

Global Supply Chains: Current Progress and the Path Forward

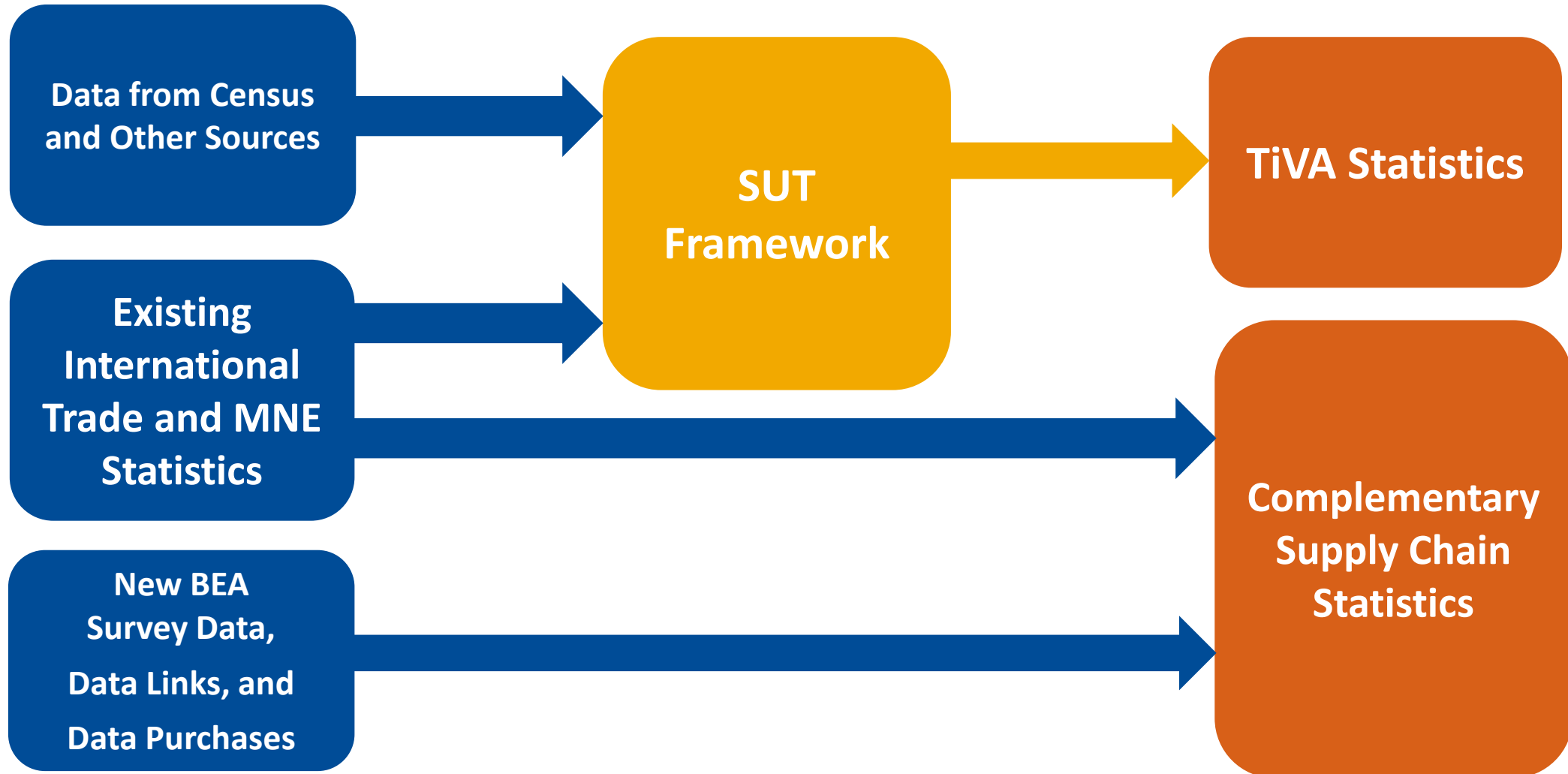
Bob Kornfeld

Meeting of the Group of Experts on National Accounts

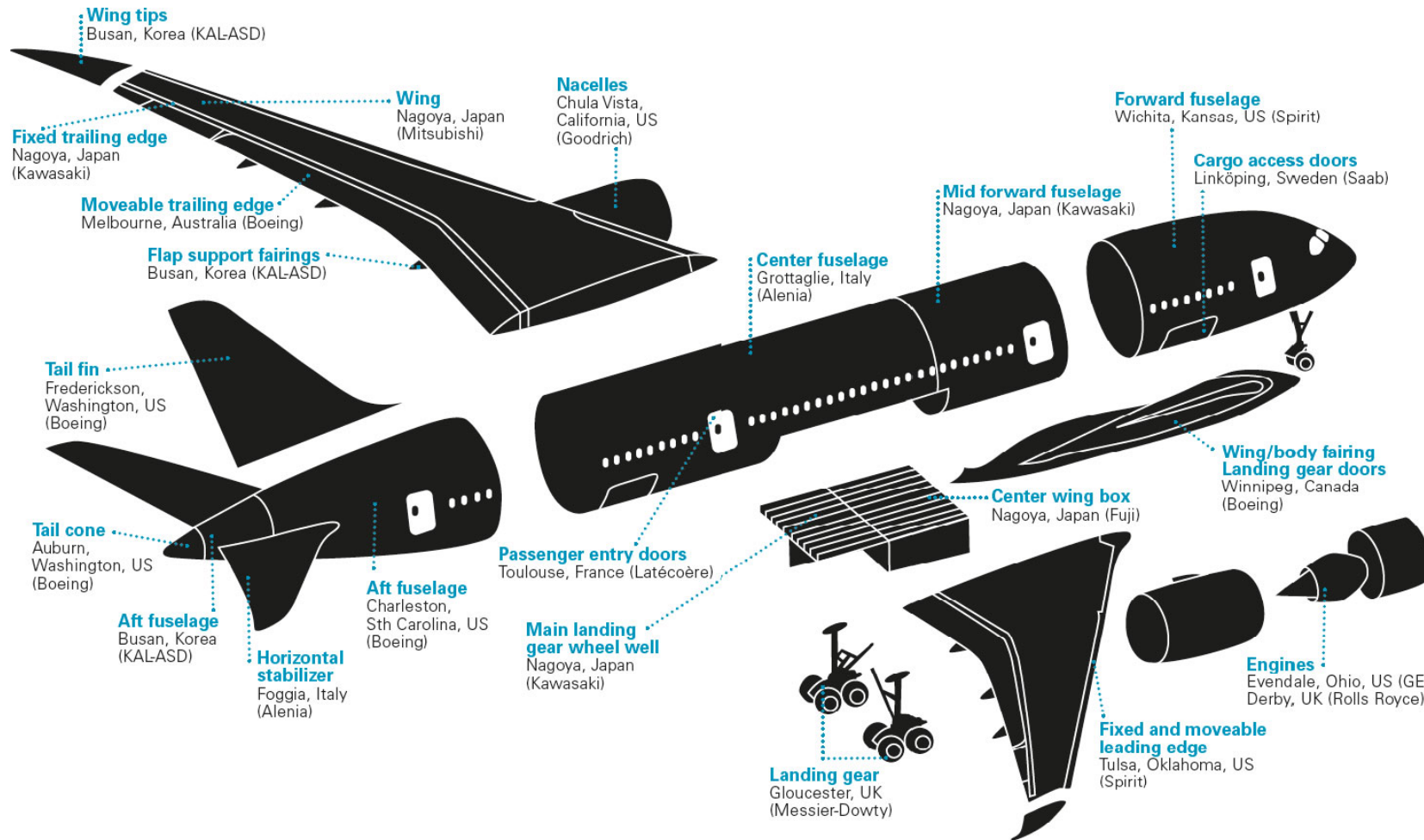
Geneva, Switzerland, 25-27 April 2024



- Annual IO Products (1997-2022)
 - Sector-level detail (15 industries)
 - Summary-level detail (71 industries)
 - Benchmark detail (402 industries) – available for 2007, 2012, 2017
- IO Products Include:
 - Supply-use tables
 - Make-use tables
 - Total requirements and tables, domestic requirements tables
- Historical tables
 - 1947-1962 – 46 industries
 - 1963-1996 – 65 industries



Why do global supply chains matter?

