Review of International Economics

WILEY

ORIGINAL ARTICLE

How Far has Globalization Gone? A Tale of Two Regions

Rodolfo G. Campos[1] | Samuel Pienknagura[2] | Jacopo Timini[1]

[1]Banco de España, Directorate General Economics, Madrid, Spain | [2]IMF, Structural and Climate Policies Division, Washington, DC, USA

Correspondence: Jacopo Timini (jacopo.timini@bde.es)

Received: 16 November 2023 | **Revised:** 22 August 2024 | **Accepted:** 9 January 2025

Keywords: Asia | globalization | Latin America | structural gravity | trade

ABSTRACT

We study the evolution of trade globalization in Latin America and Asia over the period 1995–2018 and quantify its economic impact. Using structural a gravity estimation, we estimate a proxy of trade globalization that captures the ease of trading internationally with respect to trading domestically. Results indicate similar trade globalization patterns *between* the two regions, but a great degree of heterogeneity *within* them. Trade globalization has been particularly strong in agriculture, mining, and manufacturing, but has lagged in services. Next, we quantify the economic implications of the estimated globalization trends. Simulations of a multi-country four-sector trade model point to heterogeneous long-term impacts of globalization on GDP—some countries exhibiting substantial gains and others experiencing large losses—, with no single sector playing a preponderant role.

JEL Classification: F13, F14, F15

1 | Introduction

How far has trade globalization gone and how large are its economic benefits? In light of the weak global trade growth experienced since the financial crisis of 2008, a growing body of literature studying a phenomenon often referred to as "deglobalization" or "slowbalization" has emerged (see, e.g., Cabrillac et al. 2016; Irwin 2020; Antras 2021). However, Baldwin (2022) and Kataryniuk, Perez, and Viani (2021) recently argued that rather than stalling, globalization is changing, from trade in goods to trade in services, and moving along different geographies—something hidden in aggregate statistics. In parallel, recent contributions have assessed the heterogenous gains from trade globalization. Costinot and Rodriguez-Clare (2014, 2018) argue that the implied gains from globalization stemming from empirical trade models vary substantially depending on the underlying assumptions of the model. Looking at micro-data, Artuc, Porto, and Rijkers (2019) find heterogenous gains from trade along the income distribution.

In this paper, we study two regions that devoted great efforts to increase their integration in the world economy, Asia and Latin America, and examine the similarities and differences of such processes in the 1995–2018 period, comparing both *between and within* regions, and across sectors. We then assess how these globalization patterns impact aggregate income; a key question given stark differences in economic performance between and within the two regions.

Between the 1980s and the mid-1990s, Asia and Latin America—in line with most advanced and emerging countries—implemented important reductions in a variety of trade barriers, for example, tariffs, quantitative export restrictions, foreign exchange limitations, currency overvaluation, and so forth (Irwin 2022). Since then, both regions renewed their efforts for increasing their participation in world trade, with far-reaching changes in their unilateral, bilateral/regional, and multilateral trade policies. However, differences arise—both between and within regions—in the pace, sequencing, and content of the trade reforms proposed and implemented. Unilateral liberalization has been an important factor in both regions. However, Asian countries took a more gradual approach to trade liberalization, starting from targeted tariff cuts coupled with important efforts in streamlining non-tariff measures, whereas many Latin American countries did the opposite, executing rapid generalized tariff cuts, but maintaining relatively stable non-tariff measures. In certain occasions, these actions have been largely complementary to multilateral actions: many Latin American countries enacted unilateral trade reforms ahead of the World Trade Organization Uruguay Round (1986–1993), whereas most of Asian countries concentrated trade reforms in the decade following the Round. Most importantly, drastic changes in multilateral trade policy occurred when countries joined the WTO during these years (e.g., Ecuador in 1996, China in 2001, and Vietnam in 2006), with the WTO accession implying substantial reductions in tariff and non-tariff barriers. Regional and bilateral trade policy reforms, mostly in the form of trade agreements altering intra and extra-regional preferential market access, tend to be more recent, particularly for Asia (Duran, Mulder, and Onodera 2008).

In this paper, we revisit the evolution of overall and sector-level (agriculture, mining, manufacturing, and services) trade globalization in Asia and Latin America, exploiting the latest advances in structural gravity models (Anderson and van Wincoop 2003; Head and Mayer 2014; Bergstrand, Larch, and Yotov 2015; Yotov et al. 2016; Heid, Larch, and Yotov 2021). We apply a theory-consistent version of gravity models, that uses both domestic *and* international trade flows for estimation, and estimate a time-varying indicator, called *border thickness* (Bergstrand, Larch, and Yotov 2015), that captures the cost of trading internationally relative to the costs of trading domestically. We interpret this measure as an indicator of the evolution of trade globalization.[1] Using our border thickness estimates, we then simulate a multi-sector general equilibrium model developed by Caliendo and Parro (2015) to quantify the country-specific long-term impact of globalization on GDP and study the contribution of different sectors.

Our results show that, in broad terms, the experiences of Asia and Latin America are relatively homogeneous: on average, the two regions went through similar trade integration processes during the last three decades. While the point estimates of our baseline exercise imply a sharper decline in the "border thickness" in Latin America compared to Asia, yielding a larger increase in international trade (relative to domestic trade), differences are not statistically significant. A conservative interpretation of the estimates is that trade globalization increased between 1995 and 2018 across the world—growing with particular impetus before the global financial crisis and largely stalling thereafter—and that Asia and Latin America did not lag behind.

The seemingly homogeneous globalization processes observed *between* regions stands in contrast to the heterogeneous patterns of trade integration seen *within* regions. In Asia, trade globalization was particularly rapid in China, Vietnam, Cambodia (these three countries perform well mostly in manufacturing and agriculture), and India (who performs well in services instead). In Latin America, Mexico and Peru performed particularly well, with Mexico standing out in agriculture and manufacturing and Peru in mining, whereas Brazil shows some signs of increasing trade globalization in agriculture.

Turning to the results of the multi-sector trade model's simulations, we find that the globalization process has had a significant impact on countries' GDP—mostly due to country-specific deviations from the common trend—but that the role of globalization in each sector varies across countries. For some countries, such as Mexico and Costa Rica in Latin America, and Cambodia, China and Vietnam in Asia, most of the positive impact on their GDP is explained by increased globalization in manufacturing. For other countries, notably Argentina, the decline in international integration of its agricultural sector has had a negative impact on GDP. Globalization in the mining sector tends to play a positive role in Latin America and a more negative role in Asia, while services do not play a large role in Latin America but explain an important part of the relative increase in GDP due to globalization of Singapore and the decrease in Hong Kong.

The contribution of the paper is threefold. First, it extends the analysis of the evolution of trade globalization outside manufacturing, by including agriculture, mining and services. Second, it provides a broader view on the processes of trade integration in Asia and Latin America, by analyzing differences in the evolution of trade globalization between and within these two regions. Third, it quantifies the differential impact that trade integration has had in Asia and Latin America.

The remainder of the paper is organized as follows: Section 2 reviews the relevant literature; Section 3 describes the empirical strategy and the data used; Section 4 discusses the results; and Section 5 concludes.

2 | Literature Review

In a recent paper, Irwin (2022) analyzes the rapid decline in barriers to global trade that happened between 1985 and 1995, a period characterized by a widespread transformation in economic and trade policies. In this period, the world witnessed the elimination of currency pegs at overvalued levels and of quantitative import restriction mechanisms, as well as reductions in the mandatory disposition of foreign exchange for trade purposes, import tariffs, and other non-tariff measures, particularly for emerging and developing countries—at the time including most Asian and Latin American countries.

Most papers studying the period since 1995 analyze the role of different factors in promoting or hindering international trade in the two regions, but generally leave aside a quantification of how trade globalization evolved overall. Earlier studies found that trade policies have been an important factor promoting international trade in the two regions.[2] Examples of trade policies studied for this period include signing and implementing bilateral and multilateral trade agreements (e.g., Lee and Park 2005; Baier, Bergstrand, and Vidal 2007; Kohl 2014; Hannan 2017; Baier, Yotov, and Zylkin 2019; El-Dahrawy and Timini 2021; Campos and Timini 2022), or reducing tariffs and non-tariff barriers (Manchin and Pelkmans-Balaoing 2007; Mesquita Moreira 2018; Merchán and Mesquita Moreira 2019)—for example, by improving the functioning of rules of origin.[3]

In this paper, we exploit the latest advances in gravity models to analyze the evolution of trade globalization in Asia and Latin America by sector (agriculture, mining, manufacturing, and services). Since McCallum's (1995) seminal paper, unveiling that Canadian provinces were trading far more between themselves than with bordering US states, the effect of international borders on trade has been considered within the gravity framework. A key advance in the recent literature on international trade is the use of domestic data in the estimation. Early empirical applications of gravity models failed to find evidence of a globalization process. These results were so striking that the term "missing globalization puzzle" was coined, with some authors asserting that "globalization is everywhere but in estimated gravity models" (Coe et al. 2002, cited in Yotov 2012). Yotov (2012) and Borchert and Yotov (2017) solve this puzzle,[4] and show that with the use not only of international but also domestic trade in the estimation, as trade theory prescribes, gravity models are indeed able to capture the "globalization effect", that is, a reduction in trade costs over time. Bergstrand, Larch, and Yotov (2015) apply this approach and confirm that theory-consistent gravity models detect an increasing trend in "globalization" in manufacturing goods that is consistent across narrower subsectors within manufacturing.[5]

3 | Empirical Strategy, Data, and Simulation

3.1 | Empirical Strategy and Data

To assess how Asian and Latin American trade globalization changed over time, we estimate the evolution of the regions' and countries' *relative border thickness*. In its modern and theory-consistent form, and coherent with the latest advances in structural gravity models, *border thickness* is defined in Bergstrand, Larch, and Yotov (2015) as an indicator capturing the costs of trading internationally relative to the costs of trading domestically.

Correspondingly, we estimate an equation of the form:

$$X_{ijt}^{k} = \exp\left(\gamma_t^k b_{ij} + \sum_c \delta_{ct}^k b_{ij} \times I_{i\in c \vee j\in c} + \vartheta_{it}^k + \varphi_{jt}^k + \omega_{ij}^k\right) + \varepsilon_{ijt}^k \quad (1)$$

The dependent variable X_{ijt}^{k} identifies nominal gross bilateral trade flows between the exporter i and the importer j in year t, and k identifies sectors.[6] These bilateral trade flows include both international ($i \neq j$) and domestic trade (the special case $i = j$). In addition to our variables of interest, that is, the border variables, the equation includes sector specific exporter-time (ϑ_{it}^k) and importer-time fixed effects (φ_{jt}^k). These terms absorb all country-year characteristics (e.g., GDP, GDP per capita, population), and serve as controls for all country-sector-year characteristics too (e.g., industry size). These terms are also the preferred way to capture price effects incorporated in nominal terms (Baldwin and Taglioni 2006).[7] Importantly, these terms correspond to the theory-consistent way of controlling for "multilateral trade resistances," that is, the ease of accessing exporter i's and importer j's market. The equation also includes sector specific directional pair fixed effects (ω_{ij}^k), capturing time-invariant asymmetric trade costs.[8] Finally, ε_{ijt}^k is an error term in the estimation.

The variable b_{ij} is a dummy variable that distinguishes international trade flows ($b_{ij} = 1$) from domestic trade flows ($b_{ij} = 0$). We follow Bergstrand, Larch, and Yotov (2015) in interpreting the coefficient related to the border dummy (b_{ij}) as the semi-elasticity of bilateral trade flows to crossing an international border. Therefore, γ_t^k represents the evolution of this elasticity over time. Given the inclusion of pair fixed effects (ω_{ij}^k) in the regression, γ_t^k does not depict an absolute level of trade globalization, but *relative* to a reference year, that is, the excluded category in the regression. We exclude 1995, the first year of the sample. Therefore, the coefficients γ_t^k are expected to be positive—indicating an increase in globalization during the sample period with respect to 1995—and can be interpreted as the increase in the ease of trading internationally (instead of trading domestically) with respect to the beginning of the sample.

We also include interactions between the border dummy variable and an indicator of whether a certain country or region c is either the exporter i or the importer j ($I_{i\in c \vee j\in c}$). The coefficient δ_{ct}^k therefore tracks the *relative border thickness* of country (or region) c with respect to the rest of the world, that is, how much or less country c borders hinder international trade (with respect to domestic trade). In the simplest version of the equation, c corresponds to either "Asia" or "Latin America." We later separately identify the *relative border thickness* of each Asian and Latin American country included in the database, by letting c identify individual countries. In the rest of the paper, we will use increases in globalization and reductions in border thickness interchangeably.

We estimate Equation (1) by employing a Poisson pseudo-maximum likelihood (PPML) estimator, a standard approach in the trade literature (Santos Silva and Tenreyro 2006). This properly addresses the "zeros of trade" (i.e., countries that do not trade with each other, and therefore have a value of zero in their bilateral trade statistics) and heteroskedasticity, two distinctive features of trade data. We use three-way clustering techniques (Egger and Tarlea 2015).

The *border thickness* approach is strictly related to the trade cost measure calculated and used by Jacks, Meissner, and Novy (2008), Jacks, Meissner, and Novy (2010), and Jacks, Meissner, and Novy (2011) in their studies on the globalization (since the 19th century onwards). However, while the two methods share some key features, such as the modeling framework to obtain a measure of trade costs (gravity models), they also have a number of differences, relevant for our research question. First, as we include directional pair fixed effects in the estimation, our *border thickness* measure is net of bilateral factors that affect trade but do not change over time. For example, features such as distance between countries or sharing a common language are leveled out. In this sense, our measure focuses on the variation rather than on the level. In other words, we can take as given the level of integration in 1995, and concentrate on the process of trade globalization during the 1995–2018 period. Second, our *border thickness* measure is the result of an estimation procedure, and not a calibration method. Therefore, the *border thickness* measure can be used for econometric inference.

Data on gross exports of goods (agriculture, mining, and manufacturing) and services are from the OECD Trade in Value-Added (TiVA) database. The TiVA database provides economic information on 66 economies between 1995 and 2018, corresponding to more than 90% of world exports of goods and services, including data on sector-level international trade between two countries, that is, bilateral trade. The data also includes an aggregate for the rest of the world. Domestic trade is not directly available. We follow an approach widely used in the literature—for example Borchert et al. (2021) and Yotov (2022)—and construct domestic trade flows as the difference between gross production and total exports.[9]

Due to the estimated nature of the underlying information, the data in the TiVA database may contain a degree of smoothing, which may complicate the interpretation of the annual frequency estimates. In this paper, we do not interpret high-frequency movements in border thickness and instead focus on the long-term evolution of these estimates, which we trust to be an adequate measure, and the globalization patterns of the two regions of interest.

3.2 | Simulation With a General Equilibrium Model

We use our estimates of border thickness to quantify the impact of globalization in GDP using a multi-country multi-sector trade model. Specifically, we adapt the quantitative model of Caliendo and Parro (2015) to four sectors: agriculture, mining, manufacturing, and services. It is well-known that this model implies the existence of an empirical gravity equation at the sector level, like the one we estimated, so there is a direct mapping from our border thickness estimates to trade costs in the model. Our simulations using this model include the 66 countries used in the empirical analysis and an aggregate for the rest of the world. The sectors are defined in the same way as in the previous empirical analysis.

In the model, there are N countries denoted by the index i and n and J sectors represented by the index j and k. Each country produces both final and intermediate goods using both domestic and imported varieties of the J differentiated goods sourced from all other countries. The production of intermediate goods also involves labor. Let E_n^j represent the total expenditure of country n on varieties of good j. Then the value of trade flows of sector-j varieties from country i to country n is described by the following sectoral gravity equation:

$$X_{in}^j = \pi_{in}^j E_n^j, \qquad \pi_{in}^j \equiv \frac{\lambda_i^j \left(c_i^j \kappa_{in}^j\right)^{-\frac{1}{\theta_j}}}{\sum_{i=1}^N \lambda_i^j \left(c_i^j \kappa_{in}^j\right)^{-\frac{1}{\theta_j}}}$$

In this equation, λ_i^j is an inverse measure of average productivity in country i and sector j, c_i^j is the input cost of producing a good in this country and sector, and κ_{in}^j is a bilateral and sector-specific trade friction that is composed of iceberg trade costs d_{in}^j and ad-valorem tariffs τ_{in}^j.

