NBP Technical Cooperation
Catalogue 2021
Contents

Foreword ............................................................................................................................ 3
Narodowy Bank Polski Technical Cooperation Programme ................................... 4
Seminars, workshops and webinars in 2021 ................................................................. 6
Economic education at Narodowy Bank Polski ....................................................... 9
Enhanced FDI presentations ..................................................................................... 10
Multimedia in communication of central banks: preparation, post-production and video streaming ................................................................. 11
Modelling of the financial system for systemic risk assessment ............................ 13
Probabilistic inflation forecasting with model pooling ........................................... 14
Short-term forecasting – dynamic factor models and their popular applications ... 15
Back office operations for reserve management ................................................... 17
Advanced econometrics: introduction to Bayesian econometrics ....................... 18
Times series analysis ................................................................................................. 19
The new Keynesian model: applications to monetary policy analyses and forecasting ................................................................. 21
Payment systems and non-cash transactions ......................................................... 22
Seasonal adjustment of economic time series ....................................................... 23
IT security management and information protection at Narodowy Bank Polski. Technical and organisational solutions ................................................. 25
Combining density forecasts of inflation by minimizing the Continuous Rank Probability Score (CRPS) ................................................................. 26
Cash circulation, production of banknotes and coins, money counterfeiting ..... 27
Web-scraping and the use of on-line prices for forecasting purposes ................... 29
Forecasting success in managerial positions .......................................................... 30
Monetary policy communication under an inflation targeting framework ...... 31
Panel data analysis ................................................................................................... 33
Practical information ................................................................................................. 34
Warsaw, Cracow – Come by, stay for longer ............................................................ 36
Contacts ....................................................................................................................... 38
Hi everyone,

It is my great pleasure to present to you the 11th edition of the Narodowy Bank Polski Technical Cooperation Catalogue, which I hope you will find useful again.

The 2020 pandemic has completely changed the world we knew, affecting ways of cooperation and communication and bringing new challenges. Hence, in today’s world, technical cooperation is becoming an increasingly important dimension of relationships among central banks. It is a useful platform for exchanging professional experience, promoting best practices, sharing ideas and exploring new ways of working together or defining lessons learnt. It is also an important instrument to build the capacity of the central banks of developing and transition countries. Narodowy Bank Polski wants to make sure that even in these difficult times of social distancing, our programme is pursued and the best quality of technical cooperation is upheld. This is why we have made the decision to reshape our TC programme by introducing webinars to fully adjust to the new reality.

The epidemiological situation has forced us to postpone some events to 2021, including the 17th Joint Seminar of Narodowy Bank Polski and the Swiss National Bank on modelling of the financial system for systemic risk assessment. Keeping in mind the safety of our guests, some of the events we offer will be held in the form of webinars. An on-line form of technical cooperation was already introduced in the second half of 2020, and the positive feedback we have received encourages us to move forward with this solution. Therefore, we are expanding our offer with new topics that will be available to everyone via Internet platforms. Although the global situation is extremely difficult, it is also a time of positive changes and innovation, and it gives us a chance to develop new, wider-reaching forms of cooperation.

The Technical Cooperation Catalogue for 2021 is shaped by the feedback we received from the participants who have attended our seminars, workshops and webinars in recent years. In order to take into account their needs, observations and suggestions, we decided to focus on issues relating to the key areas of the central bank’s activities.

The Catalogue provides full details of the 20 international specialist seminars, workshops and webinars that NBP has prepared for 2021, along with information on application procedures.

We will be honoured if you, as our partners, join us on this journey towards a better and technologically advanced future and help us create a new dimension of technical cooperation. I would like to wish you all good health and I hope that you stay safe in these difficult times.

Adam Glapiński
President
Narodowy Bank Polski
Narodowy Bank Polski
Technical Cooperation Programme

The Technical Cooperation Programme of Narodowy Bank Polski is addressed to officials representing central banks and institutions with competences similar to NBP tasks from developing and transition countries outside the European Union.

The main goal of the Programme is to share NBP’s knowledge and experience on various aspects of central banking with external partners and to support the development of institutional capacities of the cooperating institutions. Within the Programme, we aim to stimulate open discussion and build long-term relationships among participants, thus contributing to establishing working relations within the central banking community.

