Centre for Central Banking Studies

CCBS activities in 2020
Seminars, workshops and training opportunities
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Securing monetary and financial stability requires more than a purely domestic focus. It requires co-operation, collaboration and co-ordination across borders. Internationally. It acts as a global forum where experts from central banks and regulatory authorities from all over the world can exchange views and discuss central bank policies and operations. The programme of work and events at CCBS reflects the full range of the Bank of England’s responsibilities, including macroprudential policy, the regulation and supervision of banks and insurance firms; market operations as well as monetary policy. The centre plays an integral role in enhancing the Bank’s intellectual leadership — most notably through its research forums, but also through specific workshops reflecting some of the new challenges central banks face. And it provides advanced, practically-oriented training on the latest economic and analytical techniques used in modern central banking.

Last year, we embarked on a new initiative with the Department for International Development (DFID) to provide training and technical assistance to central banks in three African countries. Reflecting the UK’s position and experience as a leading global financial centre, the program focuses on building institutional capacity in and strengthening relationships with emerging countries to support financial stability.

I am very pleased to note that following its success the programme has now expanded to cover a wider set of central banks across Africa, the Middle East and Asia.

On behalf of the entire Bank, I am proud of the work of CCBS. And I am confident the Centre will continue to deliver an exciting programme in the coming year.

Mark Carney
Governor of the Bank of England
A global forum for 21st century central banking.

We will also continue to showcase the latest research in partnership with our colleagues in the wider Bank of England as well as leading researchers from other central banks and universities.

Although our remit is wide and our audience varied, three big picture principles guide our approach: (i) policy relevance and practitioner-focused (ii) open debate and frank exchange of views and (iii) the pursuit of intellectual leadership and best practice. Such a blend vitalises our seminars and enables all of us to learn. Last year around 140 central banks and financial authorities attended our events. We are particularly grateful to all those who share their expertise with us.

All of our events are free of charge. Most are open to experts from around the world. Some events, however are targeted. In 2020 we will welcome central bankers and financial regulators from developing and emerging market countries in Africa, the Middle East and East Asia to certain seminars in London. That reflects our growing partnership with the Department for International Development to build capacity in those countries and regions.

Full details of our seminars and workshops are set out in the prospectus. Details of the Bank’s wider training and seminar offering — including our partnership with Warwick Business School to provide an MSc in Global Central Banking and Financial Regulation — are also included.

Overview from John Power

We celebrate our 30th birthday in 2020. Since our creation we have striven to promote best practice in central bank policy and operations, build capacity, and foster networks with our partner institutions globally. I am both very pleased and privileged to continue that tradition in 2020.

Our programme for next year reflects the traditional suite of central bank activities in monetary and financial stability as well as those areas where our community is breaking new ground. Some highlights include:

- How economists use microdata to answer thorny policy questions.
- The best practice techniques available to us to assess financial and operational risks in the system.
- The unique challenges climate change presents in managing risks to the financial sector.
- The implications of the fintech revolution for central banks and regulators.
- The organisational and communication challenges faced by modern central banks.

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CCBS runs an extensive programme of international seminars, workshops and specialist events attended by experts from central banks and regulatory authorities from all over the world. Our events take place at the Bank of England in London.
Most activities last from two to five days and cover many of the key policy and operational areas of central banking and financial regulation from a practitioner’s perspective. Speakers are experts in their fields from the Bank of England, the London financial markets, academia and, of course, delegates from other central banks and regulatory authorities.

Most of our seminars and workshops are aimed at mid-career central bank and regulatory personnel who can contribute to the event from their expertise and experience in their own country. Our events reflect the latest thinking and research in the particular specialist area and examine the different approaches used by central banks and regulatory authorities around the world. The format is usually a mixture of lectures, discussions and case studies to facilitate the sharing of diverse experiences.

Some of our events, such as the expert forums or workshops for very senior officials, require a higher level of expertise and participation. Our aim here is to provide a forum where individual experts can have a frank exchange of views and experiences in confidential and highly interactive sessions.

Most CCBS international seminars are open to applicants from all central banks, financial regulators and eligible institutions. For more information on the application procedure, please see pages 25–26. www.bankofengland.co.uk/-/media/boe/files/ccbs/CCBS-Administrative-Information.

CCBS London seminars for 2020 are listed in date order on pages 6–7 and grouped by category on pages 8–9. www.bankofengland.co.uk/boeapps/titan/events.aspx.
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* By invitation only.

** CCBS-DFID thematic seminars in London by invitation only.
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| 28–29 May 2020     | Research forum on macrofinance                                           | –    |
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| 13–14 July 2020    | Workshop for Heads of insurance supervision                              | –    |
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Joint CCBS–FRBNY policy forum on the current state of market operations
22–24 June 2020
Event Directors
Michael Smart and Elizabeth Mahoney
Apply by
16 March 2020

Market operations have always been essential to the effective implementation of a central bank’s monetary policy. As a response to the global financial crisis, standard monetary operations were extended and expanded. For some central banks, market stresses have eased, permitting the return to ‘normal’ conditions, drawing on lessons learned during the crisis; for others, market operations are still being adapted and updated to respond to ongoing market and economic developments. In both cases the concept of a ‘new normal’ set of conditions is starting to emerge along with possible responses.