Such that

$$\kappa_{in}^j = \left(1 + \tau_{in}^j\right) d_{in}^j$$

The parameters $1/\theta_j > 0$ are sectoral trade elasticities.

Adding a time dimension, the sectoral gravity equation can be written as

$$X_{int}^j = \exp\left(\ln \lambda_{it}^j - \frac{1}{\theta_j} \ln c_{it}^j - \frac{1}{\theta_j} \ln \kappa_{int}^j - \ln\left(\sum_{i=1}^N \lambda_{it}^j \left(c_{it}^j \kappa_{int}^j\right)^{-\frac{1}{\theta_j}} \right) + \ln E_{nt}^j \right)$$

In our estimation, the various combinations of fixed effects absorb all terms on the right-hand side except $-\frac{1}{\theta_j} \ln \kappa_{int}^j$. We give our estimation results a structural interpretation by specifying bilateral trade costs as

$$-\frac{1}{\theta_j} \ln \kappa_{int}^j = \gamma_t^j b_{in} + \sum_c \delta_{ct}^j b_{in} \times I_{i\in c \vee n \in c} + \tilde{\vartheta}_{it}^j + \tilde{\varphi}_{nt}^j + \tilde{\omega}_{in}^j$$

Notice that our estimation only identifies the truly bilateral *and* time-varying part of trade costs $\gamma_t^j b_{in} + \sum_c \delta_{ct}^j b_{in} \times I_{i\in c \vee n\in c}$ whereas the component $\tilde{\vartheta}_{it}^j + \tilde{\varphi}_{nt}^j + \tilde{\omega}_{in}^j$ will be absorbed by the combination of fixed effects and cannot be identified separately.

In the model, the production function is assumed to be a Cobb–Douglas function defined over labor and a composite of intermediate inputs that is also modeled as a Cobb–Douglas function. By cost minimization, this nested Cobb–Douglas specification implies that the input cost in country i and sector j depends on the wage rate in country i (w_i) and on the prices of intermediate inputs, as follows:

$$c_i^j = K_i^j w_i^{\beta_i^j} \left(\prod_{k=1}^J \left(p_i^k\right)^{\gamma_i^{kj}} \right)^{1-\beta_i^j}$$

In this expression, K_i^j is a constant, p_i^k denotes the price of the sectoral good k in country i. The parameters γ_i^{kj} correspond to the share of good k used in producing good j and β_i^j is the cost share of labor. International arbitrage in the goods markets implies that the price of intermediate goods is given by

$$p_i^k = A^j \left(\sum_{i=1}^N \lambda_i^j \left(c_i^j \kappa_{in}^j\right)^{-\frac{1}{\theta_j}} \right)$$

where A^j is a constant.

In equilibrium, expenditure of country i on goods from sector j is given by the sum of intermediate inputs of type j plus final goods expenditure, which is a constant fraction α_i^j of income $I_i \equiv w_i L_i + R_i + T_i$, where T_i are net transfers and tariff rebates are given by $R_i = \sum_{j=1}^J X_i^j \left(1 - \sum_{n=1}^N \frac{\pi_{ni}^j}{1+\tau_{ni}}\right)$. This implies the equation

$$E_i^j = \sum_{k=1}^J \gamma_i^{kj} \left(1 - \beta_i^k\right) Y_i^k + \alpha_i^j I_i$$

Moreover, goods market clearing in each sector is given by

$$Y_n^j = \sum_{i=1}^N \frac{\pi_{ni}^j}{1 + \tau_{ni}} X_i^j$$

Finally, the value of total imports and domestic demand must the value of total exports including domestic sales plus transfers:

$$Y_n \equiv \sum_{j=1}^J Y_n^j = \sum_{j=1}^J \sum_{i=1}^N \frac{\pi_{in}^j}{1 + \tau_{in}} X_n^j = \sum_{j=1}^J \sum_{i=1}^N \frac{\pi_{ni}^j}{1 + \tau_{ni}} X_i^j + T_n$$

To close the model we follow Felbermayr, Gröschl, and Heiland (2022) and assume that the transfer T_i is equal to a constant share of nontransfer income, that is, $T_i = t_i\left(w_i L_i + R_i\right)$.

We calibrate the model for the year 2018 using the input–output linkages and value-added measures from the OECD Inter-Country Input–Output (ICIO) tables. This database is also the primary source from which the trade data in the TiVA database are derived. This dataset covers 66 countries and an aggregate for the rest of the world. We use the average of all trade elasticities (4.55) reported by Caliendo and Parro (2015) for manufacturing. For agriculture we use an elasticity of 8.1 and for mining an elasticity of 15.7. We follow Felbermayr, Gröschl, and Heiland (2022) and set the trade elasticity for services to 5, as implied by Egger, Larch, and Staub's (2012) calculations.

We use the model to simulate the change in the real wage in counterfactual scenarios in which globalization did not occur and infer the change in GDP due to globalization. In this model, because labor is the only factor of production, and the size of the labor force is fixed, a percent change in the real wage implies an equally sized percent change in GDP. We take countries one by one and modify international trade costs for imports and exports of each particular country to replicate a border thickness that the country had in 1995. The border thickness measure we estimate is a composite of tariff and non-tariff components, with unknown weights. For the simulations, we treat changes in trade costs as if they were entirely due to changes in non-tariff barriers. This implies that the simulations disregard the potential effect of changes in tariff revenue on country's real wage and GDP. This simplifying assumption avoids the need to obtain detailed tariff data, which are not available for some of the countries involved.

In any case, we expect most of the variation for the period used to estimate border thickness to be due to changes in non-tariff barriers rather than tariffs. In the context of the model, and because we have normalized $\gamma^k_{1995} = \delta^k_{i1995} = 0$, the ratio of trade costs at their counterfactual 1995 level relative to their level in 2018 is given by

$$\kappa'^j_{in}/\kappa^j_{in} = d'^j_{in}/\mathrm{d}^j_{in} = \left[\exp\left(-\gamma^j_{2018} - \delta^j_{i2018}\right)\right]^{-1/\theta_j}$$

where $i \neq n$. These changes in trade costs are then fed into the system of equations described in Appendix 0, which is taken from Felbermayr, Gröschl, and Heiland (2022), to solve for general equilibrium changes.

4 | Results

In this section, we show the evolution of trade globalization in Latin America and Asia, explore whether it is associated with different trade policy instruments, and quantify the impact it has had on GDP.

4.1 | The Evolution of Trade Globalization in Latin America and Asia

Figure 1 reports the estimates of the evolution of Asia, Latin America, and the Rest of the World (RoW) trade globalization for aggregate bilateral trade. These are derived from the structural gravity model described in Equation (1). For Asia and Latin America they are the sum of the globalization trend common to all countries (captured by $\hat{\gamma}$) and the globalization trend specific to each region (captured by $\hat{\delta}$). The plotted lines for

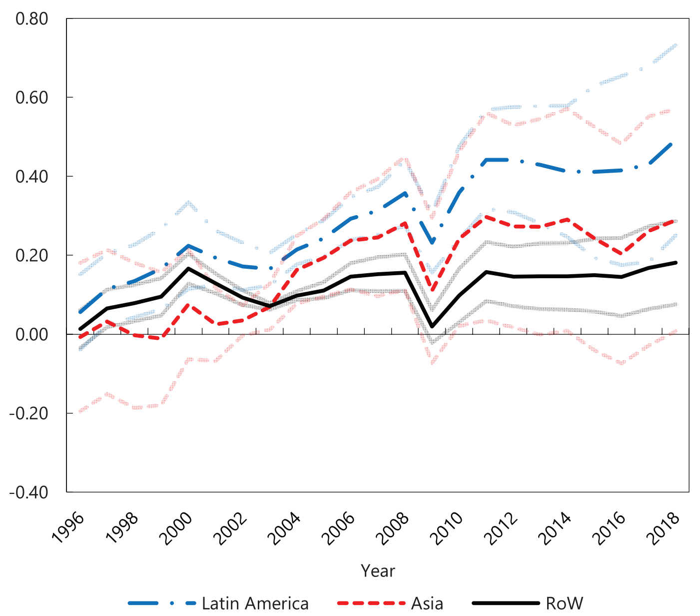


FIGURE 1 | Comparing the increase in trade globalization in Asia and Latin America. The figure plots point estimates and their confidence intervals obtained from Equation (1), where k = aggregate bilateral trade. The line for RoW plots the point estimates of the coefficient $\hat{\gamma}^k_t$; the line for Latin America plots the sum of the point estimates of the coefficients $\hat{\gamma}^k_t$ and $\hat{\delta}^k_{Latin\ America\ t}$, the line for Asia plots the sum of the point estimates of the coefficients $\hat{\gamma}^k_t$ and $\hat{\delta}^k_{Asia\ t}$. Therefore, each line identifies the ease of trading internationally (with respect to trading domestically) vis-à-vis the reference year in the estimation (1995) for any given region. RoW: Rest of the World. Confidence intervals for each line are in light colors. Point estimates and confidence intervals are reported in the Appendix (Table A1). [Colour figure can be viewed at wileyonlinelibrary.com]

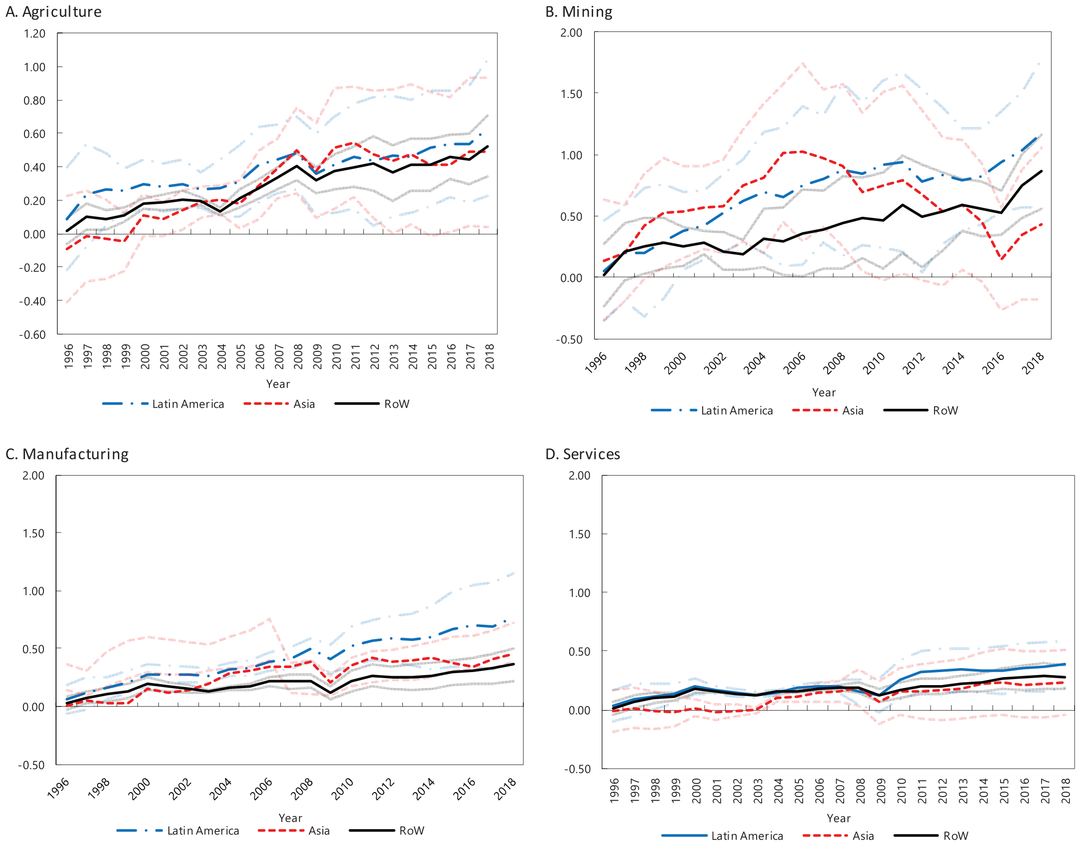


FIGURE 2 | The increase in trade globalization in Asia and Latin America, by sector. The figure plots point estimates and their confidence intervals obtained from Equation (1), where $k = \{$"agriculture"; "mining"; "manufacturing"; "services"$\}$ bilateral trade. The line for RoW plots the point estimates of the coefficient $\widehat{\gamma}_{\mathrm{t}}^{k}$; the line for Latin America plots the sum of the point estimates of the coefficients $\widehat{\gamma}_{\mathrm{t}}^{k}$ and $\widehat{\delta}_{Latin\ America\ \mathrm{t}}^{k}$, the line for Asia plots the sum of the point estimates of the coefficients $\widehat{\gamma}_{\mathrm{t}}^{k}$ and $\widehat{\delta}_{Asia\ \mathrm{t}}^{k}$. Therefore, each line identifies the ease of trading internationally (with respect to trading domestically) vis-à-vis the reference year in the estimation (1995) for any given region. RoW: Rest of the World. Confidence intervals for each line are in light colors. Point estimates and confidence intervals are reported in the Appendix (Table A2). [Colour figure can be viewed at wileyonlinelibrary.com]

Asia (red), Latin America (blue), and RoW (black) all have a positive trend: this means that trade globalization—measured as the ease of trading internationally with respect to trading domestically—has been on the rise throughout the world, at least since 1995, the beginning of our sample. Specifically, the $\widehat{\gamma}_{2018}^{aggregate\ trade}$ point estimate of 0.181 indicates that the RoW's declining "border thickness" has increased international trade (relative to domestic trade) by ≈20% over two decades (1995–2018; $= 100 \times \left[e^{0.181} - 1\right]$). This is similar to, although slightly lower than, what Bergstrand, Larch, and Yotov (2015) found for the period 1990–2002.[10] The difference is likely to depend on the sample period: the early nineties (included in their sample but not in ours) witnessed a strong decline in barriers to global trade (Irwin 2022). Point estimates for Asia ($\widehat{\gamma}_{2018}^{aggregate\ trade} + \widehat{\delta}_{Asia\ 2018}^{aggregate\ trade}$) and Latin America ($\widehat{\gamma}_{2018}^{aggregate\ trade} + \widehat{\delta}_{Latin\ America\ 2018}^{aggregate\ trade}$) are larger. The coefficients imply that the declining "border thickness" has increased international trade (relative to domestic trade) by ≈34% in Asia, and by 64% in Latin America. However, a word of caution is needed, given that Figure 1 also shows that the three confidence intervals overlap over the time span of our study, indicating that these estimates are not significantly different in a statistical sense. A more conservative view of the estimates is that they indicate that trade globalization has increased between 1995 and 2018 across the world—growing with particular impetus before the global financial crisis (GFC) and largely stalling thereafter—and that Asia and Latin America did not lag behind.

Figure 2 reports the results for the same exercise performed separately for trade in agriculture, mining, manufacturing, and services. Overall, the estimates indicate that trade integration has increased over time in each of these four broad sectors, but they also provide evidence of a "two-speed" trade globalization, faster for goods, and with services lagging behind. As suggested by Ariu (2022), lower levels of trade integration in the services sector may—at least partially—reflect the fact that an important proportion of trade in services are directly sold in foreign markets by foreign affiliates—that is, with direct commercial presence—and are often not reported in trade statistics.

