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**From agreements to markets: trade integration and agricultural export
dynamics in Latin America**

Raphael Gomes da Silva
Doctor Scientiae

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RAPHAEL GOMES DA SILVA

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Thesis submitted to the Applied
Economics Graduate Program of the
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fulfillment of the requirements for the
degree of *Doctor Scientiae*.

Adviser: Fernanda Aparecida Silva

Co-adviser: Lia Nogueira Rodriguez

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To everyone who walked this journey with me and never let me carry it alone.

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ABSTRACT

SILVA, Raphael Gomes da, D.Sc., Universidade Federal de Viçosa, July, 2026. **From agreements to markets: trade integration and agricultural export dynamics in Latin America.** Adviser: Fernanda Aparecida Silva. Co-adviser: Lia Nogueira Rodriguez.

This thesis examines trade agreements as a policy tool in Latin America and addresses two complementary questions about their effectiveness. Since the 1990s, regional trade agreements have proliferated dramatically as countries turned away from stalled multilateral negotiations, and these agreements have evolved substantially in scope, moving beyond tariff reductions to incorporate provisions on investment, services, environmental standards, labor regulations, and other areas that can influence trade, directly or indirectly. As these agreements have become widely used and vary substantially in scale, scope, and coverage, important questions arise about whether their content matters for their success and whether the heterogeneity across agreements translates into different impacts on trade. This dissertation addresses these questions through two complementary papers focused on Latin America.

The first paper asks whether agreement design matters, specifically whether the depth and modernization of negotiated provisions shape their impact on trade. We develop the Depth Index of Trade Agreements (DITA), a new multidimensional measure of agreement depth, constructed via factor analysis with endogenous provision weights, applied to 681 agreements from 1970 to 2019. Our results show that the Pacific Alliance and Central America lag one decade behind North American standards, while South America and the Caribbean lag by two to three decades. Our gravity model estimates confirm that agreement design matters for trade creation: deeper agreements generate substantially larger trade effects, with high-depth agreements producing trade increases of up to 82.6\% in the long run within the Americas, compared to insignificant effects for low-depth agreements.

The second paper examines whether regionalism worked in South America, assessing the success of Mercosur and its first wave of agreements with Chile (1996), Bolivia (1997), Peru (2005), and Colombia and Ecuador (2005) in promoting agricultural trade and export diversification in South America. We employ a structural gravity model that incorporates the actual liberalization schedules for each agreement and decomposes trade growth into its intensive and extensive margin

components, allowing us to identify not only whether these agreements generated trade but also when and through which margin. Mercosur itself produced strong and persistent trade effects across all phases of liberalization, while the associated agreements show more limited and phase-dependent results: Colombia and Ecuador generated positive agricultural trade effects concentrated in specific liberalization stages, whereas Chile, Bolivia, and Peru show little evidence of trade creation. Export diversification occurred across all agreements, with the share of previously undertraded products rising substantially, though trade growth came primarily through the intensive margin, with the only clear exception being Mercosur–Bolivia.

Together, the two papers suggest that trade agreements are a more conditional policy tool than often assumed. Their effectiveness depends on both the depth of their commitments and the structural conditions of the partner economies. For Latin America, where heterogeneity in trade policy approaches is substantial, these findings underscore the need to reassess how agreements are designed and what they are expected to achieve.

Keywords: trade agreements; gravity model; Mercosur; agricultural trade; international trade.

RESUMO

SILVA, Raphael Gomes da, D.Sc., Universidade Federal de Viçosa, julho de 2026.
De acordos aos mercados: Integração comercial e dinâmica das exportações agrícolas na América Latina. Orientadora: Fernanda Aparecida Silva.
Coorientadora: Lia Nogueira Rodriguez.

Esta tese examina os acordos comerciais como instrumento de política pública na América Latina e aborda duas questões complementares sobre sua efetividade. Desde a década de 1990, os acordos comerciais proliferaram drasticamente à medida que os países se afastaram das negociações multilaterais estagnadas, e esses acordos evoluíram substancialmente em escopo, avançando além das reduções tarifárias para incorporar provisões sobre investimento, serviços, padrões ambientais, regulamentações trabalhistas e outras áreas que podem influenciar o comércio, direta ou indiretamente. À medida que esses acordos se tornam amplamente utilizados e variam substancialmente em escala, escopo e abrangência, surgem questões importantes sobre se o conteúdo dos acordos importa para o sucesso deles e se a heterogeneidade entre os acordos se traduz em impactos distintos sobre o comércio. Esta tese aborda essas questões por meio de dois artigos complementares, ambos focados na América Latina.

O primeiro artigo pergunta se o desenho institucional dos acordos comerciais importa, especificamente se a profundidade e a modernização das provisões negociadas moldam o impacto desses acordos sobre o comércio. Desenvolvemos o Depth Index of Trade Agreements (DITA), uma nova medida multidimensional de profundidade dos acordos, construída por meio de análise fatorial, com pesos endógenos atribuídos às provisões, e aplicada a 681 acordos entre 1970 e 2019. Nossos resultados mostram que a Aliança do Pacífico e a América Central estão uma década atrás dos padrões norte-americanos, enquanto a América do Sul e o Caribe estão de duas a três décadas atrás. Nossas estimativas do modelo gravitacional confirmam que o desenho institucional dos acordos importa para a criação de comércio: acordos mais profundos geram efeitos comerciais substancialmente maiores, com acordos de alta profundidade produzindo aumentos no comércio de até 82,6% no longo prazo nas Américas, em comparação com efeitos não significativos para acordos de baixa profundidade.

O segundo artigo examina se o regionalismo funcionou na América do Sul, avaliando o sucesso do Mercosul e de sua primeira onda de acordos com

Chile (1996), Bolívia (1997), Peru (2005) e Colômbia e Equador (2005) na promoção do comércio agrícola e da diversificação das exportações na região. Empregamos um modelo gravitacional que incorpora os cronogramas de liberalização de cada acordo e decompõe o crescimento do comércio em componentes de margem intensiva e extensiva, permitindo identificar não apenas se esses acordos geraram comércio, mas também quando estes efeitos foram gerados e por meio de qual margem. O Mercosul, por si só, produziu efeitos comerciais fortes e persistentes em todas as fases de liberalização, enquanto os acordos do bloco apresentam resultados mais limitados e dependentes da fase: Colômbia e Equador geraram efeitos positivos sobre o comércio agrícola concentrados em estágios específicos de liberalização, enquanto Chile, Bolívia e Peru mostram pouca evidência de criação de comércio. A diversificação das exportações ocorreu em todos os acordos, com a participação de produtos anteriormente pouco comercializados aumentando substancialmente, embora o crescimento do comércio tenha ocorrido principalmente pela margem intensiva, com a única exceção clara sendo o Mercosul–Bolívia.

Em conjunto, os dois artigos sugerem que os acordos comerciais são um instrumento de política mais condicional do que se costuma assumir. Sua efetividade depende tanto da profundidade dos compromissos acordados quanto das condições estruturais das economias parceiras. Para a América Latina, onde a heterogeneidade nas abordagens de política comercial é substancial, esses resultados reforçam a necessidade de reavaliar como os acordos são negociados e o que se espera que eles alcancem.

Palavras-chave: acordos comerciais; modelo gravitacional; Mercosul; comércio agrícola; comércio internacional

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Chapter 1

Introduction

Since the 1990s, regional trade agreements¹ have become the dominant form of trade policy, proliferating dramatically as countries turned away from stalled multilateral negotiations under the World Trade Organization (WTO). These agreements have the advantage of involving fewer countries, making it easier to reach consensus on sensitive trade barriers that could not advance under the broader General Agreement on Tariffs and Trade (GATT) and WTO negotiating rounds. As frustration over failures in negotiations on topics such as agriculture in the GATT rounds grew, the shift toward this type of agreement intensified (Grant and Lambert, 2008). The numbers reflect this shift: in 1980, only 12 regional trade agreements were in force and notified to the WTO. By 2000, that number had jumped to 83, and by 2026 it had reached 383 (World Trade Organization, 2025a), making regional agreements one of the primary tools through which countries reduce trade barriers among their trading partners.

Beyond their proliferation, regional agreements offer a distinct advantage over multilateral negotiations: the potential for deeper integration (Baier and Bergstrand, 2007; Grant and Lambert, 2008). The key to this deeper integration lies in the capacity of agreements to address domestic policies, not only the tariff barriers targeted in earlier liberalization rounds. Lawrence (1996) made a useful distinction between *international* policies, such as tariffs and quotas, and *domestic* ones, which regulate conditions inside each country's borders, such as competition rules, antitrust regulations, and product standards. Successive GATT rounds were remarkably successful at reducing the former, but domestic policies were largely treated as matters of national sovereignty, leaving each country free to maintain its own regulatory framework. Once tariffs were reduced or eliminated, the remaining barriers were regulatory differences across countries (Lawrence, 1996; Baier and Bergstrand, 2007).

These agreements offer a way to address this gap. Because they bring together fewer countries than multilateral negotiations, reaching consensus on sensitive domestic policies becomes easier, and countries can align their regulatory frameworks in mutually beneficial ways. Regional agreements can thus achieve deeper integration than multilateral rounds could, by incorporating domestic policy provisions alongside traditional tariff reductions and addressing the regulatory conditions of member countries.

The evolution was gradual, with agreements shifting from an initial focus on tariff barriers to provisions regarding domestic policies. This change occurred because, as multilateral negotiations reduced tariff barriers, countries began to concentrate on non-tariff barriers (Grant and Lambert, 2008). Measures such as Sanitary and Phytosanitary Standards (SPS), Technical Barriers to Trade (TBT), anti-dumping rules, rules of origin, and customs facilitation began

¹Throughout this dissertation, we use the terms “trade agreement” and “regional trade agreement” interchangeably. The World Trade Organization defines regional trade agreements as any reciprocal trade agreement between two or more partners, not necessarily belonging to the same region (World Trade Organization, 2025b), so the literature tends to treat them as equivalent.

to appear more frequently. As these regulatory provisions became more common, agreements evolved to include newer, more sensitive areas not always directly related to trade, such as environmental standards, labor regulations, and migration, which can nonetheless affect trade indirectly. Trade agreements have thus progressively broadened in scope to encompass any provision that countries recognize as capable of influencing trade, whether directly or indirectly.

As these agreements have become widely used and vary substantially in scale, scope, and coverage, important questions arise about their effects on trade. Are they actually able to increase trade? Does their content matter for their success? Does this heterogeneity translate into different impacts on trade? These are central questions that must be addressed not only to assess the effectiveness of these agreements but also to evaluate how their evolution as a policy tool shapes countries' incentives to continue using them.