The Technical Cooperation Programme is carried out by NBP experts, who all have hands-on experience on the relevant topics, in cooperation with partners from other domestic and foreign institutions such as the Ministry of Finance of the Republic of Poland, the Polish Financial Supervision Authority, the Polish Security Printing Works, the Mint of Poland, the Office of Competition and Consumer Protection, and the Swiss National Bank.

To suit the varied needs of our partners, Narodowy Bank Polski offers a whole range of cooperation forms: seminars, workshops, webinars, expert missions, study visits, internships, and telephone and e-mail consultations. This Catalogue presents the offer of open seminars, workshops and webinars only.

Striving to make the technical cooperation as effective as possible, Narodowy Bank Polski adopted the NBP Technical Cooperation Programme 2016+. The aim was to focus on bilateral cooperation with individual institutions and to offer them a wider range of activities and long-term projects. The group of priority partners includes central banks and corresponding institutions of the following countries:

- Eastern Partnership countries: Armenia, the Republic of Azerbaijan, Belarus, Georgia, Moldova and Ukraine,
- members of the constituency in the IMF and the World Bank Group: the Republic of Azerbaijan, Kazakhstan, the Kyrgyz Republic, Serbia, Tajikistan, Turkmenistan and Uzbekistan,
- candidate countries for the EU accession: Albania, Bosnia and Herzegovina, the Republic of North Macedonia, Montenegro, Serbia and Turkey.

A special offer is addressed to the above-mentioned priority partners. They may use the following forms of cooperation:

- study visits/on-line study visits – for groups of experts from one central bank or several central banks,
- internships – for 1-2 experts from a selected central bank,
- expert missions – visits of NBP experts to other central banks,
- long-term projects – tailored-made offer of cooperation that takes the form of a variety of scheduled activities dedicated to one theme.
To date NBP has organised various successful training schemes and participated in four twinning projects and one regional programme. From 2005 to 2020, NBP has organised altogether around a thousand events within the Programme, including 667 bilateral cooperation activities (e.g. study visits, on-line study visits, internships and expert missions). A total of 3,989 participants representing 43 countries completed training at NBP in that period.

Due to the coronavirus epidemic, NBP has temporarily suspended its technical cooperation activities in traditional on-site form. In their place, NBP has begun to offer webinars and on-line study visits since July 2020.

The positive response, as evidenced by the doubling of the number of interested participants, has allowed us to extend NBP’s offer with new topics via our electronic platform to satisfy the demand in 2021. However, stationary events will be continued in 2021 as soon as the epidemiological situation will allow it. What is more, both forms (stationary and on-line) will be introduced to the offer permanently.

Every year Narodowy Bank Polski attempts to enhance the quality of its technical cooperation activities. That is why participants’ opinions and their feedback are crucial in this process. Should you have any questions about the NBP TC Programme or any other comments, please do not hesitate to address them to tct@nbp.pl.

Further information on Narodowy Bank Polski Technical Cooperation Programme can be found on our website:

