

# ESCoE Conference on Economic Measurement 2021

**11-13 May 2021**

**@ESCoEorg #econstats2021**

Welcome to the ESCoE Conference on Economic Measurement 2021.

This is the fourth year of the ESCoE Conference on Economic Measurement, following the success of the 2020 conference, which was held completely online last September.

Much as last year, social distancing rules and travel restrictions have led us to organise this year's Conference online. We have designed the timing of our three-day programme to maximise international attendance to our panel, plenary, and parallel sessions. To improve discussions during breaks, virtual breakout rooms are available during both afternoon coffee breaks.

We are delighted to introduce our three keynote speakers: Katharine Abraham (University of Maryland), Richard Blundell (UCL) and Paul Schreyer (OECD). You can read more about them on the following pages.

Our excellent parallel sessions programme reflects the contribution of our Scientific Committee Area Leads and programme committee members as listed at the end of this booklet. They helped us with the hard work of selecting the papers included in the programme (including in the poster exhibition) from an outstanding pool of submissions. The reduced time schedule that comes with the online format of the conference made the selection process a bigger challenge than usual and we would like to thank everyone who responded to our call for papers.

We would also like to thank the Organising Committee and the organisers of our three panel sessions, which will surely contribute to the discussion of key topics in economic statistics.

We hope that you enjoy this year's conference.

Scientific Committee Co - Chairs Ana Beatriz Galvão, Gary Koop and Sanjiv Mahajan



**Katharine G. Abraham  
(University of Maryland)**

**'Big Data for 21st Century Economic  
Statistics'**

The infrastructure and methods for developed countries' economic statistics, largely established in the mid-20th century, rest almost entirely on survey and administrative data. The increasing difficulty

of obtaining survey participation threatens this model. Meanwhile, users of economic data are demanding ever more timely and granular information. "Big data" originally created for other purposes—for example, detailed transactional data from retail scanners, credit card records, bank account records, payroll records, insurance records, data automatically recorded by sensors or mobile devices and even data obtained from websites and social media platforms—offer the promise of new approaches to the compilation of economic statistics that can address these challenges. Drawing on the US experience, the talk will consider progress towards incorporating big data into the production of economic statistics and the challenges to realising their full potential.

Katharine Abraham is Professor of Economics and Survey Methodology at the University of Maryland, College Park. She formerly served as commissioner of the US Bureau of Labor Statistics, as a member of the President's Council of Economic Advisers, and, most recently, as chair of the US Commission on Evidence-based Policymaking. Her published research includes papers on the contingent workforce; the work and retirement decisions of older Americans; unemployment and job vacancies; and the measurement of economic activity. She is an elected member of the American Academy of Arts and Sciences, a Distinguished Fellow of the American Economic Association, and a fellow of both the American Statistical Association and Society of Labor Economists. She has a Ph.D. in economics from Harvard University.



Richard Blundell  
(University College London  
and Institute for Fiscal  
Studies)

'Wage Progression of Low Skill  
Workers: The Role of Occupations  
and Firms'

Low-wage and low-educated workers experience little pay progression. For these workers employment is increasingly not enough to move them out of poverty or for longer run self-sufficiency. Using high quality matched worker-firm data for the UK we drill down to see what characteristics of occupations and firms drive differences in wage progression. We show that workers in low-educated occupations where soft skills are important receive higher returns to experience than workers in other low-educated occupations. Matching in R&D data we find these returns are higher in more innovative firms. We argue that soft skills are complementary to the firm's other assets which increases the worker's value to the firm and allow them to capture a higher share of the surplus (based on joint research with Philippe Aghion, Antonin Bergeaud and Rachel Griffith).

Professor Sir Richard Blundell is Ricardo Chair of Political Economy at University College London. He is also Director of the ESRC Centre for the Microeconomic Analysis of Public Policy at the Institute for Fiscal Studies. He has received many honours and prizes including the Yrjö Jahnsson Prize; the Frisch Prize; the Jean-Jacques Laffont Prize; the BBVA Prize; and the Erwin Plein Nemmers Prize. His published papers on microeconometrics, consumer behaviour, savings, labour supply, public finance, innovation, and inequality have appeared in the top academic journals. He is editor of Microeconomic Insights, and panel member of the IFS-Deaton Review of Inequality.



Paul Schreyer  
(Organisation for Economic  
Co-operation and  
Development)

'Framing Measurement Beyond  
GDP'

While the Beyond GDP agenda has been with us for some time, it has come centre stage in the COVID-19 crisis. The idea of building back a greener, more inclusive, more resilient economy is widespread and resonates well with measurement efforts beyond GDP. But the field of potential indicators is vast and choices need some structure. We present a simple measurement framework that is inspired by the green accounting literature and we discuss some of the challenges and opportunities arising with its implementation.