Again, the figures portraying our estimates do not seem to support the existence of any systematic difference among the two regions, Asia and Latin America, and the rest of the world. However, these estimates capture regional averages, and as trade globalization and its evolution often depends on country-level characteristics and choices, they can hide important differences within regions. Thus, in our second set of estimates, we allow for country-level heterogeneity. The results of these estimates are reported in Figures 3 and 4, where we plot $\widehat{\gamma}_{2007}^{k} + \widehat{\delta}_{c2007}^{k}$ (bars)

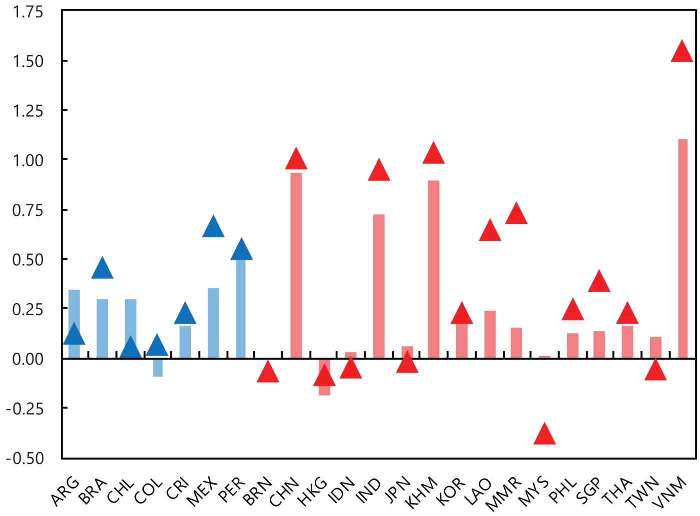


FIGURE 3 | Comparing the increase in trade globalization within Asia and Latin America. The figure plots estimates obtained from Equation (1), where k = aggregate bilateral trade. Bars plot the sum of the point estimates of the coefficients $\hat{\gamma}^k_{2007}$ and $\hat{\delta}^k_{c2007}$; triangles plot the sum of the point estimates of the coefficients $\hat{\gamma}^k_{2018}$ and $\hat{\delta}^k_{c2018}$. The former identifies—for each country c—the ease of trading internationally (with respect to trading domestically) in 2007 vis-à-vis the reference year in the estimation (1995). The latter identifies—for each country c—the ease of trading internationally (with respect to trading domestically) in 2018 vis-à-vis the reference year in the estimation (1995). Orange (blue) bars and triangles represent Asian (Latin American) countries. Point estimates and confidence intervals are reported in the Appendix (Table A3). [Colour figure can be viewed at wileyonlinelibrary.com]

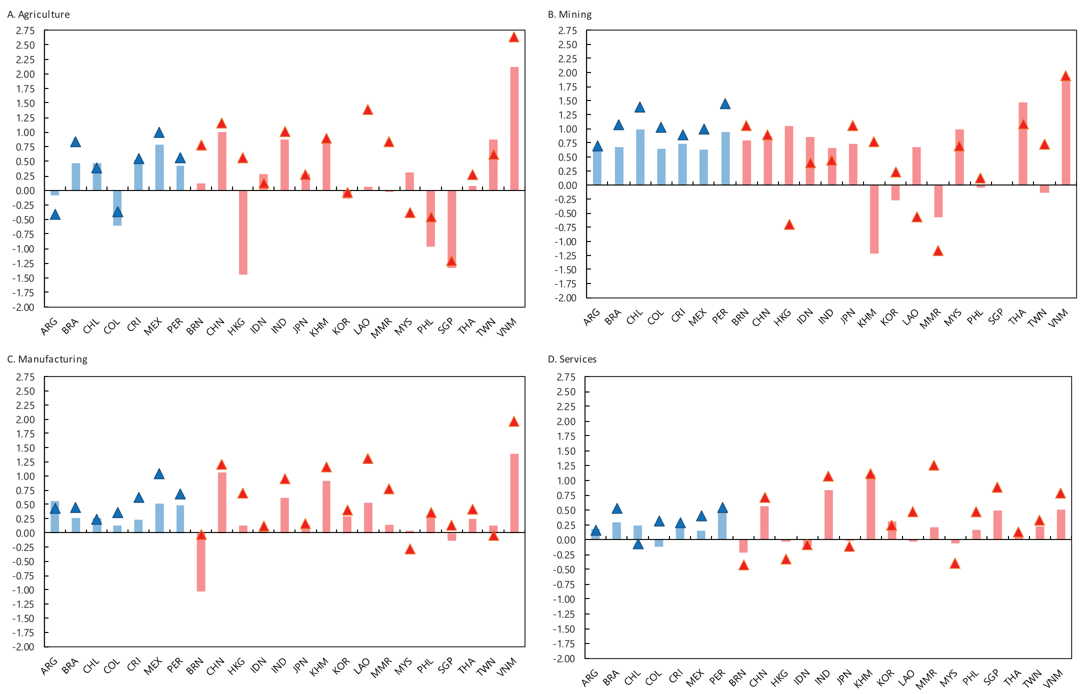


FIGURE 4 | Comparing the increase in trade globalization within Asia and Latin America, by sector. The figure plots estimates obtained from Equation (1), where k = {"agriculture"; "mining"; "manufacturing"; "services"}. Bars plot the sum of the point estimates of the coefficients $\hat{\gamma}^k_{2007}$ and $\hat{\delta}^k_{c2007}$; triangles plot the sum of the point estimates of the coefficients $\hat{\gamma}^k_{2018}$ and $\hat{\delta}^k_{c2018}$. The former identifies—for each country c—the ease of trading internationally (with respect to trading domestically) in 2007 vis-à-vis the reference year in the estimation (1995). The latter identifies—for each country c—the ease of trading internationally (with respect to trading domestically) in 2018 vis-à-vis the reference year in the estimation (1995). Orange (blue) bars and triangles represent Asian (Latin American) countries. Point estimates and confidence intervals are reported in the Appendix (Table A4). [Colour figure can be viewed at wileyonlinelibrary.com]

and $\hat{\gamma}^k_{2018} + \hat{\delta}^k_{c2018}$ (triangles), for any Asian or Latin American country c. These coefficients identify the evolution of trade globalization in 2007 and in 2018, respectively, in each country with respect to its own level of trade globalization in 1995. Therefore, if bars and triangles are above the zero line, this means that the ease of trading internationally for country c increased during the period 1995–2007 and 1995–2018, respectively. If the triangle is above the bar, it means that country c continued to increase the ease of trading internationally in the period 2007–2018, that is, after the global financial crisis. The information contained in Figure 3 indicates that—for aggregate trade flows—countries that experienced the fastest increase in trade globalization between 1995 and 2018 are Vietnam, China, Cambodia, and India in Asia, and Mexico and Peru in Latin America. However, this picture varies strongly across sectors. In agriculture, Vietnam is the Asian country that increased the most its ease of trading internationally, possibly capturing its role as one of the world's largest rice producer and exporter (Thuong 2018), followed by Laos and China. In Latin America Mexico and Brazil stand out. Mexico signed and implemented the North American Free Trade Agreement (NAFTA) in 1994, boosting Mexican trade in agriculture (Steinberg 2020). During the period of analysis, Brazil experimented large increases in productivity and trade flows of several agricultural products, most notably soybeans (Pellegrina 2022). In mining, Vietnam in Asia, and Chile and Peru in Latin America stand out in 2018 (with respect to 1995), mostly reflecting the growing importance of the copper industry in the two Latin American economies (Monfort 2008; Loayza and Rigolini 2016). In manufacturing our estimates point to Vietnam, China, Laos and Cambodia in Asia, and Mexico, Peru, and Costa Rica in Latin America. These results for the Asian economies can be rationalized by the rise of China as the "world factory" after joining the World Trade Organization (WTO), and the consequent incorporation of its neighbors to global value chains (GVCs). These effects have mostly occurred in labor-intensive sectors (Hanson 2020), for example, the textile and garment industry (Hill 2000; Rasiah 2009; Rasiah, Gopal, and Sanjivee 2013). In Latin America instead, results may be related to the strengthening of the economic ties with the United States during this period. NAFTA is also very likely to be one of the main drivers for the evolution of Mexican manufacturing exports (Caliendo and Parro 2015). Costa Rica implemented a set of policies, including a trade agreement with the United States[11] that sought to attract FDI and boost exports. These consolidated and further expanded GVCs, reinforcing the presence of multinational enterprises in the country—particularly in high-tech manufacturing industries such as electronics and medical devices—with spillover effects to domestic suppliers (Gereffi, Frederick, and Bamber 2019; Alfaro-Ureña, Manelici, and Vazquez 2022). Peru has progressively been more involved in GVCs, in sectors such as high-quality cotton textile and wearing apparel (Fernandez-Stark, Bamber, and Gereffi 2016; Pierola, Fernandes, and Farole 2018). Finally, in services, Myanmar, Cambodia, and India in Asia are those standing out. These developments may be possibly explained by the strong opening up of the former two to tourism, after decades of political instability (ADB: Asian Development Bank 2017), and the rapidly growing ICT sector of the latter (Sedik 2018).[12]

4.2 | On the Effects of Trade Globalization

In this section, we use the general equilibrium model described in Section 3 to calculate the gains from trade implied by the globalization process in Latin America and Asia. In our simulations, we take each country individually and solve for the general equilibrium effects of that country returning to its 1995 level of globalization. We report the change in GDP that can be attributed to globalization according to the model, measured as how much higher GDP was in 2018 relative to the level that GDP would have been in the same year if trade costs had been the same as in 1995.

The results are shown in Figure 5, where we decompose the overall effect of globalization into the role played by the common globalization trend (captured by the coefficient γ in our estimates) and each country's idiosyncratic deviation from this common trend (captured by the coefficient δ). The results in panel A show the impact of the common globalization trend on GDP. Although the change in trade costs implied by the common globalization trend is the same for all countries, the impact on each country's GDP is different because countries differ in terms of sector size, linkages between sectors within each country, trade openness and linkages between countries, the share of value added in output in each sector, and the size of the country relative to the rest of the world. The figure shows that the impact is more homogeneous—but lower on average—in Latin America and more heterogeneous in Asia. In Asia, there are a few countries that benefit disproportionately from the common globalization trend, such as Brunei, Cambodia, Singapore, and Vietnam, while China and India benefit less from this common trend.

Panel B of the figure shows the effect of the idiosyncratic component of globalization, which tends to dominate quantitatively (note the change in the vertical axis in the figure). Among Latin American countries, Mexico and Peru benefited more from their country-specific globalization process. Among Asian countries, China, Cambodia, Singapore, and Vietnam stand out as the countries where country-specific globalization led to the best outcome in terms of GDP. For other countries, such as Hong Kong, Malaysia, and Taiwan, the effect of their idiosyncratic globalization process goes in the opposite direction.

The impact of the idiosyncratic component varies considerably across countries. This raises the question of which sectors drove these movements for each country. To answer this question, we repeat our simulations but modify the idiosyncratic component of trade costs in each of the four sectors, one at a time. The results are shown in Figure 6. In Latin America, the decomposition shows that the positive impact on GDP in Mexico and Costa Rica is almost entirely explained by globalization in manufacturing. In Peru, most of the benefits are explained by globalization in mining. In Argentina, on the other hand, the decline in globalization is explained by less globalization in agriculture. This last result is consistent with policy changes in Argentina, which raised barriers to the export of agricultural products on several occasions during the period considered. Services seem to play a relatively minor role in the idiosyncratic globalization process of Latin American countries.

In Asia, a more globalized manufacturing sector explains almost all of the gains for China and Vietnam and most of the gains for Cambodia. Less globalized manufacturing also explains the decline in overall globalization for Malaysia and Taiwan. The contribution of mining is negative for most countries in Asia, in contrast to the generally positive effect in Latin America. The services sector, which does not play a major role in Latin America, is the main driver of the increase in GDP due to globalization in Singapore and of the decrease in Hong Kong. This result is also consistent with the anecdotal historical evidence of a transfer of internationally-integrated firms in the service sector out of

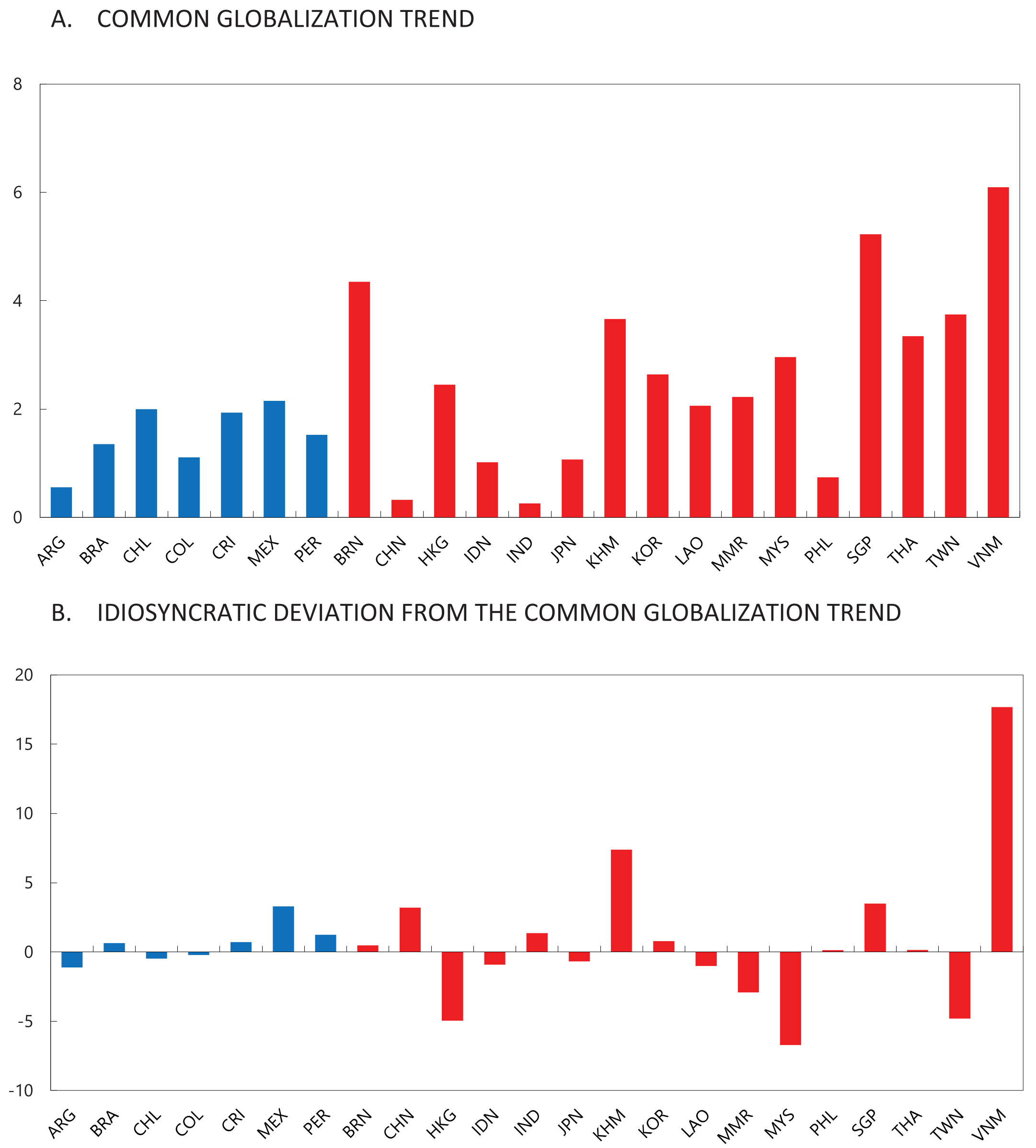


FIGURE 5 | The effect of globalization on GDP. (A) Common globalization trend. (B) Idiosyncratic deviation from the common globalization trend. The simulations use a quantitative trade model similar to the one in Caliendo and Parro (2015). The model includes 66 countries and 4 aggregate sectors. Simulations change the international trade costs of one country at a time, leaving other trade costs unchanged. The counterfactual scenario sets trade costs to their 1995 level. Results show the percentage change in GDP from a high trade costs scenario (the counterfactual) to a low trade costs one (the baseline). Panel A shows the results of country-specific simulations in which trade costs change according to the common globalization trend. Panel B shows the results of country-specific simulations in which trade costs change according to each country's idiosyncratic deviation from the common globalization trend. [Colour figure can be viewed at wileyonlinelibrary.com]

Hong Kong. Agriculture, on the other hand, does not seem to have played a major role in Asia, although in the few cases where an effect can be detected, it seems to have been positive.

5 | Conclusions

In this paper, we use a structural gravity model to estimate the aggregate and sector-level evolution of trade globalization in Asia and Latin America. We use a theory-consistent approach, by using both domestic and international trade flows, and estimate an indicator, called *border thickness* that captures the cost of trading internationally relative to the costs of trading domestically. We interpret this measure as an indicator of the evolution of trade globalization. We then perform a set of association exercises to suggest possible factors related to its intensity. Finally, we quantify the impact of globalization on long-run GDP using a multi-sector multi-country quantitative trade model.

