

# An interregional input-output analysis with agglomeration economies: Isard meets Krugman

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## **Abstract**

This study introduces generalized inter-industrial transaction of intermediate inputs into New Economic Geography (NEG) models, and suggests methodology to calibrate the model with easily accessible dataset. When applying comparative statics of the model, or linear approximation of it around its equilibrium to examine the effect of any exogenous shocks in parameters on production and welfare, we show that an inter-regional input-output (IO) table and elasticity of substitution of each industry are sufficient to calculate the result of it. We also extend the model with inter-regional migration of households and suggest a method for calibration. Specifically, our method is equivalent to that of Isard (1951) applying the Leontief inverse matrix in case of the short-run analysis in which location of variety is fixed, while the result differs from Isard's model in the long-run analysis in which firms freely enter and exit. Comparing the result of numerical simulation of our model using Japanese inter-regional IO table with that yielded from the Leontief inverse matrix, our model shows larger positive impact of local population growth on production in the same region because of the home market effect.

**Keywords:** New economic geography, input-output table, Leontief-Isard model, welfare, CGE model

**JEL classification:**D57, D58, R13 .