



Global value chains and economic globalization

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Global value chains and economic globalization

- Basic concepts of GVCs
- Importance of trade policy environments
- Some simple measures of globalization
- Statistical tools for measuring GVC
- Trade statistics and business registers
- Supply Use and Input-Output tables
- International cooperation on data collection



Globalization in historical perspective

1. unbundling: Steam made it possible, scale economies made it profitable
2. unbundling: Information and communication technology (ICT) made it possible, wage differences made it profitable
 - shifted to stages of production, trade in tasks:
 - Fractionalization concerns the unbundling of supply of chains into finer stages of production
 - Dispersion concerns the geographic unbundling of stages



Key features of trade in GVCs

A definition of GVC

International organization of production, trade and investment where the different stages of production (supply chains) of goods and services are located across various countries/regions/firms

Essentially trade in intermediates

- ✓ *Intermediate goods*: parts, components, accessories
- ✓ *Intermediate services*:
 - Business services (R&D, Legal consulting...)
 - Information and Communication Technology (IT consultancy)

Country/industry participation in GVCs in two directions:

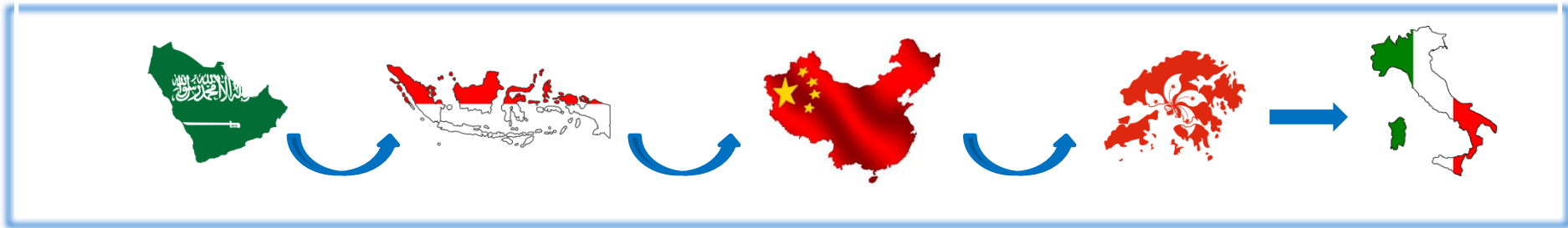
- ✓ *Backward linkages*: import of foreign inputs to produce goods/services for export
- ✓ *Forward linkages*: export of intermediates/inputs to GVC partners to produce their exports of goods and services



Schematic presentation of trade in GVCs

1. Economy position in production chain

Upstream Downstream



2. Industrial task

Oil production

Plastic production

Plastic box
manufacturing

Plastic box labelling
and packaging
(*"Manu-services"*)