www.tct.nbp.pl
# NBP Seminars and workshops in 2021

<table>
<thead>
<tr>
<th>Title</th>
<th>Date</th>
<th>Form</th>
<th>Area of central banking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic education at Narodowy Bank Polski</td>
<td>16-17 March</td>
<td>Web</td>
<td>Financial literacy</td>
</tr>
<tr>
<td>Enhanced FDI presentations</td>
<td>19-23 April</td>
<td>Web</td>
<td>Statistics</td>
</tr>
<tr>
<td>Multimedia in communication of central banks: preparation, post-production and video streaming</td>
<td>21 May</td>
<td>Web</td>
<td>Communication</td>
</tr>
<tr>
<td>Probabilistic inflation forecasting with model pooling</td>
<td>1-2 September</td>
<td>Web</td>
<td>Monetary policy</td>
</tr>
<tr>
<td>Short-term forecasting – dynamic factor models and their popular applications</td>
<td>7-9 September</td>
<td>Web</td>
<td>Monetary policy</td>
</tr>
<tr>
<td>Back office operations for reserve management</td>
<td>14-16 September</td>
<td>S</td>
<td>Central bank operations</td>
</tr>
<tr>
<td>Advanced econometrics: introduction to Bayesian econometrics</td>
<td>20-22 September</td>
<td>W/Web</td>
<td>Research</td>
</tr>
<tr>
<td>Times series analysis</td>
<td>27-30 September</td>
<td>W/Web</td>
<td>Statistics</td>
</tr>
<tr>
<td>The new Keynesian model: applications to monetary policy analyses and forecasting</td>
<td>27 September – 1 October</td>
<td>W/Web</td>
<td>Research</td>
</tr>
<tr>
<td>Title</td>
<td>Date</td>
<td>Form</td>
<td>Area of central banking</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------</td>
<td>------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Payment systems and non-cash transactions</td>
<td>5-7 October</td>
<td>S</td>
<td>Payment system</td>
</tr>
<tr>
<td>Seasonal adjustment of economic time series</td>
<td>19-22 October</td>
<td>W</td>
<td>Statistics</td>
</tr>
<tr>
<td>IT security management and information protection at Narodowy Bank Polski. Technical and organisational solutions</td>
<td>26-28 October</td>
<td>S</td>
<td>IT</td>
</tr>
<tr>
<td>Combining density forecasts of inflation by minimizing the Continuous Rank Probability Score (CRPS)</td>
<td>28 October</td>
<td>Web</td>
<td>Monetary policy</td>
</tr>
<tr>
<td>Cash circulation, production of banknotes and coins, money counterfeiting</td>
<td>4-5 November</td>
<td>Web</td>
<td>Cash circulation</td>
</tr>
<tr>
<td>Web-scraping and the use of on-line prices for forecasting purposes</td>
<td>8-10 November</td>
<td>Web</td>
<td>Monetary policy</td>
</tr>
<tr>
<td>Forecasting success in managerial positions</td>
<td>16-18 November</td>
<td>W</td>
<td>HR</td>
</tr>
<tr>
<td>Monetary policy communication under an inflation targeting framework</td>
<td>23-26 November</td>
<td>S</td>
<td>Monetary policy</td>
</tr>
<tr>
<td>Panel data analysis</td>
<td>7-10 December</td>
<td>W/Web</td>
<td>Statistics</td>
</tr>
</tbody>
</table>
### Economic education at Narodowy Bank Polski

<table>
<thead>
<tr>
<th>Date</th>
<th>16 – 17 March 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Webinar</td>
</tr>
<tr>
<td>Topics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Economic education at NBP</td>
</tr>
<tr>
<td></td>
<td>▪ Principles of conducting educational activities at NBP</td>
</tr>
<tr>
<td></td>
<td>▪ Types of educational initiatives</td>
</tr>
<tr>
<td></td>
<td>▪ Educational tools</td>
</tr>
<tr>
<td></td>
<td>▪ Target groups of the NBP educational activities</td>
</tr>
<tr>
<td></td>
<td>▪ Social research and evaluation of educational activities</td>
</tr>
<tr>
<td></td>
<td>▪ Grant award procedure</td>
</tr>
<tr>
<td></td>
<td>▪ NBP Money Centre</td>
</tr>
<tr>
<td>Language</td>
<td>English</td>
</tr>
<tr>
<td>Deadline for application</td>
<td>19 February 2021</td>
</tr>
<tr>
<td>Prerequisites</td>
<td>The webinar is intended for staff members involved in educational activities in their central banks. Participants will be expected to contribute actively to discussion and prepare presentations.</td>
</tr>
</tbody>
</table>
**Enhanced FDI presentations**

**Date**
19 – 23 April 2021

**Form**
Webinar

**Topics**
- The use of FDI statistics (historical perspective and new challenges)
- Data collection and compilation (including use of sources other than ITRS or surveys)
- Standard presentation according to assets/liabilities and directional principles
- Supplemental data series (spotlight on ultimate investing country, round-tripping and ultimate host country, investment by type)
- Research issues for the update of the statistical standards in FDI
- Producing longer time-series of FDI with revised standards
- Communication challenges and presentation of FDI data (also aspects of tying FDI with other economic variables, subnational distribution, etc.)

**Language**
English

**Deadline for application**
26 February 2021

**Prerequisites**
The webinar is intended for staff working with FDI statistics. Participants should be able to make short interventions and to actively participate in discussions, some of them may be asked to prepare a short presentation of country experience in selected topics.
Multimedia in communication of central banks: preparation, post-production and video streaming

Date 21 May 2021
Form Webinar
Topics
  ▪ The process of planning and creating multimedia content used in central banks’ communication activities
  ▪ Video production techniques: equipment, planning and recording
  ▪ Post-production techniques: video editing, animation and audio
  ▪ Video live streaming of events and meetings
Language English
Deadline for application 26 March 2021
Prerequisites This webinar is intended for creative teams at central banks, all professionals that are either working in the field of communication, or specialists and managers that are interested in incorporating multimedia techniques into their central bank’s communication and information activities.
Modelling of the financial system for systemic risk assessment
(17th Joint Seminar of Narodowy Bank Polski and the Swiss National Bank)