Our results show that, during the last three decades, on average, the evolution of trade globalization in the two regions followed similar paths: trade globalization has increased between 1995 and 2018 across the world—growing with particular impetus before the global financial crisis (GFC) and largely stalling thereafter—and that Asia and Latin America did not

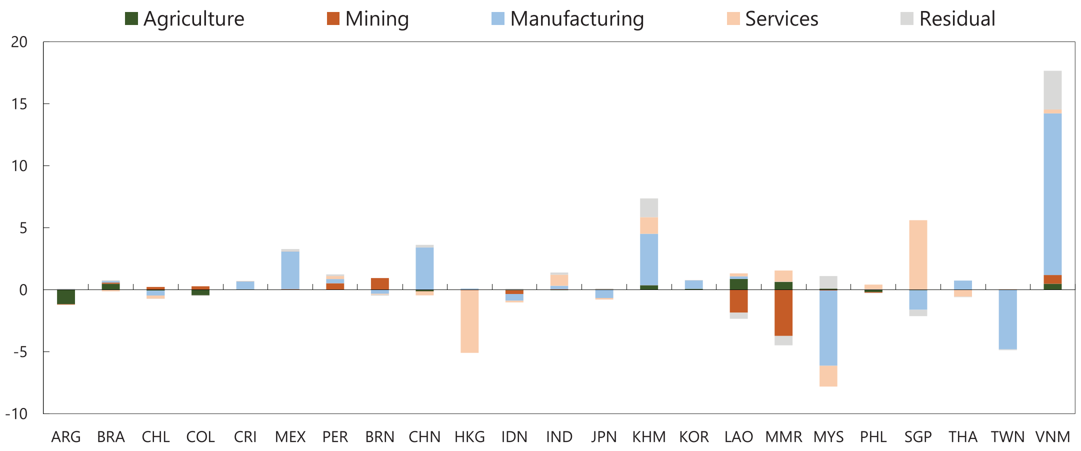


FIGURE 6 | The role of each sector in explaining the impact of country-specific globalization on GDP. The simulations use a quantitative trade model similar to the one used by Caliendo and Parro (2015). The model includes 66 countries and 4 aggregate sectors. Trade costs change according to each country's idiosyncratic deviation from the common globalization trend. The simulations change the international trade costs of one country, and on sector at a time, leaving all other trade costs unchanged. In the counterfactual scenario, trade costs are set to their 1995 level. The results show the percentage change in GDP from a situation with high trade costs (the counterfactual) to one with low trade costs (the baseline). [Colour figure can be viewed at wileyonlinelibrary.com]

lag behind. However, the aggregate picture hides heterogeneous developments at the country and sector level. In Asia, growing trade globalization was concentrated in China, Vietnam, Cambodia mostly in manufacturing and agriculture, and in India in services. In Latin America, the ease of trading internationally gained tractions in Mexico (agriculture and manufacturing), Chile and Peru (mining). Brazil shows some signs of increasing trade globalization in agriculture.

We show that differences in border thickness in Latin America and Asia are associated to different dimensions of trade policy, with policies that reduce trade costs leading to lower border thickness. More specifically, we find that lower MFN tariffs and WTO membership are associated with higher globalization across sectors, while the impact of other policies (non-tariff measures and trade agreements) is sector-dependent.

Our quantification of the impact of globalization on long-run GDP using a multi-sector trade model shows that the globalization process has had a significant impact on countries' GDP. There is no single sector that explains the variation across countries. Many countries, such as Mexico, Costa Rica, Cambodia, China, and Vietnam in Asia, experienced a positive differential impact on their GDP, driven by increased globalization in manufacturing. The agricultural sector has played a smaller role overall, but is crucial in explaining Argentina's relative decline in international integration and the consequent negative impact on GDP of this lower integration. Globalization in mining tends to have a more positive impact in Latin America than in Asia, and differential globalization in services is important in explaining the relative increase in globalization of Singapore and the decrease in Hong Kong.

Finally, our evidence—in support of strong, but very heterogeneous, increase in trade globalization in the two regions—does not shed light on firm-level effects, nor on the political economy dynamics related to the evolution of trade globalization. These issues deserve further research and consideration within the Asian and Latin American context.

Acknowledgments

The views expressed in this paper are those of the authors and do not necessarily represent the views of the Banco de España or the Eurosystem, nor those of the International Monetary Fund (IMF). We thank Gustavo Adler, Luciana Juvenal, Rafael Machado Parente, an anonymous referee, and participants at the Research Seminar at the Banco de España and IMF Western Hemisphere Department Seminar for their comments.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Endnotes

[1] Our indicator nicely reflects one of the most common definitions of trade globalization in the literature, as it captures "the process through which an increasingly free flow of goods and services leads to the integration of economies" (IMF 2002; Jakubik and Van Heuvelen 2024).

[2] Camarero et al. (2016) confirm the positive link between trade openness and income for Asia and Latin America.

[3] A parallel strand of the literature analyzes the increasing spread of production processes across borders, and their interconnectedness, that is, the extent to which countries and sectors participate in global value chains (see Johnson and Noguera 2012; Johnson 2018; Borin and Mancini 2023), and the activities in which they specialize (often looking at upstream vs. downstream activities, see Mancini et al. 2024).

[4] See Yotov (2022) for a summary of the main results.

[5] The methodology used by Bergstrand, Larch, and Yotov (2015) and extended in Anderson et al. (2018) which is described in detail in the next section, differs from alternative approaches (Kee, Nicita, and Olarreaga 2009; Estefania-Flores et al. 2022) in that it delivers a summary of trade restrictions without requiring data-intensive procedures.

[6] We estimate separate regressions for bilateral trade flows for each of the four broad sectors—agriculture, mining, manufacturing, and services—and for their aggregate. Following Egger, Larch, and Yotov (2022), we estimate gravity equations using consecutive-year data (instead of interval or averaged data), because this practice improves the efficiency of estimates (as it relies on more data points) and captures better the distribution of trade policy events across years. Breinlich, Novy, and Santos Silva (2022) suggest that in certain cases—when trade cost regressors vary at the sector level—the level of sectoral aggregation chosen for trade data may matter, although only slightly, for parameter estimates.

[7] Baldwin and Taglioni (2006) suggest that using real trade values—that is, deflating nominal values using a price index (usually the US CPI, given that trade data are in dollars)—may create "biases via spurious correlation."

[8] Directional means that we allow $\omega_{ij} \neq \omega_{ji}$ rather than imposing $\omega_{ij} = \omega_{ji}$.

[9] Campos, Timini, and Vidal (2021) show that the typical empirical estimations of trade policy effects on trade are robust to how domestic trade is calculated. In some robustness tests we also use data on WTO membership and trade agreements, which come from CEPII's gravity database see Conte, Cotterlaz, and Mayer (2022).

[10] The authors estimate an international coefficient equal to 0.29, which implies a 33% in international trade between 1990 and 2002. The larger coefficient obtained by Bergstrand, Larch, and Yotov (2015) and our estimate may be due to differences in the period and countries analyzed.

[11] This is the Dominican Republic-Central America-United States Free Trade Agreement (CAFTA-DR FTA), whose members are the United States, Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua.

[12] In the text, we analyze results at the aggregate sector level, focusing on agriculture, mining, manufacturing, and services. However, in Tables A5 and A6 in the Appendix we also report regression results at the finest level of industry classification available in TiVA. This means we obtain results for 45 different industries. Additionally, throughout the paper, our definition of trade globalization is consistent with the indicator we use for estimating its effects empirically: globalization is "the process through which an increasingly free flow of goods and services leads to the integration of economies," that is, globalization is measured by its outcome, that is, an increase in trade integration, independently of whether the drivers behind this increase in integration are driven by trade policy or other policy and non-policy factors. This is in line with most definition of trade globalization available in the literature (see e.g., IMF 2002). Indeed, the literature suggests that the so-called "first globalization" period (1870–1913 circa) was mainly driven by the reduction in transport costs (e.g., Jacks, Meissner, and Novy 2010), whereas the so-called "second globalization" period (post-WWII) was mainly driven by the reduction in trade policy-related costs (Anderson and van Wincoop 2004). Nevertheless, we run additional regressions including also trade policy-related indicators widely used in the literature, such as the WTO membership and trade agreements. Results are reported in Tables A7 and A8.

References

ADB: Asian Development Bank. 2017. *Tourism Sector Assessment, Strategy, and Road Map for Cambodia, Lao PDR, Myanmar, and Viet Nam (2016–2018)*. Manila, Philippines: ADB Country Sector and Thematic Assessments.

Alfaro-Ureña, A., I. Manelici, and J. P. Vazquez. 2022. "The Effects of Joining Multinational Supply Chains: New Evidence From Firm-To-Firm Linkages." *Quarterly Journal of Economics* 137, no. 3: 1495–1552.

Anderson, J. E., I. Borchert, A. Mattoo, and Y. V. Yotov. 2018. "Dark Costs, Missing Data: Shedding Some Light on Services Trade." *European Economic Review* 105: 193–214.

Anderson, J. E., and E. van Wincoop. 2003. "Gravity With Gravitas: A Solution to the Border Puzzle." *American Economic Review* 93: 170–192.

Anderson, J. E., and E. van Wincoop. 2004. "Trade Costs." *Journal of Economic Literature* 42: 691–751.

Antràs, P. 2021. "De-Globalisation? Global Value Chains in the Post-COVID-19 Age." 2021 ECB Forum: "Central Banks in a Shifting World" Conference Proceedings.

Ariu, A. 2022. *On the Mystery of the Missing Trade in Services*. Mimeo.

Artuc, E., G. Porto, and B. Rijkers. 2019. "Trading Off the Income Gains and the Inequality Costs of Trade Policy." *Journal of International Economics* 120: 1–45.

Baier, S. L., J. H. Bergstrand, and E. Vidal. 2007. "Free Trade Agreements *in* the Americas: Are the Trade Effects Larger Than Anticipated?" *World Economy* 30: 1347–1377.

Baier, S. L., Y. V. Yotov, and T. Zylkin. 2019. "On the Widely Differing Effects of Free Trade Agreements: Lessons From Twenty Years of Trade Integration." *Journal of International Economics* 116: 206–226.

Baldwin, R. 2022. "Globotics and Macroeconomics: Globalisation and Automation of the Service Sector." NBER Working Paper 30317.

Baldwin, R., and D. Taglioni. 2006. "Gravity for Dummies and Dummies for Gravity Equations." NBER Working Paper 12516.

Bergstrand, J. H., M. Larch, and Y. V. Yotov. 2015. "Economic Integration Agreements, Border Effects, and Distance Elasticities in the Gravity Equation." *European Economic Review* 78: 307–327.

Borchert, I., M. Larch, S. Shikher, and Y. V. Yotov. 2021. "The International Trade and Production Database for Estimation (ITPD-E)." *International Economics* 166: 140–166.

Borchert, I., and Y. V. Yotov. 2017. "Distance, Globalization, and International Trade." *Economics Letters* 153: 32–38.

Borin, A., and M. Mancini. 2023. "Measuring What Matters in Value-Added Trade." *Economic Systems Research* 35: 586–613.

Breinlich, H., D. Novy, and J. M. C. Santos Silva. 2022. "Trade, Gravity, and Aggregation." *Review of Economics and Statistics* 106, no. 5: 1418–1426.

Cabrillac, B., A. Al-Haschimi, O. Babecka-Kurcharcukova, et al. 2016. "Understanding the Weakness in Global Trade—What Is the New Normal?." ECB Occasional Paper Series n.178.

Caliendo, L., and F. Parro. 2015. "Estimates of the Trade and Welfare Effects of NAFTA." *Review of Economic Studies* 82: 1–44.

Camarero, M., I. Martínez-Zarzoso, F. Nowak-Lehmann, and C. Tamarit. 2016. "Trade Openness and Income: A Tale of Two Regions." *World Economy* 39: 386–408.

Campos, R., and J. Timini. 2022. "Unequal Trade, Unequal Gains: The Heterogeneous Impact of MERCOSUR." *Applied Economics* 54, no. 49: 5655–5669.

Campos, R., J. Timini, and E. Vidal. 2021. "Structural Gravity and Trade Policy: Does the Measurement of Domestic Trade Matter?" *Economics Letters* 208: 110080.

Conte, M., P. Cotterlaz, and T. Mayer. 2022. "The CEPII Gravity database." CEPII Working Paper N°2022-05, July 2022.

Costinot, A., and A. Rodriguez-Clare. 2014. "Trade Theory With Numbers: Quantifying the Consequences of Globalization." In *Handbook of International Economics*, edited by G. Gopinath, E. Helpman, and K. Rogoff. Amsterdam, the Netherlands: Elsevier.

Costinot, A., and A. Rodriguez-Clare. 2018. "The US Gains From Trade: Valuation Using the Demand for Foreign Factor Services." *Journal of Economic Perspectives* 32, no. 2: 3–24.

Duran, J., N. Mulder, and O. Onodera. 2008. "Trade Liberalisation and Economic Performance: Latin America Versus East Asia 1970-2006." OECD Trade Policy Papers 70.

Egger, P., M. Larch, and K. Staub. 2012. "Trade Preferences and Bilateral Trade in Goods and Services: A Structural Approach." CEPR Discussion Paper 9051.

Egger, P. H., M. Larch, and Y. V. Yotov. 2022. "Gravity Estimations With Interval Data: Revisiting the Impact of Free Trade Agreements." *Economica* 89: 44–61.

Egger, P. H., and F. Tarlea. 2015. "Multi-Way Clustering Estimation of Standard Errors in Gravity Models." *Economics Letters* 134: 144–147.

El-Dahrawy, S.-A. A., and J. Timini. 2021. "Trade Agreements and Latin American Trade (Creation and Diversion) and Welfare." *World Economy* 44: 2004–2040.

Estefania-Flores, J., D. Furceri, S. A. Hannan, J. D. Ostry, and A. K. Rose. 2022. "A Measurement of Aggregate Trade Restrictions and Their Economic Effects." IMF Working Paper No. 2022/001.

Felbermayr, G., J. Gröschl, and I. Heiland. 2022. "Complex Europe: Quantifying the Cost of Disintegration." *Journal of International Economics* 138: 103647.

Fernandez-Stark, K., P. Bamber, and G. Gereffi. 2016. *Peru in the High Quality Cotton Textile and Apparel Global Value Chain*. Duke: Duke Center on Globalization, Governance & Competitiveness.

Gereffi, G., S. Frederick, and P. Bamber. 2019. "Diverse Paths of Upgrading in High-Tech Manufacturing: Costa Rica in the Electronics and Medical Devices Global Value Chains." *UNCTAD Transnational Corporations—Investment and Developments* 26: 1–30.

Hannan, S. A. 2017. "The Impact of Trade Agreements in Latin America Using the Synthetic Control Method." IMF Working Paper WP/17/45.

Hanson, G. H. 2020. "Who Will Fill China's Shoes? The Global Evolution of Labor-Intensive Manufacturing." NBER Working Paper 28313.

Head, K., and T. Mayer. 2014. "Gravity Equations: Workhorse, Toolkit, and Cookbook." In *Handbook of International Economics*, edited by G. Gopinath, E. Helpman, and K. Rogoff, 131–195. Amsterdam, Netherlands: Elsevier.

Heid, B., M. Larch, and Y. V. Yotov. 2021. "Estimating the Effects of Non-discriminatory Trade Policies Within Structural Gravity Models." *Canadian Journal of Economics* 54: 376–409.

Hill, H. 2000. "Export Success Against the Odds: A Vietnamese Case Study." *World Development* 28: 283–300.

IMF. 2002. "Globalization: A Framework for IMF Involvement." Issues Brief 02/01.

Irwin, D. A. 2020. "The Pandemic Adds Momentum to the Deglobalisation Trend." VoxEU. https://voxeu.org/article/pandemic-adds-momentum-deglobalisation-trend.

Irwin, D. A. 2022. "The Trade Reform Wave of 1985-1995." NBER Working Paper No. 29973.

Jacks, D. S., C. M. Meissner, and D. Novy. 2008. "Trade Costs, 1870-2000." *American Economic Review* 98: 529–534.

Jacks, D. S., C. M. Meissner, and D. Novy. 2010. "Trade Costs in the First Wave of Globalization." *Explorations in Economic History* 47: 127–141.