The aim of this workshop is to allow those responsible for the design and implementation of such policies to deepen their theoretical understanding of monetary operations and to compare and contrast experiences with their peers.

Content
The following topics will be covered:
- the current state of market operations;
- balancing monetary policy and financial stability goals within central bank market operations; and
- the timing of communicating and implementing new money market operations.

Target group
Candidates will be experienced central bankers and financial regulators who are directly responsible for the design and implementation of monetary operations within their respective central banks. It is expected that candidates will be drawn from a range of industrialised, emerging market and developing economies.

Monetary policy and operations
28–30 September 2020
Event Director
Angus Foulis
Apply by
22 June 2020

This seminar looks at the key questions facing central banks on monetary policy strategy and implementation. What should determine the choice of monetary policy framework? How can we combine monetary stability with financial stability? What are the challenges in implementing monetary policy today? What is the state of play on modelling and forecasting for monetary policy? How do we formulate a communications strategy? The seminar will be very interactive and will consider monetary policy challenges in a range of central banks.

Content
The following key topics are likely to be covered:
- current challenges for monetary policy;
- low and negative interest rates;
- unconventional monetary policy, quantitative easing and forward guidance;
- current issues in implementing monetary policy;
- modelling and forecasting for monetary policy;
- combining monetary policy and financial stability objectives; and
- communicating about monetary policy in a fast changing world.
Target group
Candidates will be economists from central banks and regulatory authorities interested in the theoretical and practical aspects of monetary policy, whether from industrialised or emerging market and developing economies. Candidates should be working in the monetary policy area of their organisation, or be involved in related research, and have some experience of the subject in their own country.

Format
Presentations will be given by experts from the Bank of England and elsewhere. Discussions of the experience of different countries will form an important part of the event. The seminar requires a high level of participation, including group discussions and exercises. Participants are invited to give presentations in their fields of expertise or on their country’s experience.

Structure of financial markets
12–14 October 2020

Event Director
Christine Jayaseelan

Apply by
6 July 2020

The global financial crisis reinforced the importance of having a good appreciation of how financial markets work. In this seminar we aim to equip participants to think more deeply about the structure of financial markets by providing some background theory, reviewing the structure of several specific markets and discussing the overall risk and recent reforms to strengthen resilience and effectiveness of the financial system.

Content
The seminar is likely to focus on the following topics:

- modelling market risk;
- market liquidity;
- pricing securities and returns using structural models;
- micro structure of the foreign exchange markets;
- derivatives markets and central counterparties (CCPs);
- repo markets — issues and development;
- contingent convertible (CoCo) and bail-in debt/capital instruments;
- using financial markets data to gauge market dynamics;
- algorithm trading; and
- alternative benchmarks to Libor.

Target group
This seminar is aimed at central bankers and regulators who wish to increase their understanding of the pricing of financial securities and the characteristics of financial instruments in capital markets, money markets and derivatives markets. Candidates should have some knowledge of risk management techniques and an understanding of options pricing. It is expected that candidates will be drawn from a range of industrialised, emerging market and developing economies.

Format
Presentations will be given by Bank of England experts and guest speakers.
Financial stability and prudential regulation

Regulation and supervision of capital adequacy in the banking sector

24–26 February 2020

Event Director
Matthew Pegg

Apply by
30 December 2019

Prompted by the need to address several market failures that have threatened financial stability and to ensure the continued safety and soundness of banks, financial regulators have been reassessing the fundamental role of regulatory capital requirements. Basel III builds on previous regulation for banks, implementing significant new capital, leverage and liquidity requirements. This event will analyse the regulatory capital framework and how the key elements aim to ensure the safety and soundness of individual banks and financial stability.

Content
The following topics are likely to be covered:

– determining bank capital requirements;
– the supervision approach to Pillar 2 assessments;
– the countercyclical capital buffer;
– stress testing; and
– the interaction between macroprudential and microprudential policy.

Target group
This seminar is aimed at experienced prudential supervisors and central bankers, whether from industrialised, emerging market or developing economies. Participants must have a good understanding of their organisation’s approach to supervision so they can engage fully in the discussions during the seminar.

Format
Presentations will be given by experts from the Bank of England and guest speakers. The event requires a high level of participation, and several participants may be invited to give presentations on their country’s approach in this area.

