## Vertical Trade and Free Trade Agreements\*

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## Abstract

We investigate the welfare effect and the incentive for free trade agreements (FTAs) in a vertical trade structure. We consider a three-country model in which an FTA is formed between a country exporting a final good whose production uses an intermediate good and a country exporting the intermediate good in exchange for the final good. Without external tariff reform by the FTA member, the FTA unambiguously decreases the nonmember country's welfare, whereas it may or may not increase the FTA member countries' welfare, depending on the initial tariff levels and the number of firms producing the intermediate and the final goods. In contrast, with external tariff reform, a Pareto-improving FTA is possible.

Keywords: Free trade agreements; Vertical trade; External tariff re-

form; Cournot competition

JEL classifications: F12; F13; F53

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