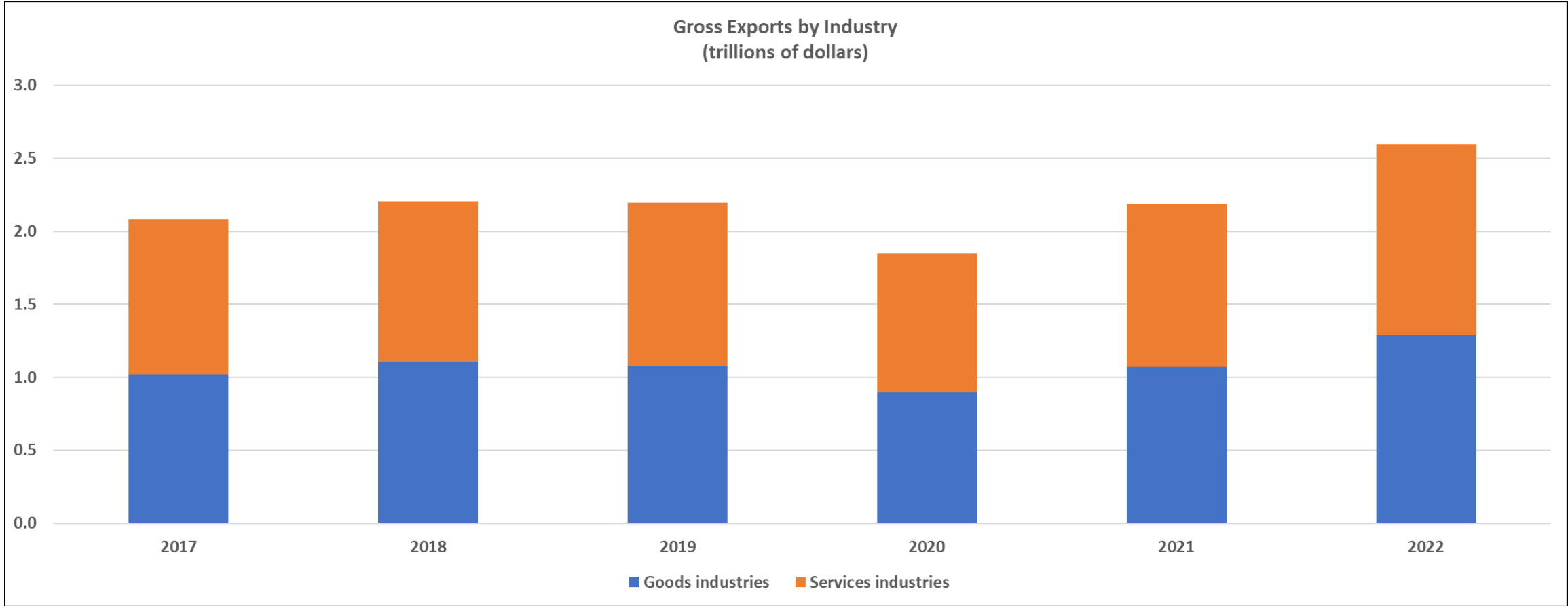


- Support for international Trade in Value Added (TiVA) initiatives
 - OECD-WTO
 - Asia Pacific Economic Cooperation (APEC)
 - North America TiVA Working Group
- Current research efforts:
 - Development of national TiVA statistics (in collaboration with the National Science Foundation)
 - Collaboration with Statistics Canada on a US-Canada regional supply-use table
 - Research on extended supply-use tables (investigating the role of multinational corporations)

