

KOSTAT-OECD Conference on novel data for economic resilience

21 September 2023

Seoul, Korea | Walker hill Hotel

Background

The COVID-19 pandemic, Russia's war of aggression against Ukraine, disruptions to supply chains and increasingly extreme weather events suggest that interacting economic shocks may be more common in the future. This demonstrates the need to strengthen the resilience of our economies and increases the demand for access to timely, relevant, and quality data to inform decision-making. NSOs and International Organisations must therefore adjust their approach, innovating in response to data collection needs and the public interest. In the coming years, the continuing impacts of the pandemic, environmental challenges and geopolitical challenges are set to further stress the need for improvements and innovations in the global statistical infrastructure. In Seoul, on September 21, 2023, Statistics Korea and the Organisation for Economic Cooperation and Development (OECD) are joining forces to reflect on lessons learned so far, focussing on the new data sources and new data techniques being used to deliver high-frequency, granular, and trusted statistics to support economic resilience policy. They will also touch upon the ways in which we can promote the usability of these new data to maximise the public good. This joint *KOSTAT-OECD Conference on novel data for economic resilience* will include high-level reflections, as well as working-level presentations of the most innovative statistical work from our respective organisations and beyond.

Agenda

09:00 - 09:30	Coffee & registration
09:30 - 10:00	Opening Ceremony Lee, Hyoung Il, Commissioner of Statistics Korea Paul Schreyer, OECD Chief Statistician
10:00 - 10:30	Keynote speech Albert F. Park, ADB Chief Economist(virtual)
10:30 – 11:00	Coffee break
11:00 - 12:30	Session 1: Bringing new data to support economic resilience Digitalisation has brought with it a wealth of new data and new opportunities to monitor our economies in more timely and more granular ways than ever before. This session highlights four such examples from the OECD, Statistics Korea and LOTTE Members, elaborating on the data sources themselves and their potential to inform decision-making to strengthen economic resilience. Chair: Paul Schreyer, OECD Chief Statistician Presentations (15 mins each) Tracking the footprints of the giants: The OECD-UNSD Multinational Enterprise Information Platform (Graham Pilgrim, the Head of Unit for Real Time Data Analytics, Statistics and Data Directorate , OECD) Korea's Statistical Business Registers and their uses (Gijun Youn, Deputy Director, Statistical Register Division, Statistics Korea)

The role of data in jobs in Canada, the United Kingdom and the United States: A natural language processing approach (Julia Schmidt, Researcher of Trade and Business Statistics, Statistics and Data Directorate , OECD)
MyData in Financial Sector (Hye-Joo Kim, CEO of Lotte Members)

Questions (30 mins)

12:30 – 14:30

Lunch break

14:30 – 16:00

Session 2: Exploiting new data techniques and analytics to track economic resilience

National and international institutions are increasingly exploiting advanced statistical modelling and data science techniques to extract new meaning from the wealth of traditional and newly available data. In this session, KOSTAT, OECD, and the Bank of Korea will share their experiences producing innovative timely indicators and gathering quantitative insights on previously difficult measurement questions.

Chair: Haeryun Kim (Director, International Cooperation Division, Statistics Korea)

Presentations (15 mins each)

Reporting of real-time economic indicators using nowcasting (Keunsik Kim, Director, Big data and Statistics Division, Statistics Korea)

Nowcasting information on global value chains (Julia Schmidt, Researcher of Trade and Business Statistics, Statistics and Data Directorate , OECD)

Extracting Economic Sentiment from News Articles: The case of Korea (Younghwan Lee, Economist, Data Research Section, Bank of Korea)

Taking the plunge with a new data source: AIS vessel tracking for trade and environmental indicators (Graham Pilgrim, the Head of Unit for Real Time Data Analytics, Statistics and Data Directorate , OECD)

Questions (30 mins)

16:00 - 16:30

Coffee break

16:30 - 17:30

Session 3: Promoting the usability of timely and granular data to support economic resilience (panel)

More timely and more granular data are being produced and made available to policy makers, private entities, and the public. But these efforts are only valuable if they can be accessed, digested and used to inform better decision making. This final session, in the form of a panel, will bring together experts from the statistical, business and policy communities to reflect on the previous presentations and discuss practices to promote the usability of these new data.

