

# The Gravity Model and Trade in Intermediate Inputs<sup>†</sup>

Theresa M. Greaney  
Department of Economics, University of Hawai‘i

Kozo Kiyota<sup>††</sup>  
Keio Economic Observatory, Keio University;  
Department of Economics, University of Hawai‘i;  
and Research Institute of Economy, Trade and Industry (RIETI)

April 1, 2019

## Abstract

Is the gravity model as applicable to trade in intermediate inputs as it is to trade in final goods? One of the contributions of this paper is that we explicitly take into account the dual nature of products that can be used as either intermediate inputs or final goods. We find that the structural gravity model performs extremely well for describing bilateral trade in final goods and in intermediate inputs. Moreover, this continues to hold even when we focus on a subset of the countries in which intermediate inputs trade accounts for a growing share of trade, namely ‘Factory Asia’. However, the gravity model may perform poorly due to the model misspecification (i.e., exclusion of intranational trade) and/or sample selection, even after the model takes into account the dual nature of the products. We demonstrate that the poor performance of the gravity model is not attributable to the large trade flow of intermediate inputs, which supports the continued use of the model as these trade flows continue to grow in importance worldwide.

**Key words:** Structural gravity model, Intermediate inputs, Intranational trade, Factory Asia  
**JEL Classification codes:** F14

---

<sup>†</sup> The authors have benefited greatly from conversations on this topic with Jota Ishikawa. We also thank seminar participants at RIETI and the University of Hawai‘i. The usual disclaimers apply.

<sup>††</sup> Kozo Kiyota was a Visiting Colleague at the University of Hawaii when this research was undertaken and would like to thank Keio University for providing financial support. Kiyota also acknowledges the financial support received from the JSPS Grant-in-Aid (18KK0348, JP1900598) and a grant-in-aid from Zengin Foundation for Studies on Economics and Finance.