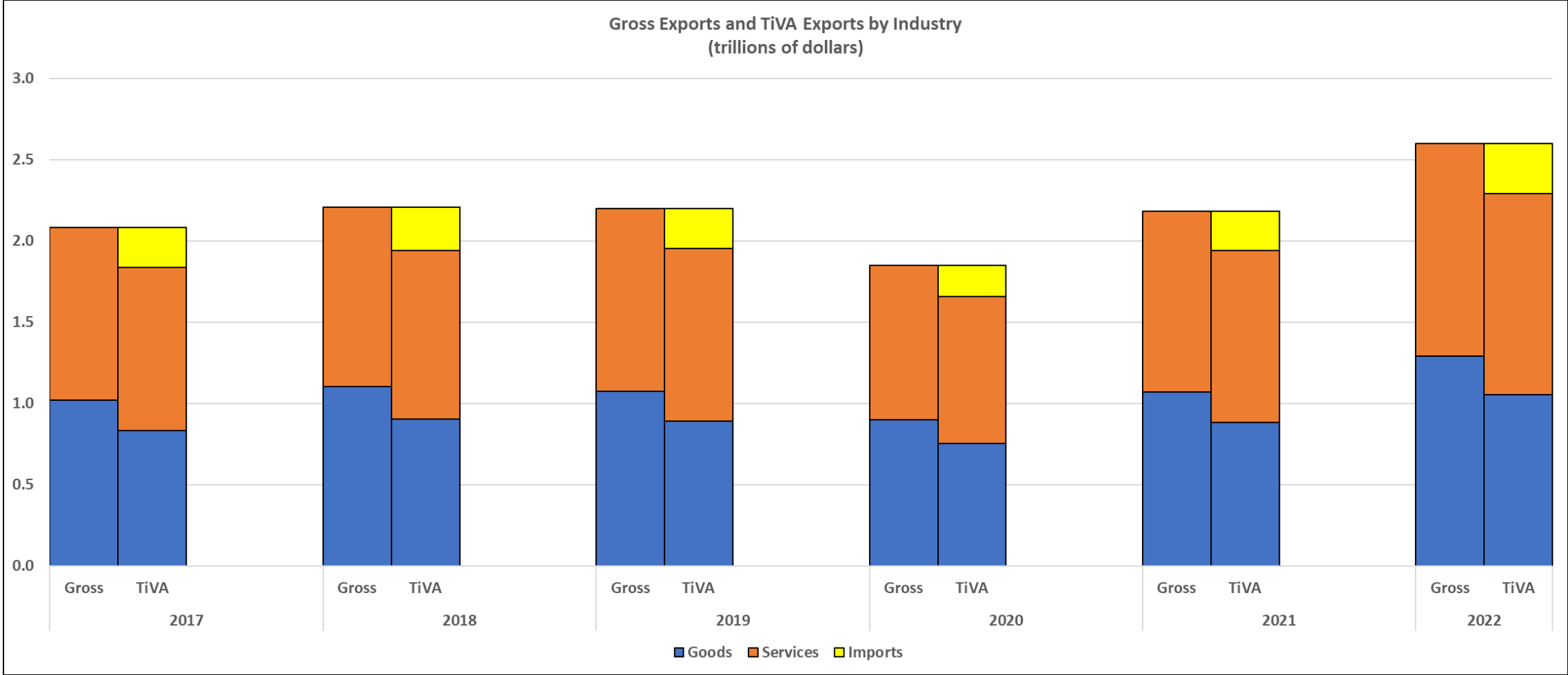
- In collaboration with the National Science Foundation (NSF), BEA released prototype National TiVA statistics in December 2021
 - Relies primarily on U.S. supply and use tables
 - Expands the domestic requirements framework to include bilateral trade relationships
 - No direct use of a multi-country supply-use table
- Statistics include:
 - Gross Exports by Exporting Industry and Destination Region
 - Value Added Exports by Producing Industry and Destination Region
 - Domestic Value Added and Imported Content
- Industry Detail: 81 Industries
- Regional Breakout: Canada, China, Europe, Mexico, and Rest-of-World
- Period: 2007-2020

- BEA released updated prototype national TiVA statistics in March 2023 and March 2024
- Statistics expanded, starting with 2023 update:
 - From 81 to 138 industries
 - From five to seven countries/regions:
 - Canada, China, Japan, Rest of Asia and Pacific, Europe, Mexico, and Rest of the World)
- 2024 update reflects 2023 comprehensive update of the national accounts
- Period now available: 2017-2022 (2007-2016 soon!)
- Improved presentation (enhanced user interface)

