submission and registration website: Conference Maker
- Registration fee: FREE

## Zoom Link: vAPC-2021

Time: This is a recurring meeting, Meet anytime December 16-18, 10:45-17:45 GMT  
Join Zoom Meeting

<https://ju-se.zoom.us/j/68393789842?pwd=eWlQaEhNelRlM0J0aEMxai9iQzRpdz09>

Meeting ID: 683 9378 9842

Passcode: 640198

All of us on the local organizing and scientific committees welcome you to vAPC 2021.

Almas Heshmati, Christopher Parmeter and Robin Sickles,

## **Committees**

### **Organizing Committee:**

- Felicity Addo, Institute for Sustainable Economic Development, Austria, E-mail: felicity.addo@boku.ac.at
- Almas Heshmati, Jönköping International Business School, Sweden, E-mail: almas.heshmati@ju.se
- Selamawit G. Kebede, Poverty and Social Welfare Center, Ethiopia, E-mail: selam3mg@gmail.com
- Christopher Parmeter, University of Miami, USA, E-mail: cparmeter@bus.miami.edu
- Robin Sickles, Rice University, USA, E-mail: rsickles@rice.edu

### **Scientific Committee:**

- William Greene, New York University, USA
- Almas Heshmati, Jönköping International Business School, Sweden
- Subal C. Kumbhakar, Binghamton University, USA
- Christopher Parmeter, University of Miami, USA
- Robin Sickles, Rice University, USA

### **Plenary Speakers:**

- William Greene, New York University, USA
- Steve Kayizzi Mugerwa, Georgetown University, USA
- Subal C. Kumbhakar, Binghamton University, USA
- M. Hashem Pesaran, University of Southern California, USA
- Klaus F. Zimmermann, Global Labor Organization.

## **Conference Mechanics**

### **Sessions**

- All sessions will be hosted on Zoom.
- The majority of sessions contain three papers. Each parallel session is scheduled to run for 105 minutes with each paper being allotted 25 minutes of presentation 10 minute of Q&A afterwards.
- Each day's events will be hosted through a unique web address that is open through the date of the actual session. The breakout room technology presumes attendees have installed the latest version of Zoom on their machines.
- The chair of the session is the presenter of the last paper listed in the session. Chairs are responsible for keeping the session on time and directing question and answers at the conclusion of each presentation.
- In the case a presenter is not present in the parallel session, the session will continue and finish early. In this setting the chair can give more time to each paper at his or her discretion.
- All times listed are in Greenwich Mean Time (GMT, UK time). Please be aware of this when making plans for your presentation or for those presentations you wish to attend live.

**Zoom Link: vAPC-2021**

Time: This is a recurring meeting, Meet anytime December 16-18, 10:45-17:45 GMT  
Join Zoom Meeting

<https://ju-se.zoom.us/j/68393789842?pwd=eWlQaEhNelRlM0J0aEMxai9iQzRpdz09>

Meeting ID: 683 9378 9842

Passcode: 640198

**Conference Program at a Glance (GMT UK time)****Thursday December 16<sup>th</sup>, 2021**

10:45-11:00	Opening Remarks
11:00-12:45	Parallel Sessions I, A, B, C
12:45-14:00	Zoom Lunch Break
14:00-15:45	Parallel Sessions II, A, B, C
15:45-16:00	Zoom Coffee Break
16:00-17:30	Plenary Session I

**Friday December 17<sup>th</sup>**

11:00-12:45	Parallel Sessions III, A, B, C
12:45-14:00	Zoom Lunch Break
14:00-15:45	Parallel Sessions IV, A, B, C
15:45-16:00	Zoom Coffee Break
16:00-17:30	Plenary Session II

**Saturday December 18<sup>th</sup>**

11:00-12:45	Parallel Sessions V, A, B, C
12:45-14:00	Zoom Lunch Break
14:00-15:45	Parallel Sessions VI, A, B, C
15:45-16:00	Zoom Coffee Break
16:00-17:30	Plenary Session III
17:30-17:45	Closing Remarks

## Session Schedules

### Thursday December 16<sup>th</sup>, 2021

All times listed are in Greenwich Mean Time (GMT, UK time).