Date 28 – 30 June 2021

Venue Narodowy Bank Polski Head Office
(ul. Świętokrzyska 11/21, 00-919 Warsaw)

Form Seminar/Webinar in cooperation with the Swiss National Bank*

Topics
- Modelling macro-financial linkages – empirical approach
- Modelling macro-financial linkages – simulation approach
- Stress tests for macroprudential policymaking
- Modelling and forecasting credit dynamics
- Modelling contagion / network analysis
- Modelling systemic risk using market-based data
- Growth-at-Risk and Capital flows-at-Risk

Language English (with simultaneous translation into Russian – seminar only)

Deadline for application By invitation only

Prerequisites The seminar/webinar is intended for economists of central banks and supervisory agencies responsible for assessing systemic risk for the financial system.

Participants are expected to engage in the discussion and share their country’s experience and their institution’s considerations.

Given the limited number of places available, participants from the Eastern Partnership countries, members of the IMF/ WB Swiss-Polish constituency and EU candidate countries will be given priority to attend the event.

* Only if due to the COVID-19 pandemic an on-site seminar cannot take place
Probabilistic inflation forecasting with model pooling

Date: 1 – 2 September 2021
Form: Webinar
Topics:
- Point vs. density prediction
- Presentation of probabilistic forecasts: probabilities, fan charts
- Approaches to uncertainty modelling: ex-post vs. ex-ante uncertainty
- Ex-post evaluation of forecasts: scoring rules, PITs
- Forecast aggregation: point vs. density forecasts
- Combination of density forecasts: different approaches
- Elements of Bayesian inference
- Dynamic non-Gaussian models
- Forecasting inflation using many models
- Discussion: advantages and limitations
Language: English
Deadline for application: 2 July 2021
Prerequisites: Basic experience with practical prediction procedures in central banking. This course should be jointly considered with the webinar on short-term forecasting and the webinar on combining density forecasts of inflation.
Short-term forecasting – dynamic factor models and their popular applications

**Date**  
7 – 9 September 2021

**Form**  
Webinar

**Topics**
- Statistical factor analysis and principal component analysis (PCA)
- Data collection and pre-processing in data-rich environment framework. Popular sources and methods
- Dynamic factor model (DFM): identification and estimation issues
- Leading indicators and short-term inflation forecasting
- Ragged edges, mixed data frequency and multi-level factor structure in DFM

**Language**  
English

**Deadline for application**  
16 July 2021

**Prerequisites**  
This practical workshop is intended for central bank analysts and forecasters interested in the implementation of dynamic factor models in their research activities on inflation processes or in forecasting inflation in a large data set environment. Basic knowledge of Matlab (preferred) or other programming languages (R, Stata, Eviews) is required. Participants are advised but not required to take part in the course on probabilistic forecasting before taking this course.
Back office operations for reserve management

Date 14 – 16 September 2021
Form Seminar
Topics
Organisation of the back office process:
- Static data
- Settlement of transactions
- Data reconciliation
- Accounting procedures
- Contractual and legal aspects of establishing correspondent banking relationships
- Controlling processes
Language English
Deadline for application 15 July 2021
Prerequisites This seminar is intended for central bank practitioners. Participants will be expected to contribute actively to the discussion. A good command of English is required.
Advanced econometrics: introduction to Bayesian econometrics

Date 20 – 22 September 2021

Venue Narodowy Bank Polski Head Office (ul. Świętokrzyska 11/21, 00-919 Warsaw)

Form Workshop/Webinar*

Topics
■ Elements of Bayesian inference: estimation, prediction and model comparison
■ Bayes' formula
■ Pooling inferences from individual models (Bayesian Model Averaging)
■ Linear regression model from Bayesian point of view
■ Basic Markov Chain Monte Carlo (MCMC) methods
■ Bayesian Vector AutoRegression (VAR)
■ Bayesian Structural VAR (SVAR)
■ Zero and sign restrictions in SVAR

Language English

Deadline for application 30 July 2021

Prerequisites Although, in substance, the course is intended to be an introduction to Bayesian econometrics, it is not an introduction to mathematical methods. Hence, working knowledge of basic linear algebra, calculus and statistical multivariate analysis is assumed. Moreover at least a superficial acquaintance with books like G. Koop, Bayesian Econometrics, or T. Lancaster, An Introduction to Modern Bayesian Econometrics, would strengthen your learning from the course.

