GVC and KLEMS Integration to Better Inform Public Policy

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Overview

• Review of GVC Accounting
  • Importance of GVC analysis for public policy
    • Four Examples: EU Shoes, U.S. Steel Tariff, U.S. Cross Border Tariff, China entering WTO
  • Main focus is on nominal GDP, GDI, and Value-Added and their components through supplemental breakouts of GVC information within the standard SNA accounts

• Integration of GVC supplemental information with KLEMS
  • Would significantly expand usefulness both of these sets of accounts through the analysis of sources of real growth and productivity related to growth and changes in GVC and Trade
  • Could focus data development issues on key issues affecting country and world I-O tables, GVC accounts, and KLEMS accounts including the use of proportionality assumptions, homogeneity within industries, possible bias in import prices, and the assumptions and methods used in reconciling discrepancies in cross-border country trade and income data.
Review of GVC Accounting

• Satellite Accounts Based on SNA BPM
• Indirect Estimates Using Global Input-Output Tables
  • Trade in Value-Added
• Improved data through reconciliation, decomposition, and collection
• Complete set of national accounts
  • Production, income, distribution of income, international transactions, prices, terms of trade, capital, and financial accounts
Global Value Chain for Shoes

- European Union
- Exports of inputs: $30
- Asia
- Exports of shoes: $50
- European Union
- Final sales of shoes: $100
- EU Consumer
- Assembly services: $20
- Other services: $50
Tariff Analysis

• Industry/Bilateral Trade View:
  • Substitution of U.S goods and services for foreign goods and services

• GVC/World I-O View
  • Impact of higher-priced foreign content in U.S. exports
  • Impact of higher priced U.S. content in U.S. imports
  • Terms of Trade
  • MNC feedback affect on foreign and domestic operations
  • MFP reduction
  • Net result net loss in GDP

• Traditional Macro View: Over time, a tariff will raise exchange rate, reducing U.S. exports and GDP, until back to full employment level of GDP.
GVC Analysis and 2018 U.S. Steel and Aluminum Tariffs

• U.S. Department of Commerce Analysis of Steel Tariffs
  • Used global I-O model: Global Trade Analysis Product (GTAP) Compatible General Equilibrium (CGE) model of global trade

• A U.S. tariff on steel was estimated to:
  • Generate 8,500 jobs in iron and steel
  • Result in the loss of 56,000 jobs in fabricated metals, autos, and other affected industries for a net loss of 47,000 U.S. jobs
  • Result in small reduction in GDP, but high cost per job “saved”

• The U.S. imposed the tariffs citing national security concerns
GVC Analytical and Policy Framework: Other Examples

• Use of extended world I-O shows reduction of even low U.S. E.U. tariffs can produce significant gains. (Feenstra et. al 2017).

• Analysis of China-U.S. trade liberalization produces net job losses with bilateral data, but net job gains, mainly in services, using world I-O data. (Feenstra et al, 2016)
KLEMS and GVC Extension/Integration

  - Used in research and policy on economic growth, structural change, and competitiveness.

- Integration of GVC and KLEMS would have the advantages of:
  - Providing supplemental detail on GVC and Trade by KLEMS categories for analysis of the impact of GVCs and Trade on real inputs, multifactor productivity, gross output and value-added by industry and country.
KLEMS and GVC Extension/Integration

• Timmer and Ye (2020) have developed a theoretical and empirical GVC framework that integrates GVC with KLEMS.
  • Other research presented at this conference (esp, GVC organizational capital)
• Official statistical offices may choose to focus on core data:
  • Extension to country and regional input-output accounts to include supplemental breakouts of GVC and Trade activities.
  • Extension of detailed breakouts of GVC and trade activities within KLEMS categories.
  • Further work on reconciliation of cross border GVC and Trade discrepancies.
  • Further research on the adequacy of assumptions regarding the proportionality assumption regarding industries use of imported vs. domestic inputs
  • Further research on the assumed homogeneity in the use of imported inputs across different types of firms (by size, MNCs, and global connected vs, non-globally connected).
  • Further research on potential bias in prices of imported intermediates inputs.
Benefits of KLEMS and GVC Integration

- Addition of KLEMS and GVC Add Important Information useful to:
  - Competitiveness
  - Long run growth: investments in training and skills, education, infrastructure, and international trade.
  - Monetary Policy: impact of offshoring and trade on inflation, productivity, sustainable growth
  - Inequality: impact of offshoring and trade by segments of the labor force and capital and labor.
  - More detailed and more accurate data