

# Value Added Trade Costs in Goods and Services

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# Measuring Value Added Trade Costs

- Our measure of value added trade costs:

$$\tau_{ij} = \tau_{ji} = \left( \frac{t_{ij} t_{ji}}{t_{ii} t_{jj}} \right)^{\frac{1}{2}} - 1 = \left( \frac{X_{ii} X_{jj}}{X_{ij} X_{ji}} \right)^{\frac{1}{2(\sigma-1)}} - 1$$

- The interpretation is still the same as ones in Arvis et. al (2013) where the trade costs are international trade costs relative to intranational one



# Why Trade Costs in Value Added?

- Products are increasingly being ‘Made in the World’ rather than made in a specific country (WTO, 2015).
- What increasingly matters for growth and development is not the volume or gross value of goods being traded, but the value addition made as part of the trading process.
- Trade costs calculated based on value added data rather than gross data may provide a more relevant indicator to develop trade and development strategies.
- Value added trade costs can be calculated for goods and services
- Measuring Value Added Trade Costs:

$$\tau_{ij} = \left( \frac{X_{ii} X_{jj}}{X_{ij} X_{ji}} \right)^{\frac{1}{2(\sigma-1)}} - 1$$

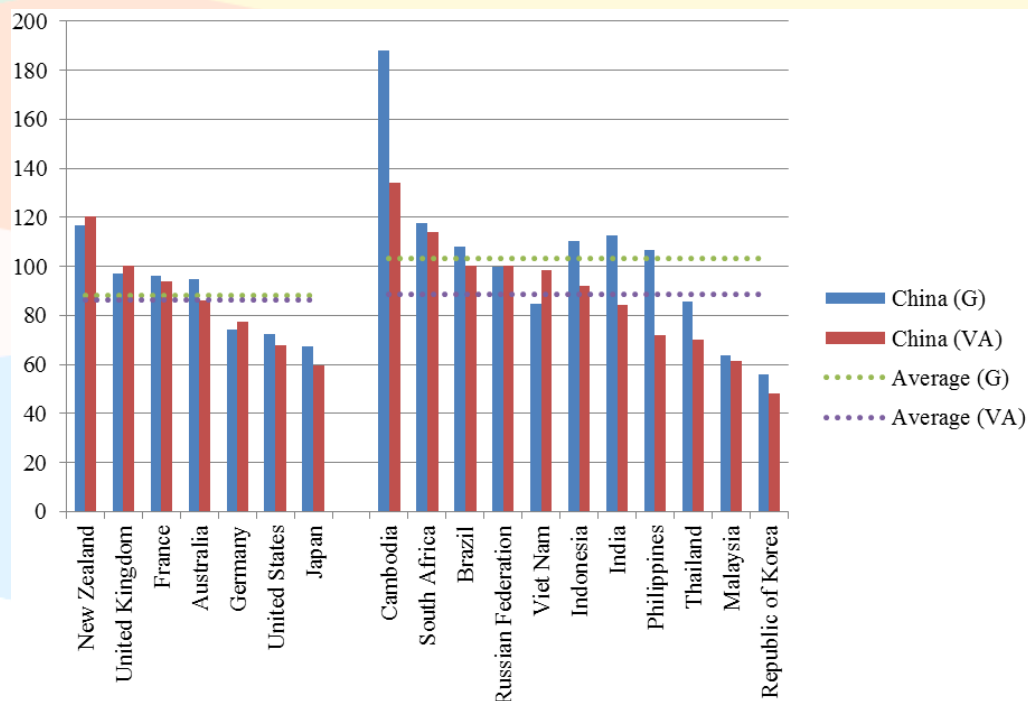
$X_{ii}$	Intra-national trade in Country i
$X_{jj}$	Intra-national trade in Country j
$X_{ij}$	Trade flows from Country i to Country j
$X_{ji}$	Trade flows from Country j to Country i
$\sigma$	Elasticity of Substitution