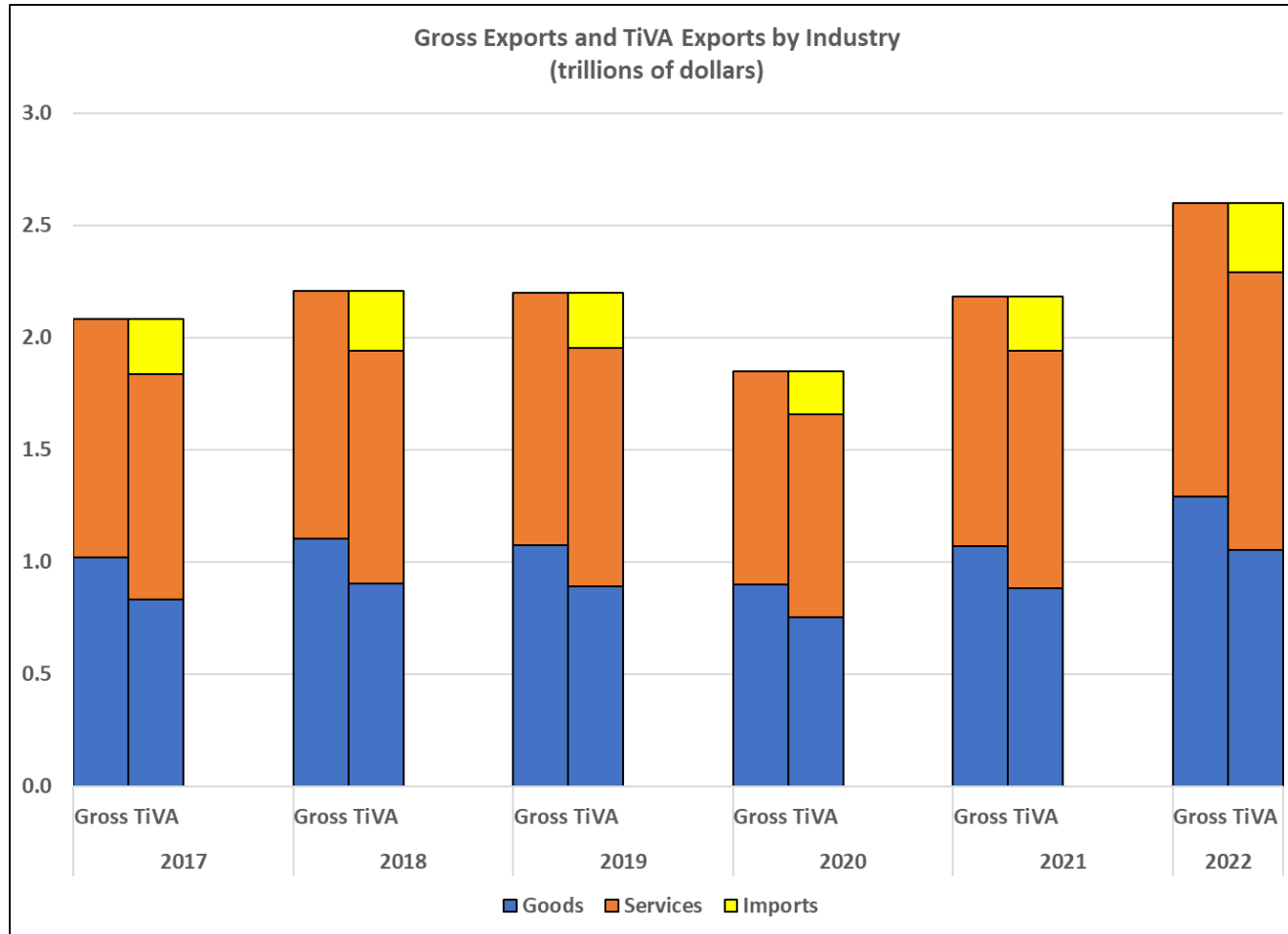
TiVA Highlights



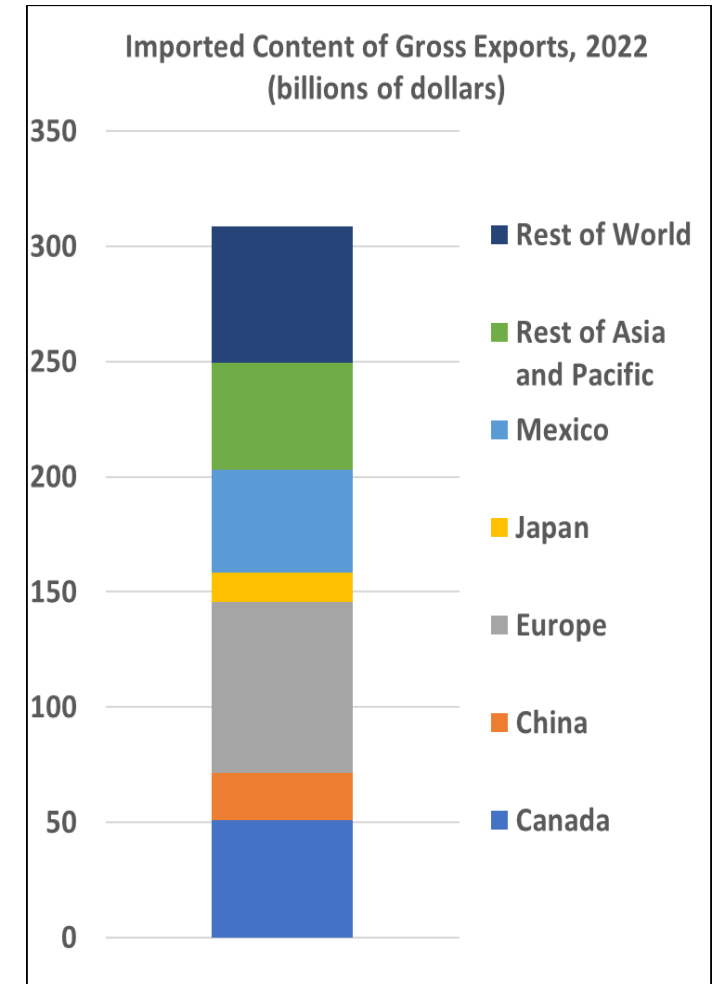