Moderator: Ashley Ward (Communications Manager, Statistics and Data Directorate, OECD)

Panellists discussion (45 mins)

Myoungho Lee (Director General, Statistical Data hub Bureau, Statistics Korea)

Myounghee Kim (Vice President, Shinhan Financial Group)

Asa Johansson (Deputy Director, Statistics and Data Directorate, OECD) (virtual)

Open questions (15 mins)

17:30 - 18:00

Closing remarks

Hyangwoo Jeong, Director General of Statistics Korea

Paul Schreyer, OECD Chief Statistician

18:30 - 20:00

Dinner (*speakers and organisers only*)

Session 1 & 2 Presentation Descriptions

Tracking the footprints of the giants: The OECD-UNSD Multinational Enterprise Information Platform (Graham Pilgrim, OECD)

Large companies leave often scattered fragments of information behind from annual reporting, websites and various other sources. The OECD-UNSD Multinational Enterprise Information Platform attempts to organise these fragments in order to build a clearer picture of some of the largest companies in the world. The platform aims to provide a clear picture of the subsidiaries which belong to the company (and where they are located) alongside the digital footprint, such as the websites which are operated by the company. Going further the hope is to expand coverage and to increase the number of data sources and outputs used – such as by developing a live news tracking tool for each MNE. This work could support economic resilience in a number of ways, including via an improved understanding of connections and reliance on FDI; through live news tracking to enable users to monitor M&A activity, investment and other events which could impact their economy; and by providing a better view of the growing digital footprint of these companies and the role of digital based technologies.

Korea's Statistical Business Registers and their uses (Gijun Youn, Deputy Director, Statistical Register Division, KOSTAT)

Korea have created Statistical Business Register (SBR) by compiling various administrative data sets, including the business registration report of the National Tax Service, and a number of survey data collected and verified through field operations. It comprises 11.12 million establishments. Annually updated SBR was first made available in 2017 which was followed by the quarterly SBRs in 2019 and monthly SBRs in July of 2023. The annual SBRs consist of 123 items derived from 34 sets of administrative and survey data. In addition to basic information for establishments, the SBRs have incorporated information items reflecting emerging interests and concerns. These include the information items on online transaction, climate change and carbon neutrality (e.g. energy usages, greenhouse gas emissions, and renewable energy), and geospatial references (e.g. coordinates, grids, traditional markets, and trading zones). The monthly SBRs, by providing up-to-date information on business activities and industrial trends, enables businesses to quickly respond to market changes and develop their strategies accordingly, thus contributing to enhancing their competitiveness. The SBRs are widely used in Korea for various purposes. They are utilized to establish survey populations, substitute statistical items in surveys, verify and complement statistical surveys, and inform policymaking by rapidly growing number of users each year.

The role of data in jobs in Canada, the United Kingdom and the United States: A natural language processing approach (Julia Schmidt, OECD)

Data production and analysis are playing an increasingly important role across many sectors and occupations in the economy. However, information on the scale of this shifting demand and on which sectors and which occupations are involved is hard to find. This project estimates the data intensity of sectors and occupations using natural language processing (NLP) on job advertisements in the United Kingdom, Canada and the United States. Online job advertisement data collected by Lightcast provide timely and disaggregated insights into labour demand and skill requirements of different professions. An open-source NLP algorithm is used to identify and extract skills and tasks in job advertisements that are linked to data production activities (e.g. data entry, database and data analysis activities). The results provide a consistent ranking of data intensity across occupations, with data analytics activities contributing most to aggregate data intensity shares in all three countries. At the sectoral level, the emerging picture is more heterogeneous across countries. This work could help to support economic resilience by providing better measures of labour demand and more precise measures of demand for digital/data-intensive skills, as well as adding to the evidence on data-related value added (i.e. measuring data as an asset in the national accounts).

MyData in Financial Sector (Hye-Joo Kim, CEO of Lotte Members)

The Data 3 Law's amendment has paved the way for the "MyData" system's advent in the credit information sector. This new system led to the majority of financial data being standardized, empowering individuals to have better control over their own information and avail services tailored to their preferences. As a result, over 60 operators are now in the fray, offering a diverse range of competitive MyData services, which has reshaped both the consumer experience and the broader financial landscape.

