

Global value chains under full employment: An input-output linear optimization

Topic: Input-Output Analysis: Trade and Global Value Chains policies (3)

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Building upon Pasinetti's insights, the essay examines the restructuring of global value chains as they transition from being determined by industry level cost-minimization processes to being shaped by supranational coordinated planning aimed at maintaining full employment. By addressing alternative linear programming problems through the integration of the rectangular choice of technology framework within a multi-regional input-output system, we adopt the perspective of a hypothetical supranational social planner tasked with optimizing the level of global income while ensuring full employment within each individual country, thereby preventing forced cross-border migration and regional imbalances in employment. The investigation provides insights for shaping industrial and trade policies, specifically: i. the optimal structure of trade flows to maximize global income and achieve multi-regional full employment; ii. the level and composition of additional final demand required to attain such macroeconomic position; iii. the distribution of the supply of intermediate inputs between multiple providers. Furthermore, at the methodological level, an alternative procedure is proposed to derive effective quantities and prices through input-output linear programming when the number of constraints exceeds the number of variables leading to multiple choices.