TiVA Highlights (cont'd)



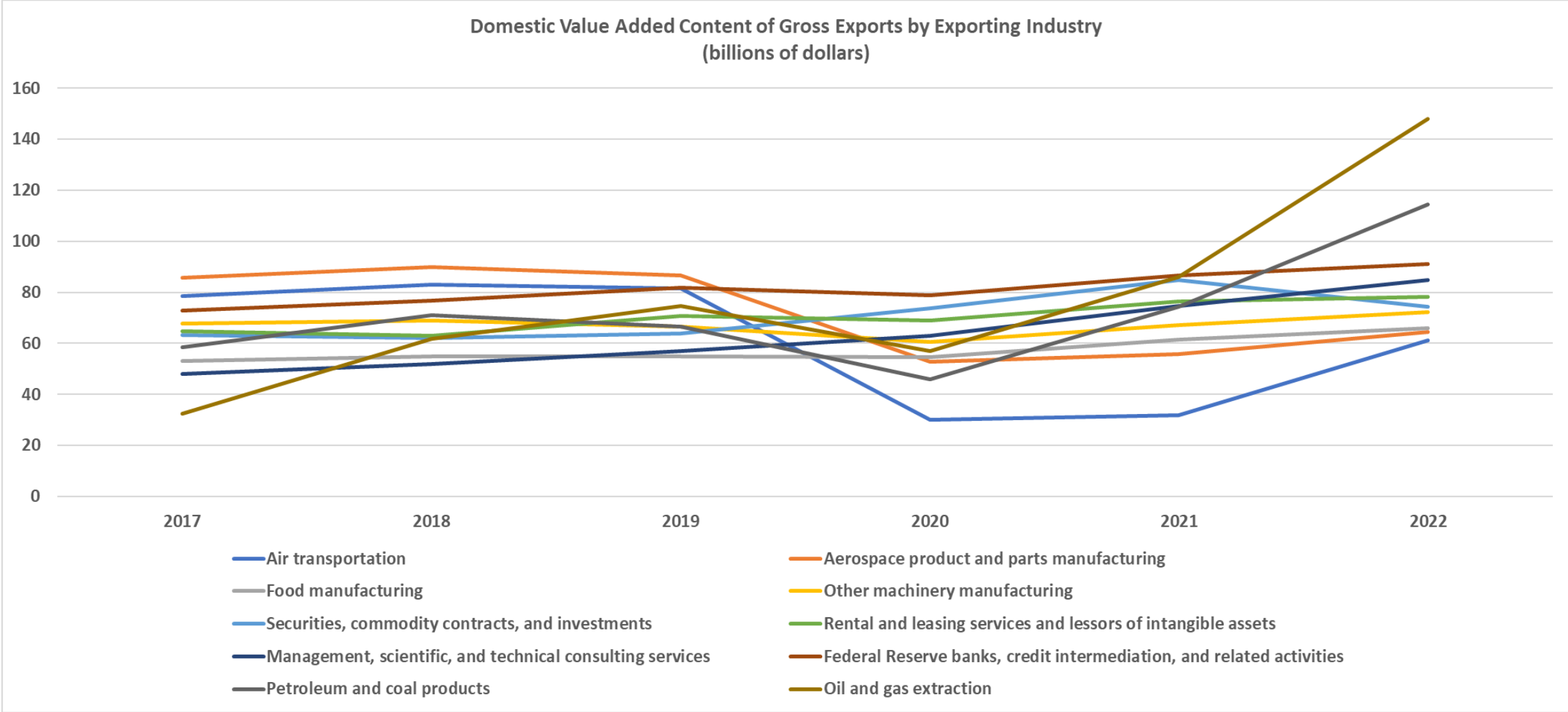
TiVA Highlights (cont'd)



