

3rd IFC and Bank of Italy Workshop on “Data Science in Central Banking: Enhancing the access to and sharing of data”

17-19 October 2023, Rome, Italy

Programme¹

Day 1: 17 October 2023

<i>Time (CET)</i>	<i>Topic</i>	<i>Presenter marked in bold</i>
10:00 – 10:15	Welcome remarks	Bruno Tissot , Head of Statistics and Research Support, Bank for International Settlements
10:15 – 11:00	Keynote speech: Project Aurora: the power of data, technology and collaboration to combat money laundering across institutions and borders	Beju Shah , Bank for International Settlements
11:00 – 12:00	Session 1.1 – Data science transforming central banks	Chair: Giuseppe Bruno , Bank of Italy
	<ul style="list-style-type: none"> Data science in the context of international banking statistics 	Jacob Ewertzh and John Svanäng, Sveriges Riksbank
	<ul style="list-style-type: none"> Experiences, essentials and future perspectives with data science in the heart of central banks and supervisors: a case study of the Dutch Central Bank 	Patty Duijm and Iman van Lelyveld, De Nederlandsche Bank
	<ul style="list-style-type: none"> Digital transformation of financial regulators and the emergence of supervisory technologies (SupTech): a case study of the UK Financial Conduct Authority 	Pavle Avramovic , UK Financial Conduct Authority
12:00 – 13:30	Lunch break	
13:30 – 14:30	Session 1.2 – Making data open	Chair: Roeland Beerten , National Bank of Belgium
	<ul style="list-style-type: none"> Building a database on cryptocurrencies 	Ilaria Mattei and Anamaria Illes, Bank for International Settlements

¹ Timing: 15 minutes per presentation; Q&A at the end of the session.

	<ul style="list-style-type: none"> European single access point as a blueprint for global financial and green data hubs 	<p>Michal Piechocki, Marta Kuczynska and Pawel Martyniuk, Business Reporting - Advisory Group (BR-AG)</p>
	<ul style="list-style-type: none"> Data sharing using a global data registry 	<p>Glenn Tice and Matt Nelson, Bank for International Settlements</p>
14:30 – 15:15	Session 1.3 – Advanced analytical tools for data sharing	Chair: Roeland Beerten , National Bank of Belgium
	<ul style="list-style-type: none"> Overcoming data-sharing challenges in central banking: federated learning of diffusion models for synthetic data generation 	<p>Timur Sattarov, Deutsche Bundesbank, and Marco Schreyer, University of St Gallen</p>
	<ul style="list-style-type: none"> Aggregation strategies for federated learning 	<p>Benjamin Santos (Statistics Canada - StatCan), Julian Templeton (StatCan), Rafik Chemli (StatCan), Francesco Pugliese (Italian National Institute of Statistics - ISTAT), Erika Cerasti (ISTAT), Mauro Bruno (ISTAT) and Massimo De Cubellis (ISTAT)</p>
15:15 – 16:00	Coffee break	
16:00 – 17:00	Session 1.4 – Accessing big data	Chair: Juri Marcucci , Bank of Italy
	<ul style="list-style-type: none"> EMIR data for financial stability analysis and research 	<p>Michele Bianchi, Dario Ruzzi and Bianca Sorvillo, Bank of Italy</p>
	<ul style="list-style-type: none"> Unveiling the interconnectedness of banks in payment systems: methodology, utilization, and data governance considerations 	<p>Renardi Ardiya Bimantoro, Mohammad Khoyrul Hidayat and Irfan Sampe, Bank Indonesia</p>
	<ul style="list-style-type: none"> Big Data Platform (FinPulse) initiative 	<p>Tsenddorj Dorjpurev, California Polytechnical State University</p>
17:00	Close of day 1	

Day 2: 18 October 2023

<i>Time (CET)</i>	<i>Topic</i>	<i>Presenter marked in bold</i>
09:00 – 09:45	Keynote speech: Why SDMX matters? a community journey towards SDMX as an AI-enabler and a data mesh enabler	Eric Anvar , Organisation for Economic Co-operation and Development (OECD)
09:45– 10:30	Session 2.1 – Data access arrangements	Chair: Rafael Schmidt , Bank for International Settlements
	<ul style="list-style-type: none"> New strategy of data sharing and data access in statistics: the view from Banco de Portugal 	Ana R. Gonçalves, Daniel V. Sousa , Mário Lourenço and Thomas Verheij, Banco de Portugal
	<ul style="list-style-type: none"> Individual data access & sharing protection policy: definition and case study on Central Bank of Indonesia 	Johanes Iman Anugrah , Akhmad Zacky Nugraha and Sapto Widyatmiko, Bank Indonesia
10:30 – 11:15	Coffee break	
11:15 – 12:15	Session 2.2 – Open source as avenues for collaboration and sharing	Chair: Patty Duijm , De Nederlandsche Bank
	<ul style="list-style-type: none"> Open sourced central bank macroeconomic models 	Douglas Araujo , Bank for International Settlements
	<ul style="list-style-type: none"> Leveraging open-source software & data standards as the backbone of your open data strategy 	Darran Hodder and Matthew Nelson , Regnology
	<ul style="list-style-type: none"> Collaborating on SDMX APIs and open-source software 	Brian Buffet , Stratos Nikoloutsos and Xavier Sosnovsky, Bank for International Settlements
12:15 – 14:00	Lunch break	
14:00 – 14:45	Session 2.3 – Time series analysis	Chair: Adam Cap , Bank for International Settlements
	<ul style="list-style-type: none"> The future of time series analysis at central banks: some preliminary results from a survey of IFC members 	Ryland Thomas , Bank of England
	<ul style="list-style-type: none"> Automated coding using the IMF's catalog of time series 	Ayoub Mharzi , International Monetary Fund (IMF)

