Irving Fisher Committee on Central Bank Statistics   ◆ BIS

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Overview of IFC-sponsored Invited Paper Sessions (IPS)

IPS 205: Sustainable finance statistics

Climate mitigation occupies the centre stage of policy discussion and planning. Statisticians can contribute with data and concepts to support policymakers' actions and allow markets to react proactively and efficiently. Moreover, to monitor the transition to a low-carbon economy, it is important to identify the sources of funds used for this purpose and their impact in supporting this transition. However, so far there has been a lack of reliable and comparable indicators for tracking the growth in "green" financing across economies. Turning to physical and transition risk indicators, although they are increasingly in focus as expressed in various central bank publications, they often are not yet available. Important progress is however under way. For example, the new DGI envisages the collection and use of security-by-security data on green financial instruments, which will be key for assessing firms' and banks' exposures to climate risks. In parallel, and as an outcome of its monetary policy strategy review, the ECB will develop new experimental indicators covering green financial instruments. At the same time, the IFC Report on Sustainable finance data for Central Banks recommends leading by example by improving the usage of the new data being collected.

The session discussed the important steps undertaken to start constructing needed indicators and applications today and design sustainable finance statistics accordingly. It also reviewed how leveraging on novel technologies enabled by AI and big data can further guide this process.

Chair: **Robert Kirchner**, Deutsche Bundesbank

Contributions:

- *"Review of firm-level carbon emissions statistics"* by Magda Erdem, Taejin Park, and Jose Maria Vidal Pastor, BIS (paper and presentation)

- *"Measuring the emission profile of self-proclaimed sustainable exchange-traded funds"* by Hendrik Christian Doll and Maurice Fehr, Deutsche Bundesbank (presentation)

- *"Constructing forward-looking climate-related physical risk indicators"* by Jens Mehrhoff, IMF, Maurice Fehr, Deutsche Bundesbank, and Elena Triebskorn, Bank of Spain (presentation)

- *"First set of Euro Area indicators for green financial instruments, physical and transition risks"* by Fabienne Fortanier, The Netherlands Bank, Julika Herzberg, Dimitra Theleriti and Caroline Willeke, European Central Bank (paper and presentation)

- *"Towards an internationally agreed set of climate-related physical risk indicators"* by Jens Mehrhoff, IMF (presentation)

IPS 224: Evolving statistics in support of central bank policies

Central banks have an almost unique perspective on official statistics, being at the forefront of both the production and the application of economic and financial data. On the one hand, they produce statistics on a wide variety of domains, especially the financial system, that are of key relevance for a broad range of economic policymakers. On the other hand, central banks make extensive use of diverse data sources in pursuing their objectives, especially their monetary policy and financial stability goals. Both roles demand constant attention to the economic and financial environment and the fitness-for-purpose of statistics and analytical tools and products.

This session will provide an opportunity to review central banks' evolving use cases in leveraging on statistics to support the conduct of their policies. It will also useful to review the impact of the new statistical initiatives developed all over the world that are relevant for the conduct of central bank policies, including the Data Gap Initiatives of the Group 20.

Chair: **Fernando Rocha**, Central Bank of Brazil

Contributions:

- *"Harnessing the power of input-output analysis for sustainability"* by Ulf von Kalckreuth, Deutsche Bundesbank (paper and presentation)

- *"Using EMIR (European Market Infrastructure Regulation) data for macroprudential analysis"* by Gemma Agostoni, Annalaura Ianiro, Francesca Lenoci, Grzegorz Skrzypczynski and Christian Weistroffer, European Central Bank (paper and presentation)

- *"In search of FDI ultimate hosting economies: maximum entropy and centrality measures techniques"* by Nadia Accoto, Valerio Astuti and Costanza Catalano, Bank of Italy (presentation)

- *"Development of intelligent prioritization of account framework for audit processing of foreign exchange records"* by Bernice A Vytiaco, Bangko Sentral ng Pilipinas, (paper and presentation)

IPS 239: Financial innovation and official statistics

The financial value chain is being disrupted and complemented by new, digitized and innovative business models, which are being developed by FinTechs, incumbents and BigTechs. This has an immediate impact on traditional financial service providers, institutions and regulators, and changes the approaches of how to construct, collect and disseminate statistical information. Those broad changes call for new approaches of how to construct, collect and disseminate information on FinTechs, while not overburdening start-ups and firms with reporting requirements. In addition, a fast-paced development in specialized technologies, eg from the crypto ecosystem, creates new and innovative forms of business models while also challenging authorities' understanding of those business models. Hence it is important, difficult though ultimately feasible, to gather statistics and other type of information on such Fintech activities and providers. In parallel, reflecting remarkable development of financial digital technology, various digital assets have mushroomed throughout the world. However, due to the novel character of the digital assets, the framework of statistical classification is still undergoing.