Paul Schreyer was nominated Chief Statistician of the Organisation for Economic Co-operation and Development (OECD) and Director of the Statistics and Data Directorate in 2020. He joined the Organisation in 1988 and held various positions in the (then) Directorates for Science Technology and Industry, Environment and Statistics. Before joining the OECD, he was a research fellow at the IFO Institute for Economic Research in Munich, Germany and Assistant Professor at the University of Innsbruck, Austria. Paul Schreyer holds a Ph.D. in economics. His personal research areas include national accounts, the measurement of capital, productivity, welfare, non-market activities and prices. He is the author of several OECD Manuals and has a record of publications in international journals and books. In 2008-09, he was rapporteur in the Stiglitz-Sen-Fitoussi Commission on the Measurement of Economic Performance and Social Progress.

# Tuesday

TIME	SESSIONS			
10.50-12.00	Welcome and Plenary Session I: Wage Progression of Low Skill Workers: The Role of Occupations and Firms			
12.00-13.00	Break			
13.00-14.30	Special Session A: New Data Sources in ONS Price Statistics	Contributed Session A: Trade Value Chains	Contributed Session B: Nowcasting	Contributed Session C: Machine Learning in Macroeconomics
14.30-15.00	Break			
15.00-16.30	Contributed Session D: Productivity	Contributed Session E: Uncertainty and Downside Risks	Contributed Session F: Solutions for Recent Measurement Challenges	Contributed Session G: Firm Level Analysis
16.30-17.00	Break			
17.00-18.00	Panel Session I: Measuring Non-Market Output during the Pandemic			

\* Please note, this Conference is on the record and all sessions will be recorded.  
 \* Timings are all BST.

## 10.50-12.00: Welcome and Plenary Session I

### Welcome

**Sam Beckett** (Second Permanent Secretary, UK Statistics Authority)

### Plenary Session I

**Chair: Ana Galvão** (University of Warwick)

**Richard Blundell** (University College London and Institute for Fiscal Studies)

'Wage Progression of Low Skill Workers: The Role of Occupations and Firms'

## 12.00-13.00: Break

## 13.00-14.30: Special Session A and Contributed Sessions A/B/C

### Special Session A: New Data Sources in ONS Price Statistics

**Chair: Sofia Poni** (Office for National Statistics)

**Natalie Jones** (Office for National Statistics) and **Aimee North** (Office for National Statistics)

'Utilising Administrative Data Sources to Develop Our Rental Price Indices'

**Jo Corless** (Office for National Statistics)

'Integrating New Data Sources into ONS Consumer Prices'

**Chris Payne** (Office for National Statistics) and **Kathryn Keane** (Office for National Statistics)

'Understanding the Impact of Changing Consumption Patterns on Consumer Price Inflation during the Pandemic'

#### **Contributed Session A: Trade Value Chains**

**Chair: Ana Rincon Aznar** (National Institute of Economic and Social Research)

**Khee Fung Wong** (Statistics Netherlands)

'The Role of Wholesale Traders in Global Value Chains'

**Riikka Korhonen** (Office for National Statistics) and Johannes Wernberg (Office for National Statistics)

'Setting Sights on the Future: Utilising Alternative Data Sources for Trade Deflator Development'

**Ana Rincon Aznar** (National Institute of Economic and Social Research)

'The "Rotterdam-Antwerp Effect" in the Context of UK Trade Statistics'

#### **Contributed Session B: Nowcasting**

**Chair: Aubrey Poon** (University of Strathclyde)

**Paul Labonne** (King's College London)

'Capturing GDP Nowcast Uncertainty in Real Time'

**Andrew Chang** (Federal Reserve Board)

'Raiders of the Lost High-Frequency Forecasts: New Data and Evidence on the Efficiency of the Fed's Forecasting'

Stuart McIntyre (University of Strathclyde), James Mitchell (Federal Reserve Bank of Cleveland) and **Aubrey Poon** (University of Strathclyde)

'Nowcasting `True' Monthly US GDP during the Pandemic'

#### **Contributed Session C: Machine Learning in Macroeconomics**

**Chair: Andreas Joseph** (Bank of England)

**Pedro Salas-Rojo** (Complutense University of Madrid) and Juan Gabriel Rodríguez (University Complutense of Madrid)

'Inheritances and Wealth Inequality: A Machine Learning Approach'

**Philippe Goulet Coulombe** (University of Pennsylvania)

'To Bag is to Prune'

**Andreas Joseph** (Bank of England), Eleni Kalamara (King's College London), George Kapetanios (King's College London) and Galina Potjagailo (Bank of England)

'Forecasting UK Inflation Bottom Up'

## 14.30-15.00: Break (Coffee Break Discussions)

## 15.00-16.30: Contributed Sessions D/E/F/G

### Contributed Session D: Productivity

**Chair: Josh Martin** (Office for National Statistics)

**Russell Black** (Office for National Statistics and King's College London)

'Productivity from the Annual Business Survey/ARDx 1998-2018'

**Norihiko Yamano** (OECD), Xue Han (Institute of Developing Economies-JETRO) and Bo Meng (Institute of Developing Economies-JETRO)

'Reviewing the Estimation Procedures of the Global Input-Output Database: Improving Coverage, Robustness and Timeliness'