14:45 – 15:30	Session 2.4 – Extracting information with machine-learning tools: anomaly and error detection	Chair: Giuseppe Bruno , Bank of Italy
	<ul style="list-style-type: none"> Siamese neural networks for detecting banknote printing defects 	Katia Boria, Andrea Luciani, Sabina Marchetti and Marco Viticoli, Bank of Italy
	<ul style="list-style-type: none"> Error spotting with gradient boosting: a machine learning-based application for central bank data quality 	Csaba Burger (Magyar Nemzeti Bank) and Mihály Berndt (Clarity Consulting)
15:30	End of presentations	
16:30 – 22:00	Social event	
22:00	Close of day 2	

Day 3: 19 October 2023

<i>Time (CET)</i>	<i>Topic</i>	<i>Presenter marked in bold</i>
9:00 – 10:00	Session 3.1 – Machine-learning powered data access, tools, and applications	Chair: Juri Marcucci , Bank of Italy
	<ul style="list-style-type: none"> A machine learning approach for the detection of firms infiltrated by organised crime in Italy 	Pasquale Cariello , Marco De Simoni and Stefano Iezzi, Bank of Italy
	<ul style="list-style-type: none"> Research for all: exploring machine learning applications in generating synthetic datasets 	Rossvern S. Reyes, Carmelita G. Esclanda, Chelsea Anne S. Ong , Gabriel A. Masangkay, Bangko Sentral ng Pilipinas
	<ul style="list-style-type: none"> Invoices rather than surveys: using ML to track real activity 	Pablo Acevedo, Emiliano Luttini, Matías Pizarro, Dagoberto Quevedo and Marco Rojas, Central Bank of Chile
10:00 – 11:00	Session 3.2 – New insights from natural language processing	Chair: Ilaria Mattei , Bank for International Settlements
	<ul style="list-style-type: none"> Leveraging large language models to extract data citations 	Hendrik Christian Doll (Deutsche Bundesbank), Shir Frank (Deutsche Bundesbank / Université de Technologie de Troyes), Christian Hirsch (Deutsche Bundesbank), Emily

		Kormanyos (Deutsche Bundesbank / Goethe University Frankfurt) and Sebastian Seltmann (Deutsche Bundesbank)
	<ul style="list-style-type: none"> Let's talk about sentiment: natural language processing using machine learning on bank earnings transcripts 	Seung Jung Lee, Sriram Nagaraj, Dylan Saez , Viktors Stebunovs, Cindy Vojtech and Karl Wirth, Board of Governors of the Federal Reserve System
	<ul style="list-style-type: none"> Constructing high-frequency and thematic economic sentiment indicators from news articles 	Alan Chester Arcin , Carmelita Esclanda, Chelsea Anne Ong and Rossvern Reyes, Bangko Sentral ng Pilipinas
11:00 – 11:30	Coffee break	
11:30 – 12:30	Session 3.3 – Natural language processing on central bank communication	Chair: Douglas Araujo , Bank for International Settlements
	<ul style="list-style-type: none"> Do anecdotes matter? Exploring the beige book through textual analysis from 1970 to 2022 	Shengwu Du, Flora Haberkorn , Abby Kessler, Isabel Kitschelt, Seung Jung Lee , Anderson Monken, Dylan Saez, Kelsey Shipman and Sandeep Thakur, Board of Governors of the Federal Reserve System
	<ul style="list-style-type: none"> Central bank communication on economic activity 	Sercan Eraslan and Eniko Gabor-Toth , Deutsche Bundesbank
	<ul style="list-style-type: none"> From the ML model to practice 	Janek Blankenburg, Maximilian König and Philipp Rothhaar, Deutsche Bundesbank
12:30 – 12:45	Closing remarks	Alessandra Perrazzelli , Deputy Governor, Bank of Italy
13:00	End of workshop	