Final consumption

3. Product type

Primary product



Intermediate good



Intermediate good



Final good



Forward GVC linkage  Backward GVC linkage

Partner
econo
mies

Schematic presentation of trade in GVCs

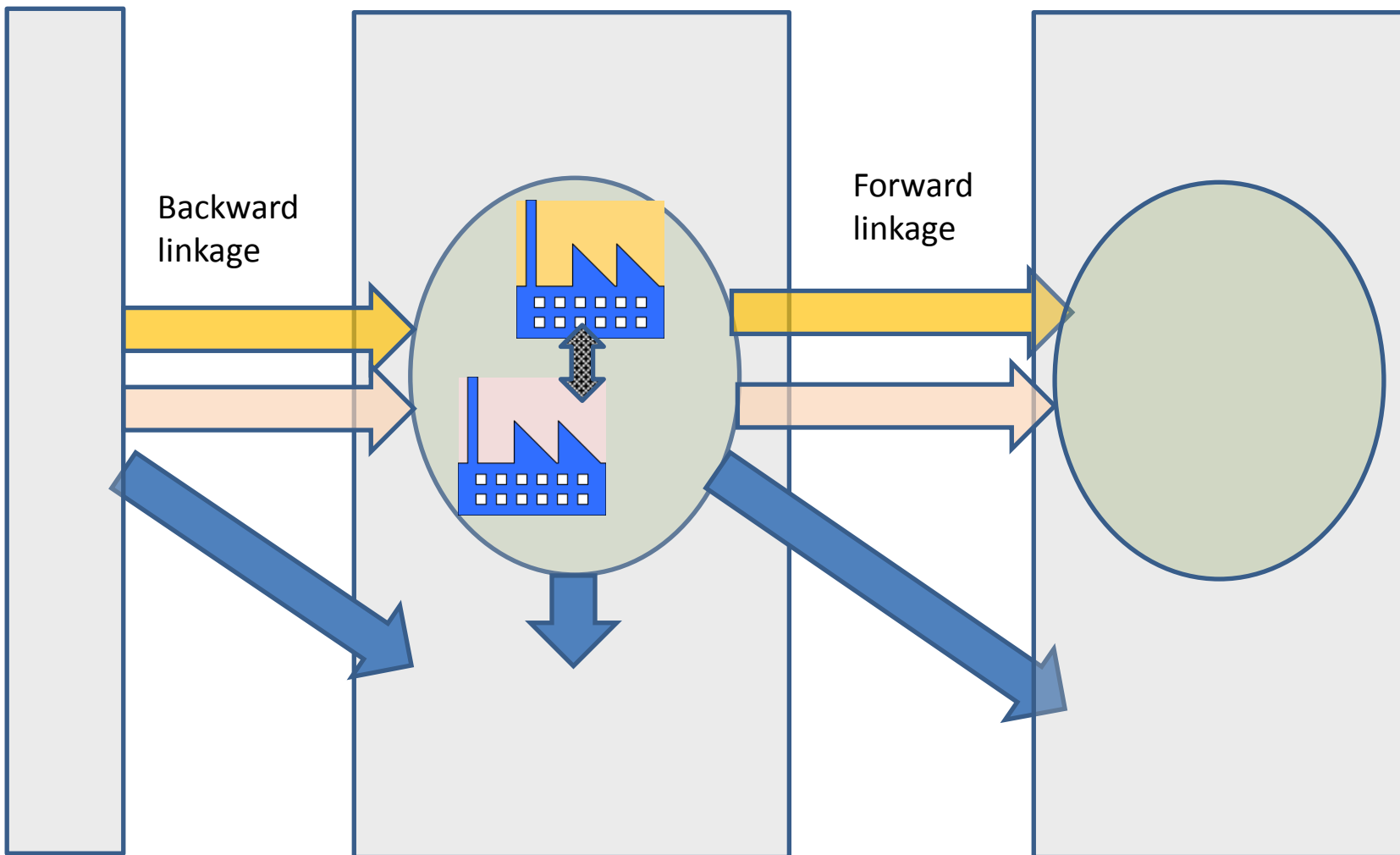


Economy

Partner economies

Backward
linkage

Forward
linkage



Intermediate input: GVC

Intermediate input: dom. Economy

Final product



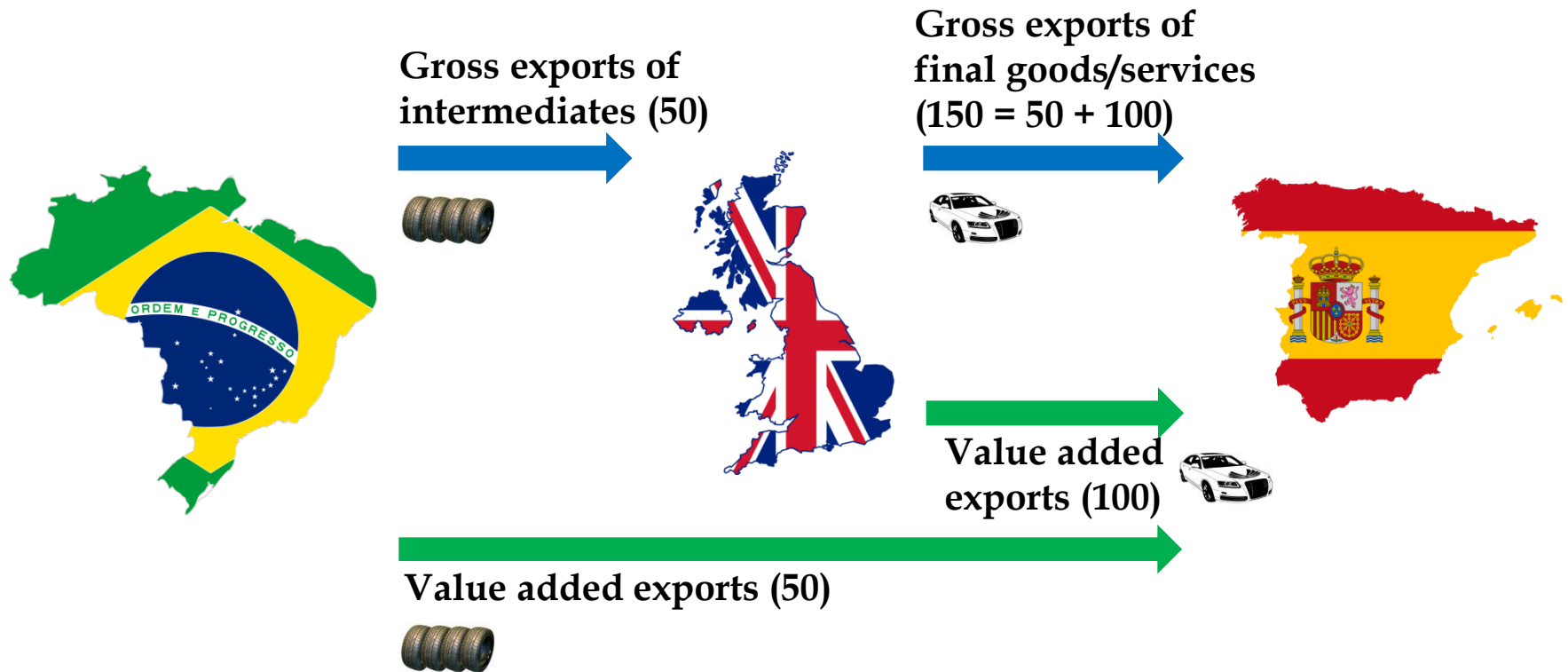
What is trade in value added ?

Trade in value added is a statistical approach that estimates the sources (by country and industry) of **value** that is **added** in the production of goods and services for exports.

Some advantages of the trade in value added measure:

- ❑ Split traditional gross trade flows into value added components.
- ❑ Highlight the actual contribution of trade to an economy.
- ❑ Address the double counting observed with traditional statistics.
- ❑ Estimate trade taking place within GVCs.