This dissertation contributes to the literature on trade agreements in two ways. First, we address the importance of trade agreement design, assessing how the content of provisions negotiated shapes their outcomes, while also evaluating the impact of different types of agreements on trade. Second, we address the use of trade agreements as a tool to boost regionalism, assessing the success of Mercosur and its first wave of regional integration. These contributions are developed across two full papers that together address the questions raised above from complementary angles: one by measuring what agreements contain and whether deeper content generates more trade, and the other by tracing the actual trade consequences of a major integration effort and its bilateral extensions across the region.

Chapter 2 addresses the importance of trade agreement design by evaluating the modernization of agreements among countries in the Americas. We develop a new methodology to measure the depth of trade agreements, using the Design of Trade Agreements (DESTA) dataset and multivariate factor analysis to construct an aggregate multidimensional index. Our goal is to examine and understand the heterogeneity across Latin American agreements and compare them with those of Canada and the United States, the countries that set the pace of modernization in the region, to assess whether Latin American countries are keeping pace with the modernization of trade agreement provisions.

Chapter 3 assesses the trade effects of regionalism by evaluating the impact of Mercosur, the largest trade bloc in South America, and its first agreements with neighboring countries that became associated members. We examine whether this first wave of regional liberalization was successful in increasing trade and investigate the potential for export diversification these agreements may have generated. Our goal is to understand whether Mercosur's directive to integrate the South was successful, at least within the region, in its early years.

The design of trade agreements has important consequences for their effectiveness as policy tools. The inclusion of new provisions reflects a natural evolution, as countries progressively recognize new issues that can influence trade, whether directly or indirectly, and incorporate them into their negotiations. Countries that fail to keep pace with this modernization are not only falling behind in the content of their agreements, but also stepping out of the broader

discussion of how to address these emerging trade issues. If modern agreements are indeed addressing potential barriers to trade, their impact on trade flows should be greater than that of shallower agreements. Consequently, countries that are unable to modernize the provisions they negotiate are limiting the effectiveness of trade agreements as a policy tool, reducing or even eliminating their potential impact on trade.

The effects of trade agreements on trade can manifest through two margins. The intensive margin, the increase in trade of previously traded goods, is the main expected effect of any agreement. But agreements also carry potential through the extensive margin, as countries can explore the lower barriers and closer relationships that agreements create to export products in sectors that were previously undertraded or not traded at all. In the case of Mercosur and its associated members, where countries share close regional ties, this potential is particularly relevant. If these agreements were successful in opening new trade corridors, they could serve as a tool for countries to strengthen previously marginal sectors, which could develop into significant export industries over time.

The remainder of this dissertation is organized as follows. Chapter 2 presents the first paper, examining the design of trade agreements and the modernization of provisions negotiated by countries in the Americas. Chapter 3 presents the second paper, assessing the trade effects of Mercosur and its first wave of regional liberalization. Chapter 4 concludes with a general discussion of the findings and their implications.

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Chapter 2

Keeping Pace or Falling Behind? The Depth of Latin American Trade Agreements

Raphael Gomes da Silva, Fernanda Aparecida Silva, and Lia Nogueira

This article examines whether Latin American countries are keeping pace with global trends in the depth of trade agreements or falling behind. Using 681 agreements (1970-2019), we develop the Depth Index of Trade Agreements (DITA) to weight provisions endogenously through factor analysis based on co-occurrence patterns. Results show that the Pacific Alliance and Central America lag one decade behind North American standards, whereas South America and the Caribbean lag by two to three decades. Our gravity model estimates confirm that agreement design matters for trade creation: deeper agreements generate substantially larger trade effects than shallow ones, with high-depth agreements increasing trade by up to 82.6% in the long run within the Americas, compared to insignificant effects for low-depth agreements. These findings suggest that regional lag reflects policy choices rather than inherent constraints, and that the cost of falling behind extends beyond the content of agreements to the effectiveness of those agreements as a trade policy tool.

Keywords: Trade agreements, Latin America, agreement depth, North-South trade, international integration

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2.1 Introduction

Modern trade agreements have evolved far beyond tariffs to include investments, services, digital commerce, environmental standards, and labor regulations (Mattoo, Rocha, and Ruta, 2020). These new provisions dictate who gains market access to competitive markets and influence how exporters adapt to emerging challenges. Countries that fall behind² may face barriers that hinder their exports and competitiveness, while those that keep up enjoy preferential access and gain earlier opportunities to adapt to the rapid changes in the global market.

Trade agreements increasingly incorporate these new provisions in their negotiations, with the level of commitment varying between partners. We define the depth of trade agreements as the extent of integration between parties, measured by the number of provisions negotiated,

²Throughout this article, “falling behind” refers to measurable differences in the depth and scope of provisions that countries negotiate in their trade agreements. These differences emerge from strategic decisions: who to negotiate with, which sectors to prioritize, and how far to extend commitments. They do not reflect structural limitations or incapacity at any institutional level. As we document, countries within Latin America vary substantially in their negotiation trajectories, which is itself evidence that deeper integration is an achievable outcome for the region.

where specific provisions are weighted more heavily than general ones to reflect their greater binding commitment. Agreements with more provisions are considered deeper because they require greater commitment and integration between partners. This depth reflects not only the breadth of the policy areas covered but also the willingness of countries to coordinate policies and harmonize standards.³

These new trade issues are particularly significant for Latin American countries, given their export-dependent economies. As developing nations, they often have limited bargaining power and adopt different trade policy approaches that determine which countries to partner with and which sectors to protect. Understanding how these countries negotiate modern trade provisions is therefore critical for their long-term competitiveness and development.

This article addresses two questions: Are Latin American trade agreements becoming deeper over time and are these countries keeping pace with global trends in trade provisions? These questions are particularly important given the region's significant diversity in trade policy approaches. Trade blocs, such as the United States-Mexico-Canada Agreement (USMCA), the Caribbean Community (CARICOM), and Mercosur, have different objectives, rules, and commitments among their member countries.⁴ Beyond these blocs, countries like Chile, Colombia, Peru, and most Central American nations follow distinct policies from the rest of the region. Understanding the negotiation patterns of these countries reveals how they adapt to new trade barriers and maintain access to key export markets.

This article contributes to the literature through three key innovations. First, no previous study has systematically analyzed the provisions of trade agreements for Latin America as a region. Previous research has examined the effects of specific provisions on trade flows (Lejarraga, 2014; Neufeld, 2014), or focused on particular types of provisions: investment (Leshner and Miroudot, 2006; Chornyi, Nerushay, and Crawford, 2016; Miroudot and Rigo, 2021), environmental standards (George and Yamaguchi, 2018; Berger et al., 2020; Brandi et al., 2020), labor regulations (Postnikov and Bastiaens, 2014; Raess, Dür, and Sari, 2018; Raess and Sari, 2018), and digital commerce (Monteiro and Teh, 2017; Burri and Polanco, 2020). By examining the full range of provisions across an entire region, we can compare how countries negotiate relative to their neighbors and identify regional patterns that provision-specific studies cannot capture.

³We acknowledge that breadth and depth are difficult to fully separate in practice, and that our measure captures both dimensions simultaneously. Our definition of depth based on the count of provisions is consistent with the literature, including the DESTA project (Dür, Baccini, and Elsig, 2014) and Mattio, Rocha, and Ruta (2020), which similarly measures depth through provision counts. We go a step further by using factor analysis, which allows the data to reveal the latent structure of integration rather than treating all provisions equally. A full description of our methodology is provided in the Methodology section.

⁴The United States-Mexico-Canada Agreement (USMCA) replaced the North American Free Trade Agreement (NAFTA) following its renegotiation in 2017. The Caribbean Community (CARICOM) is an economic bloc comprising fifteen countries from the Caribbean, Central, and South America: Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago. Mercosur is an economic bloc in South America founded by Argentina, Brazil, Paraguay, and Uruguay in 1991. Venezuela joined in 2012, and Bolivia in 2024.

Second, we develop a new methodology to measure the depth of agreements. Existing approaches, particularly the Design of Trade Agreements (DESTA) database ([Dür, Baccini, and Elsig, 2014](#)), offer two depth measures: a simple additive index covering only 7 broad policy areas, and a latent trait analysis using the Rasch model. While the Rasch model accounts for the fact that provisions differ in importance, it is specifically designed for binary data, which introduces a binding methodological constraint. Because the Rasch model can only capture one dimension of integration, its construction requires researchers to select a limited number of provisions theoretically expected to directly influence trade. We address both limitations by coding provisions as coverage ratios, measuring the share of liberalization achieved within each policy domain relative to the maximum observed in the dataset. This allows us to apply standard factor analysis to the full range of provisions without imposing a unidimensional structure. Rather than imposing a theoretical structure, we let the data determine both the number of dimensions and the weight of each provision.

Third, we document substantial heterogeneity in how Latin American sub-regions have evolved relative to global trends. We identify which provisions matter most for regional integration and document patterns consistent with North-South spillover effects into South-South agreements. Specifically, our results show that Central American countries lag approximately one decade behind North America in agreement depth, whereas Pacific Alliance countries (Chile, Colombia, and Peru) maintain pace with developed-country standards. Other South American countries, however, remain approximately three decades behind.

We use the Design of Trade Agreements (DESTA) database, restricting our analysis to the period from 1970 to 2019. This period encompasses most of the main trade agreements formed by the Latin American countries. We define depth as the level of integration between parties, measured by the number of provisions negotiated beyond tariffs. The more provisions an agreement includes, the deeper the integration it represents. To measure depth, we construct the Depth Index of Trade Agreements (DITA) using factor analysis. Our methodology enables endogenous determination of weights based on the frequency with which different provisions are negotiated together. This approach avoids arbitrarily penalizing or favoring specific areas and instead reveals which provisions are most strongly associated with deeper integration.

We analyze depth over time and across countries, comparing how agreements have evolved and how individual Latin American countries perform relative to regional and global benchmarks. This analysis allows us to identify which countries are keeping pace with international trends and which are falling behind. We find that Latin American trade agreements are indeed becoming deeper over time, but progress varies dramatically by sub-region. Using North America as our benchmark, the only region in the Americas with developed countries (Canada and the United States), we observe distinct patterns. Consistent with the findings by [Mattoo, Rocha, and Ruta \(2020\)](#) that developed countries lead the deepening of trade agreements, Canada and the United States maintain the deepest agreements in the region. Mexico, along with Caribbean and Central American countries, follows this North American trend approximately one decade

behind. The Pacific Alliance countries (Chile, Colombia, Peru) keep pace with North American standards, although with a slight lag. In contrast, other South American countries lag significantly, approximately two to three decades behind North American standards in agreement depth.

These patterns suggest spillover effects, whereby countries that engage with North-South agreements tend to negotiate deeper South-South agreements subsequently. Countries with only South-South agreements show the largest lag, suggesting that trade policy choices, particularly the decision to engage with developed country partners, have long-term consequences for the pace at which countries adopt modern trade provisions and deepen their economic integration.

