

An application of Decompr

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- Advanced GVC indicators are based on complex matrix manipulations.
- Develop a new tool, the R package *decompr*, to derive a wide set of detailed GVC indicators based on decompositions proposed by Hummels et al. (2001), Wang et al. (2013, henceforth WWZ), and Koopman et al. (2014).
- Many analyses of GVC integration patterns are based on a limited set of countries or indicators.
- Apply *decompr* to the new OECD Input-Output tables (ICIOs) with extensive country coverage to reveal novel stylized facts in the GVC integration patterns of developing economies.

Standard indicators based on Hummels et al. (2001):

- *fvax* - foreign value added in exports (Backward linkages, Vertical Specialisation, Inverse VAX ratio, i2e).
- *dvar* - domestic value added in re-exports (Forward linkages, Vertical Specialisation 1, e2r).

Advanced indicators based on WWZ and Koopman et al. (2014):

- *dva_fin* (*fva_fin*) - domestic (foreign) value added in final good exports.
- *dva_inter* (*fva_inter*) - domestic (foreign) value added in intermediate good exports.
- *rdv* - returned domestic value added.

- We confirm the **rapid expansion of GVCs from 1995 to 2011** and show that by 2011 GVCs already reached their pre-crisis level.
- We show, using novel indicators by WWZ, that GVCs have become longer over time.

Findings

Interestingly, these trends are increasingly **driven by developing economies**.

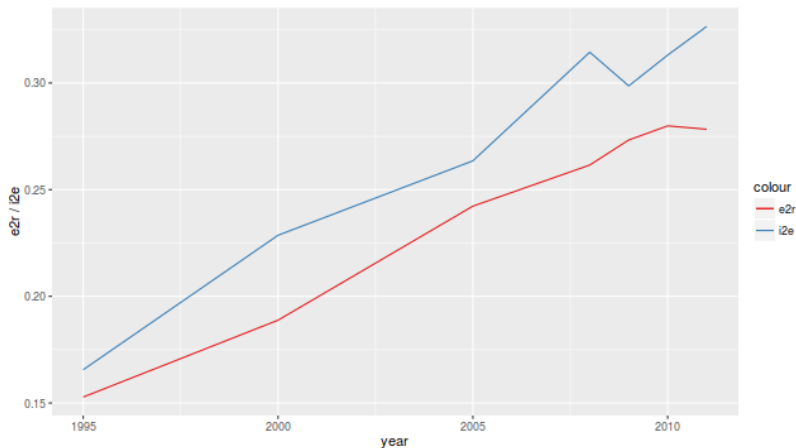


Figure 1: Developing countries' share in global backward (*i2e*) and forward (*e2r*) linkages

GVC integration **patterns of developing countries differ from advanced countries' patterns** once advanced indicators are considered.

Table 1: WWZ decomposition results by income group

Country group	<i>fva_fin</i>	<i>fva_inter</i>	<i>dva_fin</i>	<i>dva_inter</i>	<i>rdv</i>
Developing	42.07%	57.93%	44.09%	54.73%	1.18%
High-income	39.38%	60.62%	40.73%	56.85%	2.42%

Findings

However, there is convergence in patterns.

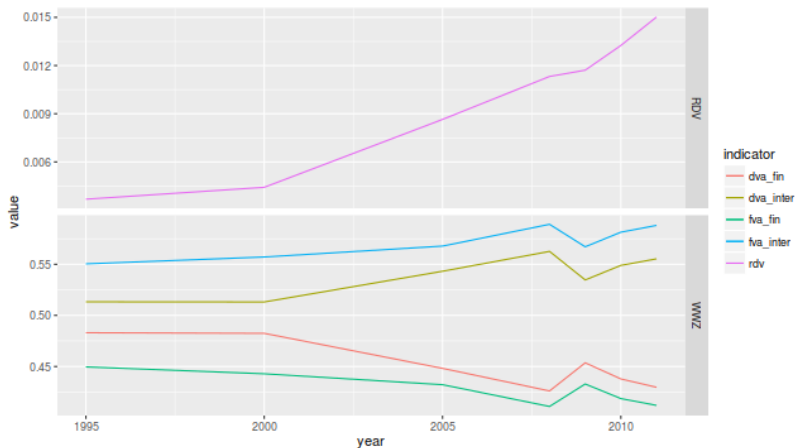


Figure 2: Development of developing economies WWZ indicators over time

We observe considerable heterogeneity among developing economies.

Table 2: WWZ decomposition for selected developing economies

Country group	<i>fva_fin</i>	<i>fva_inter</i>	<i>dva_fin</i>	<i>dva_inter</i>	<i>rdv</i>
Malaysia	39.3%	60.7%	40.8%	58.9%	0.4%
Argentina	51.2%	48.9%	51.9%	47.9%	0.2%