Gross vs Value Added measures of trade flows



➡ : Gross trade flows

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➡ : Value added trade flows



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What factors favour GVC integration

■ Structural factors

- **Location/Distance (to hub countries CHN, DEU, JPN, USA)**
- **Infrastructure & Connectivity**
- Country size
- Industrial structure
- Existing supplier network

■ Policy factors

- **Trade & investment policy**
- **Legal institutions & political environment**
- Financial institutions
- Education, skills & innovation policy
- **Restrictions on services trade**



Importance of trade policy environments

- International production networks require/benefit from predictability and stability
- GVCs increase the demand for liberalization while lowering demand for trade protection
- Lowering costs of trading – trade facilitation
- Avoid trade cost accumulation



Importance of trade policy environments

- Non-tariff measures matter a lot (regulations, bureaucracy)
- Multilateral agreements play a crucial role in lowering trade costs
- WTO trade rules provide basic framework
- Preferential trade agreements can result in deeper commitments in particular areas
- Deep RTAs boost GVC integration



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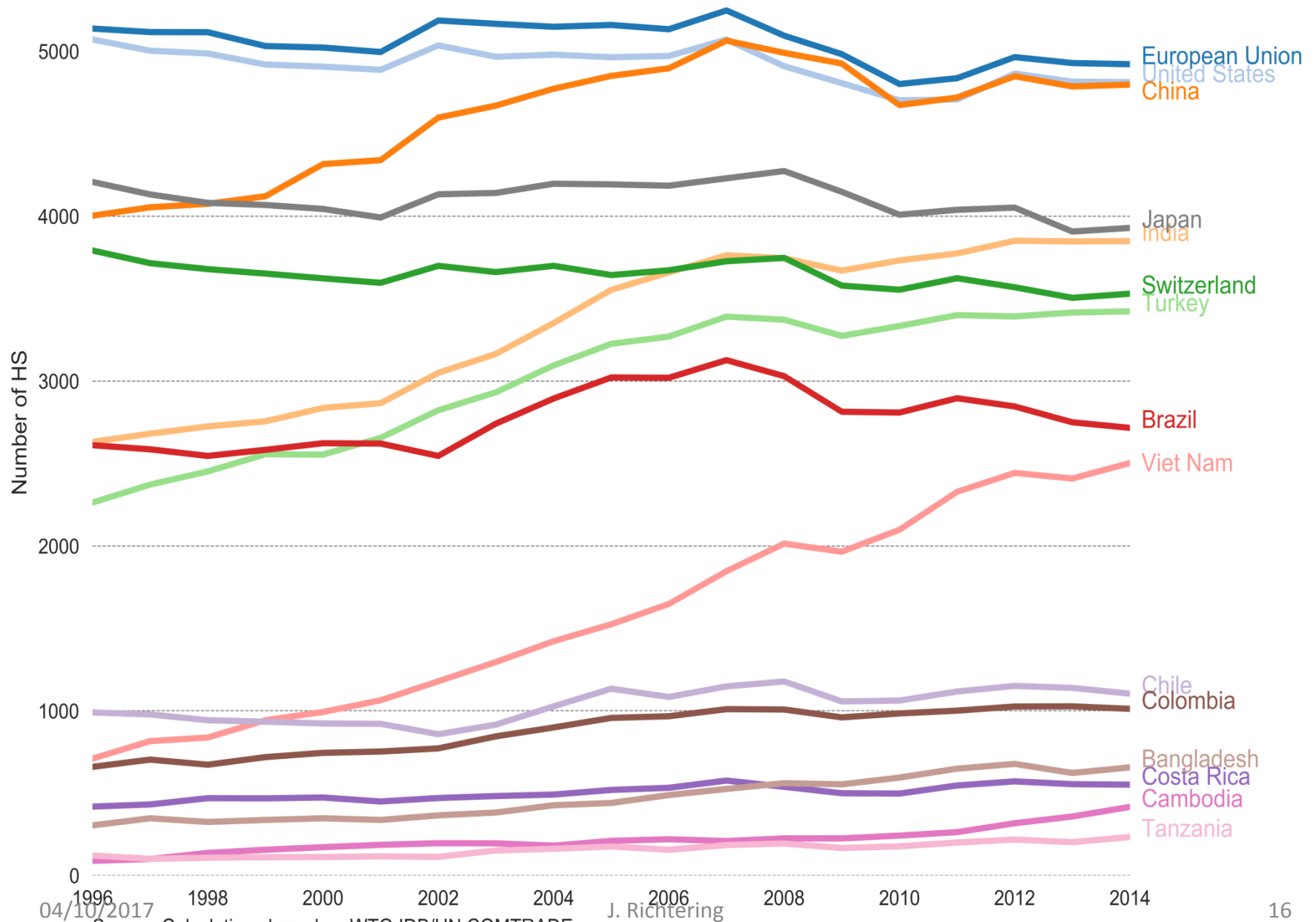
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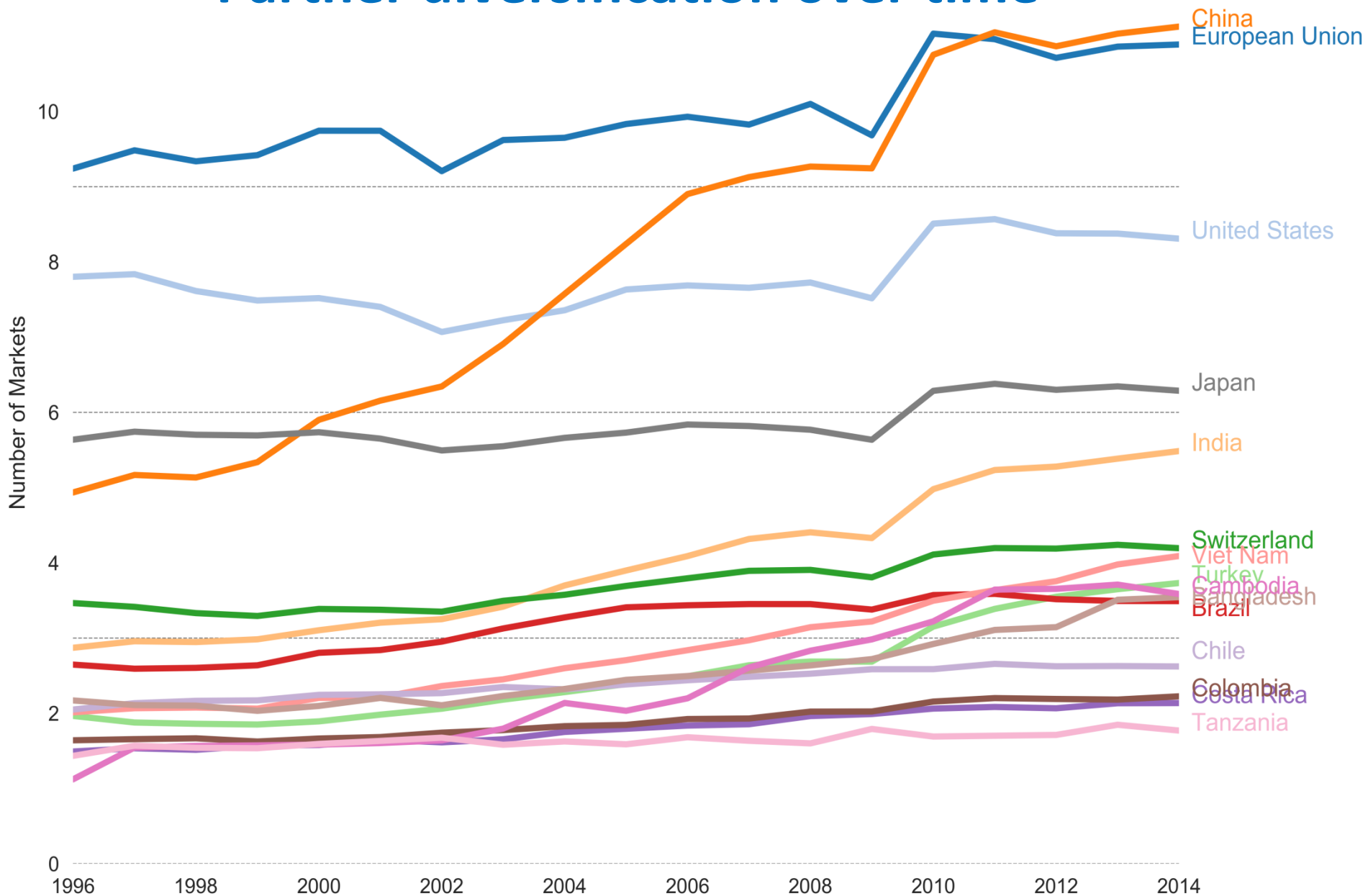
HS export diversification to track GVC participation (World Tariff Profiles 2017)