2.2 Theoretical Foundations

Understanding why countries pursue deeper trade agreements requires examining the underlying political economy mechanisms. [Maggi and Rodríguez-Clare \(1998\)](#) and [Maggi and Rodríguez-Clare \(2007\)](#) provide a theoretical framework that places domestic politics at the center of trade agreement negotiations. Their model shows that trade agreements serve as commitment devices that constrain governments' ability to grant protection to import-competing sectors. By binding themselves through international agreements, governments can prevent domestic lobbies from distorting capital allocation in anticipation of future protection.

When deciding whether to enter a trade agreement, governments face two types of inefficiencies: a terms-of-trade externality and a domestic commitment problem. The terms-of-trade externality arises when countries attempt to manipulate international prices in favor of their domestic economy by reducing the relative price of imported goods through unilateral trade policy. The domestic commitment problem emerges from the interaction between governments and domestic interest groups. Import-competing sectors form lobbies that compensate governments for maintaining trade policies that protect their markets. Because governments extract rents from this political process, they face a trade-off: adopting free trade would eliminate protection and thus reduce political contributions from protected sectors. At first glance, this dynamic suggests that governments should prefer the political equilibrium with domestic lobbies over free trade, given the compensation they receive.

However, this reasoning breaks down when capital mobility between sectors is taken into account. If investors anticipate that a sector will receive protection, they allocate capital to that sector before lobbies form. Once capital is sunk and sector-specific, lobbies emerge and compensate the government for the protection they receive. The problem is that capital allocation decisions are based on expected protection rather than comparative advantage, leading to inefficient resource allocation. Trade agreements address this domestic commitment problem by constraining the government's ability to provide ex-post protection, thereby preventing the ex-ante capital misallocation.

The government's objective function captures this trade-off:

$$(2.1) \quad U^G = aW + C,$$

where W represents national welfare and C represents political contributions from lobbies. The parameter a reflects the government's weight on welfare relative to political contributions; when a is lower, politics are more important in government decisions. National welfare W is a function of capital allocated to the import-competing sector, tariff levels, consumer surplus, and terms of trade. Political contributions C represent the compensation provided by the import-competing lobby. The lobby's objective is to maximize total returns to capital net of contributions, $U^L = px - C$, where px represents returns to capital in the import-competing sector. See [Maggi and Rodríguez-Clare \(2007\)](#) for complete derivations.

The model proceeds in three stages. First, governments negotiate an agreement that maximizes the joint objective of both governments and both lobbies. This specification reflects the influence of both lobbies and governments on the formation of agreements. Second, capital reallocates across sectors if mobility is possible, with investors choosing whether to remain in the import-competing sector given the protection granted under the new agreement. Finally, given the capital allocation and the constraints imposed by the agreement, each government-lobby pair chooses a tariff.⁵

The model generates two key predictions about the determinants of agreement depth. First, [Maggi and Rodríguez-Clare \(2007\)](#) show that trade liberalization is deeper when capital is more mobile across sectors, $z \in [0, 1]$, where $z = 0$ represents capital fully fixed in the import-competing sector and $z = 1$ represents perfect capital mobility. When capital can easily exit protected sectors, lobbies anticipate that they will be unable to capture rents in the post-agreement period, thereby reducing their incentive to resist liberalization. This lower resistance enables governments to negotiate more comprehensive agreements. Second, the relationship between political motivation and agreement depth depends critically on the degree of capital mobility. When capital mobility is sufficiently high, and the domestic-commitment motive is strong, governments that place greater weight on welfare relative to political contributions (higher a) will negotiate deeper agreements, because the commitment problem they face is more severe. However, when capital mobility is low, this relationship reverses: more politically motivated governments negotiate shallower agreements, consistent with the standard terms-of-trade theory. This relationship is particularly relevant for Latin America, where capital mobility and governments' political orientation vary substantially across subregions.

While [Maggi and Rodríguez-Clare \(2007\)](#) develop their model in a symmetric two-country setting, their comparative statics provide intuition for understanding heterogeneous settings.⁶ If

⁵The authors consider two forms of agreements: tariff ceilings and exact tariff levels. Under exact tariff commitments, protection is already incorporated into the agreement, so lobbies do not pay contributions ex post. Under tariff ceiling commitments, governments specify a maximum tariff, and lobbies must compensate governments to choose tariffs closer to the ceiling. [Maggi and Rodríguez-Clare \(2007\)](#) show that tariff ceilings can outperform exact commitments because they lead to ex-post lobbying, which reduces the net returns to capital and thus mitigates the overinvestment problem in protected sectors.

⁶A formal extension to heterogeneous countries would require allowing capital mobility (z), political parameters (a), endowments, and production structures to differ across countries. The authors note that symmetry is adopted to simplify the analysis, suggesting these extensions are non-trivial to derive. A full theoretical treatment of this extension is beyond the scope of this empirical paper and represents a promising avenue for future research.

developed countries systematically differ from developing countries in terms of capital mobility, the strength of domestic lobbies, or the weight governments place on political considerations, these differences should manifest in systematically different agreement depths. Specifically, if developed countries have higher capital mobility and stronger institutions for managing domestic commitment problems, they should be able to negotiate deeper agreements. This logic suggests that developing countries engaging primarily with developed partners may face different negotiating environments than those engaging primarily with other developing countries.

Moreover, the model suggests a potential mechanism for the diffusion of provisions across agreements. When a developing country negotiates with a developed partner that has already incorporated extensive provisions into its agreements, the developing country may adopt similar provisions to secure market access and signal commitment. Having incorporated these provisions into its policy framework and adapted its institutions to implement them, the country may subsequently find it less costly to include similar commitments in negotiations with other developing countries. This mechanism creates the possibility of spillover effects, where engagement with developed partners influences the depth of subsequent South-South agreements.

Our empirical analysis examines whether these patterns are evident in Latin American trade agreements. The substantial heterogeneity we document may reflect differences in partner selection and the extent to which countries engage with developed versus developing partners. We investigate whether countries that negotiate extensively with developed partners subsequently adopt deeper provisions in their agreements with other developing countries, providing evidence consistent with the spillover mechanism that follows from extending the theoretical framework to heterogeneous settings. These patterns suggest that trade policy choices, particularly decisions about which partners to engage with, have long-term consequences for the speed at which countries adopt modern trade provisions and deepen their economic integration.

This theoretical framework guides our empirical analysis. Latin American countries differ substantially in capital mobility, lobby strength, and governments' political orientation, and we expect these differences to manifest in systematically different agreement depths, given the intuition of [Maggi and Rodríguez-Clare \(2007\)](#). While we do not directly observe these underlying mechanisms, we investigate whether the patterns documented in our data are consistent with these theoretical predictions.

2.3 Empirical Literature Review

A substantial empirical literature examines how provisions in trade agreements affect economic outcomes. Research shows that provisions extending beyond tariff reductions can generate both opportunities and constraints. Investment provisions have facilitated capital flows while also requiring countries to adopt stronger protections that balance sovereign rights with investor interests ([Leshner and Miroudot, 2006](#); [Chornyi, Nerushay, and Crawford, 2016](#); [Miroudot and Rigo, 2021](#)). Provisions that deepen or extend World Trade Organization commitments, covering areas like services, technical barriers, and regulatory transparency, have been incorporated

into bilateral agreements at relatively low cost, suggesting potential benefits if implemented multilaterally (Lejárraga, 2014; Neufeld, 2014). Environmental and labor standards show more complex effects. While they can reduce exports or discourage foreign investment in certain sectors (Berger et al., 2020; Di Ubaldo and Gasiorek, 2022), they may also shift the export composition towards higher-value products (Brandi et al., 2020). More recently, digital trade provisions have proliferated rapidly, though without the coordination that characterized earlier forms of provision (Monteiro and Teh, 2017; Burri and Polanco, 2020).

Despite this extensive research on individual provision types and their effects, the literature has focused on provisions rather than regions. This provision-by-provision approach reveals important effects but cannot identify regional negotiation patterns or show which provisions matter most within specific geographic contexts. A regional analysis offers distinct advantages: it reveals what provisions countries actually prioritize, how negotiation patterns vary between neighbors with different trade strategies, and which provisions are most strongly associated with deeper integration in that context. For developing countries navigating limited bargaining power and diverse trade policy approaches, understanding these regional patterns is particularly valuable. It shows not just what provisions exist globally, but also how countries with similar constraints and opportunities negotiate their agreements.

A central methodological challenge in this literature concerns how to measure the depth of agreements. The most widely used approach comes from the Design of Trade Agreements (DESTA) database, which systematically codes provisions across hundreds of agreements (Dür, Baccini, and Elsig, 2014). DESTA-based indices typically employ either an additive approach, summing provisions across selected areas, or latent trait analysis using the Rasch model, which accounts for differences in the importance of provisions but is constrained to a single dimension of integration and requires researchers to pre-select provisions theoretically expected to influence trade directly (Dür, Baccini, and Elsig, 2014). Mattoo, Rocha, and Ruta (2020) employed the World Bank's Deep Trade Agreements database descriptively, revealing important North-South differences in commitment levels, but the methodological limitations of equal weighting remain in additive approaches. A framework that endogenously estimates weights from the joint occurrence of provisions across agreements, without imposing a theoretical structure or limiting the number of dimensions, can yield a more accurate representation of the depth of countries' commitments to their trade partners.

Dür, Baccini, and Elsig (2014) take an important step in this direction by using factor analysis on a selected set of provisions to construct a depth index and shows that the design of the agreement matters substantially for trade effects. Shallow agreements generate substantially smaller trade effects than deep ones, and prior studies that treat all agreements as equivalent likely underestimate the effects of deeper integration, as the estimated average is pulled downward by the less comprehensive agreements. These findings provide direct motivation for our approach: we build on their framework by applying factor analysis across the full range of seventeen

DESTA policy areas, allowing the data to determine both the dimensionality of integration and the weight of each provision, rather than relying on a pre-selected subset.

Research reveals systematic patterns in how agreement depth varies between country types. [Mattoo, Rocha, and Ruta \(2020\)](#) found that North-North agreements show substantially deeper commitments than South-South agreements, and that the overall increase in commitment levels over time has been driven primarily by developed countries requiring additional provisions and enforcement mechanisms from their partners. [Chorny, Nerushay, and Crawford \(2016\)](#) found similar evidence for investment provisions, where trends toward more balanced and comprehensive approaches were driven, in part, by Canadian and U.S. agreements. These patterns suggest that developed countries play the leading role in setting standards that shape the broader landscape of trade negotiations. However, the effects of deeper provisions are not uniformly positive. [Di Ubaldo and Gasiorsek \(2022\)](#) found that non-trade provisions negatively impact bilateral FDI flows, particularly when high-income countries invest in low- and middle-income countries. Similarly, [Berger et al. \(2020\)](#) showed that environmental provisions can harm trade flows, with effects particularly pronounced for exports from developing countries to developed ones, while [Brandi et al. \(2020\)](#) found that such provisions shift export composition, reducing "dirty" exports while promoting "green" ones. These asymmetric effects raise questions about whether North-led deeper trade agreements create pressures or opportunities for developing countries negotiating among themselves.