Regulation and supervision of liquidity and funding risk in the banking sector

9–11 March 2020

Event Director
Christine Jayaseelan

Apply by
30 December 2019

Liquidity and funding structure of a bank impacts both sides of its balance sheet given banks’ maturity transformation role. The crisis has shown that traditional approaches of capital adequacy are not the right tools to address this risk. Recent years have therefore seen new metrics being developed to quantify this risk. In addition there has been an increase in the range of Central bank liquidity and funding support. There are also new regulatory reforms in the area such as additional pillar 2 requirements and liquidity in resolution.

The seminar will therefore cover recent developments aimed at strengthening the liquidity adequacy and funding profile of banks across supervisory and central banking business models.

Content
The following topics are likely to be covered:

– Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR);
– definition of level 1 and 2 liquid asset buffers;
– central bank liquidity and funding facilities;
– asset encumbrance;
– setting pillar 1 and pillar 2 requirements;
– contingent funding plans;
– liquidity in resolution; and
– liquidity, funding and systemic risk.
Target group
This seminar is aimed at experienced prudential supervisors or central bankers, whether from industrialised, emerging market or developing economies. Participants must have a good understanding of banks liquidity profile and funding structure and the emerging regulation and standards for managing liquidity risk.

Format
Presentations will be given by experts from the Prudential Regulatory Authority, Bank of England and elsewhere. The event requires a high level of participation, and several participants may be invited to give presentations in relation to their country’s approach in this area.

Systemic risk assessment: identification and monitoring
8–12 June 2020

Event Director
Christine Jayaseelan

Apply by
2 March 2020

Achieving macroeconomic stability requires the identification of systemic risk in the financial system and of the factors that are driving it. Efforts are now underway in central banks and regulatory authorities to put systemic risk assessment onto a sounder, more productive and more measurable footing. In this seminar we survey and evaluate some of these new approaches.

Content
The following topics are likely to be covered:

- systemic risk in the interbank and non-bank financial sectors;
- amplification mechanisms between the real and financial sectors early warning systems;
- constructing financial stress indices;
- Conditional Value at Risk (CoVaR);
- systemic expected shortfall;
- estimating default probabilities using contingent claims analysis;
- network models for systemic risk assessment;
- stress testing of banks;
- countercyclical capital buffer; and
- risk and leveraged based capital requirement for systemic stability.

Target group
This seminar is aimed at central bankers and regulators actively involved in developing or evaluating systemic risk assessment models, or those who use systemic risk models as an input into their tasks and wish to acquire a deeper understanding of how they work.

Format
Presentations will be given by experts from the Bank of England and guest speakers.

Microprudential supervision tools
29 June–1 July 2020

Event Director
Matthew Pegg

Apply by
23 March 2020

In recent years, many countries have reviewed and revised their financial regulation structures and approaches to supervision. Supervision has become more intensive and intrusive, with increasing focus on financial stability, critical economic functions and resolution. The work of prudential supervisors has moved from point in time to more forward looking assessments. This seminar will cover new and developing approaches to supervision and tools used by supervisors to support the assessment, measurement and mitigation of risk.

Content
The following topics are likely to be covered:

- a judgement based approach to prudential supervision;
- applying the principle of proportionality to the supervision of firms;
- assessing firms’ financial and operational resilience;
- supervising risk management and corporate governance;
- data analysis to support supervision;
- supervisory colleges and international and domestic co-ordination between supervisors;
- forward looking supervisory tools including stress testing and business model analysis;
– supervisory intervention and resolution; and
– the Bank of England’s approach to enforcement.

**Target group**
This seminar is aimed at experienced prudential supervisors or central bankers, whether from industrialised, emerging market or developing economies. Participants must have a good understanding of their organisation’s approach to supervision so they can engage fully in the seminar’s discussions.

**Format**
Presentations will be given by experts from the Bank of England and guest speakers. The event requires a high level of participation, and several participants may be invited to give presentations in relation to their country’s approach in this area.

### Making resolution operational

**2–3 July 2020**

**Event Directors**
Adam Cull, Ruth Smith and Christine Jayaseelan

**Apply by**
26 March 2020

Over the last decade, resolution authorities around the world have made great strides in this pioneering area of public policy. Now, as resolution comes of age, attention is increasingly turning to making resolution operational.

In 2020, the Bank of England will host a seminar for expert participants to discuss shared challenges inherent to the implementation of effective resolution regimes. Join us for a practitioners’ discussion focused on the transition from policy design to implementation, and for opportunities to focus on the preparation, assurance and execution work required from authorities and firms to ensure readiness for resolution.

**Content**
The following topics are likely to be covered:

– Recent resolution policy developments across jurisdictions.
– How to ensure firms implement resolvability requirements and to gain assurance over their resolvability.
– Executing a bail-in; mechanics, methodology and management.

– Cross-border resolution; collective interest and co-ordinated action.
– The supervisory-resolution authority relationship during a resolution.
– Resolution in the context of continuous technological development.