- Tracking presence (bilateral exports > 10.000\$)
- HS 6 digit level in 18 major markets
- Reflects resource endowments and technological capabilities
- Shows competitive strength
- Indicator of production diversification and integration in international markets

Product diversification over time



Partner diversification over time



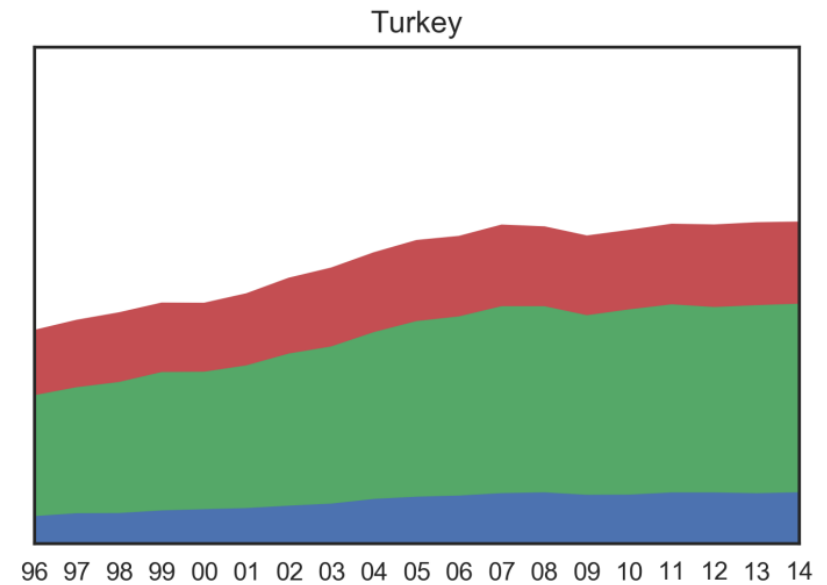
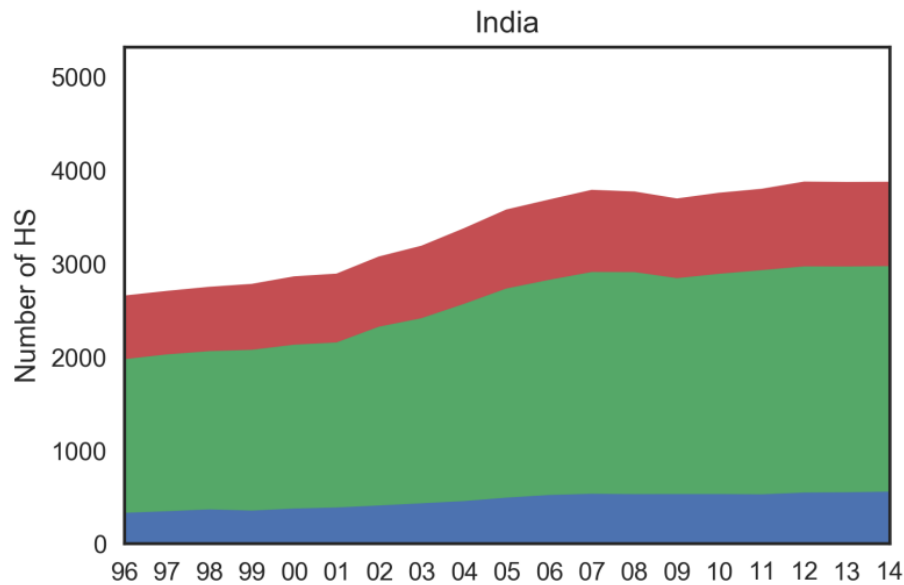
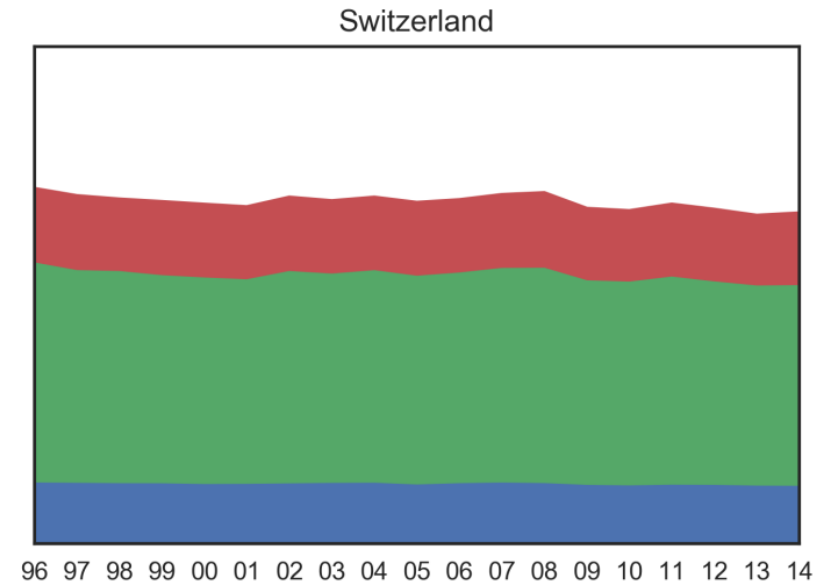
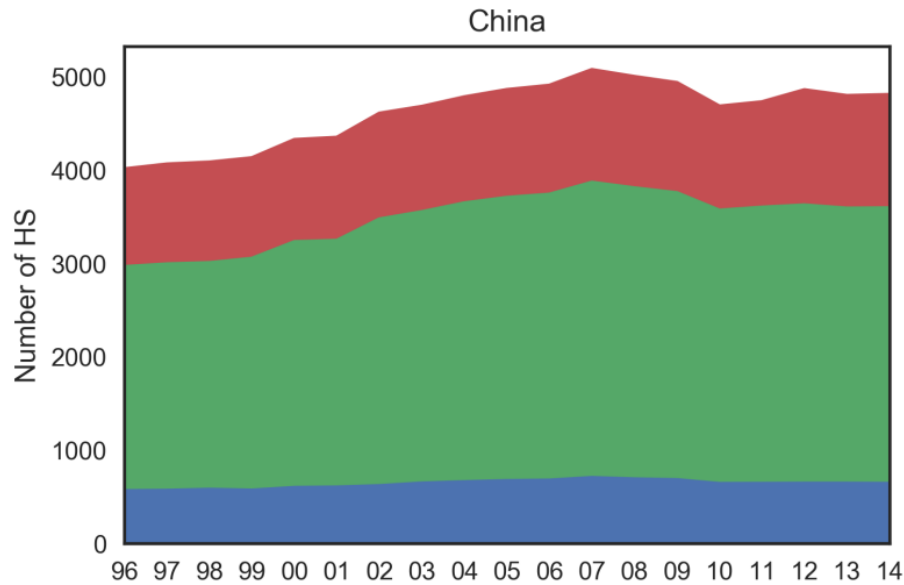
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Source: Calculations based on WTO IDB/UN COMTRADE.

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Trade shares of intermediate products over time



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Capital Intermediate Consumption

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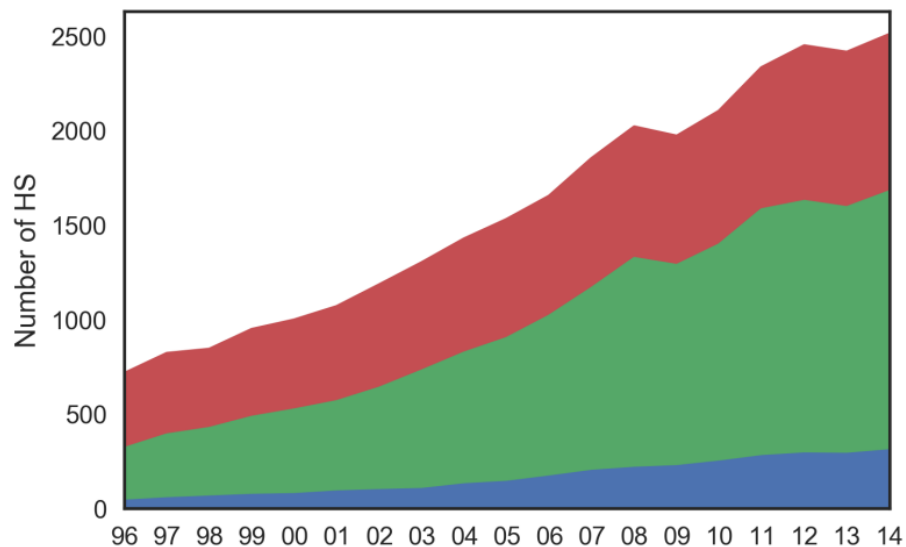
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Source: Author's calculations based on HS6 digit trade data linked to BEC rev4 categories