Evidence suggests that provisions from North-South agreements spill over into South-South agreements through specific mechanisms. Developing countries with limited bargaining power often accept deeper provisions to secure market access in developed countries, recognizing that the benefits may outweigh the costs ([Mattoo, Rocha, and Ruta, 2020](#)). Once incorporated into North-South agreements, these provisions can influence subsequent South-South negotiations as countries adopt similar standards with new partners. [Wu \(2020\)](#) documented this pattern in intellectual property provisions, showing how rules were transferred from developed to developing countries despite the higher implementation costs for the latter.

However, not all provisions show the same spillover patterns. [Burri and Polanco \(2020\)](#) found that digital trade provisions have proliferated rapidly, but in a fragmented manner, without the convergence towards common standards that characterized earlier provision types. This fragmentation suggests that, while some provisions spill over systematically, others may remain heterogeneous between agreements. Despite this evidence of North-South dynamics and spillover effects, no research has examined how these patterns manifest across Latin American agreements. Countries in this region pursue vastly different trade strategies, from Mexico's participation in the USMCA to Mercosur's more restrictive approach, which likely produce different patterns in the adoption of provisions and the depth of agreements.

2.4 Methodology and Data

2.4.1 Depth Index of Trade Agreements (DITA)

Our analysis requires measuring agreement depth in a way that captures which provisions are most strongly associated with deeper integration. We use the DESTA database (Dür, Baccini, and Elsig, 2014), which systematically codes provisions across seventeen policy areas in trade agreements worldwide: (1) market access; (2) services; (3) global value chains; (4) investment; (5) temporary entry of business persons; (6) intellectual property rights; (7) public procurement; (8) competition; (9) technical barriers to trade; (10) sanitary and phytosanitary measures; (11) regulatory cooperation and transparency; (12) trade defense instruments; (13) e-commerce; (14) data flows; (15) capital movement and exchange rates; (16) non-trade issues; and (17) dispute settlement. For each area, we calculate a coverage ratio that captures the share of liberalization achieved relative to the maximum observed in the dataset, enabling us to apply factor analysis via principal component extraction across all seventeen areas simultaneously.

Factor analysis determines weights endogenously based on how provisions co-occur across agreements, revealing which combinations signal deeper integration without imposing equal importance or preselecting a subset of areas (Fávero and Belfiore, 2017). This approach is particularly appropriate for trade agreement provisions, where countries rarely negotiate areas in isolation but instead adopt coherent strategies across policy areas.

We model this structure formally as:

$$(2.2) \quad X - \mu_X = L_{XF}C_X + \varepsilon$$

where X is a vector of the seventeen policy areas, μ_X is the vector of means across these areas, L_{XF} is the matrix of factor loadings indicating how strongly each area relates to each underlying factor, C_X is the vector of common factors, and ε captures variation not explained by the common factors. Factor loadings represent the correlation between each policy area and each factor, revealing which provisions define each integration dimension.

The factor analysis proceeds through principal component extraction, which identifies orthogonal (uncorrelated) factors that explain the maximum variance in the original seventeen areas. This method ensures that each factor captures a distinct dimension of integration rather than redundant information. The number of factors retained is determined by eigenvalues and the proportion of variance explained, balancing parsimony with explanatory power (Fávero and Belfiore, 2017). Once factors are extracted, we obtain factor loadings and factor scores for each agreement. Factor loadings indicate which policy areas load most heavily on each factor, revealing the substantive interpretation of each dimension. Factor scores represent the position of each agreement on each factor, measuring how strongly that agreement exhibits the pattern of provisions associated with that integration dimension (Fávero and Belfiore, 2017).

We construct the Depth Index of Trade Agreements (DITA) by aggregating factor scores across all retained factors using a weighted sum. Each factor is weighted by its proportion

of explained variance, ensuring that factors capturing more systematic variation in negotiation patterns contribute more to the final index (Fávero and Belfiore, 2017).

Formally, for agreement i :

$$(2.3) \text{ DITA}_i = \sum_{j=1}^k w_j F_{ij}$$

where F_{ij} is the factor score for agreement i on factor j , w_j is the proportion of variance explained by factor j , and k is the number of retained factors. This weighting scheme ensures that the index reflects the relative importance of different integration dimensions as revealed by the data, rather than imposing arbitrary weights. We normalize the DITA values to range from 0 to 1 to facilitate interpretation. Index values are therefore relative to the agreements included in the analysis and should be interpreted as a measure of depth within this sample rather than as an assessment of the quality or optimality of any given agreement.

We calculate DITA values for 681 Latin American trade agreements signed between 1970 and 2019. For each agreement, we calculate the index value based on which of the seventeen policy areas it includes, weighted by the factor structure derived from the full sample of agreements. This approach allows us to compare depth levels between countries and over time, identifying which Latin American countries are keeping pace with global trends in agreement depth and which are falling behind. We include Canada and the United States in our analysis to serve as benchmarks, as they are the only developed countries in the Americas and provide a natural comparison point for assessing how Latin American agreements perform relative to developed country standards. We examine the depth evolution within sub-regions, including North America, Central America, the Caribbean, Pacific Alliance countries, and other South American nations, to assess whether patterns of North-South spillover effects are evident in the data.

To capture both current negotiation practices and the evolution of countries' existing agreements, we calculate DITA in two ways. First, we calculate DITA for new agreements signed in each time period, measuring the average depth of agreements negotiated during that period. We use signature dates rather than entry-into-force dates because our focus is on negotiation patterns rather than implementation timing. This measure reveals how the content of newly negotiated agreements has evolved, capturing shifts in which provisions countries prioritize and how comprehensively they address modern trade challenges. Second, we calculate Cumulative DITA, which measures the average depth across all active agreements from the start of our sample period through each point in time, excluding agreements that were terminated or replaced. This cumulative measure assesses whether countries maintain and update their existing agreements or whether older, less comprehensive agreements constrain their overall integration levels. Countries that actively renegotiate or replace older agreements will exhibit Cumulative DITA values that closely track their current DITA values. In contrast, large gaps between the two measures indicate that legacy agreements remain in force without substantial updates.

To assess whether Latin American regions are falling behind compared to global benchmarks, we calculate a decade gap measure that quantifies the temporal distance between regions in terms of integration depth. This metric quantifies the number of decades by which a given region lags (or leads) the benchmark region (North America), based on their respective DITA trajectories. Positive values indicate that the American region already exceeds the benchmark, whereas negative values indicate that the region lags behind. This approach allows us to identify differences in DITA levels as a temporal metric that captures the speed of convergence or divergence between regions.

The decade-gap calculation is performed in two steps. First, we compute the average per-decade growth rate for each American region between the 1990s and 2010s as:

$$(2.4) \quad g_A = \frac{DITA_{A,2010s} - DITA_{A,1990s}}{2}$$

where g_A represents the region's average DITA growth between the 1990s and the 2010s.⁷ Second, we calculate the time required for region A to reach the 2010s DITA level of benchmark region B, assuming that region A maintains its historical growth rate.⁸

$$(2.5) \quad T_{A \rightarrow B} = \frac{DITA_{B,2010s} - DITA_{A,2010s}}{g_A}$$

If regions continue on their observed growth trajectories from the 1990s–2010s period, the decade gap measures the temporal distance separating them from North American integration levels, revealing which regions are converging toward developed-country standards and which are falling further behind.

2.4.2 Gravity Model

To estimate the effect of agreement depth on bilateral trade flows, we employ a structural gravity model following [Yotov et al. \(2016\)](#) and [Santos Silva and Tenreyro \(2006\)](#), estimating via PPML with exporter-year and importer-year fixed effects to control for multilateral resistance and heteroskedasticity. The baseline specification is:

$$(2.6) \quad X_{ijt} = \exp(\beta_1 DITA_{ijt} + \beta_2 Z_{ijt} + v_{it} + \phi_{jt}) \cdot \varepsilon_{ijt}$$

where X_{ijt} is the import value of country i from country j in year t , $DITA_{ijt}$ is the depth index value of agreements in force between the pair, Z_{ijt} is a vector of bilateral controls including number of agreements, GATT/WTO membership, distance, contiguity, common language, and colonial ties, and v_{it} and ϕ_{jt} are exporter-year and importer-year fixed effects. We do not include country-pair fixed effects, as these would absorb all within-pair variation in DITA.

⁷In our sample, $g_A > 0$, since all regions investigated show an increase in DITA values over time, consistent with the literature's finding that countries tend to form deeper agreements as time passes. However, g_A could in principle be zero, representing no growth, or negative, representing agreements becoming less deep over time.

⁸We input two restrictions on equation 2.5. First, $g_A > 0$. Second, as we are interested in cases where countries are falling behind and want to know how much time it would take to reach the benchmark region, convergence is calculated only for cases where $DITA_{B,2010s} > DITA_{A,2010s}$. Thus, the sign of $T_{A \rightarrow B}$ is always positive. These two restrictions are applied to ensure we focus on the cases we are analyzing. The only actual restriction on equation 2.5 is that $g_A \neq 0$.

DITA values can vary over time. These variations occur when a country pair renegotiates an already formed agreement, or begins negotiating a new bilateral or multilateral agreement. In some cases, new trade agreements supersede old ones, and the DITA value is substituted from the year the new agreement enters into force onward. In other cases, however, country pairs have more than one active agreement in a given year. When such cases emerge, we use the highest DITA value among the agreements between the pair in that year.

We estimate three specifications. First, the continuous DITA measure is as above. Second, a categorical specification replacing DITA with low and high depth indicators relative to the median, with no agreement as the reference category. Third, a dynamic specification following [Dür, Baccini, and Elsig \(2014\)](#):

$$(2.7) \quad X_{ijt} = \exp \left(\sum_k \beta_k D_{ijt}^k + \beta_2 Z_{ijt} + v_{it} + \phi_{jt} \right) \cdot \varepsilon_{ijt}$$

where D_{ijt}^k captures four intervals relative to the year of entry into force: anticipatory (−5 to −1 years before the agreement), short-run (1 to 5), medium-run (6 to 14), and long-run (≥ 15 years).

2.4.3 Data

As described above, we construct our dataset using the DESTA database ([Dür, Baccini, and Elsig, 2014](#)). DESTA comprises multiple policy areas, each containing a set of binary or categorical variables that assess which provisions are included in each agreement. To create a single measure for each policy area in each agreement, we calculate a coverage ratio that captures the share of provisions included in agreement i relative to the maximum possible provisions. This ratio captures the extent to which an agreement covers each policy area.

