

Centre for Central Banking Studies

Chief Economists' workshop: the impact of technology on the world of work

21–22 May 2018

Event Director: Gill Hammond

Location: TS Conference Centre



BANK OF ENGLAND

Welcome from the CCBS team: Gill Hammond, Andy Blake and Sarah Pegg



We are delighted to welcome you to the 15th Chief Economists' Workshop organised by the Centre for Central Banking Studies at the Bank of England. These annual meetings, which bring together chief economists from central banks and top academic economists to discuss hot topics, have become known for the frank and lively debates generated in an informal atmosphere.

The topic of our workshop this year is "The impact of technology on the world of work". This has been a particularly hot topic for discussion in the recent past, with some even dubbing digital innovation a fourth industrial revolution. The importance of technology for changing employment patterns has caused much comment, with the likely vulnerable sectors much more widely spread than that experienced with past technological innovation. Central banks need to understand how work is changing and how that will impact their policy remits.

We look forward to hearing the insights from our diverse range of distinguished Keynote speakers, Nick Crafts (Warwick), Alan Manning (LSE), Alison Fuller (UCL), Carl Frey (Oxford), Tom Parr (Essex) and Shamik Dhar (Foreign & Commonwealth Office).

As usual the programme also features presentations from several delegates.

We are very grateful to all of you for your continued support for this workshop and the CCBS programme of events.

Gill Hammond (Director), Andy Blake (Senior Adviser) and Sarah Pegg (Event Manager)

Day 1

Monday 21 May 2018

- 08:30 - 09:00** **Registration and coffee**
- 09:00 - 09:05** **Welcome**
Gill Hammond, Director, Centre for Central Banking Studies
Division (CCBS), Bank of England
- 09:05 - 09:15** **Opening remarks**
Andy Haldane, Chief Economist and Executive Director, Bank
of England
- 09:15 - 10:45** **Chair: Andrew Blake**
The labour market impact of new technology
Prof Alan Manning, Professor of Economics, London School of
Economics
- 10:45 - 11:15** **Break**
- 11:15 - 12:45** **Chair: Andrew Blake**
Attitudes towards automation: past, present and future
Dr Carl Frey, Oxford Martin School, University of Oxford
- 12:45 - 14:00** **Lunch**
- 14:00 - 14:45** **Chair: Gill Hammond**
Technology, work and international economic relations
Shamik Dhar, Foreign & Commonwealth Office
- 14:45 - 15:30** *Technology, productivity, and labour market outcomes in
the United States: where are we (and where are we not)
seeing the effects of technology?*
William Wascher, Board of Governors of the Federal Reserve
System
- 15:30 - 16:00** **Break**

Chair: Gill Hammond

16:00 - 16:30

Automation and the Mexican labour market

Daniel Isaac Chiquiar Cikurel, Bank of Mexico

16:30 - 17:00

The outlook for the Canadian economy and the impact of digitalisation

Eric Santor, Bank of Canada

Day 2

Tuesday 22 May 2018

- Chair: Gill Hammond**
- 09:30 - 10:00** ***Labour market dualities - the impact on aggregate wage growth***
Doris Ritzberger-Gruenwald, Oesterreichische Nationalbank
- 10:00 - 10:30** ***Technological change and the Danish labour market***
Niels Lynggård Hansen, National Bank of Denmark
- 10:30 - 11:00** ***Technology and the Australian labour market: changes and challenges***
Michael Plumb, Reserve Bank of Australia
- 11:00 - 11:30** **Break**
- Chair: Andrew Blake**
- 11:30 - 13:00** ***The future of unemployment: a normative analysis***
Dr Tom Parr, Lecturer, Department of Government, University of Essex
- 13:00 - 14:00** **Lunch**
- Chair: Andrew Blake**
- 14:00 - 15:00** ***Policy prescriptions in practice***
Prof Alison Fuller, Pro-Director for Research and Development, University College London
- 15:00 - 15:30** **Break**

Chair: Andrew Blake

15:30 - 17:00

How does technological change impact work? Some lessons from history

Prof Nicholas Crafts, Professor of Economic History and Director of ESRC CAGE Research Centre, University of Warwick

17:00 - 17:15

Closing remarks

Gill Hammond

Keynote Speaker



Nicholas Crafts

***Professor of Economic History and Director of ESRC CAGE Research Centre,
University of Warwick***

Nicholas Crafts is Professor of Economic History (since 2006) and Director of ESRC Centre on Competitive Advantage in the Global Economy (since 2010) and Professor of Economic History at the University of Warwick. His previous career has included faculty positions at London School of Economics, Oxford University, Stanford University and UC Berkeley. He was President of the Economic History Society, 2004-2007. His research interests centre on the long-run growth performance of the British economy. He has published many journal articles and written or edited several books including *The Great Depression of the 1930s: Policy Lessons for Today* (2013) (with Peter Fearon). His recent publications include "The Productivity Slowdown: Is It the New Normal?", *Oxford Review of Economic Policy* (2018). His new book, *Forging Ahead, Falling Behind and Fighting Back: British Economic Growth from the Industrial Revolution to the Financial Crisis* will be published by Cambridge University Press in June 2018. He was made CBE in 2014 and is a Fellow of the British Academy, elected 1992.