**Target group**
The event is aimed at practitioners who are experts on resolution, likely to be working in central banks, supervisory or resolution authorities in industrialised economies that have, or are developing, special resolution regimes for financial institutions. Participants are expected to have a detailed, in-depth knowledge of the resolution arrangements in place in their jurisdictions, so that they can fully engage in discussion of the practical challenges of making the resolution regime operational.

**Format**
The event requires a high level of participation, including group discussions and case studies. Presentations will be given by experts from the Bank of England, other resolution authorities, industry experts or other external speakers. Several participants will also be invited to give presentations, for example on the resolution framework in their countries or their experience of resolving failed banks. We welcome offers to present on any of the topics above.

### Beyond prevention (and cyber): operational resilience of the financial sector

**19–21 October 2020**

**Event Directors**
Nick Strange, Karen Gutierrez, Paul Williams and Matthew Pegg

**Apply by**
13 July 2020

Operational disruption can affect financial stability, threaten the viability of individual firms and Financial Market Infrastructures, or cause harm to consumers and other market participants in the financial system. However, there are numerous challenges to making sure that the finance sector is sufficiently resilient to potential disruption. These challenges have become more complex and intense in recent years, during a period of technological change and in an increasingly hostile cyber environment.
This seminar will explore the macroprudential and microprudential challenges of operational resilience and cyber; firms and policymakers must now move beyond preventing operational incidents (cyber or otherwise) towards actively responding, recovering and learning from them.

**Content**
The following key topics are likely to be covered:

- an introduction to operational resilience focusing on the Bank of England’s operational resilience consultation paper;
- an examination of international co-ordination including policy harmonisation and exercising;
- an examination beyond the regulatory perimeter; Cloud, third party management;
- an introduction to cyber and operational stress testing; how tolerances for disruption can be set and how they relate to appetites;
- an introduction to collective action with industry and how new approaches to public/private engagement can help to build greater resilience than policy alone;
- an introduction to how cyber security fits into operational resilience — implications for policymakers; and
- an exploration of the importance of having a unified approach across both macroprudential and microprudential policy approaches.

**Target group**
The event is aimed at central bankers and regulators with an interest in or responsibility for monitoring, assessing, identifying or mitigating risks related to operational disruption, including those related to the cyber threat. This responsibility may relate to the supervision of specific firms/financial market infrastructures or the financial stability of the sector as a whole. Attendees will be interested in learning about cyber security best practice, including recommendations from international bodies.

It will be helpful if participants have a broad understanding of financial systems, how they work and the main interdependencies. However, technical terms will be avoided where possible, or explained where unavoidable.

**Format**
Presentations will be given by experts from the Bank of England and elsewhere. The event requires a high level of participation; sharing the experiences of different countries will form an important part of the event. We would welcome offers from participants to present on relevant topics eg authorities’ use of cyber resilience supervisory tools and discussion of real events in participants’ jurisdictions which impacted upon their financial sector and how the financial authorities responded.

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**Non-bank financial intermediation**

26–28 October 2020

**Event Directors**
David Barr and Angus Foulis

**Apply by**
20 July 2020

A significant proportion of the economy’s total credit intermediation now takes place through a variety of markets for credit instruments, also known as the ‘shadow banking system’. The growth of this market-based credit system has had profound implications for the structure of the traditional banking system and for the wider economy. In this seminar we will aim to analyse how the new system operates, explore its impact on the financial system more generally and consider its implications for financial regulation.

**Content**
The following topics will be covered:

- the structure of the market-based credit system;
- the impact of non-bank financial intermediation on the wider financial system; and
- the challenges it poses for regulation and monetary policy.

**Target group**
This seminar is aimed primarily at central bankers and regulators who wish to improve their understanding of how the shadow banking system works and of its implications for financial stability and monetary policy.

**Format**
Presentations will be given by experts from the Bank of England, academia and financial markets. Participants will be invited to make short presentations about shadow banks in their own country.
Risk management and financial supervision

16–18 November 2020

Event Directors
Christine Jayaseelan and Matthew Pegg

Apply by
10 August 2020

Risk management is an important focus for financial regulators and central banks seeking to ensure the safety and soundness of firms and the stability of the financial system. Banks and insurers must manage the risks inherent in their business models, and the risks they face from the operating environment. It is vital that effective risk management by firms, and supervisor’s assessment of risk keep pace with financial innovation. Emerging risks provide regulators with fresh challenges, which require new approaches to supervision. This seminar will cover the management of various categories of risk, and approaches used by supervisors to assess, monitor and mitigate these risks.

Content
The following topics are likely to be covered:

– assessment, management, and supervision of risk-taking in regulated firms;
– assessment of financial risks untaken by banks including credit risk, trading risk and insurance risk;
– horizon scanning of emerging operational risks including cyber risk, and climate change;
– the use of stress testing at different levels as a tool in risk management; and
– financial, structural and operational mitigation of risk.

