

GVC and KLEMS Integration to Better Inform Public Policy

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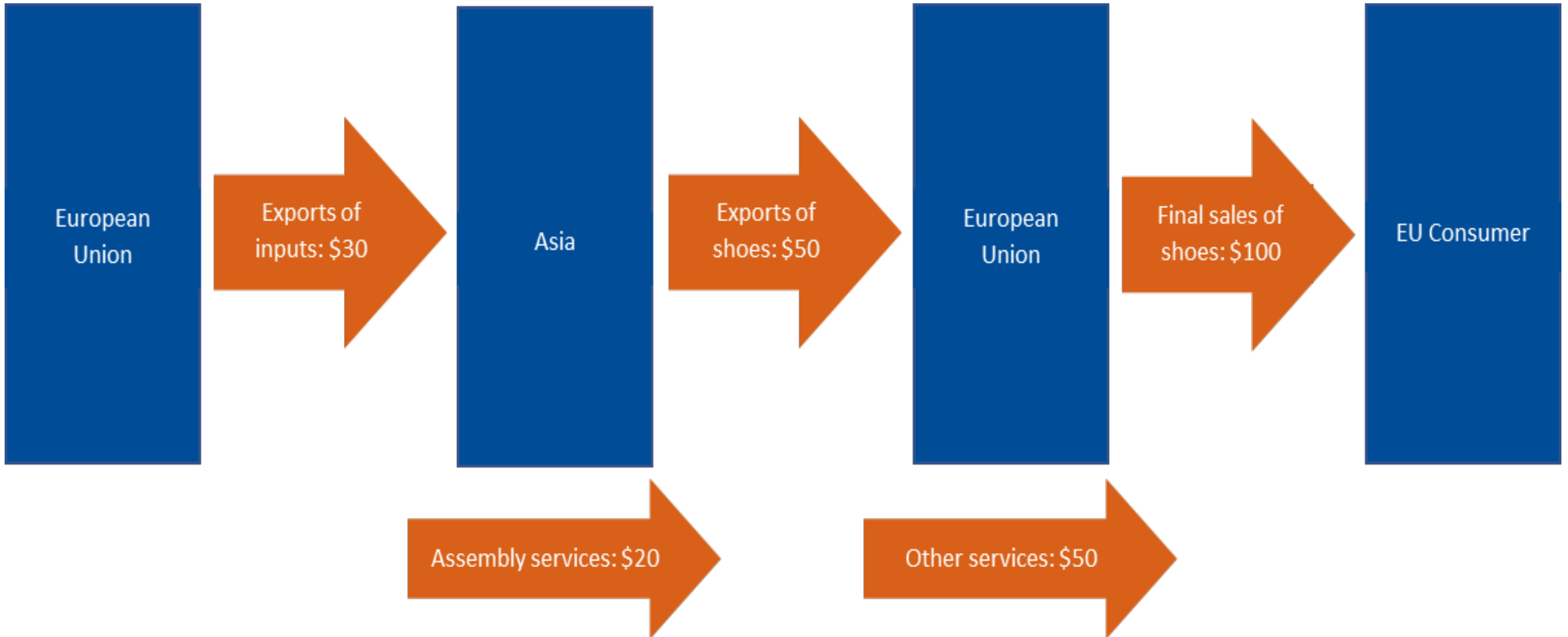
Overview

- 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



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

- KLEMS builds on Jorgenson and his coauthors growth accounting framework to decompose growth in output and productivity into contributions by Capital, Labor, Energy, and Materials, and Services.
 - 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