

## **Input-Output and Applied General Equilibrium Models"**

### **Instructions for Take Home Exam – IO**

#### **1. Your data:**

In the accompanying data folder you will find an aggregated version of the OECD ICIO database 2021 edition as a list that can directly be loaded into R (icio\_agg\_ed21\_2022-06-29.RData). The included ICIO/MRIO tables cover 10 sectors, 17 countries and a rest of world aggregate, and range from 1995 to 2018 (see also accompanying Excel file "legend.xlsx"). Flows are valued in million of nominal USD.

#### **2. Your tasks:**

First, calculate for each year the global matrix of implicit VA transactions between and within the countries in the ICIO tables (matrix N in slides 8ff from session 03). Describe the advantages and disadvantages of this trade in value added (TiVA) concept. Second, describe for a country (or countries) of your choice its patterns of global value chain integration over time. Use for this the value added to gross exports (VAX) ratios benchmarked to different trade flow types (aggregated, bilateral, etc.) discussed in Johnson and Noguera (2012) and in the lecture. The paper by Johnson (2014) might provide further inspiration. Summarize your results in a small paper of about 5 pages and support your argumentation by tables/figures etc. The preferred software to do the calculations required for this task is R or Stata.

#### **3. Your deliverables**

Please submit your short paper and the R-script (or the script of the language of your choice) used for construction of the data.

#### **4. References:**

Johnson, R. C. (2014): Five Facts about Value-Added Exports and Implications for Macroeconomics and Trade Research, *Journal of Economic Perspectives*, 28. 119 – 142.  
Johnson, R. C. and G. Noguera (2012): Accounting for intermediates: Production sharing and trade in value added, *Journal of International Economics*, 86. 224 – 236.