Target group
This seminar is aimed at experienced prudential supervisors and central bankers, whether from industrialised, emerging market or developing economies. Participants should have a good understanding of their organisation’s approach to supervision so they can engage fully in the discussions during the seminar.

Format
Presentations will be given by experts from the Bank of England and guest speakers. The event requires a high level of participation, and several participants may be invited to give presentations on their country’s approach in this area.

Managing financial risks from climate change

23–24 November

Event Directors
TBC

Apply by
17 August 2020

Climate change, and society’s response to it, creates financial risks that impact on financial stability and the safety and soundness of financial firms. It is therefore within the mandates of central banks and supervisors to ensure the financial system is resilient to these risks. The distinctive elements of climate change present unique challenges to how we manage the risks to the financial sector. This seminar will explore the impact of climate change on the financial sector, and the role and tools of central banks and supervisors in understanding and managing those risks.

Content
The following topics are likely to be covered:

– risks from climate change to the financial sector;
– role of central banks and supervisors;
– supervisory approach;
– scenario analysis and stress testing; and
– disclosure.

Target group
This seminar is aimed primarily at central bankers and supervisors at a senior level who wish to improve their understanding of financial risks from climate change, and what role their organisation can play to manage these risks in the financial sector.

Format
Presentations will be given by experts from the Bank of England and guest speakers. Participants are expected to participate, and may be invited to discuss their country’s approach in this area (with interactive case study to facilitate broader participation).
Aspects of policy and management

Central bank communication in a changing world

6–8 October 2020

Event Directors
Gill Hammond and Céline Gondat-Larralde

Apply by
30 June 2020

Innovations in social media and information technology provide both opportunities and challenges for central banks’ communication strategies. The changed landscape of central banks’ operations and policies also provides challenges in communication to a wide set of stakeholders. This workshop provides a forum for central bank experts in communication to deepen their understanding of the issues and share their experiences.

Content
The following key topics are likely to be covered:

– developing a communication strategy;
– communicating about policy and regulation;
– central banks and social media;
– dealing with the media; and
– communicating with the general public.

Target group
The workshop is aimed at experienced central bank/regulatory authority personnel working in the Press Office or similar function.

Format
The workshop will be highly interactive and participants will be expected to present on the experiences in their country.

Econometrics, modelling and forecasting

Forecasting in central banks

30 March–3 April 2020

Event Director
Andrew Blake

Apply by
23 December 2019

Forecasting is crucial to the monetary policy function of central banks. Whatever the precise remit of the monetary authority, all central banks have to forecast the main variables they are tasked with controlling in order to react in a timely fashion. Academics and policymakers alike have found that some of the variables of interest — in particular inflation — have become more difficult to forecast. Previously stable relationships now seem to have broken down and central banks are questioning the very methods they have relied on in the past. Conversely, periods of low volatility in macroeconomic variables make it challenging for a central bank forecaster to provide added value beyond a simple univariate model. This event will combine lectures on forecasting theory with complementary computer-based exercises, focusing on where that added value can be found.

Content
Many of the following topics are likely to be covered:

– econometric modelling and forecasting of inflation and growth;
– formulating and using the many varieties of mechanical, statistical, semi structural and structural forecasting models available;
– tools for forecast evaluation and combination;
– forecasting in a data rich environment and nowcasting;
– mixed frequency methods;
– density forecasting, including constructing and using a fan chart using both classical and Bayesian methods; and
– forecast communication.
Target group
Candidates will be central bankers and financial regulators interested in learning about how modern econometric methods can be used to forecast and how to construct and interpret fan charts as a tool for communicating monetary policy goals.

Format
Presentations will be given by CCBS staff and other Bank of England experts, academics and financial market participants. The lectures will be complemented by exercises that focus on the implementation of the main techniques and tools. There will be plenty of scope for discussion and interaction.

Applied Bayesian econometrics for central bankers
20–28 July 2020

Event Directors
Andrew Blake and Gabor Pinter

Apply by
13 April 2020

Bayesian estimation and simulation techniques are no longer a specialist branch of econometrics; often they are the ‘go to’ methods for many useful models. By allowing researchers to incorporate off model information into the estimation procedure such techniques deliver usable estimates where, for example, a small sample would make classical estimation infeasible. Bayesian techniques allow for the easy development of much richer model specifications, for example with a large number of parameters to estimate or parameters that vary over time. What was previously thought of as prohibitively expensive to implement is now routine.

This event is an introduction to some of the techniques in Bayesian econometrics which can be useful for modelling and forecasting in central banks. It will provide an overview of the theory and then focus on practical implementation through computer based exercises.

Content
The seminar will be taught from the perspective of the practitioner with the aim of discussing techniques that can improve upon classical econometric methods, or are more convenient alternatives. The topics covered will include:

- a general introduction to Bayesian analysis through Gibbs sampling;
- Gibbs sampling for linear regression and vector autoregressive models;
- unobserved component models estimated by Gibbs sampling, including time varying parameter and dynamic factor models;
- non-linear regression models estimated using the Metropolis Hastings algorithm; and
- Bayesian estimation of dynamic stochastic general equilibrium models.