**Josh Martin** (Office for National Statistics) and Kyle Jones (Office for National Statistics)

'An Occupation and Asset Driven Approach to Capital Utilisation Adjustment in Productivity Statistics'

### Contributed Session E: Uncertainty and Downside Risks

**Chair: Sharada Davidson** (University of Strathclyde)

Brent Meyer (Federal Reserve Bank of Atlanta), Nicholas Parker (Federal Reserve Bank of

Atlanta) and **Xuguang Simon Sheng** (American University)

'Unit Cost Expectations and Uncertainty: Firms' Perspectives on Inflation'

**Andrea De Polis** (University of Warwick), Davide Delle Monache (Bank of Italy) and Ivan Petrella (University of Warwick)

'Modelling and Forecasting Macroeconomic Downside Risk'

Joscha Beckmann (University of Greifswald / Kiel Institut), **Sharada Davidson** (University of Strathclyde), Gary Koop (University of Strathclyde) and Rainer Schüssler (University of Rostock)

'Measuring International Spillovers in Uncertainty and their Impact on the Economy'

### Contributed Session F: Solutions for Recent Measurement Challenges

**Chair: Leonard Nakamura** (Federal Reserve Bank of Philadelphia)

Richard Heys (Office for National Statistics) and **Pete Lee** (Office for National Statistics)

'Reviewing the Boundary Between Valuables and Financial Assets in SNA 2008 in the Light of Bitcoin and Similar Crypto-Assets and the UK Experience of Non-Monetary Gold'

**Marc Gronwald** (Xi'an Jiaotong-Liverpool University) and Esti Widyastuti (University of Aberdeen)

'How to Measure Oil Market Uncertainty? An application of Google Trends'

**Leonard Nakamura** (Federal Reserve Bank of Philadelphia)

'Evidence of Accelerating Mismeasurement of Growth and Inflation in the US in the 21st Century'

## Contributed Session G: Firm Level Analysis

**Chair: Silvia Lui** (Office for National Statistics)

Benjamin Schoefer (UC Berkeley) and **Oren Ziv** (Michigan State University)

'Productivity, Place, and Plants: Revisiting the Measurement'

Tomas Castagnino (Accenture) and **Jonathan Thomas** (Accenture)

'Software Robots and their Impacts on Productivity and High-Skilled Workers: A Ground-Level View'

**Silvia Lui** (Office for National Statistics), Russell Black (Office for National Statistics), Josefa Lavandero-Masson (Office for National Statistics) and Mohammad Shafat (Office for National Statistics)

'Business Dynamism in the UK: New Findings Using a Novel Dataset'

## 16.30-17.00: Break (Coffee Break Discussions)

## 17.00-18.00: Panel Session I

**Title: Measuring Non-Market Output during the Pandemic**

**Chair: Joe Grice** (Office for National Statistics)

**Panel Members: Philip Wales** (Office for National Statistics), **Diane Coyle** (University of Cambridge), **Paul Schreyer** (OECD) and **Ed Conway** (Sky News)

# Wednesday

TIME	SESSIONS			
11.00-12.00	Plenary Session II: Framing Measurement Beyond GDP			
12.00-13.00	Break			
13.00-14.30	Special Session B: The Impact of COVID-19 on Productivity	Contributed Session H: Consumer Prices and Expenditure	Contributed Session I: New Methods in Macroeconomics	Contributed Session J: Measuring Inequality
14.30-15.00	Break			
15.00-16.30	Contributed Session K: Measurement Issues	Contributed Session L: Forecasting and Uncertainty	Contributed Session M: Use of Job Vacancy Data	Contributed Session N: Measuring Capital
16.30-17.00	Break			
17.00-18.00	Plenary Session III: Big Data for 21st Century Economic Statistics			

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## 11.00-12.00: Plenary Session II

**Chair: Sanjiv Mahajan** (Office for National Statistics)

**Paul Schreyer** (OECD)

'Framing Measurement Beyond GDP'

## 12.00-13.00: Break

## 13.00-14.30: Special Session B and Contributed Sessions H/I/J

**Special Session B: The Impact of COVID-19 on Productivity**

**Chair: Tony Venables** (The Productivity Institute)

**Bart van Ark** (University of Manchester, The Conference Board and University of Groningen),  
**Klaas de Vries** (The Conference Board and University of Groningen) and **Abdul Erumban**  
(The Conference Board and University of Groningen)

'The Impact of the COVID-19 Pandemic on Productivity Dynamics by Industry'

**Diane Coyle** (University of Cambridge)

'Productivity in UK Healthcare during and After the COVID-19 Pandemic'

**Halima Jibril** (University of Warwick), **Stephen Roper** (University of Warwick) and Mark Hart (Aston University)

'Assessing the Impact of Government Support for Firms During COVID-19: Finance, Investment and Productivity'