A good command of English is required.

* Only in case the COVID-19 pandemic will make impossible on site workshop
## Times series analysis

<table>
<thead>
<tr>
<th>Date</th>
<th>27 – 30 September 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venue</td>
<td>Narodowy Bank Polski Head Office (ul. Świętokrzyska 11/21, 00-919 Warsaw)</td>
</tr>
<tr>
<td>Form</td>
<td>Workshop/Webinar*</td>
</tr>
<tr>
<td>Topics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identifying Patterns in Time Series Data</td>
</tr>
<tr>
<td></td>
<td>Working with Time Series Data</td>
</tr>
<tr>
<td></td>
<td>Univariate time series – modelling and forecasting</td>
</tr>
<tr>
<td></td>
<td>Univariate (long-run) modelling</td>
</tr>
<tr>
<td>Language</td>
<td>Russian</td>
</tr>
<tr>
<td>Deadline for application</td>
<td>6 August 2021</td>
</tr>
</tbody>
</table>

### Prerequisites

The workshop/webinar provides the theoretical basis for time series modelling. Participants will have the chance to acquire a knowledge of the concepts and tools used in time series analysis and forecasting. The topics discussed during the event will be illustrated with case studies based on statistical data analysed in Narodowy Bank Polski. Software will be made available to participants during the sessions.

The workshop/webinar is addressed to central bankers who are new to econometric analysis, or have limited econometrics and economic modelling experience. Ideally, candidates should know the basics of linear algebra and simple calculus.

* Only if due to the COVID-19 pandemic an on-site seminar cannot take place
The New Keynesian model: applications to monetary policy analyses and forecasting

Date 27 September – 1 October 2021
Venue Narodowy Bank Polski Head Office (ul. Świętokrzyska 11/21, 00-919 Warsaw)
Form Workshop/Webinar*
Topics
Theoretical sessions
- Extracting cyclical information; business cycle facts
- Basic real business cycle (RBC) model
- New Keynesian models for monetary policy
- Approximation methods: log-linearisation
- New Keynesian models: selected topics
- Estimating New Keynesian models
- Forecasting with New Keynesian models
Practical sessions
- Introduction to Dynare
- Simulating RBC and New Keynesian models in Dynare
- Estimating New Keynesian models in Dynare
- Forecasting with New Keynesian models in Dynare
Language English
Deadline for application 6 August 2021
Prerequisites The workshop/webinar is addressed to central bank economists responsible for macroeconomic modelling, preparation of forecasts and simulations. A working knowledge of calculus is assumed.
A good command of English is required.

* Only if due to the COVID-19 pandemic an on-site seminar cannot take place
Payment systems and non-cash transactions

<table>
<thead>
<tr>
<th>Date</th>
<th>5 – 7 October 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venue</td>
<td>NBP Regional Branch in Kraków</td>
</tr>
<tr>
<td></td>
<td>(ul. Basztowa 20, 30-960 Kraków)</td>
</tr>
<tr>
<td>Form</td>
<td>Seminar</td>
</tr>
<tr>
<td>Topics</td>
<td>Legal framework of payment system in Poland</td>
</tr>
<tr>
<td></td>
<td>Large Value Payment Systems (SORBNET2 and TARGET2-NBP)</td>
</tr>
<tr>
<td></td>
<td>Retail payments via the clearing house, Elixir, EuroElixir and Express Elixir systems</td>
</tr>
<tr>
<td></td>
<td>Payment cards market in Poland</td>
</tr>
<tr>
<td></td>
<td>Single Euro Payment Area (SEPA) and overview of bank account numbering</td>
</tr>
<tr>
<td></td>
<td>Payment system oversight</td>
</tr>
<tr>
<td></td>
<td>Securities settlement systems oversight</td>
</tr>
<tr>
<td></td>
<td>Innovations – new payment services and instruments</td>
</tr>
<tr>
<td></td>
<td>Payment system studies and analyses</td>
</tr>
<tr>
<td>Language</td>
<td>English with simultaneous translation into Russian</td>
</tr>
<tr>
<td>Deadline for application</td>
<td>6 August 2021</td>
</tr>
<tr>
<td>Prerequisites</td>
<td>The seminar is addressed to central bank’s experts working in the area of payment systems, payment system oversight and cashless payments.</td>
</tr>
</tbody>
</table>
Seasonal adjustment of economic time series