Exercises will show how Bayesian methods may be useful when available time series data are limited or when economic relationships are subject to structural shifts.

Target group
This seminar is aimed at candidates working in the monetary policy, financial stability and research departments of central banks and regulatory authorities. They should have experience of classical econometrics. Candidates must be proficient in least squares estimation and have some knowledge of linear algebra and maximum likelihood estimation. Knowledge of programming in Matlab is essential for this course.

Format
This event consists of lectures on the underlying theory, followed by exercises applying the theoretical models.

Causal inference using microdata
9–11 November 2020

Event Directors
Angus Foulis and Jagdish Tripathy

Apply by
3 August 2020

Quantification of causal mechanisms is the ultimate goal of empirical economics. However, in most cases this is challenging, as the underlying data are not generated randomly. A number of econometric techniques have been developed to overcome these challenges. The recent explosion of microdata has allowed these techniques to be applied to a wider range of questions. This course covers these techniques and their application to a range of economic questions of interest for central bankers, using the microdata that many of these institutions now have.
Content
The course is likely to cover the following topics:

– working with microdata;
– linear regression;
– endogeneity;
– instrumental variables;
– panel data;
– fixed effects;
– difference in differences; and
– regression discontinuity.

The event will cover the mathematics behind these methods and several practical applications, highlighting the importance of combining these methods with economic reasoning to make successful causal inferences.

Target group
The course is targeted at central bank economists working in quantitative areas. They should have experience with econometrics and an economics background. Some experience with Stata and microdata is preferred.

Format
The course will consist of theoretical lectures and practical exercises with microdata to practice the methods taught. There will also be presentations on the use of these methods in the recent academic research with plenty of opportunity to discuss and critique these applications.

Economic modelling and forecasting
30 November–11 December 2020

Event Director
Gabor Pinter

Apply by
24 August 2020

The lags in the transmission mechanism of monetary policy mean that policymakers must forecast the future path of the economy. Accurate forecasts are only possible with a clear understanding of the structure of the economy and the shocks affecting it. This two week seminar aims to improve participants’ understanding of current modelling strategies and forecasting techniques.
**Research and analytics**

**Advanced analytical tools for financial supervision and risk management**

1–5 June 2020

**Event Directors**
David Barr and Angus Foulis

**Apply by**
24 February 2020

Financial supervision, and risk management more generally, make extensive use of tools derived from mathematics, statistics and probability theory. This event introduces the core toolkit with the aim of allowing participants to understand and discuss the key concepts and their applications without having to delve into the advanced mathematics required of risk management professionals. Extensive use will be made of Monte Carlo methods to demonstrate and operationalise many of the tools covered in the course.

**Content**
The event is expected to cover a wide range of topics including:

- financial correlation risks;
- copulas;
- Value at Risk;
- extreme value theory;
- Monte Carlo methods;
- modelling credit risk; and
- network analysis and agent based models.

**Target group**
This event is aimed at economists and others with a mathematical background who wish to improve their understanding of existing risk management techniques, and who may be involved in analysing and attempting to improve regulatory regimes at a policy level. (It is not aimed specifically at those involved in the practical aspects of implementing regulations or supervisory requirements, as in, for example, the gathering of data or in visiting financial institutions.)

**Format**
Topics will be presented by Bank of England experts, academics and financial market participants.

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**R Modelling**

21–25 September 2020

**Event Director**
Andrew Blake

**Apply by**
15 June 2020

Modern central banks use a multitude of methods to collect, manipulate, analyse and display data. An increasingly popular platform for all of these is R, a free software environment with a dedicated community of cross disciplinary users. It is often the platform of choice for statisticians and now econometricians are joining in.

**Content**
This course applies the powerful features of R to various core contemporary econometric methods. This will be done both through programming up the estimators directly in R and making use of the extensive library of available packages.

The course is likely to cover:

- introduction to R and Rstudio including data manipulation and graphical outputs;
- classical time series econometrics including quantile regression;
- Bayesian econometrics via Gibbs sampling;
- VARs, SVARs and Bayesian VARs;
- DSGE modelling and estimation;
- introduction to cross sectional methods for large data sets; and
- methods for visualising data and results.

**Target group**
This course is suitable to users new to R, but requires some programming experience and participants must have done the pre-reading. R requires users to write programs to perform any kind of analysis, so some familiarity with a scripting language such as Matlab or Gauss is essential.