This paradigm shift has not only benefitted individuals by giving them more agency over their financial data but has also presented financial institutions with unprecedented opportunities. However, with these opportunities come challenges, making it imperative for these institutions to strategize adeptly to stay ahead in this evolving market. Furthermore, the implementation and learnings from the MyData system were instrumental in the recent amendment to the Personal Information Protection Act. This amendment encapsulates a broader range of data transmission rights across sectors, signaling considerable transformations in the data industry. As the landscape continues to shift, proactive entities that can effectively harness and adapt to these changes are poised to emerge as frontrunners in the sector.

Reporting of real-time economic indicators using nowcasting (Keunsik Kim, Director, Big data and Statistics Division, KOSTAT)

With rapid social changes and mounting uncertainty, the significance of data-based decision making becomes increasingly prominent. The COVID-19 outbreak in early 2020 has accelerated already-high demand for timely economic and social indicators as well as detailed data that can effectively inform policymaking.

Against this backdrop, Statistics Korea launched its nowcast portal offering semi-realtime indicators derived from privately-held data such as credit card transaction information, mobile phone location data, and data on online job seeking and hiring.

The portal provides 8 indicators spanning 4 sectors: households, businesses, jobs, and public health. These indicators are regularly updated on a weekly basis, with a visualized presentation. Additionally, the portal offers detailed comparison options for in-depth analysis of the indicators, along with other useful resources such as relevant policies, the calendar of related events, and knowledge products including analytical reports.

By utilizing these semi-realtime indicators, we expect the duration of policymaking will decrease. Furthermore, the availability of disaggregated information within the indicators will enable more effective targeting for policy measures.

Nowcasting information on global value chains (Julia Schmidt, OECD)

Trade in value added (TiVA) indicators are among the key data sources used to monitor countries' integration into global supply chains. However, TiVA indicators are published with a significant lag – often two or three years – which reduces their relevance for monitoring recent economic developments. This project aims to provide timelier insights into global value chains by exploring new ways of nowcasting five TiVA indicators in 2021 and 2022 for a panel of 41 economies at the economy-wide level and for 24 sectors. The analysis relies on a range of models, including machine-learning, and uses a wide range of explanatory variables capturing domestic business cycles and global economic developments. This work could help to support economic resilience by improving the timeliness of insights on global value chains, possible disruptions, and sectoral differences in the value added of exports and imports.

Extracting Economic Sentiment from News Articles: The case of Korea (Younghwan Lee, Bank of Korea)

In this study, I propose a “News Sentiment Index” as an attempt to meet the growing demand for timely economic statistics. Using a set of machine learning techniques, economic sentiments were extracted from news articles from 2008 to the present to construct the new index. The proposed index complements existing economic statistics in two ways. First, unlike many existing macroeconomic data, it can be available on a daily basis. Thanks to recent advances in information technologies, we can calculate the index quickly, whereas the calculation of traditional macroeconomic indices is time-consuming and costly. Second, the News Sentiment Index is a good predictor of important macro-variables. It exhibits a high correlation not only with GDP, the Economic Sentiment Index, the Consumer Sentiment Index, and the Business Sentiment Index but also leads them by one or two months. Empirical evidence supports the hypothesis that news articles convey valuable information about economic prospects. The accompanying brief analysis of the 2020 COVID-19 crisis in South Korea demonstrates the usefulness of the index.

Taking the plunge with a new data source: AIS vessel tracking for trade and environmental indicators (Graham Pilgrim, OECD)

Every vessel above certain dimensions carries a device which outputs data relating to their location, heading, speed and status. While primarily designed for safety reasons, this also presents a potential wealth of data for economic monitoring. Our work attempts to use this information for two purposes. First, to identify ports and build

meaningful indicators of utilisation and efficiency, and then apply this analysis to look at flows between ports. Second, to investigate distance travelled alongside vessel level emissions factors to monitor emissions from shipping. The analysis relies on the processing of data using big data analysis platforms such as Spark, with meaningful simplifications necessary to move from raw data to a dataset which is simple and easy to analyse. This work could support economic resilience in a number of ways, including the provision of near real-time information on delays at the port level, which may impact supply chains; the ability to determine key trading routes for particular economies; and the potential to nowcast indicators of international trade.