

## What Factors Shape Textile and Apparel Regional Trade Patterns?

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**Background:** While textile and apparel (T&A)<sup>1</sup> are known as a global sector, T&A trade remains largely regional-based, i.e., countries import and export T&A with partners in the same region (Dicken, 2015, pp.451-469). However, the T&A regional trade patterns, their evolution trajectory, and related factors remain largely unknown. This study aims to explore the T&A regional trade patterns and their affecting factors, focusing on three primary T&A regional trade blocs in the world: Asia, EU, and WH (Dicken, 2015, pp.451-469). The findings will fulfill a critical research gap and significantly enhance our understanding of the nature of T&A trade and its supply chains in today's world economy. As T&A regional trade often involves regional trade agreements (RTAs), the findings will also provide valuable inputs on the sectoral impacts of these RTAs and supporting related trade policymaking (Keough & Lu, 2020).

**Literature review:** A review of the existing literature and trade theories suggests that: **First**, the presence of a complete textile and apparel supply chain based on a division of labor among countries in the same region supports the T&A regional trade patterns (Gereffi & Frederick, 2010). **Second**, regional trade agreements' preferential import duty treatment could encourage more T&A trade flows among their member countries, i.e., the trade creation effect (Datta & Kouliavtsev, 2009). **Third**, the capacity to make a greater variety of T&A products within the region will promote the T&A regional trade patterns and reduce the necessity to source T&A products from outside. **Additionally**, the T&A regional trade patterns also face import competition, especially after eliminating the T&A quota system in 2005, which significantly reduced the barriers to trade T&A products globally (Adhikari & Yamamoto, 2007; Alam, Selvanathan, Selvanathan, & Hossain, 2019).

**Methods and data:** We use Equation 1 to empirically evaluate the T&A regional trade patterns in Asia, EU, and WH<sup>2</sup>:

$$Imtextile_{it} = \beta_{1i} Imapparel_{it} + \beta_{2i} Tariff_{textile}_{it} + \beta_{3i} Tariff_{apparel}_{it} + \beta_{4i} TextileEXHHI_{it} + \beta_{5i} ApparelEXHHI_{it} + \beta_{6i} Quota_{it} + \beta_7 T_t + c_i + \varepsilon_{it} \quad (1)$$

Where:  $Imtextile_{it}$   $i$

$i$  in year  $t$  (by value).  $Imapparel_{it}$  refers to the percentage of region  $i$ 's total apparel

<sup>1</sup> In this article, "Textile" refers to the Standard International Trade Classification (SITC) Revision 3 code 65. "Apparel" refers to the SITC Revision 3 code 84 (UNCTAD, 2020).

<sup>2</sup> The scope of "Asia", "EU", and "WH" follows the country classification by World Bank (2021).

$i$  in year  $t$  (by value).  $Tariff_{textile}_{it}$  refers to regional trade's import tariff advantage for textile products in region  $i$  in year  $t$ . Likewise,  $Tariff_{apparel}_{it}$  refers to regional trade's import tariff advantage for apparel products in region  $i$  in year  $t$ .  $TextileEXHHI_{it}$  and  $ApparelEXHHI_{it}$  refer to region  $i$ 's Herfindahl-Hirschmann product concentration index for textiles and apparel products in year  $t$ , respectively (Gnangnon, 2019)<sup>3</sup>. As a dummy variable,  $Quota_t = 1$  refers to those years after the removal of the global T&A quota system; Otherwise,  $Quota_t = 0$ . Further, we include the year variable  $T_t$  to address the potential serial correlation problem.  $c_i$  is the constant and  $\varepsilon_{it}$  is the error term. Trade data and tariff information for the study came from UNComtrade (2021) and WTO (2021), the most authentic sources of their kinds.

**Results and discussion:** The unit root test results suggest all variables are stationary (ADF test,  $p < 0.05$ ). Based on the result of the likelihood ratio test ( $p = 0.00 < 0.05$ ), we selected the fixed effects (FE) model to estimate Equation 1. The result of the F-test suggests the FE model is statistically significant at the 99% confidence level ( $p < 0.01$ ). The value of  $R^2$  exceeds 0.65, indicating an overall high goodness-of-fit of the panel regression. Specifically: **First**, the result shows that importing more apparel from trading partners in the same region, i.e., with the presence of a local T&A supply chain, will promote regional trade for textiles (i.e.  $\beta_1 = 0.55$ ,  $p < 0.01$ ). **Second**, the result suggests that the capacity to make a greater variety of textile products in the region (i.e., a lower value of  $TextileEXHHI_{it}$ ) will expand the regional trade for textiles (i.e.  $\beta_3 = -0.03$ ,  $p < 0.01$ ). **Third**, the result indicates that while the removal of the global T&A quota system significantly boots Asian countries' regional trade for textiles (i.e.,  $\beta_{4i=Asia} = 0.06$ ,  $p < 0.05$ ), the impact is not statistically significant for the regional trade patterns in the EU and WH ( $p > 0.05$ ). **Fourth**, regarding the FE model individual effect,  $c_{i=Asia}$  is higher than  $c_{i=EU}$  and  $c_{i=WH}$  ( $p < 0.01$ ), suggesting Asian countries have been building a more integrated T&A regional supply chain than their counterparts in the EU and WH. However, no evidence indicates that tariff advantages have statistically significant impacts on the T&A regional trade patterns.

**Implications and future research agendas:** The study's findings have several important implications. First, the findings confirm that the regional trade patterns remain a critical feature of T&A trade today. Second, the results call for reexamining the impact of regional trade agreements on shaping the T&A regional trade patterns. Future studies can explore further how to leverage regional trade agreements more effectively to promote the T&A regional trade

<sup>3</sup> The index was calculated at the 4-digit SITC level (UNCTAD, 2020).

patterns. Additionally, the findings suggest that the regional T&A trade patterns in Asia were better shaped than in EU and WH. Future studies can further examine what's behind such differences in growth trajectories, such as the factor of fashion companies' shifting sourcing strategies.

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