DESTA has some limitations along two distinct dimensions. First, regarding measurement, it relies on dummy variables, coding only the existence or absence of provisions, which loses some nuance about the depth of negotiated commitments. Second, regarding enforceability, it does not distinguish between binding commitments and best-practice suggestions, making it difficult to assess which provisions are actually enforceable. The main alternative dataset covering trade agreement provisions is the World Bank Deep Trade Agreements database. Unlike DESTA, the World Bank dataset specifies enforcement levels for many provisions and covers more policy areas in greater detail, with each area coded by specialists. However, it does not provide homogeneous coverage across all areas and includes fewer agreements than DESTA. Given the need for comprehensive and consistent coverage across a large number of agreements, DESTA was the chosen dataset.

Calculating coverage ratios requires assigning weights to variables based on the structure and content of the different provisions. Consider the services policy area, which includes two questions: "Does this agreement include general provisions stipulating the liberalization of trade in services?" and "Does this agreement include specific provisions stipulating the liberalization of trade in services?" These questions assess different levels of commitment. Specific provisions

signal a deeper level of liberalization than general provisions, as they provide detailed, focused commitments rather than broad statements of intent. We therefore assign a weight of 1.0 to specific provisions and 0.5 to general provisions, with the lack of provisions receiving a weight of 0.

We apply this weighting logic across all seventeen policy areas, grouping related variables and assigning weights that reflect the depth of commitment each provision signals. Appendix A.1 presents the complete list of policy areas, the questions comprising each area, the weights assigned to each question, and the method used to calculate coverage ratios for each area. We tested alternative weighting structures, and the results were consistent across specifications, suggesting our findings do not rely on the specific weights assigned (results available upon request).

Our final dataset comprises 681 trade agreements signed between 1970 and 2019. The complete list of agreements with signature years is presented in Appendix A.2. These agreements span all regions and include bilateral, regional, and multilateral agreements. The dataset encompasses not only agreements notified to the World Trade Organization (WTO) but also those that were not. This coverage constitutes one of the most comprehensive datasets mapping trade agreements, including both original agreements and their subsequent renegotiations.

To facilitate cross-regional comparisons, we classify all countries and their agreements into eleven geographic regions: North America, Central America, Caribbean, South America, Pacific Alliance, Europe, European Union, Africa, Middle East, Asia, and Oceania (see Appendix A.3). This classification enables us to position Latin American agreements within global patterns and to compare regional trends in agreement depth over time.

Bilateral trade flows are obtained from the UN Comtrade database (United Nations, 2026), using annual import values in current US dollars, covering the period from 1980 to 2024 for 202 importing and 238 exporting countries. The sample begins in 1980 to maximize country coverage, as data for several countries are not available before this period. Gravity controls, including distance, contiguity, common language, colonial ties, and GATT/WTO membership, are drawn from the Dynamic Gravity Dataset from the United States International Trade Commission (Gurevich and Herman, 2018). Appendix A.4 presents the list of all importers and exporters.

2.4.4 Factor Extraction

Before extracting factors, we verify that the data are suitable for this approach. Factor analysis requires that the observed variables share sufficient common variance; if policy areas were negotiated independently of one another, with no systematic patterns of co-occurrence, factor analysis would not be appropriate. We assess this suitability through two diagnostic tests: the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity. Results are presented in table 2.1.

Table 2.1. Tests of Sampling Adequacy and Sphericity

Test	Result
<i>Kaiser-Meyer-Olkin (KMO) Measure</i>	
KMO statistic	0.941
<i>Bartlett's Test of Sphericity</i>	
Chi-square	9,349.784
Degrees of freedom	136
<i>p</i> -value	< 0.001

Notes: The KMO statistic measures sampling adequacy, with values above 0.7 indicating suitability for factor analysis. Bartlett's test evaluates whether the correlation matrix differs significantly from an identity matrix. The null hypothesis is that variables are uncorrelated.

The KMO measure assesses sampling adequacy for factor analysis. Values above 0.7 indicate that the data are suitable for the proposed methodology (Fávero and Belfiore, 2017). Our KMO statistic of 0.941 shows excellent adequacy, confirming that the seventeen policy areas share sufficient common variance to justify factor extraction. Bartlett's test of sphericity evaluates whether the variables are correlated with one another (Fávero and Belfiore, 2017). This test is critical because factor analysis extracts factors based on correlations among variables. The test examines the null hypothesis that variables are uncorrelated. Our results strongly reject this hypothesis ($\chi^2 = 9,349.784$, $p < 0.001$), confirming that the policy areas exhibit sufficient correlation to proceed with factor analysis. Both tests confirm that the data are well-suited for factor analysis.

We retain two factors based on parallel analysis, which compares observed eigenvalues with those from random data matrices of equivalent dimensions and is preferred over the Kaiser criterion.⁹ These two factors together explain 64.56% of the variance in agreement provisions. To facilitate interpretation, we apply varimax rotation, which simplifies factor structure while maintaining orthogonality. After rotation, Factor 1 explains 33.09% of the variance and Factor 2 explains 31.47%.

Table 2.2 presents the rotated factor loadings, revealing two distinct dimensions of agreement depth. Factor 1 loads most strongly on regulatory and enforcement-oriented provisions, including trade defense instruments, technical barriers to trade, sanitary and phytosanitary measures, and dispute settlement mechanisms. It also includes traditional areas such as intellectual property rights and competition policy. These provisions have long been central to trade agreement negotiations, representing efforts to harmonize regulatory frameworks and establish enforcement capacity. We refer to this factor as the Traditional Trade Index. Factor 2 captures provisions related to modern trade challenges, loading most strongly on e-commerce, data

⁹The Kaiser criterion, which retains factors with eigenvalues greater than one (Kaiser, 1960), suggested three factors. However, the third factor had an eigenvalue of exactly 1.000 and parallel analysis (1,000 iterations) consistently supported a two-component solution. Inspection of the third factor's loadings confirmed it lacked substantive interpretation, consistent with the overfactoring tendency documented in the Kaiser criterion literature (Zwick and Velicer, 1986).

flows, investment, and regulatory cooperation. These areas reflect the evolution of trade agreements beyond traditional border measures to address digital commerce, services trade, and the integration of global value chains. We refer to this factor as the Modern Trade Index. This two-factor structure suggests that countries deepen their agreements along distinct pathways, emphasizing either traditional regulatory harmonization or engagement with emerging trade issues. Table A.2 in Appendix A.5 presents the complete factor loadings for all seventeen policy areas across both factors.

Table 2.2. Factor Composition and Loadings

Policy Area	Loading
<i>Traditional Trade Index (Factor 1)</i>	
Trade Defense Instruments	0.830
Technical Barriers to Trade	0.770
Sanitary and Phytosanitary Measures	0.770
Dispute Settlement	0.710
Competition	0.640
Intellectual Property Rights	0.620
Capital Movement	0.610
Market Access	0.540
<i>Modern Trade Index (Factor 2)</i>	
E-commerce	0.840
Data Flows	0.840
Investment	0.730
Regulatory Cooperation	0.690
Services	0.670
Global Value Chains	0.650
Temporary Entry of Business Persons	0.650
Non-Trade Issues	0.630
Public Procurement	0.540

Notes: Factor loadings from varimax-rotated principal component analysis. Areas are listed in descending order of loading strength within each factor. Together, these two factors explain 64.56% of total variance (Factor 1: 33.09%, Factor 2: 31.47%).

We construct the final DITA by aggregating these two factors using their variance shares as weights. Each agreement receives a score on both the Traditional Trade Index and Modern Trade Index based on which provisions it includes. The final DITA value weights Factor 1 (33.09%) and Factor 2 (31.47%) based on their explained variance, yielding a single depth measure that captures both traditional regulatory harmonization and engagement with modern trade provisions. This approach ensures that agreements emphasizing either dimension, or both, are appropriately reflected in the overall depth measure.

This two-factor structure reflects a substantive distinction in how countries negotiate agreements, separating long-established regulatory commitments from engagement with modern trade challenges. As we show in the following section, this structure remains stable across

alternative estimation methods, internal consistency checks, and sensitivity analyses, including residualization and structural equation modeling.

2.4.5 Robustness of Factor Structure

Having established that the data support a two-factor solution, we now assess whether this structure is stable and not an artifact of our methodological choices. A reliable index requires that the two-factor solution holds across different statistical criteria, estimation methods, and internal consistency checks. We assess this through five diagnostic tests, supplemented by sensitivity analyses using residualization and structural equation modeling. Appendix A.6 presents detailed results for these tests.

We assess the validity and stability of our two-factor solution through a comprehensive series of diagnostic tests. Complete results for all robustness checks are available upon request. First, the scree plot reveals a pronounced elbow after the second factor, with eigenvalues declining sharply from 9.44 (Factor 1) and 1.54 (Factor 2) to 1.00 (Factor 3) and below.¹⁰ Although Factor 3 reaches the Kaiser threshold exactly (eigenvalue = 1.00), parallel analysis does not support its retention, as its eigenvalue is indistinguishable from what would be expected under random data of equivalent dimensions. This clear inflection point, combined with parallel analysis, strongly supports retaining exactly two factors. Subsequent factors contribute negligibly to explained variance, forming a flat *scree* consistent with random noise.

Second, we perform a parallel analysis to compare our eigenvalues with those obtained from random data (Horn, 1965). This test provides a more rigorous statistical justification for factor retention than the Kaiser criterion alone. With 1,000 replications, the analysis confirms that only the first two components have observed eigenvalues exceeding their simulated counterparts (adjusted eigenvalues of 8.16 and 0.32, respectively), while all subsequent components fall below this threshold, further validating our two-factor solution.

Third, we assess the internal consistency of each factor using Cronbach's alpha (Johnson and Wichern, 2007). This measure evaluates whether variables within each factor reliably capture the same underlying construct. Both factors show excellent internal consistency: the Traditional Trade factor achieves $\alpha = 0.898$, while the Modern Trade factor reaches $\alpha = 0.913$. These values substantially exceed the conventional threshold of 0.70 for acceptable reliability and surpass the 0.80 threshold for good reliability, confirming that provisions within each factor coherently measure distinct dimensions of trade agreement depth.

Fourth, we test the sensitivity of our results to the extraction method by comparing principal component factoring (our baseline) with principal axis factoring and maximum likelihood estimation (Johnson and Wichern, 2007). Principal component factoring and principal axis factoring yield nearly identical results, with factor loading correlations of 0.99 for factor 1 and 0.98 for factor 2. Maximum likelihood yields somewhat lower but still strong correlations (0.87 for Factor 1 and 0.89 for Factor 2), revealing additional cross-loadings for certain provisions while

¹⁰The scree plot test is based on Cattell (1966), who proposed identifying the optimal number of factors by locating the *elbow* where the curve flattens, suggesting that subsequent factors capture only random variance.

preserving the same core two-factor structure. This consistency between methods suggests that our findings are not artifacts of a particular estimation approach.