The objective of this session is to facilitate an active exchange of views and share the experiences of statistics compilers around the world, aiming to develop a framework on new forms of digital assets in the SNA and Balance of Payments. Opinions from users are also indispensable to construct the new framework. Recording digital assets, which include central bank digital currencies (CBDCs), global stablecoins, and other types of crypto-assets, is one of the most important issues in the discussion of BPM6/2008 SNA update, as mentioned in the guidance note (GN) prepared by the Joint Financial and

Payment Systems Task Team (FITT). For example, to find an adequate recording rule for crypto-assets without a corresponding liability (eg bitcoins) is a tough challenge.

Chair: **Ko Nakayama**, Bank of Japan

Contributions:

- *"The Bundesbank Fintech Monitor: a feasibility study"* by Norman Wilson and Ulf von Kalckreuth, Deutsche Bundesbank ([presentation](#))

- *"Recognizing Fintechs: A graph approach. Automatically classifying companies for statistical purposes"* by Andy Bosyi, Neusinger.ai, Ulf von Kalckreuth and Maximilian König, Deutsche Bundesbank ([presentation](#))

- *"Fintech in statistical classifications: suggestions and tentative figures in a central bank context"* by Enzo Buthiot (Banque de France), CelestinoGiron (ECB), Luis Ángel Maza (Banco de España), Ulf von Kalckreuth (Deutsche Bundesbank), Urszula Kochanska (ECB), RománSantos (Banco de España), Yann Wicky (Banque de France), Norman Wilson (Deutsche Bundesbank) ([presentation](#))

- *"The rise of crypto-assets: cool breeze or tsunami in balance of payments statistics?"* by Andrea Carboni, Giuseppe Carone and Giuseppina Marocchi, Bank of Italy ([presentation](#))

- *"Issues in reflecting digital assets in the official statistics"* by Yoshiko Sato, Bank of Japan, ([presentation](#))

IPS 240: Central bank statistics re-branding and purpose-driven communication

During the last years, central banks have been recognizing the importance of making their statistics more understandable by the public at large. Although some efforts have been done to reach new users and to increase trust in official statistics, central banks need to rethink their strategic positioning in this context. They should shift the purpose of statistical communication from a tool to support statistical dissemination to one that adds meaningful contributions to society.

This session will provide an opportunity to share experiences from central banks that have created new fresh ways of communicating statistics (content, channels, partnerships or engagement strategies) and how these new initiatives created value to society as a whole or to specific target groups.

Chair: **Luís Teles Dias**, Banco de Portugal

Contributions:

- *"BPstat: speaking official statistics with a stronger brand voice"* by Lígia Maria Nunes, Banco de Portugal ([presentation](#))

- "*Communication with reporting agents and lowering the reporting burden – the ESCB approach"* by Antonio Colangelo and Dominique Durant, European Central Bank ([paper](#) and [presentation](#))

- *"How Bank Indonesia communicate its Monetary Policy during Covid-19 period"* by Retno Andrini, Vita Rosiana Dewi and Syachman Perdymer, Bank Indonesia ([paper](#) and [presentation](#))

- *"Visualising higher frequency economic indicators from unconventional sources using BI tool"*, by Eilyn Chong, Central Bank of Malaysia ([presentation](#))

IPS 241: Rethinking data governance in official statistics: the central banks' experience

The data revolution brings new challenges. Once data silos are broken and data is perceived as a common good, proper governance must apply. Which data governance models ensure high data quality and leverage innovation?

In this session, we would like to ear experiences about data governance initiatives: scope, principles adopted, practical implementation, main challenges or "best practices".

Chair: **Silke Stapel-Weber**, European Central Bank

Contributions:

- *"The future speaks data - rethinking data governance and management in central banks; the challenges of creating a Data Office"* by Silke Stapel-Weber and Björn Fischer, European Central Bank (presentation)

- *"From data management to data governance: Experience of the Reserve Bank of India"* by Archana Dilip and Debasis Nandi, Reserve Bank of India (paper and presentation)

- *"Have you thought about data governance? Think again. Think better."* by Maria do Carmo Moreno, Banco de Portugal (paper and presentation)

- *"The integrated economic accounts in R: The role of open-source technology in modernising and enhancing official statistics workflows"* by Wian Boonzaaier, Reserve Bank of South Africa (presentation)

IPS 243: Data science in official statistical production: insights from central banks

Data science tools and techniques in the central bank environment have mainly focused on policy-related applications. For example, machine learning techniques have been used to develop high-frequency indicators of inflation, and the measurement of people's inflation perception using social media data sources, etc. In parallel, the exponential rise of available structured and unstructured data in the internet allows statistical organizations to build, enhance or collect data and indicators in new ways. In this new digital age, indicators stemming from large data sets of multinational firms can be constructed in a timelier manner, with the help of public-private partnership and other types of co-operation. A prerequisite for those indicators are sound methodologies and a standardized exchange of data in suitable data formats. This development is at the research frontier, and there are encouraging examples in Banking Supervision, Fintech Monitoring and information extraction for Sustainable Finance purposes. The approach promises real time information that comes without the contorted process of enacting mandatory reporting.