Jacks, D. S., C. M. Meissner, and D. Novy. 2011. "Trade Booms, Trade Busts, and Trade Costs." *Journal of International Economics* 83: 185–201.

Jakubik, A., and E. Van Heuvelen. 2024. "Globalization Today." *Finance & Development* June: 8–9.

Johnson, R. C. 2018. "Measuring Global Value Chains." *Annual Review of Economics* 10: 207–236.

Johnson, R. C., and G. Noguera. 2012. "Accounting for Intermediates: Production Sharing and Trade in Value Added." *Journal of International Economics* 86: 224–236.

Kataryniuk, I., J. Perez, and F. Viani. 2021. "(De-)Globalisation of Trade and Regionalisation: A Survey of the Facts and Arguments." Banco de España Occasional Paper n.2124.

Kee, H. L., A. Nicita, and M. Olarreaga. 2009. "Estimating Trade Restrictiveness Indices." *Economic Journal* 119: 172–199.

Kohl, T. 2014. "Do We Really Know That Trade Agreements Increase Trade?" *Review of World Economics* 150: 443–469.

Lee, J., and I. Park. 2005. "Free Trade Areas in East Asia: Discriminatory or Non-discriminatory?" *World Economy* 28: 21–48.

Loayza, N., and J. Rigolini. 2016. "The Local Impact of Mining on Poverty and Inequality: Evidence From the Commodity Boom in Peru." *World Development* 84: 219–234.

Manchin, M., and A. O. Pelkmans-Balaoing. 2007. "Rules of Origin and the Web of East Asian Free Trade Agreements." Policy Research Working Paper Series 4273.

Mancini, M., P. Montalbano, S. Nenci, and D. Vurchio. 2024. "Positioning in Global Value Chains: World Map and Indicators, a New Dataset Available for GVC Analyses." *World Bank Economic Review* 38, no. 4: 669–690.

McCallum, J. 1995. "National Borders Matter." *American Economic Review* 85: 615–623.

Merchán, F., and M. Mesquita Moreira. 2019. "Effects of Lowering Tariffs on Extensive and Intensive Margins in Latin America, 1990–2015." Technical Note N°IDB-TN-1828.

Mesquita Moreira, M. 2018. *Connecting the Dots: A Road Map for Better Integration in Latin America and the Caribbean*. Washington, DC: IADB Publishing.

Monfort, B. 2008. "Chile: Trade Performance, Trade Liberalization, and Competitiveness." IMF Working Papers 2008/128.

Pellegrina, H. S. 2022. "Trade, Productivity, and the Spatial Organization of Agriculture: Evidence From Brazil." *Journal of Development Economics* 156: 102816.

Pierola, M. D., A. M. Fernandes, and T. Farole. 2018. "The Role of Imports for Exporter Performance in Peru." *World Economy* 41: 550–572.

Rasiah, R. 2009. "Garment Manufacturing in Cambodia and Laos." *Journal of the Asia Pacific Economy* 14: 150–161.

Rasiah, R., V. Gopal, and P. Sanjivee. 2013. "Export and Innovation in Cambodian Clothing Manufacturing Firms." *Asian Journal of Technology Innovation* 21: 305–316.

Santos Silva, J. M. C., and S. Tenreyro. 2006. "The Log of Gravity." *Review of Economics and Statistics* 88: 641–658.

Sedik, T. S. 2018. "Asia's Digital Revolution." *Finance & Development* 55: 31–33.

Steinberg, J. B. 2020. "The Macroeconomic Impact of NAFTA Termination." *Canadian Journal of Economics* 53: 821–856.

Thuong, N. T. T. 2018. "The Effect of Sanitary and Phytosanitary Measures on Vietnam's Rice Exports." *Economia* 19: 251–265.

Yotov, Y. V. 2012. "A Simple Solution to the Distance Puzzle in International Trade." *Economics Letters* 117: 794–798.

Yotov, Y. V. 2022. "On the Role of Domestic Trade Flows for Estimating the Gravity Model of Trade." *Contemporary Economic Policy* 40, no. 3: 526–540.

Yotov, Y. V., R. Piermartini, J. Monteiro, and M. Larch. 2016. *An Advanced Guide to Trade Policy Analysis*. Geneva, Switzerland: World Trade Organization.

Appendix A

TABLE A1 | Point estimates and standard errors (Figure 1).

Aggregate trade								
Coef.	**Point est.**	**s.e.**	**Coef.**	**Point est.**	**s.e.**	**Coef.**	**Point est.**	**s.e.**
γ_{1996}	0.0134	(0.0241)	$\delta_{ASIA,1996}$	−0.0206	(0.0715)	$\delta_{LATAM,\ 1996}$	0.0430	(0.0244)
γ_{1997}	0.0656	(0.0243)	$\delta_{ASIA,\ 1997}$	−0.0338	(0.0688)	$\delta_{LATAM,\ 1997}$	0.0488	(0.0218)
γ_{1998}	0.0791	(0.0236)	$\delta_{ASIA,\ 1998}$	−0.0813	(0.0701)	$\delta_{LATAM,\ 1998}$	0.0554	(0.0232)
γ_{1999}	0.0951	(0.0241)	$\delta_{ASIA,\ 1999}$	−0.106	(0.0617)	$\delta_{LATAM,\ 1999}$	0.0708	(0.0283)
γ_{2000}	0.166	(0.0194)	$\delta_{ASIA,\ 2000}$	−0.0904	(0.0515)	$\delta_{LATAM,\ 2000}$	0.0583	(0.0363)
γ_{2001}	0.129	(0.0126)	$\delta_{ASIA,\ 2001}$	−0.104	(0.0345)	$\delta_{LATAM,\ 2001}$	0.0644	(0.0223)
γ_{2002}	0.0929	(0.00947)	$\delta_{ASIA,\ 2002}$	−0.0579	(0.00981)	$\delta_{LATAM,\ 2002}$	0.0788	(0.0211)
γ_{2003}	0.0708	(0.00408)	$\delta_{ASIA,\ 2003}$	−0.000920	(0.0255)	$\delta_{LATAM,\ 2003}$	0.0943	(0.0167)
γ_{2004}	0.0976	(0.00565)	$\delta_{ASIA,\ 2004}$	0.0658	(0.0380)	$\delta_{LATAM,\ 2004}$	0.117	(0.0135)
γ_{2005}	0.111	(0.0104)	$\delta_{ASIA,\ 2005}$	0.0823	(0.0398)	$\delta_{LATAM,\ 2005}$	0.132	(0.0130)
γ_{2006}	0.146	(0.0172)	$\delta_{ASIA,\ 2006}$	0.0910	(0.0453)	$\delta_{LATAM,\ 2006}$	0.147	(0.0103)
γ_{2007}	0.152	(0.0220)	$\delta_{ASIA,\ 2007}$	0.0932	(0.0536)	$\delta_{LATAM,\ 2007}$	0.161	(0.00882)
γ_{2008}	0.156	(0.0235)	$\delta_{ASIA,\ 2008}$	0.125	(0.0627)	$\delta_{LATAM,\ 2008}$	0.201	(0.0186)
γ_{2009}	0.0199	(0.0215)	$\delta_{ASIA,\ 2009}$	0.0912	(0.0723)	$\delta_{LATAM,\ 2009}$	0.212	(0.0174)
γ_{2010}	0.0982	(0.0346)	$\delta_{ASIA,\ 2010}$	0.144	(0.0780)	$\delta_{LATAM,\ 2010}$	0.261	(0.0253)
γ_{2011}	0.158	(0.0378)	$\delta_{ASIA,\ 2011}$	0.139	(0.0959)	$\delta_{LATAM,\ 2011}$	0.284	(0.0264)
γ_{2012}	0.146	(0.0386)	$\delta_{ASIA,\ 2012}$	0.127	(0.0920)	$\delta_{LATAM,\ 2012}$	0.296	(0.0294)
γ_{2013}	0.147	(0.0423)	$\delta_{ASIA,\ 2013}$	0.125	(0.0971)	$\delta_{LATAM,\ 2013}$	0.282	(0.0334)
γ_{2014}	0.147	(0.0431)	$\delta_{ASIA,\ 2014}$	0.143	(0.100)	$\delta_{LATAM,\ 2014}$	0.265	(0.0415)
γ_{2015}	0.150	(0.0469)	$\delta_{ASIA,\ 2015}$	0.0924	(0.0971)	$\delta_{LATAM,\ 2015}$	0.261	(0.0640)
γ_{2016}	0.145	(0.0507)	$\delta_{ASIA,\ 2016}$	0.0590	(0.0913)	$\delta_{LATAM,\ 2016}$	0.270	(0.0713)
γ_{2017}	0.168	(0.0532)	$\delta_{ASIA,\ 2017}$	0.0932	(0.0948)	$\delta_{LATAM,\ 2017}$	0.262	(0.0727)
γ_{2018}	0.181	(0.0537)	$\delta_{ASIA,\ 2018}$	0.108	(0.0900)	$\delta_{LATAM,\ 2018}$	0.311	(0.0696)

Note: The table reports point estimates and standard errors obtained from Equation (1), where $k =$ aggregate bilateral trade.

TABLE A2 | Point estimates and standard errors (Figure 2).

(a) Agriculture

Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
γ_{1996}	0.0172	(0.0389)	$\delta_{ASIA,\ 1996}$	−0.11	(0.122)	$\delta_{LATAM,\ 1996}$	0.0729	(0.117)
γ_{1997}	0.103	(0.0407)	$\delta_{ASIA,\ 1997}$	−0.116	(0.0970)	$\delta_{LATAM,\ 1997}$	0.128	(0.117)
γ_{1998}	0.0848	(0.0288)	$\delta_{ASIA,\ 1998}$	−0.117	(0.0922)	$\delta_{LATAM,\ 1998}$	0.179	(0.0829)
γ_{1999}	0.112	(0.0227)	$\delta_{ASIA,\ 1999}$	−0.16	(0.0665)	$\delta_{LATAM,\ 1999}$	0.147	(0.0453)
γ_{2000}	0.18	(0.0143)	$\delta_{ASIA,\ 2000}$	−0.0722	(0.0487)	$\delta_{LATAM,\ 2000}$	0.116	(0.0615)
γ_{2001}	0.188	(0.0236)	$\delta_{ASIA,\ 2001}$	−0.102	(0.0292)	$\delta_{LATAM,\ 2001}$	0.0889	(0.0494)
γ_{2002}	0.203	(0.0259)	$\delta_{ASIA,\ 2002}$	−0.0599	(0.0340)	$\delta_{LATAM,\ 2002}$	0.0951	(0.0493)
γ_{2003}	0.195	(0.0120)	$\delta_{ASIA,\ 2003}$	−0.00759	(0.0362)	$\delta_{LATAM,\ 2003}$	0.0692	(0.0413)
γ_{2004}	0.133	(0.0134)	$\delta_{ASIA,\ 2004}$	0.0714	(0.0292)	$\delta_{LATAM,\ 2004}$	0.139	(0.0733)
γ_{2005}	0.21	(0.0267)	$\delta_{ASIA,\ 2005}$	−0.0336	(0.0469)	$\delta_{LATAM,\ 2005}$	0.105	(0.0836)
γ_{2006}	0.269	(0.0304)	$\delta_{ASIA,\ 2006}$	0.0219	(0.0742)	$\delta_{LATAM,\ 2006}$	0.144	(0.0846)
γ_{2007}	0.332	(0.0328)	$\delta_{ASIA,\ 2007}$	0.0582	(0.0596)	$\delta_{LATAM,\ 2007}$	0.115	(0.0731)
γ_{2008}	0.402	(0.0422)	$\delta_{ASIA,\ 2008}$	0.0942	(0.0877)	$\delta_{LATAM,\ 2008}$	0.0782	(0.0687)
γ_{2009}	0.317	(0.0389)	$\delta_{ASIA,\ 2009}$	0.0587	(0.106)	$\delta_{LATAM,\ 2009}$	0.0396	(0.0854)
γ_{2010}	0.37	(0.0539)	$\delta_{ASIA,\ 2010}$	0.141	(0.129)	$\delta_{LATAM,\ 2010}$	0.0401	(0.0921)
γ_{2011}	0.4	(0.0612)	$\delta_{ASIA,\ 2011}$	0.146	(0.106)	$\delta_{LATAM,\ 2011}$	0.0611	(0.0995)
γ_{2012}	0.42	(0.0830)	$\delta_{ASIA,\ 2012}$	0.0558	(0.112)	$\delta_{LATAM,\ 2012}$	0.0127	(0.114)
γ_{2013}	0.364	(0.0845)	$\delta_{ASIA,\ 2013}$	0.0701	(0.135)	$\delta_{LATAM,\ 2013}$	0.099	(0.0980)
γ_{2014}	0.413	(0.0784)	$\delta_{ASIA,\ 2014}$	0.0644	(0.135)	$\delta_{LATAM,\ 2014}$	0.0496	(0.0941)
γ_{2015}	0.413	(0.0796)	$\delta_{ASIA,\ 2015}$	−0.000495	(0.140)	$\delta_{LATAM,\ 2015}$	0.0968	(0.0972)
γ_{2016}	0.461	(0.0683)	$\delta_{ASIA,\ 2016}$	−0.0454	(0.138)	$\delta_{LATAM,\ 2016}$	0.0769	(0.0928)
γ_{2017}	0.447	(0.0786)	$\delta_{ASIA,\ 2017}$	0.0421	(0.148)	$\delta_{LATAM,\ 2017}$	0.0904	(0.100)
γ_{2018}	0.524	(0.0923)	$\delta_{ASIA,\ 2018}$	−0.0371	(0.137)	$\delta_{LATAM,\ 2018}$	0.109	(0.115)

(b) Mining

Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
γ_{1996}	0.0175	(0.129)	$\delta_{ASIA,\ 1996}$	0.122	(0.121)	$\delta_{LATAM,\ 1996}$	0.0367	(0.0792)
γ_{1997}	0.21	(0.116)	$\delta_{ASIA,\ 1997}$	−0.0113	(0.0845)	$\delta_{LATAM,\ 1997}$	−0.0151	(0.0822)
γ_{1998}	0.256	(0.117)	$\delta_{ASIA,\ 1998}$	0.161	(0.0992)	$\delta_{LATAM,\ 1998}$	−0.0535	(0.151)
γ_{1999}	0.281	(0.105)	$\delta_{ASIA,\ 1999}$	0.248	(0.121)	$\delta_{LATAM,\ 1999}$	0.0105	(0.132)
γ_{2000}	0.251	(0.0805)	$\delta_{ASIA,\ 2000}$	0.283	(0.110)	$\delta_{LATAM,\ 2000}$	0.126	(0.0815)
γ_{2001}	0.288	(0.0477)	$\delta_{ASIA,\ 2001}$	0.281	(0.123)	$\delta_{LATAM,\ 2001}$	0.138	(0.0959)
γ_{2002}	0.213	(0.0772)	$\delta_{ASIA,\ 2002}$	0.367	(0.116)	$\delta_{LATAM,\ 2002}$	0.315	(0.0857)
γ_{2003}	0.184	(0.0644)	$\delta_{ASIA,\ 2003}$	0.563	(0.166)	$\delta_{LATAM,\ 2003}$	0.437	(0.108)
γ_{2004}	0.319	(0.122)	$\delta_{ASIA,\ 2004}$	0.489	(0.187)	$\delta_{LATAM,\ 2004}$	0.372	(0.130)
γ_{2005}	0.295	(0.138)	$\delta_{ASIA,\ 2005}$	0.722	(0.147)	$\delta_{LATAM,\ 2005}$	0.360	(0.150)
γ_{2006}	0.361	(0.181)	$\delta_{ASIA,\ 2006}$	0.659	(0.187)	$\delta_{LATAM,\ 2006}$	0.388	(0.146)
γ_{2007}	0.387	(0.163)	$\delta_{ASIA,\ 2007}$	0.583	(0.123)	$\delta_{LATAM,\ 2007}$	0.414	(0.102)
γ_{2008}	0.446	(0.193)	$\delta_{ASIA,\ 2008}$	0.465	(0.145)	$\delta_{LATAM,\ 2008}$	0.434	(0.164)
γ_{2009}	0.486	(0.167)	$\delta_{ASIA,\ 2009}$	0.208	(0.160)	$\delta_{LATAM,\ 2009}$	0.358	(0.126)
γ_{2010}	0.46	(0.199)	$\delta_{ASIA,\ 2010}$	0.286	(0.192)	$\delta_{LATAM,\ 2010}$	0.459	(0.148)
γ_{2011}	0.593	(0.203)	$\delta_{ASIA,\ 2011}$	0.202	(0.187)	$\delta_{LATAM,\ 2011}$	0.346	(0.167)
γ_{2012}	0.498	(0.213)	$\delta_{ASIA,\ 2012}$	0.172	(0.141)	$\delta_{LATAM,\ 2012}$	0.287	(0.167)
γ_{2013}	0.539	(0.160)	$\delta_{ASIA,\ 2013}$	−0.00576	(0.147)	$\delta_{LATAM,\ 2013}$	0.290	(0.123)
γ_{2014}	0.593	(0.109)	$\delta_{ASIA,\ 2014}$	0.000479	(0.159)	$\delta_{LATAM,\ 2014}$	0.201	(0.104)
γ_{2015}	0.56	(0.112)	$\delta_{ASIA,\ 2015}$	−0.111	(0.132)	$\delta_{LATAM,\ 2015}$	0.260	(0.0867)
γ_{2016}	0.524	(0.0907)	$\delta_{ASIA,\ 2016}$	−0.373	(0.124)	$\delta_{LATAM,\ 2016}$	0.420	(0.117)
γ_{2017}	0.745	(0.131)	$\delta_{ASIA,\ 2017}$	−0.399	(0.140)	$\delta_{LATAM,\ 2017}$	0.292	(0.110)
γ_{2018}	0.862	(0.155)	$\delta_{ASIA,\ 2018}$	−0.427	(0.159)	$\delta_{LATAM,\ 2018}$	0.310	(0.153)