#### **Contributed Session H: Consumer Prices and Expenditure**

**Chair: Andy Peisker** (Australian Bureau of Statistics)

**Valéry Dongmo Jiongo** (Statistics Canada)

'Innovative Uses of Web-Scraped Data in the Canadian Clothing and Footwear Consumer Price Index'

**Lance Taylor** (Statistics Canada) and Roobina Keshishbanoosy (Statistics Canada)

'Estimating Computers and Peripherals Price Indices Using Web-Scraped Data'

Michael Smedes (Australian Bureau of Statistics), **Andy Peisker** (Australian Bureau of Statistics) and Tom Lay (Australian Bureau of Statistics)

'Using Detailed Transactions Data to Measure Household Consumption in Australia'

#### **Contributed Session I: New Methods in Macroeconomics**

**Chair: James Mitchell** (Federal Reserve Bank of Cleveland)

Max Breitenlechner (University of Innsbruck), **Georgios Georgiadis** (European Central Bank)

and Ben Schumann (Free University of Berlin)

'What Goes Around Comes Around: How Large are Spillovers from US Monetary Policy Really?'

Efrem Castelnuovo (University of Padova), **Kerem Tuzcuoglu** (Bank of Canada) and Luis Uzeda (Bank of Canada)

'Measuring Aggregate and Sectoral Uncertainty'

**James Mitchell** (Federal Reserve Bank of Cleveland), Aubrey Poon (University of Strathclyde) and Gian Luigi Mazzi (Eurostat, retired)

'Nowcasting Euro Area GDP Growth Using Bayesian Quantile Regression'

#### **Contributed Session J: Measuring Inequality**

**Chair: Joel Suss** (London School of Economics)

**Brian Nolan** (Institute for New Economic Thinking) and Juan Palomino (University of Oxford)

'Intergenerational Wealth Transfers in Great Britain from the Wealth and Assets Survey in Comparative Perspective'

**Victor Bustos** (INEGI)

'Maximum Constrained Pseudo-Likelihood Estimation of Income Distributions, Combining Sources'

**Joel Suss** (London School of Economics)

'Measuring Local, Salient Economic Inequality in the UK'

14.30-15.00: Break (Coffee Break Discussions)

15.00-16.30: Contributed Sessions K/L/M/N

**Contributed Session K: Measurement Issues**

**Chair: Gueorguie Vassilev** (Office for National Statistics)

Richard Heys (Office for National Statistics) and **Clodhna Taylor** (Office for National Statistics)

‘Valuing Free Digital Platforms in a National Accounting Framework’

**Rachel Soloveichik** (Bureau of Economic Analysis)

‘Bundled Investment and Intermediates: Measuring “Free” Smartphone Investment as a Limiting Case’

Khloe Evans (Office for National Statistics) and **Gueorguie Vassilev** (Office for National Statistics)

‘Measuring Human Capital: An Indicator Framework to Identify Policy Needs’

**Contributed Session L: Forecasting and Uncertainty**

**Chair: Saeed Zaman** (Federal Reserve Bank of Cleveland and University of Strathclyde)

**Matteo Luciani** (Federal Reserve Board and Washington DC)

‘Common and Idiosyncratic Inflation’

Tara Sinclair (George Washington University) and **Zhoudan Xie** (George Washington University)

‘Sentiment and Uncertainty about Regulation’

Edward Knotek II (Federal Reserve Bank of Cleveland), **Saeed Zaman** (Federal Reserve Bank of Cleveland and University of Strathclyde)

‘Real-Time Density Nowcasts of US Inflation: A Model-Combination Approach’

**Contributed Session M: Use of Job Vacancy Data**

**Chair: Karlis Kanders** (Nesta)

**Julie Lassebie** (OECD), Luca Marcolin, Marieke Vandeweyer (OECD) and Benjamin Vignal (ENSAE)

‘Speaking the Same Language: a Machine Learning Approach to Classify Burning Glass Skills’

**Matthias Qian** (University of Oxford)

‘Flexible Work Arrangements in Low Wage Jobs: Evidence from Job Vacancy Data’

**Karlis Kanders**, Jyldyz Djumalieva, Cath Sleeman and Jack Orlik (Nesta)

‘Mapping Career Causeways: Supporting Workers at Risk’

**Contributed Session N: Measuring Capital**

**Chair: Jiaqi Li** (Bank of Canada)

**Mary O’Mahony** (King’s College London) and Martin Weale (King’s College London)

'Depreciation and Net Capital Services: How Much do Intangibles Contribute to Economic Growth?'