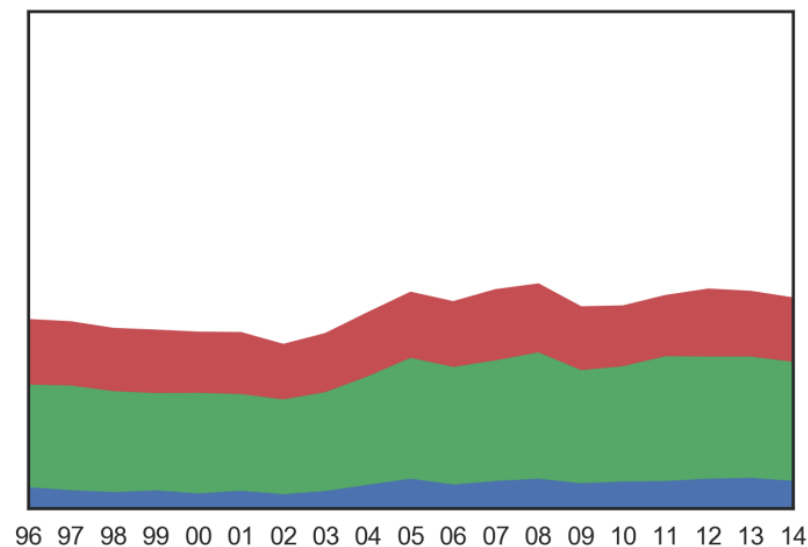


Trade shares of intermediate products over time

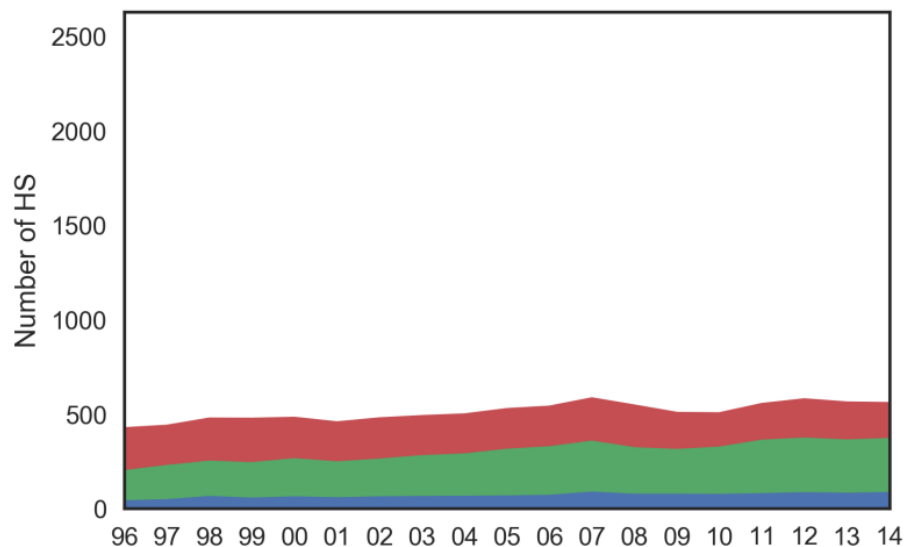
Viet Nam



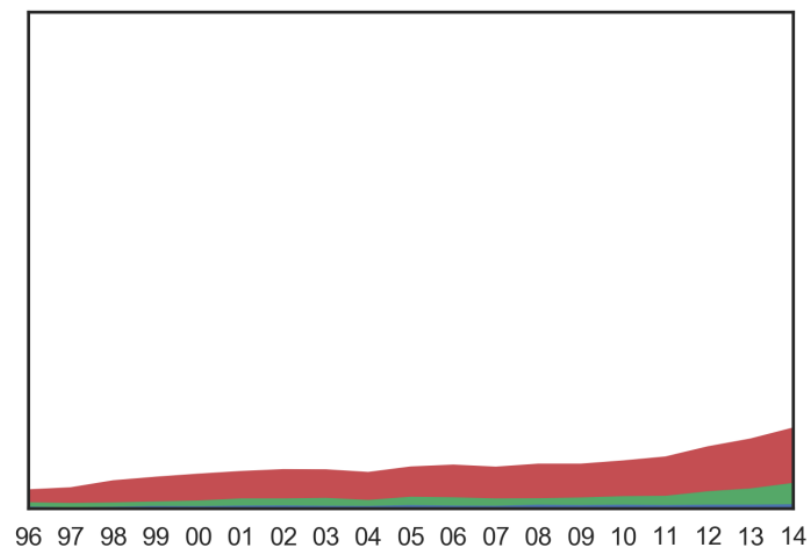
Chile



Costa Rica



Cambodia



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Capital

Intermediate

Consumption

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Source: Author's calculations based on HS6 digit trade data linked to BEC rev4 categories



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Approaches to assess trade in GVCs

Approach		Level of detail	Measurement type
Case studies : <ul style="list-style-type: none"> ○ Focus on a product (iPhone, iPod, iPad, Barbie doll...), company or sector ○ Decomposition of the production process into the components and services used and the related trade flows 	Bottom up approach	Product level	<i>Not applicable</i>
Micro data: Trade statistics and business registers : <ul style="list-style-type: none"> ○ Focus on the role of imported intermediates in foreign trade ○ Use of HS (goods), ISIC (business) or BOP (commercial services) classifications ○ Estimation of value added in total trade 		Product/sector/product group level	Direct measure (based on raw reported data)
Macro data: Supply use and Input-Output tables : <ul style="list-style-type: none"> ○ Combining national accounts with trade statistics ○ Decomposition of gross trade into its foreign and domestic value added contents 	Top down approach	Sectoral level (aggregated)	Indirect measure (estimates)