#### 10:45-11:00: Welcome and Opening Remarks,

**Almas Heshmati**

#### 11:00-12:45pm: Parallel Sessions I

##### Agricultural Productivity - Breakout Room A

**Session Chair: Selamawit Kebede**

*Determinants of Technical Efficiency of Wheat Production among Rural Households in Debre Elias District: East Gojjam Zone, Amhara National regional state, Ethiopia, Teshager Asratie* (Debre Berhan University).

*Sources of Productivity Growth in Ethiopian Agriculture, Anbes Tenaye Kidane* (Norwegian University of Life Sciences).

*Agricultural efficiency growth and Poverty in Rural Ethiopia: Evidence from Living Standards Measurement Study - Integrated Surveys of Agriculture (LSMS-ISA), Naod Anega.*

##### DEA I - Breakout Room B

**Session Chair: Sung-ko Li**

*How to estimate efficient frontiers through Gradient Tree Boosting, Maria Guillen* (Miguel Hernandez University of Elche); *Juan Aparicio* (University Miguel Hernandez of Elche); *Miriam Esteve* (University Miguel Hernandez of Elche)

*S-shaped Production Function and Efficiency Measurement, Sung-ko Li* (Hong Kong Shue Yan University); *Chun Kei Tsang* (Hong Kong Shue Yan University); *Shu Kam Lee* (Hong Kong Shue Yan University)

*Selecting Proxies for Inputs / Outputs with Limited Data in Data Envelopment Analysis, Sung-ko Li* (Hong Kong Shue Yan University); *Chun Kei Tsang* (Hong Kong Shue Yan University); *Shu Kam Lee* (Hong Kong Shue Yan University)

##### Tax reform, energy and natural resources - Breakout Room C

**Session Chair: Bernhard Mahlberg**

*Economy-wide impact of tax reform in Ethiopia: A recursive dynamic general equilibrium model, Takele Nikus* (Policy Studies Institute).

*The Relationship between Institutions and the Extractive Industry of Natural Resources in SADC Countries, Simeão Nhabinde* (UEM, Mozambique)

*Benchmarking and economic efficiency of biomass local heating plants: The case of Austria*, Andrea Frank-Stocker (Institute for Industrial Research); Wolfgang Koller (Institute for Industrial Research); Bernhard Mahlberg (Institute for Industrial Research).

**12:45-14:00: Lunch Break**

**14:400-15:45 Parallel Sessions II**

**SFA I - Breakout Room A**

**Session Chair: Christopher Parmeter**

*Modal Regression of Stochastic Frontier Models*, Shirong Zhao (Dongbei University of Finance and Economics).

*Spatial Stochastic Frontier Model with Endogenous Spillovers*, Levent Kutlu (University of Texas Rio Grande Valley).

*Nonparametric Estimation of Stochastic Frontier Models with Weak Separability*, Samuele Centorrino (Stony Brook University); Christopher Parmeter (University of Miami).

**Agriculture - Breakout Room B**

**Session Chair: Subal Kumbhakar**

*Review on Economic Efficiency of Vegetables Production in Ethiopia*, Dagmawe Asfaw (Samara University).

*Agronomic Endowment, Crop Choice and Agricultural Productivity*, Rishabh Sinha (The World Bank); Xican Xi (Fudan University).

*Risk-adjusted parametric and nonparametric production functions: The case of basmati rice in India*, Gudbrand Lien (Inland Norway University of Applied Sciences); Subal Kumbhakar (Binghamton University); Ashok Mishra (Arizona State University).

**The African Continent - Breakout Room C**

**Session Chair: Victor Ajayi**

*Are African Economies Becoming More Efficient Lately?*, Omotara Adeeko (University of Pittsburgh); AKM Morshed (Southern Illinois University Carbondale).

*Employment versus value-added structural change: which is more relevant for growth in the African LDCs?*, Ngwinui Azenui (Denison University).

*The Performance of the African Banking Sector: How Important are Institutions and Contract Law?*, Victor Ajayi (University of Cambridge).

**15:40-16:00: Zoom Coffee Break**

## **16:00-17:30: Plenary Session I**

**Session Chair: Christopher Parmeter**

*Recent Advances in the Panel Stochastic Frontier Models: Endogeneity, Heteroskedasticity, Dependence*, Subal Kumbhakar, Binghamton University, USA.

*Remarks on linear and nonlinear estimation of binary choice models*, William Greene, New York University, USA.

## **Friday December 17<sup>th</sup>, 2021.**

All times listed are in Greenwich Mean Time (GMT, UK time).