Date 19 – 22 October 2021

Venue Narodowy Bank Polski Head Office
(ul. Świętokrzyska 11/21, 00-919 Warsaw)

Form Workshop

Topics
- Introduction to the theory of seasonal adjustment – aims, basic concepts and definitions
- Decomposition of time series into components
- The role of pre-adjustment (calendar effects, outliers)
- Seasonal adjustment methods: X-12-ARIMA and TRAMO/SEATS – assumptions, underlying concepts, characteristics, diagnostics
- Interpretation and validation of the results
- Specific issues on seasonal adjustment (direct/indirect seasonal adjustment, short and long time series, problematic series, revisions)
- Case studies with JDemetra+
- The strategies for seasonal adjustment in central institutions and statistical agencies
- European Statistical System (ESS) Guidelines on Seasonal Adjustment
- Specification files and settings
- JDemetra+ Cruncher for mass production

Language English with simultaneous translation into Russian

Deadline for application 3 September 2021

Prerequisites A sound knowledge of time series analysis would be an advantage. Familiarity with seasonal adjustment methods and software is not required. Participants should be able to make short interventions and actively participate in the discussions.
IT security management and information protection at Narodowy Bank Polski. Technical and organisational solutions

Date 26 – 28 October 2021

Venue Narodowy Bank Polski Head Office (ul. Świętokrzyska 11/21, 00-919 Warsaw)

Form Seminar

Topics
- Organisational structure of NBP. Legal and organisational measures
- Significant attack resistance tests based on experience at NBP
- Information protection systems at NBP. Recommended technological solutions supporting information protection
- Conducting penetration tests of IT systems at NBP and an outline of the TIBER-EU project
- Cryptography at NBP
- Security Operation Centre (SOC)
- Act on the national cybersecurity system. Practical support or formal impediment to SOC operational activities
- Business Continuity Planning

Language Polish with simultaneous translation into English and Russian

Deadline for application 3 September 2021

Prerequisites The seminar is addressed to employees with a function in IT systems inspection, administrators in charge of information and communication technologies (ICT) system security, IT systems supervisors and auditors.
## Combining density forecasts of inflation by minimizing the Continuous Rank Probability Score (CRPS)

**Date**  
28 October 2021

**Form**  
Webinar

**Topics**
- Continuous Rank Probability Score (CRPS) for the mixture of predictive distributions
- Equal weights versus time-varying weights based on minimizing the CRPS
- Optimal combining using Mathematica
- Experiment for inflation predictive densities used in NBP

**Language**  
English

**Deadline for application**  
3 September 2021

**Prerequisites**  
The webinar is intended for staff members involved in optimal probabilistic forecasts for inflation. A knowledge of basic elements of probability distribution theory is preferred. This course should be considered by participants that also participate in the webinar on short-term forecasting and probabilistic forecasting.
Cash circulation, production of banknotes and coins, money counterfeiting

**Date**  
4 – 5 November 2021

**Form**  
Webinar in cooperation with the Polish Security Printing Works and the Mint of Poland

**Topics**
- Cash and Issue Department at NBP – role and tasks
- Banknote quality control – cooperation with producer
- Coin quality control – cooperation with producer
- Cash and COVID-19 – how the pandemic impacts on demand for cash
- NBP’s collector coins and banknotes
- Cash cycle in Poland
- Combating money counterfeiting in Poland

**Language**  
English

**Deadline for application**  
3 September 2021

**Prerequisites**  
The webinar is addressed to employees of the cash and treasury divisions who plan the issue of currency and cooperate with banknote and coin producers.
Web scraping and the use of on-line prices for forecasting purposes

Date 8 – 10 November 2021

Form Webinar

Topics
- Use of web-scraped data in inflation forecasts and analysis at NBP
- Process for obtaining web-scraped data at NBP
- Introduction to Python
- Web scraping techniques
  - Selenium library
  - Beautiful Soup library
- Product selection and classification

Language English

Deadline for application 17 September 2021

Prerequisites The webinar is intended for staff members involved in inflation forecasting and micro-price analysis. Some experience with programming and Python is preferred for practical sessions.
### Forecasting success in managerial positions