Fifth, we examine communalities, the proportion of each variable's variance explained by the retained factors. Communalities range from 0.29 to 0.79 (mean = 0.65), with 16 of 17 provisions exceeding the 0.30 adequacy threshold. Only Market Access falls slightly below at 0.289, suggesting it contains substantial unique variance not captured by the common factors. The high communalities for most provisions indicate that the two-factor solution adequately represents the data's variance structure.

Sixth, we assess whether the two-factor structure is sensitive to omitted variables or confounders. We implement two additional sensitivity analyses. For residualization, we regress each of the 17 sub-indices on key control variables commonly used in gravity models before extracting factors (García et al., 2020).¹¹ For structural equation modeling, we estimate both exploratory and confirmatory MIMIC models that simultaneously extract latent factors while controlling for the same covariates (Bowen and Guo, 2011).¹² Across all approaches, the two-factor structure remains stable, and regional rankings are preserved. These results confirm that our two-factor structure is not driven by economic or geographic characteristics of the countries in our sample, but reflects genuine patterns in how countries negotiate trade agreements.

Taken together, these tests confirm that the two-factor solution is appropriate, stable, and robust to methodological choices. The Traditional and Modern Trade dimensions are not artifacts of our chosen estimation approach, but reflect genuine patterns in how countries negotiate trade agreements, providing a solid foundation for the DITA index and the regional comparisons that follow.

This residualization exercise also addresses a related concern: countries may select partners based on characteristics such as proximity or development level, and these same characteristics could drive the depth of the agreements they negotiate. Because residualization removes the variation in DITA explained by these characteristics before extracting factors, it also addresses this endogeneity concern for the observable characteristics included in the regression. The remedy is partial, however, as it does not account for selection on unobservable characteristics that may also shape both partner choice and agreement depth.

2.5 Results

2.5.1 Global and Regional Patterns in Agreement Depth

Figure 2.1 presents both DITA and Cumulative DITA for all eleven regions from the 1970s through 2010s. Appendix A.8 presents the numerical values for both indices across all decades, along with the number of agreements in each cell. Regions in the upper right quadrant not only negotiate deeper new agreements but also maintain high average depth across their existing

¹¹The control variables used in the sensitivity analyses are: GDP per capita, distance, contiguity, common language, colonial ties, number of members, an intra-regional dummy, and decade dummies.

¹²Complete results for the residualization and structural equation modeling sensitivity analyses are presented in Appendix A.7.

agreements. This pattern indicates that these regions avoid being constrained by older, shallower agreements still in force and successfully renegotiate existing agreements to incorporate modern provisions. Regions positioned toward the left show lower cumulative depth, suggesting their existing agreements include many legacy arrangements that have not been updated.

During the 1970s, all regions exhibited remarkably similar depth levels, with most DITA values clustering between 0.01 and 0.08. This convergence reflects the early stage of bilateral trade integration, when agreements focused predominantly on tariff liberalization. This period coincided with the GATT Tokyo Round (1973-1979), which expanded multilateral focus beyond tariffs to address non-tariff barriers, including technical barriers to trade, anti-dumping measures, and subsidies. The limited scope of bilateral agreements during this decade meant that regional differences in negotiation approaches had not yet emerged.

The 1990s marked a turning point, as the proliferation of trade agreements coincided with growing regional divergence in depth. North America and the European Union emerged as leaders, with DITA values of 0.40 and 0.27, respectively, substantially exceeding those of other regions. Their cumulative indices also rose distinctly, both have a value of 0.19. This divergence occurred during the post-Uruguay Round period, when developed countries increasingly incorporated provisions beyond traditional trade barriers into their agreements.

By the 2000s and 2010s, a clear ranking had emerged. Six regions, North America, the European Union, Asia, Central America, Oceania, and the Pacific Alliance (Chile, Colombia, and Peru), sustained DITA values above 0.45 by the 2010s, with North America reaching 0.66 and the EU 0.65. These regions consistently negotiated more comprehensive agreements that incorporated modern trade issues, including digital commerce, regulatory cooperation, and investment protection.

In contrast, South America, non-EU Europe, the Middle East, the Caribbean, and Africa lagged substantially behind. South America's 2010s DITA of 0.24 is less than half that of leading regions, while its cumulative DITA of 0.16 suggests minimal updating of existing agreements. The Caribbean shows particularly stark stagnation, with DITA decreasing from 0.27 to 0.18 between the 2000s and 2010, and Cumulative DITA remaining at 0.18 over the same period. Africa similarly plateaued around 0.20-0.21 during this period. The critical divergence point appears to be the 2000s. Although all regions continued negotiating agreements, lagging regions failed to match the depth and scope of those adopted by leading regions. These patterns suggest not a reduction in negotiation activity, but rather a fundamental difference in the types of provisions these regions prioritize or are willing to accept.

The widening gap between leading and lagging regions has important policy implications. Deeper agreements promote integration and harmonization among member markets by establishing common rules, objectives, and regulatory frameworks. This harmonization allows countries to stay current with evolving global requirements, facilitating market access as trading partners adopt similar provisions. Conversely, regions that fall behind in agreement depth risk being isolated from modern trade frameworks. When these countries eventually seek to

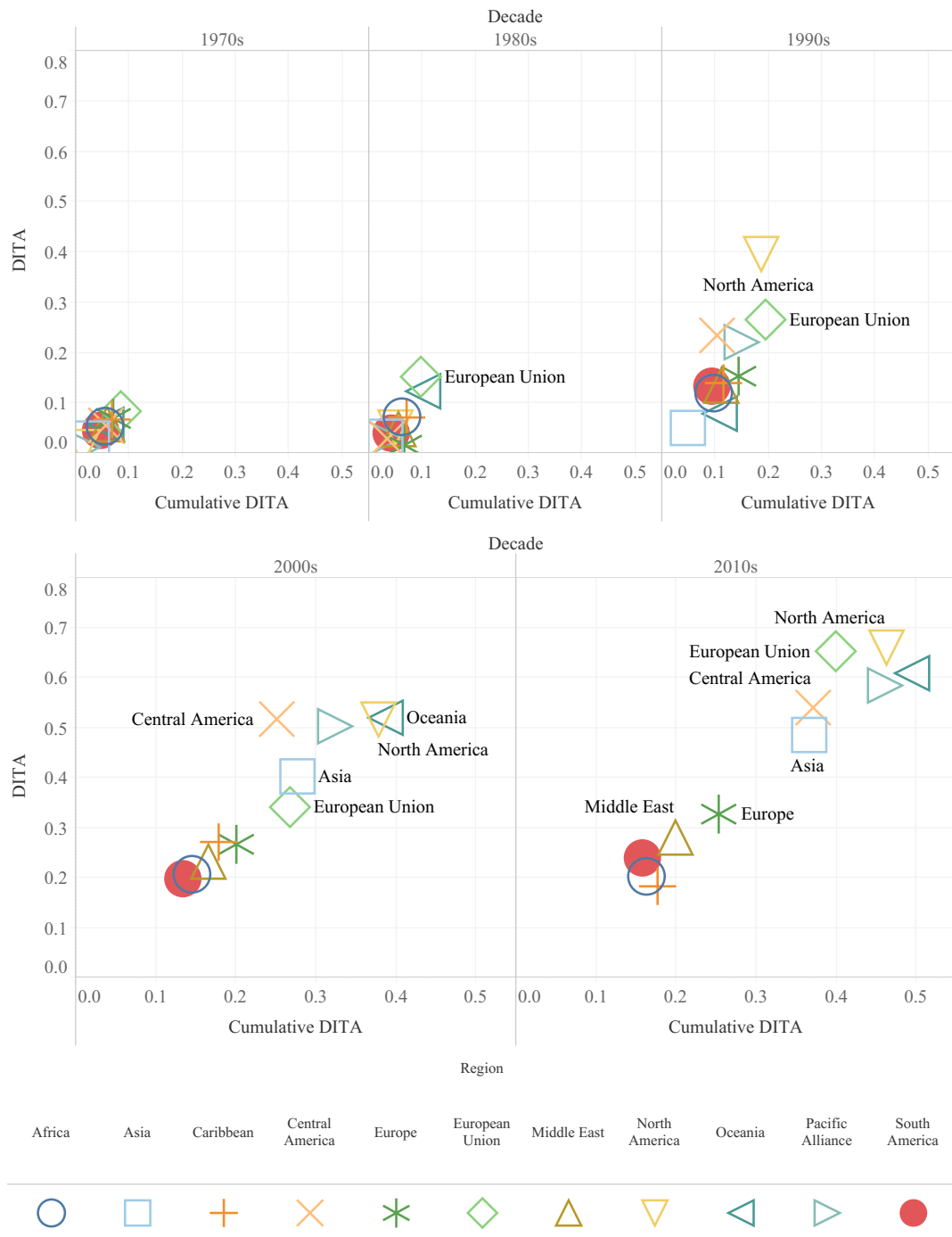


Figure 2.1. Regional Comparison of DITA Over Time

Notes: Each panel shows regional patterns for successive decades, with DITA (average depth of new agreements signed in the decade) on the horizontal axis and Cumulative DITA (average depth of all active agreements through the end of the decade) on the vertical axis. Regions in the upper right quadrant negotiate deep new agreements and maintain high overall depth across existing agreements.

integrate with partners that use current standards, adoption costs may increase substantially, potentially limiting their ability to engage with partners that have already adopted modern standards. Producers unfamiliar with meeting contemporary regulatory, environmental, or digital

commerce requirements face substantial compliance costs, potentially making market access exceedingly expensive.

These adoption costs could create a self-reinforcing cycle. Countries reluctant to adopt modern provisions may exclude sensitive sectors or resist requirements that challenge existing production methods, limiting the agreements they can successfully negotiate. The prolonged EU-Mercosur negotiations illustrate this dynamic. After more than a decade of negotiations centered on regulatory and environmental provisions, the parties finalized the agreement in 2026. South America's substantial lag in agreement depth, with DITA values three decades behind North American standards, is consistent with a pattern in which limited prior engagement with modern trade provisions may be associated with greater difficulties in negotiating comprehensive agreements with leading trading partners.