\$308 billion



TiVA Highlights (cont'd)



- Collaboration with U.S. International Trade Administration and Statistics Canada
- Develop regional SUT to go beyond national TiVA tables to examine
 - share of US exports and final demand that reflect third-party imports to the U.S. via Canada (and share of Canadian exports and final demand that reflect third-party imports to Canada via the U.S.)
 - share of US exports and final demand that reflect Canadian value added and vice versa.
- Relies on detailed SUTs, import and export data from U.S. and Canada
- Preliminary results expected by Spring 2024
- Part of a larger effort to move toward multi-lateral TiVA
 - Hoping to incorporate SUTs and trade data from other economies

- Relies on “bottom up” microdata approach:
 - merging establishment-level records from the Census Bureau’s economic census and BEA’s company-level records of surveys of multinational enterprises (MNEs)
- Disaggregates SUTs into transactions for 1) domestic-owned MNEs, 2) foreign-owned MNEs, and 3) entirely domestic business
- Comparison between “bottom up” microdata approach and “top down” aggregate approach based on published data
- Make /supply table results expected later this year

Collaboration with IMF Multi-Analytical Regional Input-Output (IMF-MARIO) Database



- IMF-Mario intends to provide an analytical tool and a source of harmonized granular data to better understand the inter-relationships between economies, their impact on climate change and the environment, and their economic and social development.
- Linking domestic input-output tables together in a consistent multi-regional model will help improve data consistency within and across economies.
- MARIO's development will take advantage of already available official statistics.
- MARIO will cover the years from 1990 to 2022 and 209 economies (including all IMF members), 178 products and 144 industries, providing sufficient granularity to perform detailed analysis on themes related to climate change and the environment
- See [this paper](#) for more information

- Accelerate production of quarterly Gross Output by Industry statistics to be released concurrently with the second estimate of GDP
 - Release at 60 days after the end of the reference period (versus current 90 days)
 - A prerequisite for a similar acceleration of GDP by Industry statistics
- Begin publication of quarterly supply-use tables
 - Unpublished tables used in production of GDP by industry statistics
 - Additional resources needed for methodology and system improvements and regular pre-release review
 - Foundation for quarterly TiVA statistics

- Expanded industry detail
 - Expand annual 140-industry tables to include full suite of input-output products
 - Produce annual 400-industry input-output products (including TiVA)
 - New 400-industry tables set stage for possibility of GDP by industry statistics at this level of detail
- Expanded country detail
 - Expand TiVA statistics beyond the seven regions currently covered (Canada, China, Europe, Japan, Mexico, Rest of Asia and Pacific, Rest of World)

- Integrate the supply-use framework with the industry level production account (ILPA)
 - Decomposition of value added into capital and labor services
 - Decomposition of capital services by type of asset
- Constant-price supply-use tables
 - Provides a foundation for constant-price TiVA statistics
- Hybrid TiVA model
 - Expand regional SUT beyond US and Canada
 - Incorporate data from OECD-WTO TiVA database
- Begin producing separate prices for imported intermediate inputs and domestically produced intermediate inputs