<table>
<thead>
<tr>
<th>Date</th>
<th>16 – 18 November 2021</th>
</tr>
</thead>
</table>
| Venue         | Narodowy Bank Polski Head Office  
                (ul. Świętokrzyska 11/21, 00-919 Warsaw) |
| Form          | Workshop |
| Topics        | - Determinants of success in managerial positions – false beliefs and confirmed dependencies  
                - Possibilities of verification of managerial potential within the organisation  
                - Range of adjustment and compensation of individual characteristics |
| Language      | English |
| Deadline for application | 15 October 2021 |
| Prerequisites | The workshop is addressed to employees who influence recruitment decisions in the organisation. |
Monetary policy communication under an inflation targeting framework

Date 23 – 26 November 2021
Venue Narodowy Bank Polski Head Office (ul. Świętokrzyska 11/21, 00-919 Warsaw)
Form Seminar
Topics
- Inflation targeting framework
- Monetary policy decision-making process
- Communicating monetary policy decisions
- Publishing inflation reports and projections
- Preparation of NBP press conferences
Language English with simultaneous translation into Russian
Deadline for application 24 September 2021
Prerequisites The seminar is intended for staff members involved in monetary policy, especially in the monetary policy communication process. Participants will be expected to contribute actively to the discussion and prepare presentations.
Panel data analysis

Date 7 – 10 December 2021

Venue Narodowy Bank Polski Head Office (ul. Świętokrzyska 11/21, 00-919 Warsaw)

Form Workshop/Webinar*

Topics
- Statistical analysis and econometric models
- Linear models with exogenous covariates
- Linear models with endogenous variables (instrumental-variables estimators)
- Dynamic linear models (introduction to the generalized method of moments estimation technique, the Arellano–Bond estimator, the Arellano–Bover/Blundell–Bond estimator)
- Nonlinear models

Language Russian

Deadline for application 15 October 2021

Prerequisites The workshop/webinar provides a theoretical basis for panel data analysis. Participants will get a chance to acquire knowledge of the concepts and tools used in panel data analysis. Topics discussed during the workshop/webinar will be illustrated with case studies based on statistical data analysed at NBP.

The workshop/webinar is addressed to central bankers who are new to econometric analysis, or have limited econometrics and economic modelling experience. Ideally, candidates should know the basics of linear algebra and simple calculus.

* Only if due to the COVID-19 pandemic an on-site seminar cannot take place
Practical information

Registration for seminars, workshops and webinars

A representative of an institution, who is interested in attending a seminar, workshop or webinar should fill in the application form available at www.tct.nbp.pl. Please note that for every event an application needs to be sent by the deadline stated both on the respective page of this Catalogue and on our website (www.tct.nbp.pl). Potential participants should note that registration is possible only after approval by their supervisor/authorized official. An event might be cancelled if the number of registered participants does not reach the required minimum.

Registration for bilateral cooperation (study visits and internships)

Due to capacity constraints, these kinds of technical cooperation activities are addressed to priority beneficiaries only, i.e. Albania, Armenia, the Republic of Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, the Kyrgyz Republic, the Republic of North Macedonia, Moldova, Montenegro, Serbia, Tajikistan, Turkey, Turkmenistan, Ukraine and Uzbekistan. If a representative of an institution is interested in participating in any of the bilateral cooperation activities, he/she should apply via our website www.tct.nbp.pl.

Security

Due to strict security regulations, participants will be required to carry a recognized identification document at all times when on the NBP premises. Please enter the type of identification document (e.g. passport) and its number in our registration form and bring it with you to the NBP premises. During the webinars any recording (without permission) is strictly prohibited.

Invitations

Invitations for both seminars, workshops and webinars are sent to central banks 2 months in advance of the planned undertaking. A detailed workshop/seminar/webinars programme is attached to the invitation. In case of webinars, after the deadline for application, NBP will send the list of participants to each central bank for verification and approval.

Costs

Attendance of the courses is free of charge.

Travel and medical insurance

Please be advised that NBP does not cover travel costs to and from Poland.

NBP also does not provide any insurance coverage for participants travelling to and from or staying in Poland. Therefore, participants are assumed to have insurance coverage, including medical treatment abroad, adequate to their needs. Any medical costs borne in Poland are to be paid by the delegating institution.
Location and accommodation

During a seminar/workshop, NBP provides hotel accommodation near NBP’s Head Office or Regional Branch.

Participants of study visits and internships are accommodated at the NBP Guesthouse, which is situated in Warsaw, ul. Siedmiogrodzka 5a.