**Jiaqi Li** (Bank of Canada)

'Financial Frictions and Capital Misallocation'

16.30-17.00: Break (Coffee Break Discussions)

17.00-18.00: Plenary Session III

**Chair: Gary Koop** (University of Strathclyde)

**Katharine G. Abraham** (University of Maryland)

'Big Data for 21st Century Economic Statistics'

# Thursday

TIME	SESSIONS			
11.00-12.00	Panel Session II: Public Good of Economic Statistics			
12.00-13.00	Break			
13.00-14.30	Contributed Session O: Business Dynamic Analysis	Contributed Session P: Measuring Prices	Contributed Session Q: New Methods in Macroeconomics	Contributed Session R: Measuring Welfare
14.30-15.00	Break			
15.00-16.30	Contributed Session S: The Impact of COVID- 19 on Business	Contributed Session T: Text Data in Macro Measurement	Contributed Session U: Measuring the Digital Economy	Contributed Session V: Trade and Education
16.30-16.45	Break			
16.45-17.45	Panel Session III: Estimating the UK Population during the Pandemic			
17.45-18.00	Closing Remarks			

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## 11.00-12.00: Panel Session II

**Title: Public Good of Economic Statistics**

**Chair: Ed Humpherson** (Office for Statistics Regulation)

**Panel Members: Mary Louise Cowan** (Office for Statistics Regulation) **Rebecca Riley** (King's College London and ESCoE), **Grant Fitzner** (Office for National Statistics) and **Helen Boaden** (UK Statistics Authority)

## 12.00-13.00: Break

## 13.00-14.30: Contributed Session O/P/Q/R

**Contributed Session O: Business Dynamic Analysis**

**Chair: Jakob Schneebacher** (Office for National Statistics)

**Eric Bartelsman** (Vrije Universiteit Amsterdam and Tinberg)

'Micro Data Infrastructure'

Freddy Farias Arias (Office for National Statistics) and **Emily Hopson** (Office for National Statistics)

'End of EU Transition: Analysing the Impact on UK Businesses'

Anna Ardanaz-Badia (Office for National Statistics), Josefa Lavandero-Masson (Office for National Statistics) and **Jakob Schneebacher** (Office for National Statistics)

'Business Forms, Management Practices and Enterprise Lifecycles: A Dissection of the UK Business Population, 1999-2020'

### **Contributed Session P: Measuring Prices**

**Chair: Martin Weale** (King's College London)

**Denisa Naidin** (LISER), Sofie Waltl (LISER & WU Vienna) and Michael Ziegelmeyer (Banque centrale du Luxembourg)

'Macroeconomic Statistics Based on Surveys: Circumventing Subjectivity in Housing Sales and Rent Data'

**Dennis Leech** (University of Warwick)

'What's Wrong with the Retail Prices Index Anyway?'

Andrew Aitken (National Institute of Economic and Social Research) and **Martin Weale** (King's College London)

'On Household Cost Indices'

### **Contributed Session Q: New Methods in Macroeconomics**

**Chair: Christopher Kurz** (Federal Reserve Board of Governors)

**Pim Kastelein** (University of Amsterdam)

'Comparing Imputation Methods Using Expenditure Surveys and Unlinkable Administrative Data: An Application to Household Consumption Behaviour in the Netherlands'

Philippe Goulet Coulombe (University of Pennsylvania), Maxime Leroux (Université du Québec à Montréal), Dalibor Stevanovic (Université du Québec à Montréal) and **Stéphane Surprenant** (Université du Québec à Montréal)

'Macroeconomic Data Transformations Matter'

Leland Crane, Ryan Decker, Aaron Flaaen, Adrian Hamins-Puertolas and **Christopher Kurz** (Federal Reserve Board of Governors)

'Business Exit During the COVID-19 Pandemic: Non-Traditional Measures in Historical Context'

### **Contributed Session R: Measuring Welfare**

**Chair: Richard Heys** (Office for National Statistics)

**Andrew Aitken** (National Institute of Economic and Social Research) and Martin Weale (King's College London)

'Welfare Indicators for Lower Tier Local Authorities in England and Wales in 2016'

**Dorothee Hillrichs** (Universite Catholique de Louvain-la-Neuve) and Gonzague Vannoorenberghe (Universite Catholique de Louvain-la-Neuve)

'Recovering Within-Country Inequality from Trade Data'

**Richard Heys** (Office for National Statistics) and Clíodhna Taylor (Office for National Statistics)

'GDP and Welfare: Empirical Estimates of a Spectrum of Opportunity'

## 14.30-15.00: Break (Coffee Break Discussions)

## 15.00-16.30: Contributed Sessions S/T/U/V

### Contributed Session S: The Impact of COVID-19 on Business

**Chair: Clare Wilkinson** (Office for National Statistics)

**Catherine Buffington** (US Census Bureau)

'A Year of a Pandemic Survey: Perspectives from the US Census Bureau's Small Business Pulse Survey'

Emily Hopson and **Clare Wilkinson** (Office for National Statistics)

'Business Impact of Coronavirus, Analysis over Time, Panel of Businesses, UK'

### Contributed Session T: Text Data in Macro Measurement

Chair: Eva Arnold (Universität Hamburg)

Yuriy Gorodnichenko (University of California Berkeley), **Tho Pham** (University of Reading) and Oleksandr Talavera (University of Birmingham)

'The Voice of Monetary Policy'

**Yucheng Yang** (Princeton University), Yue Pang (Peking University), Guanhua Huang (USTC) and Weinan E (Princeton University)

'The Knowledge Graph for Macroeconomic Analysis with Alternative Big Data'