To quantify these regional disparities more precisely, we compare the DITA values of each Latin American region in the 2010s against those of other regions across decades.¹³ Table 2.3 presents two complementary measures of regional positioning. The "Decade Gap" column shows how many decades behind (negative values) or ahead (positive values) each Latin American region stands relative to the benchmark region (North America). We identify the decade in which the benchmark region's DITA most closely matched the Latin American region's 2010s value. For instance, a decade gap of -1 for Central America relative to North America indicates that Central America's 2010s agreements exhibit depth comparable to what North America achieved in the 2000s, one decade earlier. The "Convergence Time" column presents the calculation of the number of decades required for the Latin American region to reach the benchmark region's 2010s DITA level, assuming the region maintains its average growth rate from 1990s to 2010s. We calculate this convergence as the gap between regions divided by the Latin American region's average per-decade growth over these twenty years. This metric assumes static benchmarks, providing a conservative estimate of convergence time if lagging regions maintain recent growth trajectories while leading regions remain at their 2010s levels. If the benchmark region continues growing at historical rates, convergence becomes unattainable for South America and the Caribbean, as leading regions are deepening their agreements faster than these lagging regions can close the gap.

Table 2.3 reveals substantial heterogeneity within Latin America. Central America and the Pacific Alliance emerge as competitive players in terms of the depth of global agreements. Central America exhibits a gap of only one decade relative to North America and Oceania, while the Pacific Alliance similarly lags behind North America by a comparable margin. Both regions have DITA values that match or exceed those of the European Union, Asia, and other developed regions in the 2010s. The Caribbean and South America follow a markedly different

¹³We tested alternative time aggregations, including yearly averages and 5-year intervals. The yearly specification proves too noisy for meaningful interpretation, as trade agreement negotiations occur irregularly across years. The 5-year interval reveals the same fundamental patterns but is more susceptible to the influence of individual outlier agreements, given the fewer agreements per interval. All specifications confirm our core finding of regional divergence, suggesting our results are robust to the choice of time aggregation.

Table 2.3. Americas' Relative Lag and Estimated Catch-Up Time (Decades)

Region	Central America		Caribbean		South America		Pacific Alliance	
	Decade Gap	Converg. Time	Decade Gap	Converg. Time	Decade Gap	Converg. Time	Decade Gap	Converg. Time
North America	-1	0.8	-3	22.2	-2	7.9	-1	0.4
Central America	—	—	-2	16.6	-2	5.7	0	—
Caribbean	+2	—	—	—	+1	—	+2	—
South America	+2	—	-1	2.6	—	—	+2	—
Pacific Alliance	0	—	-2	18.7	-2	6.5	—	—
Europe	+2	—	-2	6.7	-1	1.7	+2	—
European Union	0	—	-3	21.9	-2	7.8	0	—
Middle East	+2	—	-2	4.5	-1	0.8	+2	—
Africa	+2	—	0	—	+1	—	+2	—
Asia	+1	—	-2	14.1	-1	4.6	+1	—
Oceania	-1	0.4	-3	19.8	-3	7.0	0	—

Notes: “Decade Gap” identifies the decade in which the benchmark region’s (rows) DITA most closely matched the American region’s (columns) 2010s value. Negative values indicate the number of decades by which the American region lags behind the benchmark; for example, a gap of -2 means the American region’s current integration depth resembles what the benchmark achieved two decades earlier. Positive values indicate that the American region leads the benchmark by the corresponding number of decades. A value of 0 indicates that both regions are negotiating agreements of similar depth in the 2010s, with no meaningful temporal gap between them. “Convergence Time” reports the estimated number of decades required for the American region to reach the benchmark’s 2010s DITA level, calculated as $T_{A \rightarrow B} = (DITA_{B,2010s} - DITA_{A,2010s})/g_A$, where $g_A = (DITA_{A,2010s} - DITA_{A,1990s})/2$ is the American region’s average per-decade growth rate between the 1990s and 2010s. Convergence time is reported only when the American region lags behind the benchmark.

trajectory from the more competitive regions. South America exceeds only the Caribbean and Africa in agreement depth, while the Caribbean lags behind every region except Africa, with which it shares comparable DITA levels, ranging from 0.18 to 0.20. The magnitude of these gaps is substantial. At their respective growth rates from 1990 to 2010, South America would require 7.9 decades to reach North America’s 2010s depth, while the Caribbean would need 22.2 decades. Convergence with other leading regions would require 5 to nearly 8 decades for South America and 5 to 22 decades for the Caribbean.

These calculations are consistent with a self-reinforcing pattern in the depth gap. Regions that have incorporated modern provisions may benefit from learning effects, established regulatory frameworks, and negotiating experience that facilitate subsequent deepening. Regions that have resisted or been unable to adopt contemporary standards may face increasingly steep adjustment costs when seeking to negotiate with more integrated partners. While we cannot establish causality, this pattern may also reflect broader political and institutional factors that shape countries’ negotiation strategies.

In summary, Latin American trade agreements have undergone substantial deepening since the 1970s, with growth evident in newly negotiated agreements. However, this deepening oc-

curs at dramatically different rates across the region. Central America and the Pacific Alliance follow closely behind global leaders, maintaining depth levels that are competitive with those of developed regions. South America and the Caribbean, conversely, lag three decades behind leading standards, raising concerns about their ability to maintain market access and negotiate effectively with partners that have embraced modern trade frameworks.

2.5.2 Country-Level Performance

Figure 2.2 presents the DITA results for each country in the Americas, separated by region to better illustrate the heterogeneous integration negotiations occurring across the continent. The figure presents DITA results for new agreements, as the Cumulative DITA yields similar results. Appendix A.9 presents the DITA for all countries and the Cumulative DITA results, respectively.¹⁴

Most regions show consistency across countries in their DITA results, with countries tending to closely follow their neighbors in terms of the depth of trade agreement integration. In the 2010s, Canada led the continent, with Mexico and the United States following closely. The Pacific Alliance countries similarly tracked the region's integration leaders. Their performance has been remarkably consistent, with DITA indices ranging from 0.54 (Chile) to 0.69 (Colombia) in the 2010s. These countries have prioritized trade agreements since the 2000s, steadily increasing the number of their agreements. In the 2010s, Pacific Alliance members negotiated the most new agreements of any regional grouping, with most being highly comprehensive and with depth comparable to those signed by North American countries.

The Caribbean also exhibits a close alignment between countries, primarily because most are members of the Caribbean Community (CARICOM). This economic bloc spans Caribbean island nations, Belize in Central America, and Guyana and Suriname in South America. Since most agreements are negotiated collectively through CARICOM, regional consistency is high. The main exception is Cuba, which is not a CARICOM member and struggles to negotiate new agreements. CARICOM has been relatively inactive in recent years; its last major agreement was with the European Union in 2008, followed by the agreement with the United Kingdom in 2021, post-Brexit. Failed negotiations during the 2010s may reflect the bloc's difficulties in finalizing new trade deals. In 2023, CARICOM announced a new trade policy focused on updating existing bilateral agreements to align with the bloc's strategic objectives, rather than pursuing new comprehensive agreements (Caribbean Community, 2023).

Central America also shows regional consistency, with Belize being the notable exception. These countries frequently negotiate trade agreements together, through the Central American Common Market (CACM) framework. Their geographic and economic proximity enables them to pursue deeper agreements and follow similar negotiation patterns. In the 2010s, their DITA indices ranged from 0.51 to 0.63, reflecting closely aligned negotiating positions. El Salvador

¹⁴Our results are also robust to the general deepening of agreements over time: regional trends and rankings remain unchanged after removing decade effects through residualization. Detailed results from this robustness check are presented in Appendix A.7.

Region	Country	Decade				
		1970s	1980s	1990s	2000s	2010s
North America	Canada		0.16 (2)	0.43 (3)	0.51 (5)	0.69 (8)
	Mexico	0.01 (1)	0.02 (13)	0.41 (9)	0.30 (11)	0.64 (8)
	United States		0.24 (2)	0.62 (1)	0.68 (15)	0.60 (2)
Caribbean	Antigua & Barbuda	0.07 (3)	0.15 (3)	0.13 (5)	0.39 (5)	
	Barbados	0.07 (3)	0.18 (2)	0.13 (5)	0.39 (5)	
	Cuba		0.02 (4)	0.06 (7)	0.16 (9)	0.13 (1)
	Dominica	0.07 (3)	0.15 (3)	0.13 (5)	0.39 (5)	
	Dominican Republic		0.10 (2)	0.30 (3)	0.56 (3)	
	Grenada	0.07 (3)	0.15 (3)	0.13 (5)	0.39 (5)	
	Haiti	0.07 (3)	0.13 (3)	0.13 (5)	0.39 (5)	
	Jamaica	0.07 (3)	0.18 (2)	0.13 (5)	0.39 (5)	
	Saint Kitts & Nevis	0.07 (3)	0.15 (3)	0.13 (5)	0.39 (5)	
	Saint Lucia	0.07 (3)	0.15 (3)	0.13 (5)	0.39 (5)	
	St. Vincent & Grenadines	0.07 (3)	0.15 (3)	0.13 (5)	0.39 (5)	
	The Bahamas	0.07 (3)	0.18 (2)	0.13 (5)	0.39 (5)	
	Trinidad & Tobago	0.07 (3)	0.10 (4)	0.13 (5)	0.39 (5)	0.21 (2)
Central America	Belize	0.12 (1)	0.16 (1)	0.11 (6)	0.37 (6)	
	Costa Rica	0.06 (1)	0.02 (3)	0.31 (6)	0.56 (5)	0.63 (9)
	El Salvador	0.09 (2)	0.03 (4)	0.22 (6)	0.63 (6)	0.41 (6)
	Guatemala	0.02 (1)	0.01 (3)	0.21 (7)	0.51 (8)	0.51 (6)
	Honduras	0.01 (1)	0.02 (3)	0.26 (5)	0.63 (6)	0.60 (6)
	Nicaragua	0.02 (1)	0.02 (4)	0.31 (6)	0.70 (4)	0.57 (4)
	Panama	0.05 (6)	0.04 (4)	0.06 (4)	0.63 (5)	0.61 (9)
Pacific Alliance	Chile	0.01 (1)	0.03 (3)	0.26 (12)	0.52 (15)	0.54 (12)
	Colombia		0.03 (8)	0.15 (9)	0.46 (9)	0.69 (9)
	Peru	0.01 (1)	0.06 (5)	0.13 (5)	0.43 (10)	0.67 (15)
South America	Argentina	0.01 (1)	0.03 (12)	0.10 (9)	0.16 (11)	0.33 (3)
	Bolivia		0.07 (3)	0.19 (8)	0.15 (3)	
	Brazil	0.01 (1)	0.02 (7)	0.12 (8)	0.15 (12)	0.09 (4)
	Ecuador		0.05 (5)	0.09 (7)	0.18 (4)	0.26 (4)
	Guyana	0.07 (3)	0.13 (3)	0.11 (6)	0.33 (6)	
	Paraguay	0.01 (1)	0.04 (2)	0.13 (6)	0.16 (11)	0.10 (3)
	Suriname	0.07 (3)	0.18 (2)	0.13 (5)	0.32 (6)	
	Uruguay	0.01 (2)	0.03 (8)	0.11 (7)	0.18 (12)	0.30 (3)
	Venezuela		0.04 (10)	0.13 (10)	0.06 (4)	0.06 (2)

Figure 2.2. Trade Agreement Integration Depth Across the Americas, 1970s-2010s

Notes: The integration index ranges from 0 to 1, where higher values indicate deeper trade agreement integration. Values in parentheses show the number of agreements each country negotiated during that decade. Colors indicate integration levels: red (low), gray (moderate), green (high). Pacific Alliance countries are shown separately to highlight their distinct integration trajectory compared to other South American nations.

exhibits a slightly reduced index in the 2010s, at 0.41, due to the signing of shallow agreements with Cuba (2011) and Ecuador (2017); however, in other decades, it tracked more closely with regional peers.