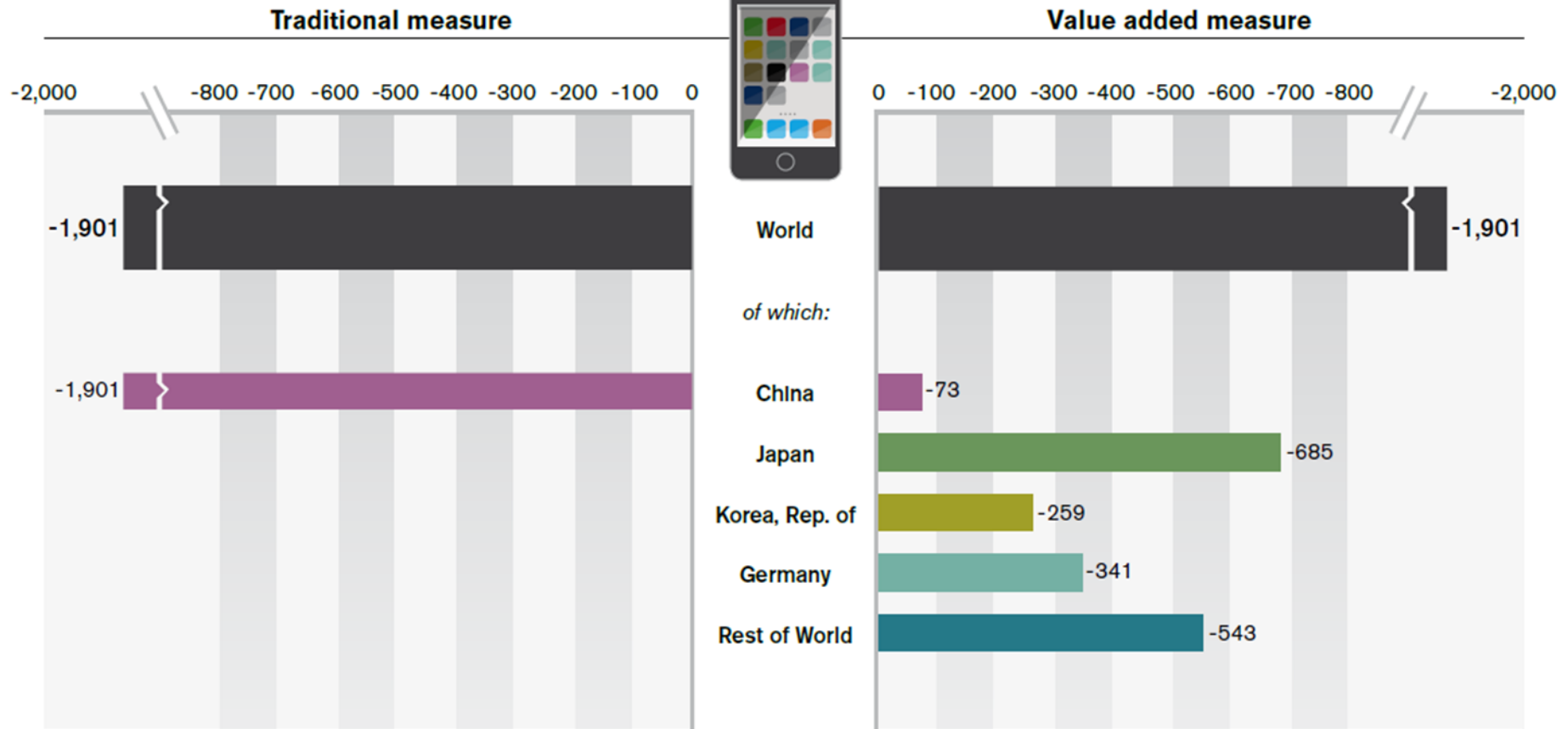
Case study approach of GVCs

The Nutella chocolate spread





Case Study: iPhone and trade flows





Measuring economic globalization

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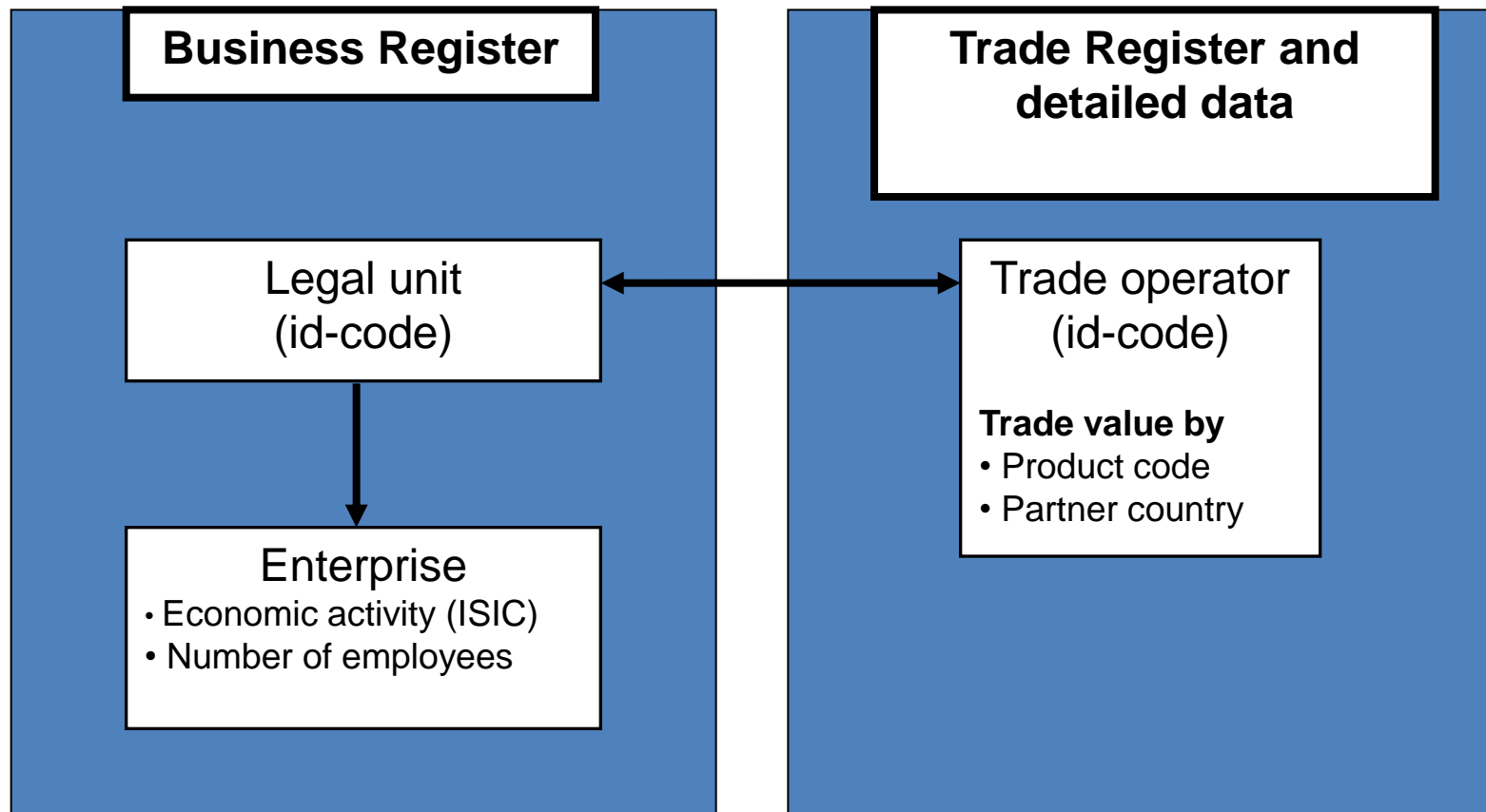