# Findings (I):

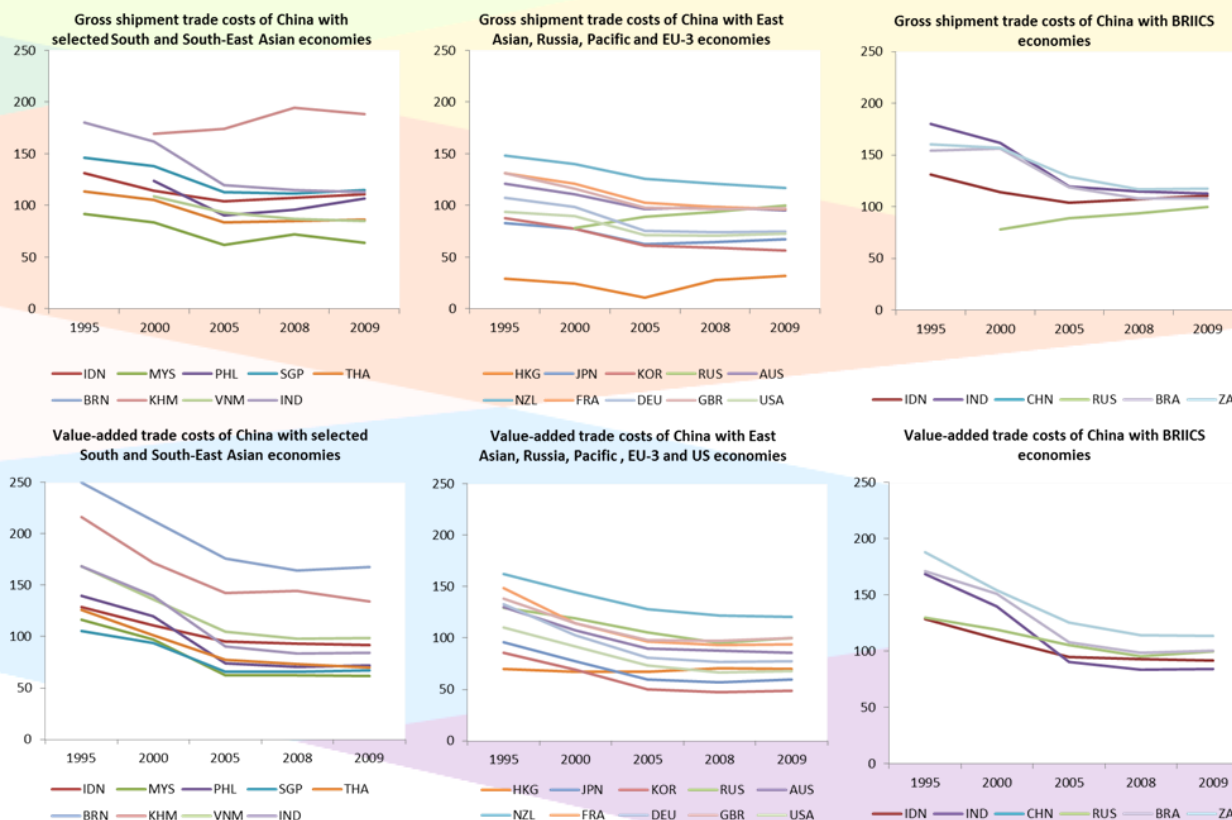
- In absolute term, trade costs calculated using value added data are lower than those calculated using gross trade and output data

Trade costs with China in the goods sector, 2009



# Findings (II):

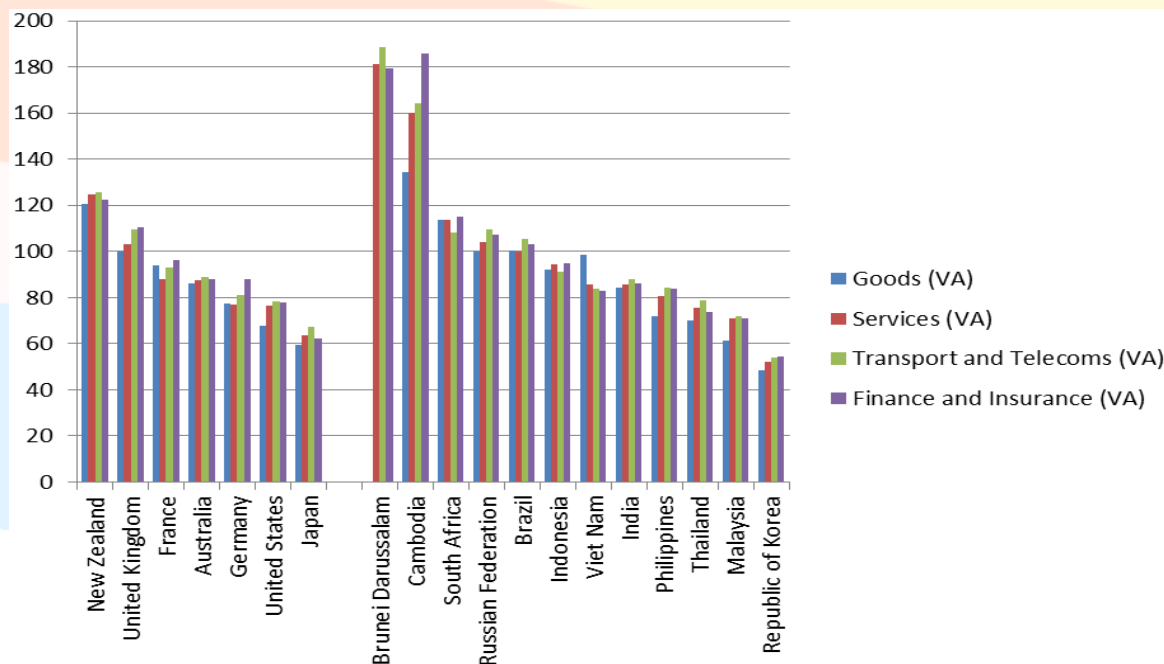
- In relative term, Gross and VA trade costs give similar result. Trade costs in goods sector are declining over time.