**Eva Arnold** (Universität Hamburg)

'Banks Through the Lens of the Media'

### Contributed Session U: Measuring the Digital Economy

**Chair: Oleksii Romanko** (King's College London)

**Francesco Venturini** (Università di Perugia) and Ioana A. Igna (Circle, Lund University)

'The Anatomy of the AI Innovating Sector in Europe'

Elodie Andrieu (King's College London), Mary O'Mahony (King's College London) and **Oleksii Romanko** (King's College London)

'COVID-19 Resilience and Digital Readiness: An Analysis Using Online Company Data'

### Contributed Session V: Trade and Education

**Chair: Lu Han** (University of Liverpool)

Antonella Liberatore (OECD) and **Steen Wettstein** (World Trade Organization)

'The OECD-WTO Balanced Trade in Services Database (BPM6 edition)'

**Rhys Humphries** (Office for National Statistics) and Sara Zella (Office for National Statistics)  
'Quality Adjustment in Education: The Role of Wellbeing and Bullying'

Meredith Crowley (University of Cambridge), **Lu Han** (University of Liverpool) and Thomas Prayer (University of Cambridge)

'The Value of Deep Trade Agreements in the Presence of Pricing-to-Market'

## 16.30-16.45: Break

## 16.45- 17.45: Panel Session III

**Title: Estimating the UK Population during the Pandemic**

**Chair: Jonathan Portes** (King's College London)

**Panel Members: Michael O'Connor** (Stronger in Numbers), **Madeleine Sumption** (University of Oxford) and **Becca Briggs** (Office for National Statistics)

## 17.45-18.00: Closing Remarks

Rebecca Riley (ESCoE)

### **\*Attendee Zoom Meeting Facility**

Throughout the conference, attendees will have the ability to make use of a dedicated Zoom channel to arrange bespoke meetings.

Please contact our team via the conference helpdesk and we will be able to help arrange this for you.

# Poster Exhibition

Please note, this year we are not holding a poster session. Research posters will instead be displayed throughout the course of the conference and contact details for each presenter will be provided.

## EM2021 Conference Posters

Applying Machine Learning for Outlier Detection from Alternative Price Data  
Xuxin Mao, Janine Boshoff, Hande Küçük and Garry Young (National Institute for Economic and Social Research)

Beyond GDP - Exploring Perceptions of Wellbeing  
Tony Dent (CMR Group)

Entrepreneurship, Productivity and Digitalization: Evidence from the EU  
Noha Ghazy and Hebatallah Ghoneim (The German University in Cairo)

International Comparisons of GDP in the COVID-19 Pandemic  
Sumit Dey-Chowdhury, Niamh McAuley and Andrew Walton (Office for National Statistics)

Outlier Detection Methodologies for Alternative Data Sources: International Review of Current Practices  
Janine Boshoff, Garry Young and Xuxin Mao (National Institute of Economic and Social Research)

Participation in Setting Technology Standards and the Implied Cost of Equity  
Xin Deng, Cher Li and Simona Mateut (University of Nottingham)

Reflecting Price Movements in Industries with Rapid Quality Change: Telecommunications, Computing and Data Processing  
Rob Bucknall and Katherine Chant (Office for National Statistics)

The Automotive Industry: A Dynamic Analysis of Productivity in Four European Countries  
Mariasaria Agostino (University of Calabria), Annamaria Nifo (University of Sannio), Sabrina Ruberto (University of Naples Federico II) and Francesco Trivieri (University of Calabria)

The Labour Market Effect of Fiscal Policy Uncertainty  
Wei-Fong Pan (University of Reading)

The Use of Administrative Tax Data as an Estimation Strategy  
Sihle Khanyile (Statistics South Africa and University of Michigan)

Wellbeing and Intergenerational Mobility in Spain  
Amaia Palencia-Esteban (Universida de Vigo and EQUALITAS) and Pedro Salas-Rojo (Universidad Complutense de Madrid and EQUALITAS)

## ESCoE Research Posters

Communicating Data Uncertainty: Experimental Evidence for UK GDP  
Ana Galvão (Warwick Business School, University of Warwick) and James Mitchell (Federal Reserve Bank of Cleveland)

Historical Data UK  
Sylaja Srinivasan and Ryland Thomas (Bank of England)

Immigration Stocks and Flows, APS and Electoral Register Data  
Augustin de Coulon (King's College London), Richmond Egyei (King's College London) and Jonathan Wadsworth (Royal Holloway University of London)

Improving Regional Economic Indicators: Interregional trade & Regional Supply & Use  
Sharada Davidson, James Black, Kevin Connolly and Mairi Spowage (Fraser of Allander Institute, University of Strathclyde)

Managing Expectations: How Better Managed Firms Make Better Macro and Micro Forecasts  
Nicholas Bloom (Stanford University), Takafumi Kawakubo (National Institute of Economic and Social Research and London School of Economics), Paul Mizen (University of Nottingham), Rebecca Riley (King's College London), Tatsuro Senga (Queen Mary University of London) and John Van Reenen (London School of Economics)

