Single Country Trade in Value-Added
Why is Trade in Value-Added (TiVA) important?

• Countries produce statistics on exports and imports of goods and services via their national accounts

• However, these data do not reflect the origin of inputs to these commodities or how they are used in production

• TiVA illustrates the value added of a country in the production of goods and services that are consumed worldwide. TiVA indicators provide details into trade between countries.
Global Value Chains

Wing
Nagoya, Japan
(Mitsubishi)

Nacelles
Chula Vista, California, US
(Goodrich)

Forward fuselage
Wichita, Kansas, US (Spirit)

Cargo access doors
Linköping, Sweden (Saab)

Center fuselage
Gruttaglie, Italy
(Alemia)

Mid forward fuselage
Nagoya, Japan (Kawasaki)

Wing/body fairing
Landing gear doors
Winnipeg, Canada
(Boeing)

Tail fin
Frederickson,
Washington, US
(Boeing)

Tail cone
Auburn,
Washington, US
(Boeing)

Aft fuselage
Busan, Korea
(KAL-ASD)

Horizontal stabilizer
Foggia, Italy
(Alemia)

Aft fuselage
Charleston,
S.C. Carolina, US
(Boeing)

Main landing gear wheel well
Nagoya, Japan
(Kawasaki)

Passenger entry doors
Toulouse, France (Laestoire)

Center wing box
Nagoya, Japan (FUJI)

Landing gear
Gloucester, UK
(Messier-Dowty)

Fixed and movable leading edge
Tulsa, Oklahoma, US
(Spirit)

Engines
Evertonal, Ohio, US
(GE)
Darby, UK
(Rolls Royce)

Fixed trailing edge
Nagoya, Japan
(Kawasaki)

Moveable trailing edge
Melbourne, Australia (Boeing)

Flap support fairings
Busan, Korea (KAL-ASD)

Wing tips
Busan, Korea (KAL-ASD)

TiVA Overview
Key goal of BEA/NSF collaboration is to explore development of TiVA statistics in a single-country framework:

- Rely primarily on the U.S. supply-use tables
- No direct use of a multi-country supply-use framework

By limiting reliance on a multi-country framework:

- Greater timeliness
- Higher level of detail
- Greater consistency with official statistics
Multi-country TiVA Framework

• Advantages of the multi-country framework:
  – Traces supply chain through direct and indirect U.S. trade partners
  – Captures exported U.S. value that “returns home” embedded in U.S. imports
  – Eliminates double counting of intermediate inputs that cross borders multiple times

• Disadvantages of the multi-country framework:
  – High level of international coordination required
  – Timeliness limited by statistical schedules in other countries
  – Level of detail limited by data availability in other countries
  – Changes to U.S. data required to reconcile discrepancies with other countries
International Engagement to Support Global Value Chain Statistics

• OECD-WTO
  – Ongoing support for world TiVA database
  – Engagement with Expert Group on Extended Supply-Use Tables

• Asia Pacific Economic Cooperation (APEC)
  – Development of APEC regional TiVA statistics
  – Regional capacity building efforts

• North America
  – Collaboration to develop a North America regional TiVA database
  – Bilateral trade asymmetries
Methodology: data inputs

• Make-Use Tables 81 industry custom level of detail
  – Technology and aerospace manufacturing
  – Medical supplies manufacturing
  – Pharmaceuticals
  – Information services
  – Research and development

• Bilateral trade data from the International Transaction Accounts
  – Canada
  – China
  – Europe
  – Mexico
  – ROW
Methodology: calculations

Inputs
- Make table
- Use table
- Import matrix

Intermediate calculations
- Total Requirements
  - Value added requirements
  - Import requirements

TiVA Statistics
- Decomposition of gross exports into:
  - Domestic value added
  - Imported content
Single Country Decomposition Concept

USA EXPORTS (GROSS OUTPUT)

USA DIRECT VALUE ADDED

USA DIRECT VALUE ADDED

USA VALUE ADDED (DIRECT AND INDIRECT)

DOMESTIC SOURCED II

IMPORTED II

FOREIGN VALUE ADDED

MEXICAN

CHINESE

OTHER
Views of the Supply Chain: Upstream

Foreign Content
- Industry D
- Industry E
- Industry F
- Industry G
- Industry C
- Industry B
- Industry A

Gross Exports
Publication Products

• TiVA Statistics
  - Gross output and value added by industry
  - Gross exports by exporting industry and purchasing region
  - Value added exports by producing industry and purchasing region
  - Domestic value added in U.S. gross exports
  - Imported Content in U.S. gross exports
  - Disaggregation by exporting industry, value added source/import user sectors, trading partners

• Supporting tables
  - Make table
  - Use Table
  - Bilateral import matrices by trading partner
  - Export Vectors
What’s Next for TiVA?

• This is a multi-year project with NSF

• Year 2 (FY2022)
  o Publication of annual TiVA Statistics at 140-industry SUT for TiVA
  o Research potential for breakout of Value-Added components at 140-order
  o Research potential for publication of 400-industry SUT for TiVA

• Year 3 (FY2023)
  o Refine TiVA methodology
  o Re-evaluate regional breakout and propose additional countries/regions
  o Propose publication of 400-industry SUT for TiVA
  o Propose incorporation into regular production cycle