(Continues)

(c) Manufacturing

Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
γ_{1996}	0.0302	(0.0281)	$\delta_{ASIA,\ 1996}$	−0.0232	(0.0848)	$\delta_{LATAM,\ 1996}$	0.0319	(0.0327)
γ_{1997}	0.0777	(0.0262)	$\delta_{ASIA,\ 1997}$	−0.0223	(0.0755)	$\delta_{LATAM,\ 1997}$	0.0371	(0.0459)
γ_{1998}	0.103	(0.0296)	$\delta_{ASIA,\ 1998}$	−0.0766	(0.0780)	$\delta_{LATAM,\ 1998}$	0.0583	(0.0182)
γ_{1999}	0.135	(0.0327)	$\delta_{ASIA,\ 1999}$	−0.103	(0.0734)	$\delta_{LATAM,\ 1999}$	0.077	(0.0149)
γ_{2000}	0.198	(0.0266)	$\delta_{ASIA,\ 2000}$	−0.0457	(0.0656)	$\delta_{LATAM,\ 2000}$	0.0742	(0.0218)
γ_{2001}	0.171	(0.0209)	$\delta_{ASIA,\ 2001}$	−0.0492	(0.0339)	$\delta_{LATAM,\ 2001}$	0.108	(0.0158)
γ_{2002}	0.151	(0.0174)	$\delta_{ASIA,\ 2002}$	−0.00944	(0.00993)	$\delta_{LATAM,\ 2002}$	0.121	(0.0180)
γ_{2003}	0.131	(0.00458)	$\delta_{ASIA,\ 2003}$	0.0635	(0.0388)	$\delta_{LATAM,\ 2003}$	0.139	(0.0246)
γ_{2004}	0.16	(0.0104)	$\delta_{ASIA,\ 2004}$	0.128	(0.0546)	$\delta_{LATAM,\ 2004}$	0.164	(0.0193)
γ_{2005}	0.173	(0.0154)	$\delta_{ASIA,\ 2005}$	0.134	(0.0597)	$\delta_{LATAM,\ 2005}$	0.161	(0.0194)
γ_{2006}	0.217	(0.0205)	$\delta_{ASIA,\ 2006}$	0.131	(0.0584)	$\delta_{LATAM,\ 2006}$	0.169	(0.0182)
γ_{2007}	0.218	(0.0318)	$\delta_{ASIA,\ 2007}$	0.129	(0.0682)	$\delta_{LATAM,\ 2007}$	0.194	(0.0167)
γ_{2008}	0.221	(0.0283)	$\delta_{ASIA,\ 2008}$	0.166	(0.0784)	$\delta_{LATAM,\ 2008}$	0.275	(0.0194)
γ_{2009}	0.122	(0.0275)	$\delta_{ASIA,\ 2009}$	0.0912	(0.0765)	$\delta_{LATAM,\ 2009}$	0.289	(0.0364)
γ_{2010}	0.224	(0.0466)	$\delta_{ASIA,\ 2010}$	0.127	(0.0855)	$\delta_{LATAM,\ 2010}$	0.294	(0.0392)
γ_{2011}	0.269	(0.0488)	$\delta_{ASIA,\ 2011}$	0.155	(0.103)	$\delta_{LATAM,\ 2011}$	0.302	(0.0387)
γ_{2012}	0.249	(0.0498)	$\delta_{ASIA,\ 2012}$	0.137	(0.0971)	$\delta_{LATAM,\ 2012}$	0.337	(0.0493)
γ_{2013}	0.254	(0.0562)	$\delta_{ASIA,\ 2013}$	0.15	(0.107)	$\delta_{LATAM,\ 2013}$	0.327	(0.0579)
γ_{2014}	0.265	(0.0551)	$\delta_{ASIA,\ 2014}$	0.155	(0.110)	$\delta_{LATAM,\ 2014}$	0.333	(0.0834)
γ_{2015}	0.293	(0.0537)	$\delta_{ASIA,\ 2015}$	0.0844	(0.105)	$\delta_{LATAM,\ 2015}$	0.374	(0.110)
γ_{2016}	0.306	(0.0569)	$\delta_{ASIA,\ 2016}$	0.0408	(0.0957)	$\delta_{LATAM,\ 2016}$	0.394	(0.124)
γ_{2017}	0.328	(0.0648)	$\delta_{ASIA,\ 2017}$	0.0865	(0.105)	$\delta_{LATAM,\ 2017}$	0.366	(0.125)
γ_{2018}	0.361	(0.0703)	$\delta_{ASIA,\ 2018}$	0.0922	(0.108)	$\delta_{LATAM,\ 2018}$	0.407	(0.124)

(d) Services

Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
γ_{1996}	0.0129	(0.0279)	$\delta_{ASIA,\ 1996}$	−0.0196	(0.0628)	$\delta_{LATAM,\ 1996}$	0.0184	(0.0387)
γ_{1997}	0.0689	(0.0261)	$\delta_{ASIA,\ 1997}$	−0.0516	(0.0637)	$\delta_{LATAM,\ 1997}$	0.0178	(0.0430)
γ_{1998}	0.1	(0.0213)	$\delta_{ASIA,\ 1998}$	−0.107	(0.0601)	$\delta_{LATAM,\ 1998}$	0.0168	(0.0352)
γ_{1999}	0.116	(0.0168)	$\delta_{ASIA,\ 1999}$	−0.133	(0.0463)	$\delta_{LATAM,\ 1999}$	0.0221	(0.0255)
γ_{2000}	0.176	(0.0130)	$\delta_{ASIA,\ 2000}$	−0.159	(0.0254)	$\delta_{LATAM,\ 2000}$	0.0261	(0.0194)
γ_{2001}	0.157	(0.00561)	$\delta_{ASIA,\ 2001}$	−0.179	(0.0272)	$\delta_{LATAM,\ 2001}$	0.0139	(0.0114)
γ_{2002}	0.136	(0.00377)	$\delta_{ASIA,\ 2002}$	−0.141	(0.0204)	$\delta_{LATAM,\ 2002}$	0.00605	(0.0125)
γ_{2003}	0.128	(0.00443)	$\delta_{ASIA,\ 2003}$	−0.132	(0.00767)	$\delta_{LATAM,\ 2003}$	−0.00305	(0.00871)
γ_{2004}	0.151	(0.00212)	$\delta_{ASIA,\ 2004}$	−0.0526	(0.0121)	$\delta_{LATAM,\ 2004}$	−0.00694	(0.00992)
γ_{2005}	0.157	(0.00516)	$\delta_{ASIA,\ 2005}$	−0.0425	(0.0186)	$\delta_{LATAM,\ 2005}$	0.0298	(0.00986)
γ_{2006}	0.178	(0.00716)	$\delta_{ASIA,\ 2006}$	−0.0344	(0.0304)	$\delta_{LATAM,\ 2006}$	0.0226	(0.0118)
γ_{2007}	0.189	(0.00995)	$\delta_{ASIA,\ 2007}$	−0.0343	(0.0371)	$\delta_{LATAM,\ 2007}$	0.0128	(0.0194)
γ_{2008}	0.191	(0.0235)	$\delta_{ASIA,\ 2008}$	−0.00451	(0.0542)	$\delta_{LATAM,\ 2008}$	−0.0396	(0.0311)
γ_{2009}	0.126	(0.0281)	$\delta_{ASIA,\ 2009}$	−0.0607	(0.0646)	$\delta_{LATAM,\ 2009}$	0.00154	(0.0451)
γ_{2010}	0.166	(0.0314)	$\delta_{ASIA,\ 2010}$	−0.0121	(0.0702)	$\delta_{LATAM,\ 2010}$	0.089	(0.0533)
γ_{2011}	0.201	(0.0353)	$\delta_{ASIA,\ 2011}$	−0.0445	(0.0854)	$\delta_{LATAM,\ 2011}$	0.126	(0.0540)
γ_{2012}	0.203	(0.0339)	$\delta_{ASIA,\ 2012}$	−0.0408	(0.0910)	$\delta_{LATAM,\ 2012}$	0.128	(0.0602)
γ_{2013}	0.221	(0.0345)	$\delta_{ASIA,\ 2013}$	−0.0441	(0.0959)	$\delta_{LATAM,\ 2013}$	0.119	(0.0592)
γ_{2014}	0.23	(0.0394)	$\delta_{ASIA,\ 2014}$	−0.00999	(0.0993)	$\delta_{LATAM,\ 2014}$	0.100	(0.0580)
γ_{2015}	0.266	(0.0471)	$\delta_{ASIA,\ 2015}$	−0.0321	(0.0968)	$\delta_{LATAM,\ 2015}$	0.0719	(0.0590)
γ_{2016}	0.274	(0.0531)	$\delta_{ASIA,\ 2016}$	−0.0606	(0.0905)	$\delta_{LATAM,\ 2016}$	0.0824	(0.0512)
γ_{2017}	0.286	(0.0550)	$\delta_{ASIA,\ 2017}$	−0.0661	(0.0890)	$\delta_{LATAM,\ 2017}$	0.084	(0.0514)
γ_{2018}	0.276	(0.0514)	$\delta_{ASIA,\ 2018}$	−0.0446	(0.0892)	$\delta_{LATAM,\ 2018}$	0.110	(0.0489)

Note: The table reports point estimates and standard errors obtained from Equation (1), where k = {“agriculture”; “mining”; “manufacturing”; “services”} bilateral trade.

TABLE A3 | Point estimates and standard errors (Figure 3).

Aggregate trade								
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
γ_{2007}	0.135	(0.0242)	$\delta_{ARG,\ 2007}$	0.213	(0.0459)	$\delta_{BRA,\ 2007}$	0.159	(0.0377)
γ_{2018}	0.170	(0.0563)	$\delta_{ARG,\ 2018}$	−0.0393	(0.0543)	$\delta_{BRA,\ 2018}$	0.284	(0.0632)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{CHL,\ 2007}$	0.163	(0.0513)	$\delta_{COL,\ 2007}$	−0.230	(0.0513)	$\delta_{CRI,\ 2007}$	0.0403	(0.0523)
$\delta_{CHL,\ 2018}$	−0.112	(0.0931)	$\delta_{COL,\ 2018}$	−0.0998	(0.0817)	$\delta_{CRI,\ 2018}$	0.0641	(0.0539)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{MEX,\ 2007}$	0.222	(0.0434)	$\delta_{PER,\ 2007}$	0.359	(0.0626)	$\delta_{BRN,\ 2007}$	−0.143	(0.122)
$\delta_{MEX,\ 2018}$	0.498	(0.0688)	$\delta_{PER,\ 2018}$	0.382	(0.106)	$\delta_{BRN,\ 2018}$	−0.233	(0.169)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{CHN,\ 2007}$	0.797	(0.0505)	$\delta_{HKG,\ 2007}$	−0.319	(0.0680)	$\delta_{IDN,\ 2007}$	−0.108	(0.0630)
$\delta_{CHN,\ 2018}$	0.839	(0.0565)	$\delta_{HKG,\ 2018}$	−0.255	(0.0939)	$\delta_{IDN,\ 2018}$	−0.215	(0.0739)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{IND,\ 2007}$	0.587	(0.0464)	$\delta_{JPN,\ 2007}$	−0.0736	(0.0366)	$\delta_{KHM,\ 2007}$	0.758	(0.146)
$\delta_{IND,\ 2018}$	0.778	(0.0655)	$\delta_{JPN,\ 2018}$	−0.186	(0.0528)	$\delta_{KHM,\ 2018}$	0.866	(0.146)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{KOR,\ 2007}$	0.0996	(0.0328)	$\delta_{LAO,\ 2007}$	0.101	(0.157)	$\delta_{MMR,\ 2007}$	0.0202	(0.136)
$\delta_{KOR,\ 2018}$	0.0575	(0.0403)	$\delta_{LAO,\ 2018}$	0.482	(0.143)	$\delta_{MMR,\ 2018}$	0.565	(0.135)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{MYS,\ 2007}$	−0.131	(0.0440)	$\delta_{PHL,\ 2007}$	−0.00638	(0.0865)	$\delta_{SGP,\ 2007}$	−0.0000971	(0.0531)
$\delta_{MYS,\ 2018}$	−0.543	(0.0562)	$\delta_{PHL,\ 2018}$	0.0769	(0.0851)	$\delta_{SGP,\ 2018}$	0.218	(0.0542)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{THA,\ 2007}$	0.0305	(0.0408)	$\delta_{TWN,\ 2007}$	−0.0302	(0.0484)	$\delta_{VNM,\ 2007}$	0.966	(0.0932)
$\delta_{THA,\ 2018}$	0.0591	(0.0466)	$\delta_{TWN,\ 2018}$	−0.225	(0.0574)	$\delta_{VNM,\ 2018}$	1.378	(0.108)

Note: The table reports point estimates and standard errors obtained from Equation (1), where k = aggregate bilateral trade.

TABLE A4 | Point estimates and standard errors (Figure 4).

