

Global Sourcing and Domestic Value-added in Exports*

Edwin L.-C. Lai[†], Han (Steffan) Qi[‡] and Heiwai Tang[§]

This draft: June 3, 2019

Very Preliminary.

Abstract

This paper employs data from the World Input-Output Database (WIOD) to document the evolution of the domestic content in exports, as measured by the domestic value added to gross exports ratio (DVAR), across countries and sectors over the period 1995-2008. We develop a multiple-sector general equilibrium model of Eaton and Kortum (2002) with domestic and global input-output linkages (a la Caliendo and Parro (2015)) to provide structural interpretations of individual countries' DVAR. We use the calibrated version of the model to fully decompose the time-series changes of the global DVAR and selected countries' DVAR into separate parts that are due to changes in technology, bilateral trade frictions, unilateral export fixed costs, and other exogenous factors such as changes in factor endowments and trade balances. We find that while the partial effects of both technology and trade costs are negative, there is a positive and significant interactive effect from the two. Taking into account the interactive effects, we find that the total effect of technology, which has been either overlooked or misinterpreted in the existing analyses of the evolution of global value chains, is significantly positive, while the total effect of trade frictions is far from capable of explaining the changes in DVAR over the sample period. The contributions of other determinants are quantitatively very small.

JEL Classification codes: F10, F11, F14, F17

Keyword: fragmentation, gravity, global value chain, domestic value-added ratio

*We thank Pol Antras, Johnathan Eaton, Lorenzo Caliendo, Sharat Ganapati, Fernando Parro, Felix Tintelnot, Shang-Jin Wei, and Daniel Xu for comments.

[†]CESifo Research Network Fellow. Department of Economics, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong. Phone: (852) 2358-7611; Fax: (852) 2358-2084; Email: elai@ust.hk or edwin.l.lai@gmail.com

[‡]Department of Economics, Hong Kong Baptist University, Kowloon Tong, Kowloon, Hong Kong. Email: stefan@hkbu.edu.hk

[§]Johns Hopkins University. Email: hwtang@jhu.edu