Micro data:

Trade statistics & business statistics

- Statistics on trading of goods describe trade flows between countries with a breakdown of products
 - Monthly statistics with detailed breakdowns of products and partner countries
 - No data on traders (no explicit statistical units)
- Business Statistics, in particular SBS, describe the structure and evolution of activities of businesses
 - Annual (SBS) or monthly (STS) statistics with a great number of variables
 - Basic breakdown according to the economic activity
 - Limited information on external trade
- Trade and business statistics are based on different concepts and classification, thus using them separately may provide incoherent basis for analysing the effects of external trade on production, employment and enterprises' performances.

Link between trade operators and statistical units



Micro approach: link trade registers/data with business register



- Relies on the real information rather than theoretical assumptions
- The link between traders and businesses is required by Business Register Regulation
- No need for data collection; uses the data already collected
- Detailed level of trade data can be maintained
- The most important economic characteristics are available (economic activity, number of employees, turnover)
- Can be extended to cover all statistics related to businesses

Matching of trade and business registers



- Quality of statistics based on register linkage depends on the matching rates between source data sets
- Consistent and coherent definition of statistical units required
- A particular problem in matching of complex businesses: trade may be allocated to headquarter instead of “true” trader



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Supply and Use Tables

Input-Output Tables



Supply and use tables (SUT)

- Focus on measuring the productive structure of the economy
- Measure value added by industry - output (or sales) less intermediate inputs
- Trace production of commodities by domestic industries, combined with imports, through their use as intermediate inputs or as final consumption, investment or exports
- Extended SUT to include enterprise characteristics

Input-Output tables (IO)

- Certain analytical/modelling purposes require symmetric industry-by-industry tables
- Inter-industry transactions show all purchases of an industry from all other industries, incl. expenditures on imports and expenditures on primary inputs.
- Final demand table shows all purchases by a final demand category from all other industries, including expenditures on imports.



Input-Output Tables

- Input-output tables allow the analyst to explore “what if?” questions at a fairly detailed level
- Exploring the impact of exogenous changes in final demand on output while taking account of the interdependencies between different industries and regions of the economy and the leakages to imports and taxes
- The use of an input-output model to address such a question would permit the estimation of indirect effects of a demand shock of this nature, and the calculation of the corresponding multipliers



A simple, generic 2 country IIO table

		Intermediate use		Final Use		Total use
		Country 1	Country 2	Country 1	Country 2	
		1 ... N	1 ... N			
Supply	Country 1 1 : N	1's use of its own inputs	2's use of inputs from 1	1's use of its own final goods	2's use of final goods from 1	1's total output
	Country 2 1 : N	1's use of inputs from 2	2's use of its own inputs	1's use of final goods from 2	2's use of its own final goods	2's total output
	Value added	1's value added	2's value added			
	Total supply	1's total output	2's total output			

Source : Powers (2012)



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International standardization

- As economic globalization is cross-border international standardization is essential
- New, internationally standardized data sets
 - parsimonious, to save resources and minimize respondent burden
 - rich by current standards to shed light on aspects of economic globalization that have so far remained nearly invisible in economic statistics



Tracking enterprises

- Identify and link enterprises across the different datasets
- Use unique identification numbering system managed by the business registers and used by each of the statistics included in micro-data linking programs
- Move to a consistent use of statistical units (most typically, the enterprise)
- Upgrade systems of administration for statistical purposes. Tax and statistics legislation could be combined in a mandatory request for business accounting information in one system



International micro data linking

- Improve the unique enterprise identifier system including a matrix for linking country enterprise IDs
- Develop new information about international trade in goods, in particular about intra-group trade, by including a related party flag on all customs forms and international transactions records
- Develop systematic information on international sourcing through new surveys using the business function approach.
- Continue to improve information on international trade in services, and include related-party trade
- Work with international agencies to share the best practices and related surveys with trading partners
- Explore the feasibility of leveraging data from private companies in the official statistical system



Conclusion

The statistical system needs to modernize and internationalize to provide appropriate and timely information that can support agile, evidence-based policy-making



Thank you

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