(a) Agriculture

Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
γ_{2007}	0.303	(0.033)	$\delta_{ARG,\ 2007}$	−0.391	(0.103)	$\delta_{BRA,\ 2007}$	0.159	(0.119)
γ_{2018}	0.501	(0.102	$\delta_{ARG,\ 2018}$	−0.909	(0.285)	$\delta_{BRA,\ 2018}$	0.342	(0.211)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{CHL,\ 2007}$	0.163	(0.138)	$\delta_{COL,\ 2007}$	−0.915	(0.147)	$\delta_{CRI,\ 2007}$	0.224	(0.097)
$\delta_{CHL,\ 2018}$	−0.112	(0.223)	$\delta_{COL,\ 2018}$	−0.861	(0.136)	$\delta_{CRI,\ 2018}$	0.0463	(0.104)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{MEX,\ 2007}$	0.487	(0.043)	$\delta_{PER,\ 2007}$	0.128	(0.097)	$\delta_{BRN,\ 2007}$	−0.182	(0.168)
$\delta_{MEX,\ 2018}$	0.502	(0.085)	$\delta_{PER,\ 2018}$	0.0635	(0.165)	$\delta_{BRN,\ 2018}$	0.272	(0.218)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{CHN,\ 2007}$	0.703	(0.099)	$\delta_{HKG,\ 2007}$	−1.744	(0.252)	$\delta_{IDN,\ 2007}$	−0.0175	(0.115)
$\delta_{CHN,\ 2018}$	0.658	(0.137)	$\delta_{HKG,\ 2018}$	0.0671	(0.213)	$\delta_{IDN,\ 2018}$	−0.374	(0.120)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{IND,\ 2007}$	0.577	(0.115)	$\delta_{JPN,\ 2007}$	−0.0230	(0.120)	$\delta_{KHM,\ 2007}$	0.570	(0.173)
$\delta_{IND,\ 2018}$	0.512	(0.120)	$\delta_{JPN,\ 2018}$	−0.225	(0.104)	$\delta_{KHM,\ 2018}$	0.388	(0.219)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{KOR,\ 2007}$	−0.450	(0.111)	$\delta_{LAO,\ 2007}$	−0.235	(0.262)	$\delta_{MMR,\ 2007}$	−0.330	(0.225)
$\delta_{KOR,\ 2018}$	−0.529	(0.115)	$\delta_{LAO,\ 2018}$	0.881	(0.238)	$\delta_{MMR,\ 2018}$	0.332	(0.245)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{MYS,\ 2007}$	−0.00142	(0.099)	$\delta_{PHL,\ 2007}$	−1.277	(0.135)	$\delta_{SGP,\ 2007}$	−1.638	(0.131)
$\delta_{MYS,\ 2018}$	−0.876	(0.125)	$\delta_{PHL,\ 2018}$	−0.957	(0.159)	$\delta_{SGP,\ 2018}$	−1.715	(0.174)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{THA,\ 2007}$	−0.227	(0.101)	$\delta_{TWN,\ 2007}$	0.568	(0.168)	$\delta_{VNM,\ 2007}$	1.825	(0.146)
$\delta_{THA,\ 2018}$	−0.232	(0.103)	$\delta_{TWN,\ 2018}$	0.126	(0.185)	$\delta_{VNM,\ 2018}$	2.137	(0.148)

(b) Mining

Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
γ_{2007}	0.382	(0.172)	$\delta_{ARG,\ 2007}$	0.224	(0.265)	$\delta_{BRA,\ 2007}$	0.292	(0.160)
γ_{2018}	0.870	(0.164)	$\delta_{ARG,\ 2018}$	−0.174	(0.291)	$\delta_{BRA,\ 2018}$	0.200	(0.189)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{CHL,\ 2007}$	0.614	(0.205)	$\delta_{COL,\ 2007}$	0.263	(0.140)	$\delta_{CRI,\ 2007}$	0.351	(0.216)
$\delta_{CHL,\ 2018}$	0.518	(0.298)	$\delta_{COL,\ 2018}$	0.156	(0.178)	$\delta_{CRI,\ 2018}$	0.0268	(0.252)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{MEX,\ 2007}$	0.249	(0.172)	$\delta_{PER,\ 2007}$	0.561	(0.285)	$\delta_{BRN,\ 2007}$	0.419	(0.236)
$\delta_{MEX,\ 2018}$	0.133	(0.169)	$\delta_{PER,\ 2018}$	0.577	(0.298)	$\delta_{BRN,\ 2018}$	0.190	(0.372)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{CHN,\ 2007}$	0.483	(0.170)	$\delta_{HKG,\ 2007}$	0.661	(0.154)	$\delta_{IDN,\ 2007}$	0.476	(0.171)
$\delta_{CHN,\ 2018}$	0.0152	(0.232)	$\delta_{HKG,\ 2018}$	−1.576	(0.334)	$\delta_{IDN,\ 2018}$	−0.473	(0.183)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{IND,\ 2007}$	0.276	(0.182)	$\delta_{JPN,\ 2007}$	0.356	(0.147)	$\delta_{KHM,\ 2007}$	−1.599	(0.406)
$\delta_{IND,\ 2018}$	−0.430	(0.418)	$\delta_{JPN,\ 2018}$	0.181	(0.269)	$\delta_{KHM,\ 2018}$	−0.104	(0.178)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{KOR,\ 2007}$	−0.661	(0.151)	$\delta_{LAO,\ 2007}$	0.291	(0.241)	$\delta_{MMR,\ 2007}$	−0.953	(0.322)
$\delta_{KOR,\ 2018}$	−0.634	(0.283)	$\delta_{LAO,\ 2018}$	−1.431	(0.361)	$\delta_{MMR,\ 2018}$	−2.041	(0.349)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{MYS,\ 2007}$	0.614	(0.192)	$\delta_{PHL,\ 2007}$	−0.430	(0.267)	$\delta_{SGP,\ 2007}$	—	—
$\delta_{MYS,\ 2018}$	−0.180	(0.286)	$\delta_{PHL,\ 2018}$	−0.745	(0.305)	$\delta_{SGP,\ 2018}$	—	—
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{THA,\ 2007}$	1.087	(0.253)	$\delta_{TWN,\ 2007}$	−0.522	(0.169)	$\delta_{VNM,\ 2007}$	1.534	(0.215)
$\delta_{THA,\ 2018}$	0.209	(0.485)	$\delta_{TWN,\ 2018}$	−0.138	(0.336)	$\delta_{VNM,\ 2018}$	1.074	(0.255)

(Continues)

(c) Manufacturing

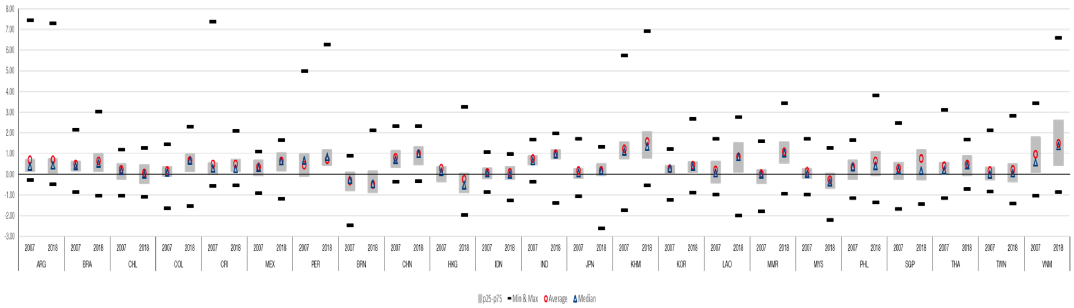
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
γ_{2007}	0.187	(0.032)	$\delta_{ARG,\ 2007}$	0.374	(0.050)	$\delta_{BRA,\ 2007}$	0.0713	(0.043)
γ_{2018}	0.330	(0.077)	$\delta_{ARG,\ 2018}$	0.103	(0.051)	$\delta_{BRA,\ 2018}$	0.111	(0.061)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{CHL,\ 2007}$	0.0746	(0.072)	$\delta_{COL,\ 2007}$	−0.0549	(0.058)	$\delta_{CRI,\ 2007}$	0.0441	(0.086)
$\delta_{CHL,\ 2018}$	−0.0933	(0.091)	$\delta_{COL,\ 2018}$	0.0319	(0.089)	$\delta_{CRI,\ 2018}$	0.299	(0.094)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{MEX,\ 2007}$	0.330	(0.053)	$\delta_{PER,\ 2007}$	0.301	(0.102)	$\delta_{BRN,\ 2007}$	−1.213	(0.214)
$\delta_{MEX,\ 2018}$	0.717	(0.076)	$\delta_{PER,\ 2018}$	0.359	(0.100)	$\delta_{BRN,\ 2018}$	−0.363	(0.206)
Coef.	Point est.	s.e.	Coef.	Point est.	(s.e.	Coef.	Point est.	s.e.
$\delta_{CHN,\ 2007}$	0.885	(0.054)	$\delta_{HKG,\ 2007}$	−0.0615	(0.091)	$\delta_{IDN,\ 2007}$	−0.139	(0.074)
$\delta_{CHN,\ 2018}$	0.878	(0.062)	$\delta_{HKG,\ 2018}$	0.376	(0.143)	$\delta_{IDN,\ 2018}$	−0.213	(0.082)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{IND,\ 2007}$	0.429	(0.051)	$\delta_{JPN,\ 2007}$	−0.0498	(0.038)	$\delta_{KHM,\ 2007}$	0.735	(0.204)
$\delta_{IND,\ 2018}$	0.623	(0.078)	$\delta_{JPN,\ 2018}$	−0.163	(0.064)	$\delta_{KHM,\ 2018}$	0.830	(0.183)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{KOR,\ 2007}$	0.105	(0.039)	$\delta_{LAO,\ 2007}$	0.337	(0.179)	$\delta_{MMR,\ 2007}$	−0.0413	(0.178)
$\delta_{KOR,\ 2018}$	0.0782	(0.046)	$\delta_{LAO,\ 2018}$	0.985	(0.146)	$\delta_{MMR,\ 2018}$	0.444	(0.160)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{MYS,\ 2007}$	−0.153	(0.054)	$\delta_{PHL,\ 2007}$	0.133	(0.118)	$\delta_{SGP,\ 2007}$	−0.324	(0.067)
$\delta_{MYS,\ 2018}$	−0.612	(0.060)	$\delta_{PHL,\ 2018}$	0.0235	(0.111)	$\delta_{SGP,\ 2018}$	−0.201	(0.074)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{THA,\ 2007}$	0.0554	(0.051)	$\delta_{TWN,\ 2007}$	−0.0584	(0.047)	$\delta_{VNM,\ 2007}$	1.200	(0.110)
$\delta_{THA,\ 2018}$	0.0914	(0.060)	$\delta_{TWN,\ 2018}$	−0.378	(0.061)	$\delta_{VNM,\ 2018}$	1.628	(0.141)

(d) Services

Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
γ_{2007}	0.182	(0.011)	$\delta_{ARG,\ 2007}$	0.00104	(0.034)	$\delta_{BRA,\ 2007}$	0.111	(0.031)
γ_{2018}	0.276	(0.052)	$\delta_{ARG,\ 2018}$	−0.123	(0.048)	$\delta_{BRA,\ 2018}$	0.256	(0.041)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{CHL,\ 2007}$	0.0573	(0.044)	$\delta_{COL,\ 2007}$	−0.297	(0.041)	$\delta_{CRI,\ 2007}$	0.0200	(0.052)
$\delta_{CHL,\ 2018}$	−0.338	(0.051)	$\delta_{COL,\ 2018}$	0.0348	(0.049)	$\delta_{CRI,\ 2018}$	0.00751	(0.054)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{MEX,\ 2007}$	−0.0301	(0.029)	$\delta_{PER,\ 2007}$	0.274	(0.049)	$\delta_{BRN,\ 2007}$	−0.393	(0.077)
$\delta_{MEX,\ 2018}$	0.130	(0.055)	$\delta_{PER,\ 2018}$	0.262	(0.077)	$\delta_{BRN,\ 2018}$	−0.695	(0.087)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{CHN,\ 2007}$	0.384	(0.053)	$\delta_{HKG,\ 2007}$	−0.219	(0.047)	$\delta_{IDN,\ 2007}$	−0.287	(0.046)
$\delta_{CHN,\ 2018}$	0.435	(0.065)	$\delta_{HKG,\ 2018}$	−0.598	(0.082)	$\delta_{IDN,\ 2018}$	−0.360	(0.055)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{IND,\ 2007}$	0.653	(0.059)	$\delta_{JPN,\ 2007}$	−0.203	(0.040)	$\delta_{KHM,\ 2007}$	0.928	(0.115)
$\delta_{IND,\ 2018}$	0.793	(0.070)	$\delta_{JPN,\ 2018}$	−0.382	(0.049)	$\delta_{KHM,\ 2018}$	0.842	(0.105)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{KOR,\ 2007}$	0.127	(0.025)	$\delta_{LAO,\ 2007}$	−0.221	(0.107)	$\delta_{MMR,\ 2007}$	0.0330	(0.088)
$\delta_{KOR,\ 2018}$	−0.0325	(0.049)	$\delta_{LAO,\ 2018}$	0.200	(0.115)	$\delta_{MMR,\ 2018}$	0.985	(0.081)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{MYS,\ 2007}$	−0.246	(0.039)	$\delta_{PHL,\ 2007}$	−0.00829	(0.062)	$\delta_{SGP,\ 2007}$	0.306	(0.048)
$\delta_{MYS,\ 2018}$	−0.667	(0.049)	$\delta_{PHL,\ 2018}$	0.194	(0.060)	$\delta_{SGP,\ 2018}$	0.614	(0.041)
Coef.	Point est.	s.e.	Coef.	Point est.	s.e.	Coef.	Point est.	s.e.
$\delta_{THA,\ 2007}$	−0.0982	(0.034)	$\delta_{TWN,\ 2007}$	0.0459	(0.063)	$\delta_{VNM,\ 2007}$	0.322	(0.079)
$\delta_{THA,\ 2018}$	−0.146	(0.049)	$\delta_{TWN,\ 2018}$	0.0598	(0.057)	$\delta_{VNM,\ 2018}$	0.508	(0.074)

Note: The table reports point estimates and standard errors obtained from Equation (1), where $k = \{$“agriculture”; “mining”; “manufacturing”; “services”$\}$ bilateral trade.

TABLE A5 | Comparing the increase in trade globalization within Asia and Latin America, by industry.



Note: The figure plots estimates obtained from Equation (1), where $k = \{1$: Agriculture, hunting, forestry; 2: Fishing and aquaculture; 3: Mining and quarrying, energy producing products; 4: Mining and quarrying, non-energy producing products; 5: Mining support service activities; 6: Food products, beverages and tobacco; 7: Textiles, wearing apparel, leather and related products; 8: Wood and products of wood and cork; 9: Paper products and printing; 10: Coke and refined petroleum products; 11: Chemical and chemical products; 12: Pharmaceuticals, medicinal chemical and botanical products; 13: Rubber and plastics products; 14: Other non-metallic mineral products; 15: Basic metals; 16: Fabricated metal products; 17: Computer, electronic and optical products; 18: Electrical equipment; 19: Machinery and equipment n.e.c; 20: Motor vehicles, trailers and semi-trailers; 21: Other transport equipment; 22: Manufacturing nec; repair and installation of machinery and equipment; 23: Electricity, gas, steam and air conditioning supply; 24: Water supply; sewerage, waste management and remediation activities; 25: Construction; 26: Wholesale and retail trade; repair of motor vehicles; 27: Land transport and transport via pipelines; 28: Water transport; 29: Air transport; 30: Warehousing and support activities for transportation; 31: Postal and courier activities; 32: Accommodation and food service activities; 33: Publishing, audiovisual and broadcasting activities; 34: Telecommunications; 35: Computer programming, consultancy and information services activities; 36: Financial and insurance activities; 37: Real estate activities; 38: Professional, scientific and technical activities; 39: Administrative and support services activities; 40: Public administration and defense; compulsory social security; 41: Education; 42: Human health and social work activities; 43: Arts, entertainment and recreation; 44: Other service activities; 45: Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use$\}$. Gray bars report the 25th to 75th percentile distribution of point estimates. Black lines report minimum and maximum point estimates. Red dots report the average of point estimates. Blue triangles report the mean of point estimates. "Point estimates" refer to the sum of the point estimates of the coefficients $\hat{\gamma}^k_{2007}$ and $\hat{\delta}^k_{c2007}$ and the sum of the point estimates of the coefficients $\hat{\gamma}^k_{2018}$ and $\hat{\delta}^k_{c2018}$. The former identifies—for each country c—the ease of trading internationally (with respect to trading domestically) in 2007 vis-à-vis the reference year in the estimation (1995). The latter identifies—for each country c—the ease of trading internationally (with respect to trading domestically) in 2018 vis-à-vis the reference year in the estimation (1995). To reduce the time taken by the estimation procedure (which we have to run 45 times), we run regressions using 4-year intervals. Y-axis capped between −3 and +8.

TABLE A6 | Increase in trade globalization, top 5 industries by country, 2018.