**Format**
Although we will introduce all the necessary features of R for the applied econometrician this course will not be a complete guide to the language. Experienced R programmers will probably find the going rather slow.
Research forum on Advanced analytics — topic tbc
5–6 November 2020

Event Directors
Andreas Joseph and Andrew Blake

Apply by
30 July 2020

Further details to follow when the topic has been confirmed.
A new partnership

In 2020, the CCBS will run a programme of thematic events in London, in partnership with the Department for International Development (DFID). These three seminars, by invitation only, are part of a new initiative, fully funded by the UK Government’s Prosperity Fund, and will primarily welcome central bankers and financial regulators from developing and emerging market countries in Africa, the Middle East and East Asia.
This new collaboration between the Bank and DFID is part of a broader UK initiative to harness the expertise of the UK financial sector to promote development of financial markets and trade globally. Two years ago, the Bank partnered with three African central banks to share technical expertise on-site and help build capacity across a broad range of central bank policy and operations — with a view to promoting global financial stability and economic growth.

More than 500 local central bankers and more than 40 Bank experts have taken part in our DFID-sponsored workshops held in South Africa, Ghana and Sierra Leone over the past 18 months. Following the success of the initiative, the project, co-ordinated by a small team in CCBS, is expanding, to include six new institutions that may also serve as ‘hubs’ to help us deliver regional training to neighbouring central banks. All in all, the Bank-DFID partnership now covers most of Africa and the Middle East, South East Asia and China — a mix of low to lower-middle income economies and systemic emerging markets.

We will continue drawing on the expertise of colleagues from all around the Bank to deliver on-site workshops. In addition, for the first time, we will also be offering three by invitation only seminars in 2020, to be held at the Bank of England on the following themes:

- central bank organisation, values and governance;
- the fintech revolution: opportunities and challenges; and
- challenges facing emerging market and developing countries in the international monetary and financial system.

(1) New partners include the People’s Bank of China, Bank Indonesia, Bank of Morocco, the Central Bank of West African States (BCEAO), Central Bank of Jordan, and the Arab Monetary Fund. We will continue working with our original three partner central banks in South Africa, Ghana and Sierra Leone.
Central bank organisation, values and governance

15–17 April 2020

Event Directors
John Power and Ben Norman

The powers and responsibilities of central banks around the world have grown since the financial crisis. As well as monetary policy and currency management, many central banks have responsibilities for financial stability, prudential policy, payment systems, resolution/crisis mgmt and supervision. That raises many internal challenges with respect to:

– Organisation: How should a modern central bank be organised to discharge these wide set of objectives?
– Effective decision-making: What constitutes a good balance of decision-making between the executives/governors, the Board, the policy committees and the staff. How can we manage perceived conflicts?
– Culture and values: How do we ensure that the central bank’s expertise is fully deployed and that staff can contribute to the wider mission.
– Strategic planning and prioritisation: How should central banks future proof themselves to shocks and changes in mission.

At the same time, central banks need to remain accountable for their work to their national parliaments and public.

This workshop, geared towards chief operating officers and senior staff will explore how we can meet these challenges. It will draw principally on the BoE’s journey since the financial crisis. We will also encourage participants to share their experiences.

The fintech revolution: opportunities and challenges

1–2 September 2020

Event Director
Matthew Pegg

Fintech presents both opportunities and challenges to the financial system and to central banks and regulators. We have seen the potential of emerging technology to make the financial system more efficient, resilient and inclusive by facilitating economic growth and democratising financial services, however it brings with it a unique set of challenges. It has the potential to introduce new risks creating a more volatile financial sector and aggravating market liquidity concerns.

As policymakers we have a tight rope to walk, in order to harness the benefits of innovation while ensuring the risks are appropriately mitigated. It is our role as regulators to ensure we are ready for this technology revolution and contribute as active participants. This workshop will explore topical issues and discuss how authorities in EMDCs can interact with fintech.

Challenges facing emerging market and developing countries in the international monetary and financial system

2–4 November 2020

Event Director
Glenn Hoggarth

The International Monetary and Financial System (IMFS) is at a watershed. Following decades of liberalisation in trade and capital flows, since the Global Finance Crisis this has come to a halt with growing pressures now for a reversal and shift to a more fragmented system. At the same time, emerging-market and developing countries (EMDCs) are playing a relatively bigger role in the global system. New global issues have also come to the fore including the growing role played by market-based finance, the impact of FinTech and dealing with the risks from climate change. This workshop will assess the current state of the international financial architecture including the global ‘rules of the road’ for regulatory, prudential and capital flow policies, the role played by the International Financial Institutions and the effectiveness of the global financial safety net. It will also assess the opportunities and risks to EMDCs from the global system, including the role played by international banks and spillovers from advanced countries, and the policy options facing central banks in EMDCs to maximise the benefits while minimising the potential costs of an open and integrated IMFS.
How to apply

Full details of our web-based electronic application process can be found at www.bankofengland.co.uk/ccbs.

If you need further information or assistance please email the CCBS Administration Team at ccbsinfo@bankofengland.co.uk.

Application process
All candidates must obtain prior approval from their training department before applying.

Applications must be received by the stated deadline (a minimum of 14 weeks before the event start date) and are limited to one per central bank/regulatory authority.