Please note that NBP will cover the costs of accommodation for the duration of the course as well as on the arrival and departure days. In the event that a participant would like to prolong his/her stay, he/she will need to cover any expenses related to it.

We regret that we are unable to provide accommodation for participants’ partners or other family relatives.

Visas

Should a participant require a visa, he/she is strongly advised to contact the relevant Polish diplomatic representation as soon as he/she has been accepted/confirmed for the event to ensure that the necessary formalities are completed in time. For further information please visit: https://www.gov.pl/web/diplomacy/visas

Cancellation

If an institution has to cancel its delegate's participation in a seminar/workshop/webinar, please inform NBP as soon as possible, at least one week before the event. Late cancellation deprives other applicants of the opportunity to attend a seminar/workshop/webinar. Moreover, NBP is charged by hotel for no-show participants.

Language skills

The events are conducted:

- in English, with simultaneous translation into Russian, or
- in English, or
- in Russian, or
- in Polish with simultaneous translation into English and/or Russian.

To effectively benefit from NBP technical cooperation activities, participants should be fluent in the language relevant for the specific course, unless otherwise indicated in the catalogue.

Dress code

Business formal attire is recommended.
Warsaw

The capital of Poland is a vibrant and green metropolis. Rather than being centered around the old town, the city spreads across a vast area, showcasing diverse architecture of a modern bustling city centre and places of historical significance. Gothic relics, baroque palaces, socialist realism architecture, and contemporary buildings, along with traces of multicultural heritage, form a unique mixture.

Warsaw from the river perspective – the only wild river in all the European capital cities, which has many interesting stories to tell. Thanks to the Vistula River, the longest river in Poland, Warsaw has its own beaches, which are considered to be the most beautiful city beaches in the world. This is due to the greenery, sand and the beautiful panorama of the Old Town – a window into the 'once-upon-a-time' of Warsaw's golden days and one of the country's architectural pearls.

Warsaw's architecture recalls the city's past. A walk through the Old Town will take you back to the 16th century, when the city took over the leading position in the Polish Kingdom, becoming the host city of the most important events such as sessions and elections of the Polish kings and, in the end, a capital of Poland. Entirely rebuilt after the Warsaw Uprising, the Old Town is a symbol of Warsaw's rise from the ruins.

It is worth spending a few days in order to experience the unforgettable atmosphere. The city's diversity and richness means that there is something for everyone.
Cracow

The former Polish capital – Cracow – is one of the most popular weekend destinations in Europe. Its history dates back to the 7th century, when it was just a small village on the Wawel Hill.

During the Middle Ages, it started to play the role of a capital – political and cultural life were concentrated here. Cracow was the headquarters and the place of coronation of Polish kings and the nation's capital from 1038 until the move to Warsaw in 1596.

Nowadays, it attracts visitors with its charming Main Square, the ancient Wawel Castle and the famous dragon's den. Cracow has one of the oldest European universities – the over 650-year-old Jagiellonian University.

The narrow streets are full of cosy cafés and local museums that encourage tourists to drop in. One of the key attractions is Sukiennice (the Cloth Hall) – a Renaissance shopping centre where you can purchase traditional food products and regional handicraft.

Photo: https://upload.wikimedia.org/wikipedia/commons/0/0d/Wawel_castle.jpg
Contacts

Technical Cooperation Division
International Department
Narodowy Bank Polski
ul. Świętokrzyska 11/21
00-919 Warszawa, Poland
e-mail: tct@nbp.pl
www.tct.nbp.pl

Magdalena Berlińska
Head of Technical Cooperation Division
tel. 48 22 185 45 50
e-mail: magdalena.berlinska@nbp.pl

Katarzyna Drabarek
tel. 48 22 185 41 41
e-mail: katarzyna.drabarek@nbp.pl

Wiktoria Matyska
tel. 48 22 185 22 85
e-mail: wiktoria.matyska@nbp.pl

Anna Paprotna
tel. 48 22 185 15 72
e-mail: anna.paprotna@nbp.pl
Irena Paszkowska  
tel. 48 22 185 91 76  
e-mail: irena.paszkowska@nbp.pl

Marcin Staniewicz  
tel. 48 22 185 24 06  
e-mail: marcin.staniewicz@nbp.pl

Mariusz Stankowski  
tel. 48 22 185 25 81  
e-mail: mariusz.stankowski@nbp.pl

Rita Stokłosa  
tel. 48 22 185 11 08  
e-mail: rita.stoklosa@nbp.pl