# Findings (III):

- Value added trade costs tend to be higher in the services sector compared to the goods sector.

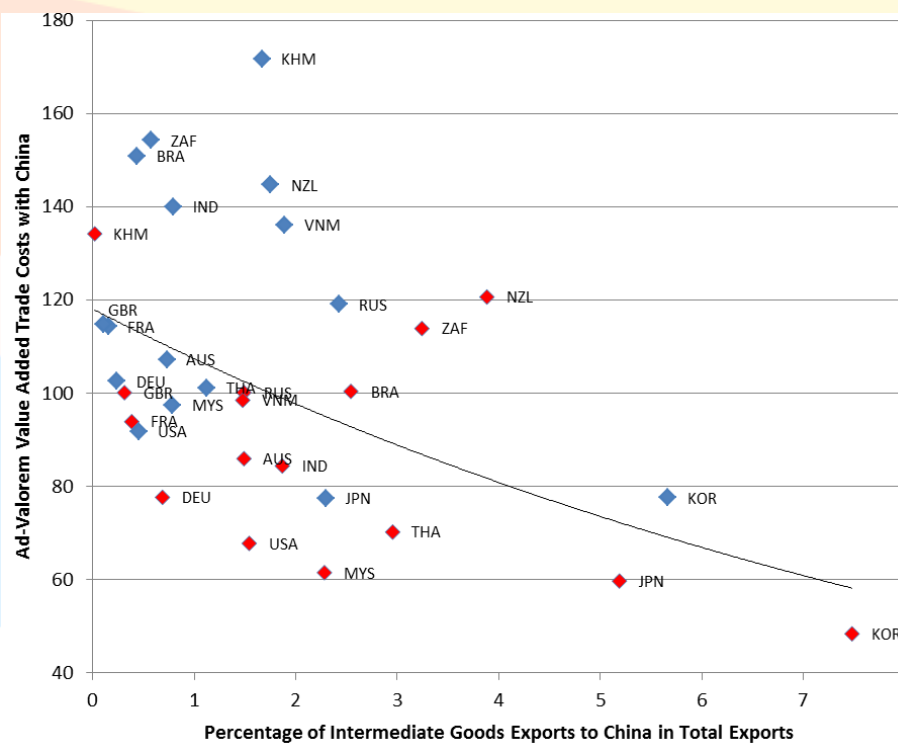
Trade costs with China in the goods, services, transport and telecoms, and finance and insurance sectors, 2009



# Findings (IV):

- Lower value added trade costs are associated with greater participation in global value chains – in terms of greater exports of intermediate goods.

## Trade Costs and Global Value Chains



# Conclusion:

- Key Findings:
  - In absolute term, trade costs calculated using value added data are lower than those calculated using gross trade and output data.
  - In relative term, trade costs in both approaches gives similar result. Trade costs in goods sector are declining over time.
  - Value added trade costs tend to be higher in the services sector compared to the goods sector. In contrast to sub-sector industries for goods trade (e.g., agriculture vs. manufacturing), differences in value added trade costs across services sub-sectors (e.g., transport and telecoms vs. finance and insurance) also tend to be more limited.
  - East Asia–3 remains low in both gross shipment and value added term.
  - Lower value added trade costs is clearly associated with greater participation in global value chains – in terms of greater exports of intermediate goods.
- Future Work:
  - Better theoretical basis needed to calculate VA trade costs
  - VA trade costs may be best interpreted as trade connectivity indicators





# Thank You



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