The aim of this session is to focus specifically on how data science can contribute (and have contributed) to the statistics production process at central banks. Some topics include (but not limited to): (1) the automation and optimisation of statistics production processes (including dissemination and reporting), (2) the use of novel techniques in the areas of cluster analysis, outlier identification and treatment, as well as survey-level imputation, (3) the development of open-source data management platforms and its integration with existing internal systems , (4) internally-developed business intelligence (front-end) solutions for internal and external stakeholders, and (5) the sourcing, processing and dissemination of statistics using non-traditional sources of data. Lastly, central bank representatives will showcase what has been done in their respective areas on the topic. There is in particular interest in the toolchains and workflows used by central bank data scientists to enhance the sourcing, compilation, and dissemination process. The interactions with the information technology department regarding architectural designs

(tech stack), the introduction of new technology, and cybersecurity considerations (and the associated challenges/opportunities) would also be analysed.

Chair: **Gloria Peña**, Central Bank of Chile

Contributions:

- *"Central banks collaboration in data science: Examples from Latin America"* by Matias Ossandon-Busch, CEMLA (presentation)

- *"Applied machine learning for central bank statistics: supervised models for the detection of subsidized housing complexes in Chile"* by Martín Rebolledo, Central Bank of Chile (paper and presentation)

- *"Business sector classification and beyond using machine learning"* by Alejandro Morales, Bank of Spain (paper and presentation)

- *"An alternative approach for getting investment direction with the combination of unstructured and structured data"* by Anggraini Widjanarti, Nursidik Heru Praptono and Mohammad Khoyrul Hidayat, Bank Indonesia (presentation)

- *"Stacking machine-learning models for anomaly detection: comparing AnaCredit to other banking datasets"* by Andrea Del Monaco, Bank of Italy (presentation)

IPS 244: Commercial real estate indicators: progress and challenges

Structural change has been underway in commercial real estate markets worldwide as a consequence of the Covid-19 crisis. For economic analysis and the assessment of potential financial stability risks, it is of relevance how property and space markets for office, retail, rental housing and other commercial properties have evolved. The provision of commercial real estate market indicators has been enhanced by the development of new data sources, progress in statistical methodology and practical compilation experiences. However, further efforts are needed to fill existing data gaps to advance in the development of commercial real estate market indicators.

The session will review the various initiatives related to the compilation of commercial real estate indicators. It will also help to draw attention on recent methodological work and compilation exercises and on how to address further challenges.

Chair: **Matt Haigh**, Reserve Bank of New Zealand

Contributions:

- *"BIS role in the global dissemination of Commercial Property Prices"* by Robert Szemere and Bruno Tissot, BIS (paper and presentation)

- *"Towards the compilation of quarterly price, rent and rental yield indices for German commercial real estate markets"* by Thomas Knetsch, Deutsche Bundesbank (presentation)

- *"Working towards comparable measures of commercial real estate developments"* by Paul Konijn, Rui Evangelista, Renata Rechnio and Albrecht Wirthmann, Eurostat (presentation)

- *"Commercial Property Price Indexes: opportunities and challenges"* by Erich H Strassner, IMF (presentation)

IPS 245: The present and future of access to granular administrative data

In recent decades, the growth in data collection, data availability and computing power has meant a corresponding growth in the empirical grounding of research and policymaking. This session proposes bringing together experts from the INEXDA network to share their knowledge on recent developments and future trends on how to facilitate access to granular administrative data and metadata. The talks first revolve around the current situation in which Research Data Centres (RDCs) are a widespread way to provide access to confidential administrative data.

After identifying best practices and lessons learned with regard to RDCs, the session will provide an outlook on the coming developments in the next few years. This session targets data producers.

Chair: **Hanna Brenzel**, Deutsche Bundesbank

Discussant: **Jorrit Zwijnenburg**, OECD

Contributions:

- *"Can sensitive data be FAIR? The annodata framework"* by Christian Hirsch, Deutsche Bundesbank (presentation)

- *"On the value of data sharing in RDCs"* by Jannick Blaschke and Christian Hirsch, Deutsche Bundesbank (presentation)

- *"An example in the use of microdata to obtain experimental statistics on households' and firms' financing in Spain"* by Luis Ángel Maza, Bank of Spain (presentation)

- *"Deep learning on administrative tabular data: a comparative study"*, by Chiung Ching Ho, Central Bank of Malaysia (paper and presentation)