Keynote Speaker



Carl Benedikt Frey
Oxford Citi Fellow, Oxford University

Carl Benedikt Frey is Oxford Martin Citi Fellow at Oxford University where he directs the programme on Technology and Employment at the Oxford Martin School – regarded the world's leading programme on the future of work. He is one of the most widely cited scholars in the field of workforce automation and the future of work. His prime research interest is the transition of industrial nations to digital economies.

Over the course of his career, he has served as an advisor and consultant to international organisations, think tanks, government and business, including the OECD, the European Commission, the United Nations, and several Fortune 500 companies. In partnership with Citigroup, he also works to help global leaders navigate the rapidly changing world economy.

His work has been widely covered by the BBC, CNN, The Economist, Financial Times, Wall Street Journal, Foreign Affairs, New York Times, Washington Post, Frankfurter Allgemeine, Scientific American, TIME Magazine, Forbes, and many others.

In 2016 he was named the 2nd most influential young opinion leader by the Swedish business magazine Veckans Affärer.

Carl Benedikt is also Economics Associate of Nuffield College, and Senior Fellow of the Programme on Employment, Equity and Growth at the Institute for New Economic Thinking, both University of Oxford. He remains a Senior Fellow of the Department of Economic History at Lund University, and a board member of Futurion AB.

Keynote Speaker



Alison Fuller

***Pro-Director(Research and Development) at University College London
Institute of Education and Professor of Vocational Education and Work***

Alison Fuller is Pro-Director (Research and Development) at UCL Institute of Education and Professor of Vocational Education and Work. She has been researching, and publishing in the field of workplace learning, education – work transitions, apprenticeship, vocational education and training (VET), for over 25 years. Alison is currently a project leader in the ESRC Centre for Learning and Life Chances in Knowledge Economies and Societies (LLAKES) researching employee-driven innovation in the healthcare sector, and is also undertaking comparative international research for Cedefop on adult apprentices. Her recent publications include *Contemporary Apprenticeships: International Perspectives on an Evolving Model of Learning*, an edited collection which brings together the latest research on apprenticeship in diverse sectors in countries across Europe and internationally. Alison is frequently called on to provide policy advice and to present evidence to government enquiries on vocational education and training. She is a member of the UK's All Parliamentary Skills Commission, and a member of the SEMTA (The Science, Engineering and Manufacturing Technologies Alliance) Board of Trustees.

Keynote Speaker



Alan Manning

Professor of Economics Department, London School of Economics

Professor Alan Manning is Professor of Economics Department at the London School of Economics. His research has been on many aspects of labour markets including the minimum wage, monopsony, immigration and the impact of technological change on wages and employment. He is also currently Chair of the UK Government's Migration Advisory Committee.

Keynote Speaker



Tom Parr

Lecturer, Political Theory, Department of Government, University of Essex

Tom Parr is a Lecturer in Political Theory in the Department of Government at the University of Essex. His research concerns how policymakers should regulate labour markets in the light of the threats and opportunities associated with demographic and technical change. In September 2018, he will take up a Laurance S. Rockefeller Visiting Faculty Fellowship within the University Center for Human Values at Princeton University.

List of participants

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Forthcoming 2018 CCBS London events

Date	Subject
30 - 31 May	Research forum on macro-finance
4 - 8 June	Structure of financial markets
18 - 20 June	Joint CCBS-FRBNY policy forum on the current state of market operations
9 - 10 July	Workshop for Heads of insurance supervision*
23 - 31 July	Applied Bayesian econometrics for central bankers
3 - 5 September	Risk management and financial supervision
19 - 21 September	Financial frictions
1 - 5 October	Systemic risk assessment: identification and monitoring
8 - 10 October	Central bank communication in a changing world
15 - 16 October	FinTech workshop
22 - 26 October	The shadow banking system
19 - 21 November	Microprudential regulation and supervision
26 November - 7 December	Economic modelling and forecasting

* This event is by invitation only

CCBS publications

Monetary policy

State of the art of inflation targeting

Author(s)

Gill Hammond

Economic modelling and forecasting

Applied Bayesian econometrics for central bankers

Author(s)

Andrew Blake and Haroon Mumtaz

Deriving option-implied probability densities for foreign exchange markets

Andrew Blake and Garreth Rule

Monetary operations

Monetary operations

Understanding the central bank balance sheet

Liquidity forecasting

Collateral management in central bank policy operations

Issuing central bank securities

Author(s)

Simon Gray and Nick Talbot

Garreth Rule

Simon Gray

Garreth Rule

Garreth Rule

Financial stability

Modelling credit risk

Somnath Chatterjee

Research and analytics

Text mining for central banks

David Bholat, Stephen Handzen, Pedros Santos and Cheryl Schonhardt-Bailey

The above handbooks can be downloaded from our website www.bankofengland.co.uk/ccbs



BANK OF ENGLAND

Centre for Central Banking Studies

The CCBS provides an extensive programme of events for central bankers from all over the world. These cover many of the analytical and technical areas of central banking from a practitioner's perspective. Speakers are experts in their field from the Bank of England, the London financial markets, academia and of course the participants themselves.

The seminars and other events are mostly aimed at experienced central bank personnel, who already have expertise in the subject. Participants are often asked to prepare papers beforehand and to give presentations to their course colleagues. This facilitates the sharing of diverse experiences, and contributes to the participative nature of these events, which typically study the different approaches used by central banks around the world. Most seminars include syndicate work and discussions.

Director

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