BRAINSTORM

GII *iLens* Innovation Data Lab

Fifth workshop "Industrialization, Investment and Innovation: A Measurement Agenda"

Organized by:

- United Nations Industrial Development Organization (UNIDO) — Department of Industrial Policy Research and Statistics
- World Intellectual Property Organization (WIPO) — Department for Economics and Data Analytics

Tuesday 27th January 2026
Format: Hybrid

Objective and context of the workshop

The GII iLens Innovation Data Lab of the Global Innovation Index (GII) of the World Intellectual Property Organization (WIPO) of the United Nations, drives and supports research to enhance global innovation measurement. Utilizing novel data and innovative approaches, the lab strives to refine existing measures of innovation with a view to augmenting the GII model, but also to contribute to the broader innovation measurement agenda.

Industrialization has been a defining stage in the economic history of every high-income economy. In recent decades, the fastest and most sustained growth stories, notably in East and Southeast Asia and Eastern Europe, have come from economies that successfully expanded their manufacturing sector and its diversity. This often occurred through participation in international production networks, in the end, accelerating technological catch-up and growth.[1]

Foreign direct investment (FDI) flows, offer an additional lens for understanding industrialization and structural transformation. Their scale and composition shed light on an economy's integration into global value chains and the nature of the capabilities being developed domestically. Inward FDI targeted at high-tech manufacturing, R&D-intensive activities, or advanced producer services can bring technology transfer, managerial know-how, and access to international markets. Outward FDI, conversely, may signal the emergence of competitive domestic firms seeking strategic assets, advanced technologies, or new production bases abroad. Examining the sectoral and technological structure of FDI flows can provide important insights into the evolving diversification of an economy's production base.

The objective of this workshop is to assess our current high-tech manufacturing and diversification indicators (see below), to improve or augment them or to find additional industrialization indicators for possible use.

Status quo

The WIPO gii – see the country profile of the Philippines here - currently incorporates two indicators from UNIDO that reflect high-tech manufacturing and industry diversification:

> *4.3.2 Domestic industry diversification:* Herfindahl–Hirschman Index (HHI) based on ISIC two-digit industry shares in total manufacturing output.
>
> *6.2.4 High-tech manufacturing:* High technology and medium-high technology output as a percentage of total manufacturing output, based on the OECD classification of Technology Intensity Definition

A larger share of high-tech manufacturing signals stronger innovation and technological upgrading, while a lower H-H index reflects a more diversified and stable industrial base that fosters cross-sector knowledge spillovers. Together, they capture both technological intensity and structural diversity.

Regarding FDI, the GII currently uses a single measure:

> *5.3.4 FDI net inflows, % GDP*

This indicator does not capture critical dimensions of FDI shedding light on the sophistication of domestic firms, the extent of technology transfer, and the development of local capabilities. Inward FDI focused on high-value manufacturing or knowledge-intensive activities can accelerate technological catch-up and capability building, while outward FDI can indicate that domestic enterprises are maturing and integrating strategically into global production networks. Expanding the FDI indicators to account for both the composition and direction of investment flows would provide a richer, more nuanced understanding of industrialization, diversification, and the evolution of domestic innovation capacity. Leveraging detailed FDI data, such as FT FDI Markets, makes it possible to go beyond aggregate inflows and examine both the composition and direction of investment.

[1] Fu, X., Pietrobelli, C., & Soete, L. (2011). The role of foreign technology and indigenous innovation in the emerging economies: technological change and catching-up. *World development*, *39*(7), 1204-1212.

Workshop Focus

The workshop will explore avenues to enhance the measurement of industrialization-led innovation, focusing on the following key areas:

1. **Refining existing indicators**
    - How can we improve the current GII measures of manufacturing strength, including domestic industry diversification (HHI) and high-tech manufacturing shares?
    - Would alternative metrics, such as employment or value added, reveal different insights into industrial capabilities and innovation dynamics?
    - Could expanding the scope to the entire industrial sector, beyond manufacturing alone, provide a more comprehensive view?

2. **Leveraging UNIDO expertise for new indicators**
    - Identifying early signals of structural transformation that signal when countries are building stronger industrial capabilities.
    - Detecting successful integration into international production networks and its impact on innovation performance.
    - Capturing process innovation, tacit knowledge, and technological capabilities that go beyond formal R&D measures.
    - Developing enhanced indicators to better track the innovation dynamics of emerging industrial economies.

3. **Enhancing FDI measurement**
    - Moving beyond aggregate net inflows (% of GDP) to capture both inward and outward FDI flows.
    - Distinguishing the type and sectoral composition of FDI, including greenfield, M&A, high-tech, and R&D-oriented investments.
    - Using FDI to illuminate the sophistication of domestic enterprises, technology transfer, and the development of local capabilities.
    - Tracking how FDI contributes to industrial diversification and integration into global production networks.

Agenda

9:00 – 9:10 Opening remarks:

- Nobuya Haraguchi (UNIDO)
- Sacha Wunsch-Vincent (WIPO)

9:10 – 11:10 Session 1: Industrialization and innovation

Chair: Lorena Rivera Leon (WIPO)

High-tech manufacturing in the GII

Presentation and discussion of UNIDO’s indicator currently used in the GII, including ideas for refinement

- Speaker: Fernando Cantu Bazaldua (UNIDO) and Oriol Gisbert Marti (WIPO)
- Discussant: Roman Stöllinger (TU Delft)

Industrial diversification in the GII

Presentation and discussion of UNIDO’s indicator currently used in the GII, including ideas for refinement

- Speaker: Fernando Cantu Bazaldua (UNIDO) and Lorena Rivera Leon (WIPO)
- Discussant: Michele Delera (UNIDO) and Annalisa Primi (OECD)

New UNIDO or other indicators

- Speaker: Nobuya Haraguchi (UNIDO) and Nicola Cantore (UNIDO)
- Discussant: Alejandro Lavopa (UNIDO)

11:10 – 11:30 Coffee break

11:30 – 12:50 Session 2: FDI

Chair: Nicola Cantore (UNIDO)

IMF FDI data in the GII

Presentation and discussion of IMF’s indicator currently used in the GII, including ideas for refinement

- Speaker: Jeff Slee (WIPO)

Presentation of UNCTAD’s World Investment Report Data and potential applications in the GII

- Speaker: Bruno Casella (UNCTAD)

Presentation from FDI microdata from fDi Markets and potential applications in the GII

- Speaker: Glenn Barklie (FT Locations)

Discussants: Carlo Pietrobelli (Roma Tre, UNU-MERIT) and Dea Tusha (University of Groningen)

12:50 – 13:00 Concluding remarks

Annex

Measurement needs and indicator specifications

The final selection of GII indicators follows these rules:

- We require a minimum data coverage of at least 45% of the total number of economies covered in a given GII year (e.g. around 59 economies at minimum).
- The indicator should be updated on an annual or bi-annual basis and must be replicable.
- The data source/data provider should be reputable and have robust data quality processes.
- Data collection should encompass countries from all regions of the world and various levels of development. Moreover, the indicator must be designed to ensure comparability across countries, regardless of their economic status. Particular attention should be given to avoiding coverage biases, such as those that may arise between English-speaking and non-English-speaking countries, Asian and non-Asian regions, or developed and developing economies. This inclusivity is essential to provide a truly global and balanced perspective.