Modelling Productivity and Wellbeing in the UK regions: Results from the UK Household

### Longitudinal Study

Silvia Lui (Office for National Statistics) and Ana Rincon Aznar (National Institute of Economic and Social Research)

### Nowcasting in the Presence of Large Measurement Errors and Revisions

Paul Labonne and Martin Weale (King's College London)

### Public Understanding of Economics and Economic Statistics: How People Think About Economic Concepts and Measurement

Johnny Runge (National Institute of Economic and Social Research) and Nathan Hudson-Sharp (National Institute of Economic and Social Research) with: Jonathan Portes (King's College London), Amy Sippitt (Full Fact) and Mike Hughes (Royal Statistical Society)

### Regional Nowcasting in the UK

Gary Koop (University of Strathclyde), Stuart McIntyre (University of Strathclyde), James Mitchell (Federal Reserve Bank of Cleveland) and Aubrey Poon (University of Strathclyde)

### The Impact of Offshore Profit Shifting on the Measurement of GDP: The Case of the UK

Giordano Mion (University of Sussex) and Manuel Tong (National Institute of Economic and Social Research)

### Using Firm-Level Surveys to Understand Industrial and Regional Capacity, Investment, Productivity and Output Growth

Kevin Lee, Michael Mahony & Paul Mizen (University of Nottingham)

### ONS Renaissance Prize

### What are the Economic Measurement Issues Which Have Arisen as a Result of the COVID-19 Pandemic?

Wilson King, (London School of Economics)

### EM2021 Exhibitors

### Economic Statistics Centre of Excellence (ESCoE)

[escoe.ac.uk](http://escoe.ac.uk)

### National Institute of Economic and Social Research (NIESR)

[niesr.ac.uk](http://niesr.ac.uk)

### Office for National Statistics (ONS)

[ons.gov.uk](http://ons.gov.uk)

### The Productivity Institute

[productivity.ac.uk](http://productivity.ac.uk)

### Royal Economic Society (RES)

[res.org.uk](http://res.org.uk)

### Royal Statistical Society (RSS)

[rss.org.uk](http://rss.org.uk)



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Ana Galvão (University of Warwick)  
Gary Koop (University of Strathclyde)  
Sanjiv Mahajan (Office for National Statistics)

## EM2021 Scientific Committee Area Leads

Mary O'Mahony (King's College London)  
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Martin Weale (King's College London)  
Area 2: Measuring Innovation, Inequality, Digital Economy and Welfare

Stuart McIntyre (University of Strathclyde)  
Area 3: Measuring Output and Prices (Including Nowcasting Models and Use of Alternative Data Sources)

Ivan Petrella (University of Warwick)  
Area 4: Methods (Including Data Science and Machine Learning)

Philip Wales (Office for National Statistics)  
Area 5: Economic Statistics in Practice (Aimed at the Producers of Statistics)

## The EM2021 Scientific Committee Co-chairs and Area Leads are very grateful to the following

### Grading submissions

Andrew Aitken (National Institute of Economic and Social Research), Sonia Carrera (Office for National Statistics), Diane Coyle (University of Cambridge), Thomas Crossley (European University Institute), Sharada Davidson (University of Strathclyde), Augustin de Coulon (King's College London), Huw Dixon (Cardiff University), Thomas Drechsel (UMD), Jack Fosten (King's College London), David Freeman (Office for National Statistics), Anthony Garratt (University of Warwick), Mike Hardie (Office for National Statistics), Robert Heath (Office for National Statistics), Richard Heys (Office for National Statistics), Robert Inklar (University of Groningen), Cecilia Jona-Lasinio (OECD), Andreas Joseph (Bank of England), George Kapetanios (King's College London), Kevin Lee (University of Nottingham), Peter Levell (Institute of Fiscal Studies), Tara Sinclair (GWU), James Mitchell (Federal Reserve Bank of Cleveland), Ellys Monahan (Office for National Statistics), Francesca Monti (King's College London), Leonard Nakamura (Federal Reserve Board of Philadelphia), David Nguyen (National Institute of Economic and Social Research), Nicholas Oulton (London School of Economics), Ed Palmer (Office for National Statistics), Aubrey Poon (University of Strathclyde), Matthias Qian (University of Oxford), Lea Samek (OECD), Dalibor Stevanovic (Université du Québec à Montréal), Bart Van Ark (University of Manchester), Peter van de Ven (OECD), Michela Vecchi (Middlesex University London) and Francesco Venturini (UNIPG).

### Organising Committee

ESCoE: John Barlow, Mercy Quaynor and Sarah Sheppard.

Office for National Statistics: Nathan Birch, Caroline Lewis, Sharon Shaw, and all who have provided additional assistance with hosting during the conference.

Economic statistics are fundamental to evidence-based policy making and the decisions we all make. To serve their purpose they need to keep up with changing economies, drawing on new data sources and the best available methods. This calls for a creative, research-led approach to maintaining and developing them.