As most events are oversubscribed and places are limited, we are not able to consider late or multiple applications. If more than one application per organisation is received, it will be at the discretion of the Event Director to choose the most suitable applicant.

Registration
If you are a first-time user of the electronic application system, you need to register on the CCBS website, using your official email address.

A password will then be emailed to you. Once registered you can monitor the progress of your application and apply for other CCBS events.

Online application
After registering with CCBS and having obtained a password you should:

1. go to the CCBS website and sign in with your username (your official email address) and password;
2. select the relevant event and click on ‘Apply Now’;
3. complete all sections of the application form; and
4. submit the application form.

You will be informed by email whether your application has been successful some two to three months before an event.

CCBS advises not to book any travel arrangements before your application has been accepted.
Please ensure that you have adequate insurance cover for your needs. You should also ensure you have adequate medical insurance.
Other training opportunities

In this section you will find other training opportunities offered by the Bank of England and our partners. These are not organised by the CCBS so if you require any further information regarding these, please use the specific contact details provided.
Other training opportunities

MSc Global Central Banking and Financial Regulation

A part-time, online programme delivered in partnership between the Bank of England and Warwick Business School.

Built with central banking professionals in mind, this specialised modular programme has been designed to introduce the latest evidence led and practice informed financial regulation and monetary policy and is suitable for those looking to evidence their knowledge, gain insight or develop their career in central banking or financial regulation.

Contributing to your professional development, you may choose to initially only commit to a single module which upon successful completion will grant you a Postgraduate Award qualification. From this you may build-up to a higher qualification level culminating in a full Masters’ qualification.

• Taught entirely online, this programme offers you the flexibility to study at a time that suits you.
• Continuing to work while studying allows you the opportunity to apply new theory directly to your day-to-day work.
• The modular structure of the programme allows you to focus on one topic and return to build-up further expertise and insight.
• Provides evidence of your professional learning while providing new skills and insights through cutting-edge research and the latest thought-leadership.

Modules available include:

Available from the academic year 2019/20 onwards

Comparative Central Banking

This module explores and explains why central banks have different operating procedures and thereby seeks to open minds to the full scope of possible policy choices. There is comparison between the US, Europe, Japan and EMES, and case studies from how central bank operations evolved during the financial crisis.

Money, Banks and Macroeconomics

This module provides a rigorous discussion of the role of money, banks and other financial institutions in a modern economy. It studies the fragilities in fractional reserve banking, the role of the central bank, the foundations of inflation targeting and the weaknesses of inflation targeting and the weaknesses caused by the shadow banking sector.

Financial Regulation and Supervision

In this module you will study the rationale behind financial regulation and supervision. You will look at the issues regulators are addressing and which tools are used. Learning will be structured around critical, policy relevant questions in financial regulation which have seen scholarly study.

Monetary Policy and Monetary Analysis

This module investigates the analytical and empirical tools from macroeconomics and econometrics to understand the role of monetary policy and how monetary policy is implemented. The module emphasises the interaction between the financial system and the macroeconomy; and critiques post Global Financial Crisis policy responses.
**Available from the academic year 2020/2021 onwards**

**Financial Markets and Financial Risk Management**
The module covers the financial architecture of exchanges and the promise of FinTech, fundamental concepts of international finance, emphasising the operation of spot and derivative securities in international markets. The module also covers financial risk management in banks and insurers.

**Behavioural Finance and Big Data**
You will develop an understanding of key deviations from rationality that have been documented in behavioural science, and learn how these deviations can affect the economy. You will also be introduced to advances in data science and current debates on the validity of the claims of big data analytics.

**Financial Conduct, Leadership and Ethics**
The aim of this module is to build an ethical leadership capacity in critical areas of banking, and in particular financial conduct. You will explore ethical leadership from all angles: academic, through practice, and via peer learning. You will investigate financial conduct, the regulatory rules, and the enforcement tools available if ethics are poor.

**Available from the academic year 2021/2022 onwards**

**Research Methods and Dissertation**
You will be equipped with the knowledge and general research tools to correctly execute a project such as a Masters dissertation. In your dissertation you will identify and investigate a current research topic which will help to develop your theoretical and practical understanding.

**Administrative Information**
For more information of module content please visit the [WBS website](https://www.wbs.ac.uk/).

For further details on fees and funding please click [here](https://www.wbs.ac.uk/). Some central banks may be eligible for a bursary. For more information including eligibility criteria please read the [Warwick Business School Bursary information flyer](https://www.wbs.ac.uk/).

Modules are delivered sequentially throughout the year.

For more information [wbs.ac.uk/go/cbbs](https://www.wbs.ac.uk/go/cbbs) or contact Warwick Business School.

**Bank of England conferences**
Details of other Bank of England conferences and workshops which may be of interest can be found on the Bank of England [website](https://www.bankofengland.co.uk/).
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