## **11:00-12:45: Parallel Sessions III**

**Session Chair: Giulia Rossello**

### **Health and Education - Breakout Room A**

*Technical efficiency of health production in Africa: Does income inequality matter*, Leulseged Kasa.

*Sustainability of Cooperation in the International Development of African Higher Education*, Lars Hartvigson (Jonkoping International Business School).

*Ph.D. publication productivity: the role of gender and race in supervision in South Africa*, Giulia Rossello (Maastricht University); Robin Cowan (Maastricht University); Jacques Mairesse (CREST-ENSAE).

### **SFA II - Breakout Room B**

**Session Chair: Kristofer Månsson**

*A New Corrected Ordinary Least Squares Estimation for the Stochastic Frontier Model with Normal-Half-Normal Specification*, Shirong Zhao (Dongbei University of Finance and Economics).

*Conditions for Robust Maximum Likelihood Estimation of the Stochastic Frontier Model*, William Greene (New York University); Alex Stead (University of Leeds); Phill Wheat (Institute for Transport Studies, University of Leeds).

*Conditional Quantile Estimators of Unit Inefficiency in Stochastic Frontier Analysis, with Application to Electricity Distribution Market*, Zangin Zeebari (Jönköping University).

### **Extractive Production and Growth - Breakout Room C**

**Session Chair: Nam Seok Kim**

*Factors that affect the level of gold extraction in Ethiopia*, Seyum Gashie (Bank of Abyssinia).



*The Extractive Industry's Impact on Economic Growth in SADC Countries*, Simeao Nhabinde (UEM).

*Democratic Consolidation, Unionization, and Growth Inducing Structural Change*, Nam Seok Kim (Syracuse University).

#### **12:45-14:00: Lunch Break**

#### **14:00-15:45: Parallel Sessions IV**

##### **Energy - Breakout Room A**

###### **Session Chair: Scott Hacker**

*Determinants of household energy choice in West Shoa Zone: in the case of Ambo Town*, Takele Nikus (Policy Studies Institute).

*Benchmarking of the Electricity Sector in East Africa, an Assessment of Technical Efficiency*, Rene Nsabimana (The University of Liege).

*Energy Efficiency of Manufacturing Firms in Ethiopia: Endogeneity-Corrected Stochastic Frontier Analysis*, Hailegebriel Yigezu (Addis Ababa University); Mans Söderbom (University of Gothenburg).

##### **Environmental Efficiency - Breakout Room B**

###### **Session Chair: Xinju He**

*International Environmental Efficiency Estimation Using Stochastic Metafrontier Directional Distance Function*, Ziyao Li

*Future Pathways of the African Rice System: Climate vs. Socio-economics*, Koen De Vos (KU Leuven); Charlotte Janssens (KU Leuven); Lies Jacobs (UVA); Benjamin Campforts (University of Colorado at Boulder); Gerard Govers (KU Leuven).

*An Input-oriented Approach to the Environmental Performance Index*, Xinju He (Hefei University of Technology).

##### **Comparative Studies - Breakout Room C**

###### **Session Chair: Almas Heshmati**

*Agricultural productivity growth, technical innovation and efficiency in Central African countries*, Ajapnwa Akamin (University of Buea).

*Growth and Poverty Dynamics: Evidence from a panel survey*, Chinasa Ikelu.

*Population Growth Similarity in North and East Africa*, Almas Heshmati (Jönköping International Business School).

#### **15:45-16:00: Zoom Coffee Break**

**16:00-17:30: Plenary Session II**

**Session Chair: Almas Heshmati**

*Long-Term Macroeconomic Effects of Climate Change: A Cross-Country Analysis*, M. Hashem Pesaran, University of Southern California, USA.

**Saturday December 18<sup>th</sup>, 2021**

All times listed are in Greenwich Mean Time (GMT, UK time).

**11:00-12:45pm: Parallel Sessions V**

**Firm Productivity - Breakout Room A**

**Session Chair: Tsegaye Mulugeta**

*Informal Competition and Manufacturing Firm Productivity in Ethiopia*, Kefyalew Endale (Addis Ababa University).

*The contribution of industrial robots to labor productivity growth and convergence: A production frontier approach*, Andreas Eder (Institute for Industrial Research); Bernhard Mahlberg (Institute for Industrial Research).

