Economic Integration Agreements and Agricultural Trade: Disentangling Extensive and Intensive Margin Effects

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Selected Presentation - Lightning Session

Prepared for presentation at the 2025 AAEA & WAEA Joint Annual Meeting

Denver, CO; July 27–29, 2025

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Extended Abstract

The global approach to economic integration has shifted from multilateral agreements to focus on bilateral and regional partnerships during the past decades. This transition is reflected in the dramatic increase in Economic Integration Agreements (EIAs), which have grown from just 22 in 1990 to 373 by 2024 (World Trade Organization 2024). This surge in EIAs has sparked significant interest in understanding how these agreements influence agricultural trade. Much of the attention has centered on trade creation, where EIAs reduce trade barriers and foster new agricultural trade flows, and trade diversion, which redirects trade away from non-member countries (e.g., Koo, Kennedy and Skripnitchenko 2006; Lambert and McKoy 2009; Sun and Reed 2010; He 2022). The growing accessibility of granular trade data has allowed economists to explore these dynamics in greater depth, with a particular focus on distinguishing between intensive margins (growth in pre-existing trade flows) and extensive margins (the emergence of new trade flows) (e.g., Liapis 2009; Bureau and Jean 2013; Hejazi, Grant and Peterson 2017). By disentangling trade creation into these two components, the literature has provided a clearer picture of how EIAs shape manufacturing trade patterns and drive trade growth (Baier, Bergstrand and Feng 2014).

While previous papers have provided important insights into how EIAs affect trade, many rely on fixed thresholds to define the extensive trade margin (e.g., Hummels and Klenow 2005; Zhang et al. 2017; Scoppola, Raimondi and Olper 2018). This approach, though beneficial in some cases, has significant drawbacks. For one, it often fails to capture growth at the extensive margin fully. For example, when trade grows after an EIA, goods previously categorized as part of the extensive margin may be reclassified under the intensive margin, leading to an underestimation of the impact of new trade flows. Additionally, fixed thresholds cannot account for differences in the relative importance of products between countries, meaning a more flexible, country-specific method would provide a clearer picture of how the extensive margin contributes to trade growth. Recently developed approaches address these issues by incorporating a broader set of countries and their interactions in a structural gravity model framework French and Zylkin (2024). They account for technological

progress, changing spending patterns, and multilateral trade resistance. These improvements make the analysis more robust and help uncover how EIAs shape trade dynamics across extensive and intensive trade margins.

This paper assesses the impact of EIAs on the margins of agricultural trade by building on the conceptual framework developed by French and Zylkin (2024), which extends Kehoe and Ruhl (2013)'s concept of the "new goods margin" within a pooled product-level gravity model. In our paper, we construct the extensive margin for each EIA country pair by sequentially adding agricultural goods with zero or minimal trade values before the EIA until these goods collectively account for a specified threshold (e.g., 10%) of the total pre-EIA bilateral trade value. Conversely, the intensive margin comprises goods that already constitute a significant share of trade flows before the EIA, representing the remaining majority (e.g., 90%) of bilateral trade value. To achieve this, we draw on highly disaggregated global trade data at the HS-6 level covering 1996 to 2023. Using a theory-consistent gravity framework and state-of-the-art estimation techniques, we incorporate an extensive margin indicator and interact it with EIAs of varying depths. This approach enables us to precisely identify how EIAs influence the extensive and intensive margins of agricultural trade.

Our initial results show that agricultural trade growth following EIAs is primarily driven by the extensive margin. New agricultural goods entering destination markets play a more significant role than increases in pre-existing, intensively traded goods. We also find that the impact of EIAs varies significantly across different levels of aggregation. Ignoring product-level heterogeneity leads to a downward bias in the estimates, highlighting the importance of accurately accounting for such differences to assess trade effects. Additionally, deep EIAs consistently have a stronger impact on both the extensive and intensive margins, demonstrating their ability to expand market access and encourage more diverse trade flows. Our analysis further differentiates between raw agricultural goods and processed foods, shedding light on how the effects of EIAs differ across these categories. We find that EIAs do not significantly increase intensive margin exports of raw agricultural goods, except in the case of deep agreements, but they do promote growth along the extensive margin. In contrast, EIAs significantly enhance both margins for processed food, with particularly strong effects on the extensive margin. We also explore variations between developing and developed countries, offering a broader perspective on how EIAs influence trade dynamics. These findings

underscore the critical role of product differentiation in shaping trade patterns and outcomes under EIAs.

This paper makes three key contributions to the literature on the effects of EIAs on agricultural trade. First, applying the "new goods margin" concept by Kehoe and Ruhl (2013) within an agricultural trade framework, we go beyond the commonly used Hummels and Klenow (2005) approach. This allows us to fully capture the contribution of new trade flows to agricultural growth under EIAs, offering a clearer understanding of the extensive margin's role in driving trade expansion. Second, our analysis incorporates various countries and their trade relationships by adopting the gravity framework by French and Zylkin (2024). This methodology addresses critical econometric challenges, such as accounting for technological advancements, making our findings more robust and generalizable. Unlike previous studies, which often focused on a small subset of agreements or countries and covered shorter timeframes, typically around 15 years (e.g., Sun and Xian-de 2018), our work examines all EIAs over 27 years using the most granular global agricultural trade data available under the HS classification.

Using a product-specific estimation approach allows for greater precision by letting key coefficients vary by product. This enables us to identify which agricultural commodities contribute most to the intensive and extensive margins, providing policymakers with actionable insights into the sectors most benefit from EIAs. By offering a deeper understanding of how EIAs influence agricultural trade dynamics—particularly regarding product variety and market access, our paper adds to the growing body of research on trade agreements. As the number of EIAs continues to rise, understanding how these agreements shape trade will be crucial for designing policies that maximize their economic benefits across diverse regions and product categories.

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