ESCoE is all about bringing to the fore this research-led approach to measuring the economy.

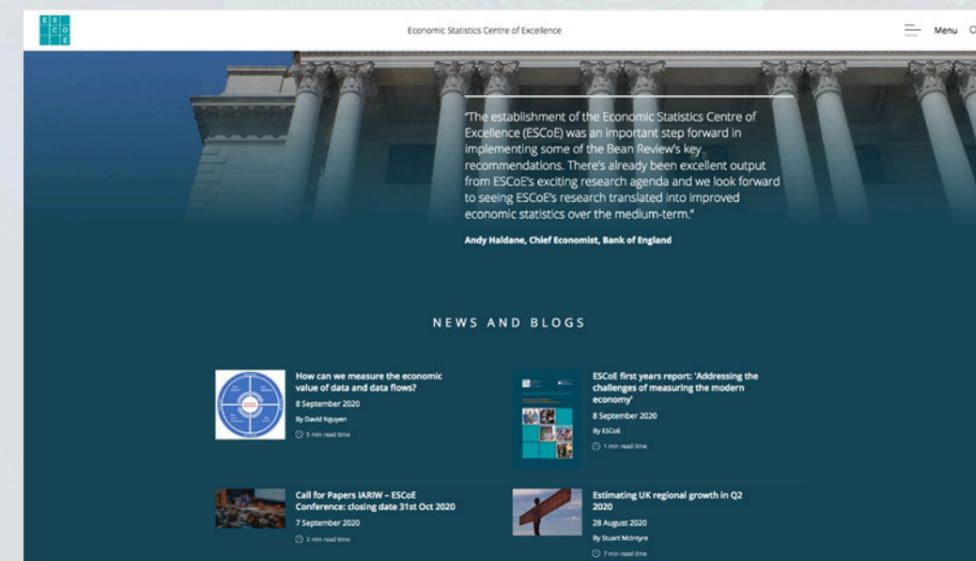
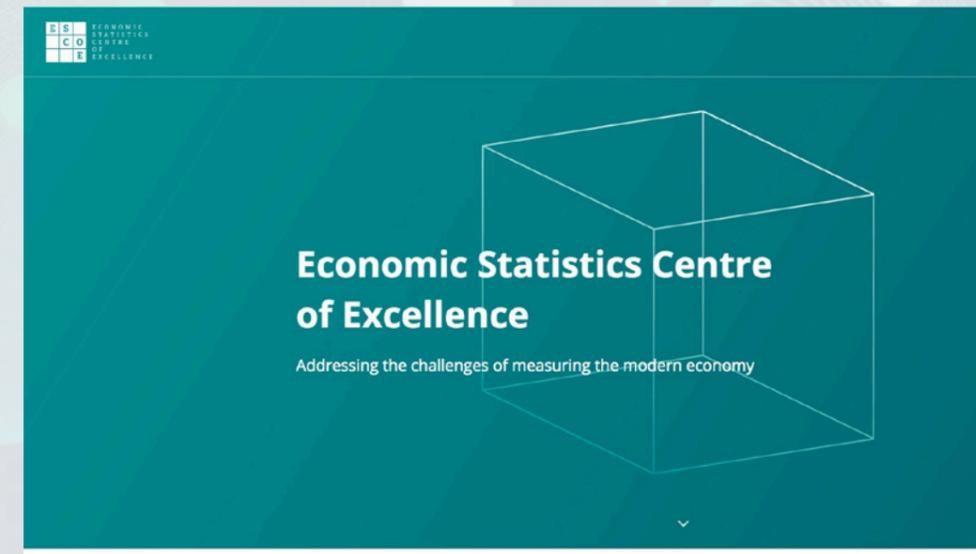
Established in 2017 with the support of the UK Office for National Statistics, ESCoE is the UK's first-ever dedicated academic centre of expertise for economic measurement and one of just a handful around the world. Its foundation followed the recommendations of the Independent Review of UK Economic Statistics by Professor Sir Charles Bean, published March 2016. This Review recommended that "in conjunction with suitable partners in academia and the user community, ONS should establish a new centre of excellence for the analysis of emerging and future issues in measuring the modern economy".

The Centre's ambition is to be an international point of reference for measurement research, supporting cultural change in the delivery of economic statistics.

Our approach is clear. It involves building expertise, increasing collaboration between statistics producers, academia, policymakers and other data users, and raising the profile of economic measurement issues. We do this by addressing both theoretical and practical questions that arise in describing the modern economy, relying on our large international network of Research Associates and Affiliates, and investing in the next generation of experts. We carry out our research in dialogue with statistics producers and promote constructive discussion through workshops and conferences.

There are many people involved in delivering our research programme. We bring together a partnership of over twenty UK and international institutions, including our host partner the National Institute of Economic and Social Research (NIESR) and our other founding partners Fraser of Allander Institute (University of Strathclyde), King's Business School (King's College London), innovation foundation Nesta, University of Cambridge and Warwick Business School (University of Warwick).

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