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The Trade Impact of Economic Integration Agreements

A year ago, *Cornhusker Economics* reported on the substantial trade integration that has been taking place globally in recent decades (see Beghin, 2022). With this proliferation of Economic Integration Agreements (EIAs) through regional and bilateral trade agreements and customs unions since the 1990s, many economists have investigated the effect of these agreements on merchandise trade. Early investigations struggled to find robust findings. They reached two opposite conclusions, with an eventual rejoinder on their limitations. Some investigations found statistically insignificant or negligible effects of EIAs on trade flows. Other investigations found significant effects, sometimes negative, of EIAs on trade. See Park and Beghin (2023) referenced at the end of the article for detailed references of these studies.

These opposite findings and variability of the estimated effects of EIAs on trade flow led to addressing the suspected endogeneity of EIAs and trade flows. For example, countries trading a lot tend to formalize and deepen their already strong trade bonds. Unobservables correlated with trade flows can cause the variable measuring the trade integration to be jointly determined with trade flows, leading to spurious and biased estimated effects when one overlooks the endogeneity issue. A series of investigations by economists Baier and Bergstrand, starting in 2002, made major progress addressing these issues. They found robust evidence of large expanding effects of AEIs on bilateral trade of countries entering these EIAs. The techniques developed by Baier and Bergstrand have been widely adopted by trade economists.

More recent evolution in this literature on trade integration deals with the long-term effects of EIAs on trade, as trade agreements take time to be implemented. To capture “phased-in” periods of EIAs, economists account for both contemporaneous and lagged effects of integration on bilateral trade. These more recent investigations found even larger long-term effects of EIAs, which more than double bilateral trade after 10-years relative to bilateral trade flows of countries that did not integrate. This lagging approach has also been adopted by trade economists. A drawback of the “lagged” approach is that different lags are arbitrarily chosen by researchers, without a transparent criterion. More concerning is the fact that different assumptions on the lag structure provide different estimated long-term effects of trade integration agreements.

Another drawback is that most investigations ignore lead effects of EIAs. Not surprisingly, except perhaps for econometricians, EIAs take time to be negotiated and subsequently have various preliminary phases, such as “scrubbing” regulations, or zero-for-zero phases,¹ once negotiated. These steps take place before the agreements are ratified and enter into force officially. This possibility has been recognized by some economists but rarely incorporated into investigations of the impact of trade agreements. In a recent investigation (Park and Beghin, 2023), we posit that lead effects are plausible, to reflect the fact that trade integration is well on its way before the official starting date of an EIA and that expectations of various economic agents have rationally adjusted before the official starting date of most EIAs.

¹Scrubbing regulation refers to a phase of preparing respective regulations to be consistent with the forthcoming EIA. Zero for zero refers to agreeing to reduce specific distortions, such as border taxes or regulation, in a reciprocal fashion to zero levels.

To illustrate this plausibility, the EU-Korea free trade agreement took seven rounds of negotiations lasting more than two years, followed by nearly two years of time before its provisional application, and then almost five years to be fully implemented after that, suggesting both lagged and lead effects. As another example, Mexico reformed its economic policies in the 1980s and early 1990s to ensure acceptance in the GATT by gradually reducing tariffs, non-tariff barriers, and quotas. This enabled Mexico to sign a free trade agreement with Chile in 1991, which came into effect in 1999. In addition, Mexico implemented a series of market reforms culminating into the North American Free Trade Agreement (NAFTA), signed in 1992 but ratified in 1994. A massive agricultural policy reform program, PROCAMPO, started in 1993 to help cope with the surge of imports and adapt to competitive markets. All these pre-agreement steps suggest lead effects.

In our investigation we provide an empirical strategy, guided by the data, to investigate the effects of EIAs on trade flows. The strategy uses so-called extreme bounds analysis (EBA) to guide the choice of lags and leads in the trade effects. The basic idea of EBA is to find out a subset of the explanatory variables (here all possible leads and lags of the integration indicator) that strongly correlate with the dependent variable (here bilateral merchandise trade flows) in a regression from all candidate explanatory variables, by running many possible regressions. An explanatory variable exhibiting similar directional effects (without a switch between positive and negative effects) in the range of the many regressions is selected as robust.

Our approach enables the exploration of the dynamics and transitional effects of EIAs. We show that arbitrarily selected year intervals and starting year can result in non-robust estimates of the effects of EIAs on trade flows, distorting the estimated dynamics of the effects. The empirical strategy follows two steps: EBA firstly sifts lags and leads of EIAs robustly related to trade flows from candidates leads and lags, in ten years around the date of entry, then these are included in a second regression estimating the effects of EIAs on bilateral trade flows. We use a reference dataset of Baier and Bergstrand to conduct our investigation. Their dataset specifies the level of economic integration by ranking: No Agreement (0), One-way Preferential Trade Agreement (1), Two-way Preferential Trade Agreement (2), Free Trade Agreement (3), Customs Union (4), Common Market (5), and Economic Union (6).

We find that various lags and one lead of EIAs are robustly related to trade flows, leading to a long-term increase in trade of 63%. Lag and lead structure can also vary according to the depth of integration of EIAs. We find that

agreements deeper than the level of free trade agreements show richer lag and lead structure and exhibit a stronger long-term effect (132%) on trade than those from shallower free trade agreements (31%). Free trade agreements and preferential trade agreements typically focus on market access at the border without further coordination of other policies affecting economic integration. Finally, our estimates show a smaller contemporaneous effect and larger phased-in effects compared to previous studies relying on subjective choices of year intervals. For more details and formalism, see Park and Beghin (2023).

References

Beghin, John. "Lost Grounds in US Trade Integration" *Cornhusker Economics*, February 23, 2022. <https://agecon.unl.edu/cornhuskereconomics>

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