*Impacts of R&D Expenditures on Firms' Innovation and Financial Performance: A Panel Data Evidence from Ethiopian Firms*, Tsegaye Mulugeta (Arsi University).

**Firm Performance - Breakout Room B**

**Session Chair: Zangin Zeebari**

*R&D, Innovations, and Productivity in Developing Countries: Evidence from Ethiopian Firm level panel data*, Mezid Keraga (Addis Ababa University).

*Linking Technology Entrepreneurship to a Business Model towards the Growth of Ventures: Lessons from Ethiopian Small Manufacturing Enterprises*, Abdela Chebo (Debre Berhan University).

*Labor Productivity and Human Capital in Sub-Saharan Africa: a Firm-based Analysis*, Elsa Fontainha (ISEG Universidade de Lisboa); Rohey Touray (ISEG Universidade de Lisboa).

**Ethiopia and Tunisia - Breakout Room C**

**Session Chair: Mohamed Nejib Ouertani**

*Scale Efficiency of the Municipalities in Tunisia and Optimal Size: A Two-Stage Bootstrapped DEA*, Mohamed Ben Jemaa (University of Carthage).

*Corruption and Enterprises performance in Ethiopia*, Abraham Gonfa (Addis Ababa University)

*Investigating technical inefficiency variability before and during Arab spring: the case of the Tunisian insurance industry, Mohamed Nejib Ouertani (Imam Mohammad Ben Saud Islamic University).*

#### **12:45-14:00: Lunch Break**

#### **14:00-15:45: Parallel Sessions VI**

##### **Small Farm Efficiency - Breakout Room A**

###### **Session Chair: Khabo Sithole**

*Productive Capacity of Farm Households by Age in Ghana: Policy Implications for Food Security, Jacob Asravor (Hans-Ruthenberg-Institute (490a), University of Hohenheim); Richard Asravor (Ghana Technology University College); Alexander Wiredu - International Institute of Tropical Agriculture.*

*Competitiveness of Currently Practiced and Alternative Cotton Production Methods in Meatu District, Tanzania, Michael Baha (www.udom.ac.tz); Christian Elleby (European Commission); Arne Henningsen (University of Copenhagen); Gilead Mlay (Sokoine University of Agriculture).*

*Technical efficiency of small-scale sugarcane farmers in the Nkomazi Municipality, Mpumalanga province of South Africa, Khabo Sithole (University of Limpopo).*

##### **Trade and Efficiency - Breakout Room B**

###### **Session Chair: Mingyang Li**

*Effect of Economic Crises on Japan's Bilateral Trade Distribution: Examination of the Tohoku Earthquake Impact on the African Market, Onur Biyik (Waseda University, Japan).*

*Germes, Globalization, and Trade Spillovers: How could COVID-19 affect African Economies and AfCFTA, Gouranga Das (Hanyang University); Yumeka Hirano (World Bank); Jean-Claude Maswana (Ritsumeikan University).*

*Export and Productivity: A Semiparametric Smooth Coefficient Approach, Subal Kumbhakar (Binghamton University) Mingyang Li (University of Connecticut, USA).*

##### **Heterogeneity Bias, Renewable Energies and Industrialization - Breakout Room C**

###### **Session Chair: Selamawit G. Kebede**

*Considering Heterogeneity Bias and the Determinants of Transient and Persistent Efficiency: A case of Austrian Crop Farms. Felicity Addo (Institute for Sustainable Economic Development, BOKU; Integrated Biosphere Futures Group, IIASA) and Klaus Salhofer (Institute for Sustainable Economic Development).*

*The Role of R&D in the Effectiveness of the Determinants of Renewable Energies: A Spatial Economic Analysis. Mohsen Khezri (University of Kurdistan Hewler).*

*Political Economy of Industrialization and Industry Parks in Ethiopia*, Selamawit G. Kebede (Ethiopian Policy Research Institute); Almas Heshmati (Jönköping International Business School).

**15:45-16:00: Zoom Coffee Break**

**16:00-17:30: Plenary Session III**

**Session Chair: Robin Sickles**

*Ethnic Identity and Productivity*, Klaus F. Zimmermann, Global Labor Organization.

*The Developmental State in Africa in the 21st Century: Relevance and Plausibility*, Steve Kayizzi Mugerwa, Georgetown University, USA.

**17:30-17:45: Closing Remarks**

**Robin Sickles**