	Latin America
ARG	• Water supply; sewerage, waste management, and remediation activities • Computer programming, consultancy, and information services activities • Postal and courier activities • Mining and quarrying, energy producing products • Mining support service activities
BRA	• Mining and quarrying, energy producing products • Construction • Other transport equipment • Computer programming, consultancy and information services activities • Telecommunications
CHL	• Mining and quarrying, energy producing products • Administrative and support services activities • Basic metals • Pharmaceuticals, medicinal chemical and botanical products • Chemical and chemical products
COL	• Administrative and support services activities • Professional, scientific, and technical activities • Computer programming, consultancy, and information services activities • Education • Mining and quarrying, energy producing products
CRI	• Coke and refined petroleum products • Textiles, wearing apparel, leather, and related products • Construction • Computer, electronic, and optical products • Professional, scientific, and technical activities
MEX	• Mining and quarrying, energy producing products • Machinery and equipment n.e.c. • Basic metals • Chemical and chemical products • Manufacturing n.e.c.; repair and installation of machinery and equipment
PER	• Mining support service activities • Electrical equipment • Wood and products of wood and cork • Rubber and plastics products • Other non-metallic mineral products
BRN	• Wood and products of wood and cork • Warehousing and support activities for transportation • Mining and quarrying, energy producing products • Food products, beverages and tobacco • Agriculture, hunting, forestry
CHN	• Pharmaceuticals, medicinal chemical and botanical products • Motor vehicles, trailers and semi-trailers • Electrical equipment • Fishing and aquaculture • Computer, electronic and optical products
HKG	• Coke and refined petroleum products • Other transport equipment • Agriculture, hunting, forestry • Motor vehicles, trailers, and semi-trailers • Fishing and aquaculture
IDN	• Electrical equipment • Mining and quarrying, energy producing products • Motor vehicles, trailers, and semi-trailers • Basic metals • Pharmaceuticals, medicinal chemical and botanical products
IND	• Fishing and aquaculture • Air transport • Water transport • Mining and quarrying, energy producing products • Telecommunications

(Continues)

TABLE A6 | (Continued)

	Latin America
JPN	• Mining and quarrying, non-energy producing products • Administrative and support services activities • Rubber and plastics products • Manufacturing n.e.c.; repair and installation of machinery and equipment • Other transport equipment
KHM	• Water supply; sewerage, waste management and remediation activities • Mining support service activities • Pharmaceuticals, medicinal chemical and botanical products • Accommodation and food service activities • Postal and courier activities
KOR	• Mining and quarrying, energy producing products • Postal and courier activities • Other service activities • Pharmaceuticals, medicinal chemical and botanical products • Administrative and support services activities
LAO	• Wood and products of wood and cork • Motor vehicles, trailers, and semi-trailers • Electrical equipment • Chemical and chemical products • Computer, electronic, and optical products
MMR	• Computer programming, consultancy, and information services activities • Motor vehicles, trailers, and semi-trailers • Professional, scientific and technical activities • Arts, entertainment, and recreation • Real estate activities
MYS	• Mining and quarrying, energy producing products • Coke and refined petroleum products • Water supply; sewerage, waste management, and remediation activities • Basic metals • Other non-metallic mineral products
PHL	• Mining support service activities • Computer programming, consultancy and information services activities • Administrative and support services activities • Professional, scientific and technical activities • Machinery and equipment n.e.c.
SGP	• Coke and refined petroleum products • Computer programming, consultancy and information services activities • Construction • Public administration and defense; compulsory social security • Financial and insurance activities
THA	• Motor vehicles, trailers, and semi-trailers • Electrical equipment • Machinery and equipment n.e.c. • Electricity, gas, steam, and air conditioning supply • Arts, entertainment, and recreation
TWN	• Air transport • Water transport • Warehousing and support activities for transportation • Fishing and aquaculture • Computer programming, consultancy and information services activities
VNM	• Water supply; sewerage, waste management, and remediation activities • Electricity, gas, steam, and air conditioning supply • Textiles, wearing apparel, leather, and related products • Mining and quarrying, non-energy producing products • Motor vehicles, trailers, and semi-trailers

TABLE A7 | Trade policy variables.

Aggregate bilateral trade			
Aggregate bilateral trade—without trade policy variable		Aggregate bilateral trade—with trade policy variable	
γ_{2000}	0.166	γ_{2000}	0.162
	−0.0194		−0.0185
γ_{2005}	0.111	γ_{2005}	0.104
	−0.0104		−0.0139
γ_{2010}	0.0982	γ_{2010}	0.0918
	−0.0346		−0.0369
γ_{2015}	0.15	γ_{2015}	0.127
	−0.0469		−0.0504
γ_{2018}	0.181	γ_{2018}	0.158
	−0.0537		−0.0577
$\delta_{ASIA,\ 2000}$	−0.0904	$\delta_{ASIA,\ 2000}$	−0.0774
	−0.0515		−0.0369
$\delta_{ASIA,\ 2005}$	0.0823	$\delta_{ASIA,\ 2005}$	0.0164
	−0.0398		−0.0247
$\delta_{ASIA,\ 2010}$	0.144	$\delta_{ASIA,\ 2010}$	0.0697
	−0.078		−0.0649
$\delta_{ASIA,\ 2015}$	0.0924	$\delta_{ASIA,\ 2015}$	0.0244
	−0.0971		−0.0815
$\delta_{ASIA,\ 2018}$	0.108	$\delta_{ASIA,\ 2018}$	0.0394
	−0.09		−0.0769
$\delta_{LATAM,\ 2000}$	0.0583	$\delta_{LATAM,\ 2000}$	0.0602
	−0.0363		−0.0314
$\delta_{LATAM,\ 2005}$	0.132	$\delta_{LATAM,\ 2005}$	0.135
	−0.013		−0.0122
$\delta_{LATAM,\ 2010}$	0.261	$\delta_{LATAM,\ 2010}$	0.262
	−0.0253		−0.0279
$\delta_{LATAM,\ 2015}$	0.261	$\delta_{LATAM,\ 2015}$	0.273
	−0.064		−0.0687
$\delta_{LATAM,\ 2018}$	0.311	$\delta_{LATAM,\ 2018}$	0.324
	−0.0696		−0.0749
		WTO_{ijt}	0.216
			−0.111
		FTA_{ijt}	0.0233
			−0.0183

Note: The table reports point estimates and standard errors obtained from Equation (1), where k = aggregate bilateral trade. Results from regressions using consecutive years. We only report 2000, 2005, 2010, 2015, and 2018 coefficients for the sake of simplicity.

TABLE A8 | Trade policy variables.

Bilateral trade by aggregate sector															
Agriculture—without trade policy variable		**Agriculture—with trade policy variable**		**Mining—without trade policy variable**		**Mining—with trade policy variable**		**Manufacturing—without trade policy variable**		**Manufacturing—with trade policy variable**		**Services—without trade policy variable**		**Services—with trade policy variable**	
γ_{2000}	0.18	γ_{2000}	0.173	γ_{2000}	0.251	γ_{2000}	0.267	γ_{2000}	0.198	γ_{2000}	0.193	γ_{2000}	0.176	γ_{2000}	0.174
	−0.0143		−0.0164		−0.0805		−0.0812		−0.0266		−0.026		−0.013		−0.0122
γ_{2005}	0.21	γ_{2005}	0.205	γ_{2005}	0.295	γ_{2005}	0.321	γ_{2005}	0.173	γ_{2005}	0.166	γ_{2005}	0.157	γ_{2005}	0.154
	−0.0267		−0.0326		−0.138		−0.143		−0.0154		−0.0161		−0.00516		−0.00676
γ_{2010}	0.37	γ_{2010}	0.367	γ_{2010}	0.46	γ_{2010}	0.503	γ_{2010}	0.224	γ_{2010}	0.217	γ_{2010}	0.166	γ_{2010}	0.165
	−0.0539		−0.0573		−0.199		−0.208		−0.0466		−0.0471		−0.0314		−0.0326
γ_{2015}	0.413	γ_{2015}	0.383	γ_{2015}	0.56	γ_{2015}	0.616	γ_{2015}	0.293	γ_{2015}	0.272	γ_{2015}	0.266	γ_{2015}	0.254
	−0.0796		−0.0839		−0.112		−0.129		−0.0537		−0.0568		−0.0471		−0.0491
γ_{2018}	0.524	γ_{2018}	0.495	γ_{2018}	0.862	γ_{2018}	0.926	γ_{2018}	0.361	γ_{2018}	0.337	γ_{2018}	0.276	γ_{2018}	0.264
	−0.0923		−0.0956		−0.155		−0.166		−0.0703		−0.0737		−0.0514		−0.0536
$\delta_{ASIA,\ 2000}$	−0.0722	$\delta_{ASIA,\ 2000}$	−0.0517	$\delta_{ASIA,\ 2000}$	0.283	$\delta_{ASIA,\ 2000}$	0.266	$\delta_{ASIA,\ 2000}$	−0.0457	$\delta_{ASIA,\ 2000}$	−0.0295	$\delta_{ASIA,\ 2000}$	−0.159	$\delta_{ASIA,\ 2000}$	−0.152
	−0.0487		−0.0285		−0.11		−0.114		−0.0656		−0.0518		−0.0254		−0.0194
$\delta_{ASIA,\ 2005}$	−0.0336	$\delta_{ASIA,\ 2005}$	−0.151	$\delta_{ASIA,\ 2005}$	0.722	$\delta_{ASIA,\ 2005}$	0.761	$\delta_{ASIA,\ 2005}$	0.134	$\delta_{ASIA,\ 2005}$	0.0641	$\delta_{ASIA,\ 2005}$	−0.0425	$\delta_{ASIA,\ 2005}$	−0.0799
	−0.0469		−0.0654		−0.147		−0.149		−0.0597		−0.0342		−0.0186		−0.0252
$\delta_{ASIA,\ 2010}$	0.141	$\delta_{ASIA,\ 2010}$	−0.00205	$\delta_{ASIA,\ 2010}$	0.286	$\delta_{ASIA,\ 2010}$	0.351	$\delta_{ASIA,\ 2010}$	0.127	$\delta_{ASIA,\ 2010}$	0.0458	$\delta_{ASIA,\ 2010}$	−0.0121	$\delta_{ASIA,\ 2010}$	−0.0525
	−0.129		−0.133		−0.192		−0.207		−0.0855		−0.0658		−0.0702		−0.0749
$\delta_{ASIA,\ 2015}$	−0.000495	$\delta_{ASIA,\ 2015}$	−0.136	$\delta_{ASIA,\ 2015}$	−0.111	$\delta_{ASIA,\ 2015}$	−0.0486	$\delta_{ASIA,\ 2015}$	0.0844	$\delta_{ASIA,\ 2015}$	0.0053	$\delta_{ASIA,\ 2015}$	−0.0321	$\delta_{ASIA,\ 2015}$	−0.0674
	−0.14		−0.145		−0.132		−0.14		−0.105		−0.0862		−0.0968		−0.0928
$\delta_{ASIA,\ 2018}$	−0.0371	$\delta_{ASIA,\ 2018}$	−0.173	$\delta_{ASIA,\ 2018}$	−0.427	$\delta_{ASIA,\ 2018}$	−0.345	$\delta_{ASIA,\ 2018}$	0.0922	$\delta_{ASIA,\ 2018}$	0.0107	$\delta_{ASIA,\ 2018}$	−0.0446	$\delta_{ASIA,\ 2018}$	−0.0798
	−0.137		−0.146		−0.159		−0.159		−0.108		−0.0875		−0.0892		−0.0919
$\delta_{LATAM,\ 2000}$	0.116	$\delta_{LATAM,\ 2000}$	0.121	$\delta_{LATAM,\ 2000}$	0.126	$\delta_{LATAM,\ 2000}$	0.134	$\delta_{LATAM,\ 2000}$	0.0742	$\delta_{LATAM,\ 2000}$	0.0766	$\delta_{LATAM,\ 2000}$	0.0261	$\delta_{LATAM,\ 2000}$	0.0276
	−0.0615		−0.0626		−0.0815		−0.0799		−0.0218		−0.0212		−0.0194		−0.0194
$\delta_{LATAM,\ 2005}$	0.105	$\delta_{LATAM,\ 2005}$	0.109	$\delta_{LATAM,\ 2005}$	0.36	$\delta_{LATAM,\ 2005}$	0.376	$\delta_{LATAM,\ 2005}$	0.161	$\delta_{LATAM,\ 2005}$	0.16	$\delta_{LATAM,\ 2005}$	0.0298	$\delta_{LATAM,\ 2005}$	0.0323
	−0.0836		−0.085		−0.15		−0.148		−0.0194		−0.017		−0.00986		−0.0106
$\delta_{LATAM,\ 2010}$	0.0401	$\delta_{LATAM,\ 2010}$	0.0451	$\delta_{LATAM,\ 2010}$	0.459	$\delta_{LATAM,\ 2010}$	0.478	$\delta_{LATAM,\ 2010}$	0.294	$\delta_{LATAM,\ 2010}$	0.292	$\delta_{LATAM,\ 2010}$	0.089	$\delta_{LATAM,\ 2010}$	0.0911
	−0.0921		−0.0916		−0.148		−0.149		−0.0392		−0.0411		−0.0533		−0.0541
$\delta_{LATAM,\ 2015}$	0.0968	$\delta_{LATAM,\ 2015}$	0.123	$\delta_{LATAM,\ 2015}$	0.26	$\delta_{LATAM,\ 2015}$	0.271	$\delta_{LATAM,\ 2015}$	0.374	$\delta_{LATAM,\ 2015}$	0.38	$\delta_{LATAM,\ 2015}$	0.0719	$\delta_{LATAM,\ 2015}$	0.082
	−0.0972		−0.0989		−0.0867		−0.0936		−0.11		−0.113		−0.059		−0.0606
$\delta_{LATAM,\ 2018}$	0.109	$\delta_{LATAM,\ 2018}$	0.135	$\delta_{LATAM,\ 2018}$	0.31	$\delta_{LATAM,\ 2018}$	0.31	$\delta_{LATAM,\ 2018}$	0.407	$\delta_{LATAM,\ 2018}$	0.416	$\delta_{LATAM,\ 2018}$	0.11	$\delta_{LATAM,\ 2018}$	0.12
	−0.115		−0.117		−0.153		−0.164		−0.124		−0.128		−0.0489		−0.0505
		WTO_{ijt}	0.304			WTO_{ijt}	−0.152			WTO_{ijt}	0.205			WTO_{ijt}	0.162
			−0.129				−0.115				−0.15				−0.0714
		FTA_{ijt}	−0.00960			FTA_{ijt}	−0.238			FTA_{ijt}	0.0663			FTA_{ijt}	−0.00560
			−0.0539				−0.0926				−0.0213				−0.0274

Note: The table reports point estimates and standard errors obtained from Equation (1), where k = {agriculture; mining; manufacturing; services} bilateral trade. Results from regressions using consecutive years. We only report 2000, 2005, 2010, 2015, and 2018 coefficients for the sake of simplicity.

Appendix B

Felbermayr, Gröschl, and Heiland (2022) show that, under the assumption that trade deficits are proportional to country income, the changes of endogenous variables in response to a change in trade costs is determined by the following system of equations. We use the usual exact algebra notation, so that $\hat{x} = x'/x$, where x is the value of a variable in a baseline equilibrium and x' is the value of a variable in an alternate counterfactual equilibrium.

$$\hat{c}_n^j = \hat{w}_n^{\beta_n^j} \left(\prod_{i=1}^{N} \left(\hat{p}_n^j \right)^{\gamma_n^{kj}} \right)^{1-\beta_n^j}$$

$$\hat{p}_n^j = \left(\sum_{i=1}^{N} \pi_{in}^j \left(\hat{\kappa}_{in}^j \hat{c}_i^j \right)^{-1/\theta_j} \right)^{-\theta_j}$$

$$\hat{\pi}_{in}^j = \left(\hat{\kappa}_{in}^j \hat{c}_i^j / \hat{p}_n^j \right)^{-1/\theta_j}$$

$$X_n^{j\prime} = \sum_{j=1}^{J} \gamma_n^{jk} \left(1 - \beta_n^k \right) \left(\sum_{i=1}^{N} \frac{\pi_{ni}^{k\prime}}{1 + \tau_{ni}^{k\prime}} X_n^{k\prime} \right) + \alpha_n^j I_n'$$

$$\sum_{j=1}^{J} F_n^{j\prime} X_n^{j\prime} - T_n = \sum_{j=1}^{J} \sum_{i=1}^{N} \frac{\pi_{ni}^{j\prime}}{1 + \tau_{ni}^{j\prime}} X_n^{j\prime}$$

$$I_n' = \hat{w}_n w_n L_n + \sum_{j=1}^{J} X_n^{j'} \left(1 - F_n^{j'} \right) + T_n'$$

$$F_n^j \equiv \sum_{i=1}^{N} \frac{\pi_{in}^j}{1 + \tau_{in}^j}$$

$$T_n' = t_n' \left(\hat{w}_n w_n L_n + \sum_{j=1}^{J} X_n^{j'} \left(1 - F_n^{j'} \right) \right)$$