South America presents the most heterogeneous results, with DITA scores in the 2010s ranging from 0.06 (Venezuela) to 0.33 (Argentina). However, all South American countries outside the Pacific Alliance maintain relatively shallow agreements, lagging significantly behind even Caribbean nations. Argentina and Uruguay are approximately two decades behind their Pacific Alliance neighbors in integration depth and three decades behind North America. Brazil, Bolivia, Paraguay, and Venezuela lag even further.

These patterns suggest the existence of two distinct groups of countries in Latin America. The first group, comprising Pacific Alliance and Central American nations, actively uses trade agreements as a policy tool for economic integration, incorporating modern negotiation issues. The second group, Caribbean and South American countries, struggles not only to sign new trade agreements but also to negotiate modern, comprehensive deals that focus on deep economic integration.

The limited depth of Caribbean countries can be explained by a combination of structural and strategic factors. Most Caribbean nations negotiate collectively through CARICOM, whose members are small island economies that depend on tourism, agriculture, or energy sectors (Hornbeck, 2008). As small economies that rely on preferential access from larger partners such as the European Union and the United States, CARICOM members have traditionally preferred unilateral arrangements over reciprocal agreements, concerned about their capacity to comply with complex and comprehensive provisions (Hornbeck, 2008). The last major agreement signed by the bloc was the CARIFORUM-EU Economic Partnership Agreement in 2008¹⁵. More recently, CARICOM formally shifted its strategy toward strengthening existing agreements rather than pursuing new comprehensive ones (Caribbean Community, 2023). Suriname and Guyana, although geographically part of South America, are CARICOM members and follow this same pattern, making them more similar to Caribbean nations than to their South American neighbors.

South America presents a more complex picture, as the region encompasses countries with distinct institutional affiliations and trade policy orientations that shape their engagement with trade agreements in different ways.

The limited depth observed among Mercosur members likely reflects a combination of institutional and structural factors. From an institutional standpoint, Decision CMC No. 32/00 formally limited member states from signing new agreements with third countries that had not been negotiated collectively by the bloc (Mercosur, 2000). These countries are also major agricultural exporters and may be prioritizing provisions affecting market access and regulatory areas relevant to their export sectors, rather than the more comprehensive and complex provisions beyond those. Together, these two factors may help explain why the bloc has lagged behind other regions in agreement depth.

However, the institutional constraint alone does not fully account for the variation observed within the bloc. By the late 2010s, Mercosur allowed each member to negotiate bilateral agreements with Chile, and the differences in depth across those agreements are considerable. Argentina and Uruguay negotiated relatively deeper agreements, with a DITA index around 0.30, while Brazil and Paraguay signed considerably shallower ones, around 0.10. This variation suggests that the bloc constraint may not reflect the preferences of all its members equally, as

¹⁵Following the United Kingdom's exit from the European Union, CARICOM signed a continuity agreement with the UK in 2019 to preserve the terms of the original EPA, though it has not yet entered into force. This agreement is not included in our analysis as it was not yet coded in the dataset.

some appear willing to pursue deeper agreements when given the opportunity, while others do not, raising the possibility that Mercosur's collective framework may be constraining members that would otherwise seek more comprehensive agreements.

The remaining South American countries present a more heterogeneous picture. Ecuador and Bolivia share a common challenge in attracting agreements, as their relatively small economic size limits their negotiating leverage individually. The Andean Community has served as a vehicle to partially overcome this constraint, allowing these countries to negotiate collectively and access agreements that would be harder to secure on their own. However, their recent trajectories have diverged considerably. Ecuador has shifted toward a more open trade policy, signing a comprehensive agreement with the European Union alongside Colombia and Peru, signaling a move toward the Pacific Alliance path. Bolivia, by contrast, left the Andean Community and joined Mercosur in 2024, a move that may further constrain its future negotiating autonomy given the institutional framework discussed above.

2.5.3 *The Role of Partner Choice in Integration Depth*

[Mattoo, Rocha, and Ruta \(2020\)](#) and [Chornyi, Nerushay, and Crawford \(2016\)](#) showed that developed countries lead the inclusion of new provisions in trade agreements. Therefore, agreements between Latin American countries and developed nations (North-South agreements) should be more comprehensive than those between developing countries (South-South agreements). To test this pattern, we divided the DITA index into two groups based on whether each country's partners are developed or developing nations.

Figure 2.3 presents the average agreement depth with developed and developing countries by decade for North America and the Caribbean.¹⁶ For both regions, agreements involving developed countries are consistently deeper than those involving developing countries. Canada during the 1980s and 1990s represents a notable exception, as its agreements with developing countries were more comprehensive. In the 1990s, this pattern was heavily influenced by the North American Free Trade Agreement (NAFTA), which was classified as a North-South agreement due to Mexico's developing-country status. The Caribbean was part of two North-South agreements during the 2000s, both of which included European countries. These agreements achieved moderate depth scores in our index but represent the deepest commitments these countries have made, far surpassing their agreements with other developing nations.

Figure 2.4 presents results for Central America, the Pacific Alliance, and South America. The same pattern holds: North-South agreements are typically deeper than South-South agreements. Costa Rica, Honduras, Nicaragua, and Panama in the 2010s represent exceptions to this trend. An important pattern emerges for Central America and the Pacific Alliance: the increase in South-South agreement depth following North-South engagement is consistent with a spillover effect. After engaging with developed nations, the depth of South-South agreements in these countries is substantially higher in subsequent periods. Chile began negotiating North-South

¹⁶Appendix A.10 presents the full results for DITA and Cumulative DITA.

Region	Country	Type	Decade				
			1970s	1980s	1990s	2000s	2010s
North America	Canada	NN		0.16 (2)	0.23 (1)	0.31 (1)	0.77 (1)
		NS			0.53 (2)	0.56 (4)	0.68 (7)
	Mexico	NS	0.01 (1)	0.03 (1)	0.62 (1)	0.44 (4)	0.69 (3)
		SS		0.02 (12)	0.38 (8)	0.22 (7)	0.61 (5)
	United States	NN		0.24 (2)		0.73 (4)	
		NS			0.62 (1)	0.66 (11)	0.60 (2)
Caribbean	Antigua & Barbuda	NS	0.04 (2)	0.18 (2)		0.50 (2)	
		SS	0.12 (1)	0.10 (1)	0.13 (5)	0.32 (3)	
	Barbados	NS	0.04 (2)	0.18 (2)		0.50 (2)	
		SS	0.12 (1)		0.13 (5)	0.32 (3)	
	Cuba	NS		0.03 (1)		0.33 (1)	
		SS		0.02 (3)	0.06 (7)	0.13 (8)	0.13 (1)
	Dominica	NS	0.04 (2)	0.18 (2)		0.50 (2)	
		SS	0.12 (1)	0.10 (1)	0.13 (5)	0.32 (3)	
	Dominican Republic	NS		0.16 (1)		0.56 (3)	
		SS		0.03 (1)	0.30 (3)		
	Grenada	NS	0.04 (2)	0.18 (2)		0.50 (2)	
		SS	0.12 (1)	0.10 (1)	0.13 (5)	0.32 (3)	
	Haiti	NS	0.04 (2)	0.13 (3)		0.50 (2)	
		SS	0.12 (1)		0.13 (5)	0.32 (3)	
	Jamaica	NS	0.04 (2)	0.18 (2)		0.50 (2)	
		SS	0.12 (1)		0.13 (5)	0.32 (3)	
	Saint Kitts & Nevis	NS	0.04 (2)	0.18 (2)		0.50 (2)	
		SS	0.12 (1)	0.10 (1)	0.13 (5)	0.32 (3)	
	Saint Lucia	NS	0.04 (2)	0.18 (2)		0.50 (2)	
		SS	0.12 (1)	0.10 (1)	0.13 (5)	0.32 (3)	
	St. Vincent & Grenadines	NS	0.04 (2)	0.18 (2)		0.50 (2)	
		SS	0.12 (1)	0.10 (1)	0.13 (5)	0.32 (3)	
	The Bahamas	NS	0.04 (2)	0.18 (2)		0.50 (2)	
SS		0.12 (1)		0.13 (5)	0.32 (3)		
Trinidad & Tobago	NS	0.04 (2)	0.13 (3)		0.50 (2)		
	SS	0.12 (1)	0.01 (1)	0.13 (5)	0.32 (3)	0.21 (2)	

Figure 2.3. Trade Agreement Depth by Partner Type Across North America and the Caribbean, 1970s-2010s

Notes: The integration index ranges from 0 to 1, where higher values indicate deeper trade agreement integration. Values in parentheses show the number of agreements each country negotiated during that decade. NN = North-North agreements (developed-developed), NS = North-South agreements (developed-developing), SS = South-South agreements (developing-developing). Colors indicate integration levels: red (low), gray (moderate), green (high).

agreements in the 1990s with Canada; in the 2000s, its average South-South depth jumped from 0.26 to 0.41. Colombia and Peru followed similar trajectories; after their first North-South agreements in the 2000s, their South-South depth doubled in the 2010s. Central American countries show a similar pattern, though with smaller increases. In contrast, South American countries have signed few North-South agreements, and these do not appear to influence their subsequent South-South negotiations. Like the Caribbean, the region's limited engagement with developed country partners may partially explain why it lags in integration depth.

These patterns are consistent with a diffusion process, whereby developed countries first establish deep provisions in North-North agreements, which then appear in developing countries through North-South agreements. After engaging with these provisions, developing countries

Region	Country	Type	Decade				
			1970s	1980s	1990s	2000s	2010s
Central America	Belize	NS		0.16 (1)		0.50 (2)	
		SS	0.12 (1)		0.11 (6)	0.31 (4)	
	Costa Rica	NS				0.60 (3)	0.58 (5)
		SS	0.06 (1)	0.02 (3)	0.31 (6)	0.49 (2)	0.69 (4)
	El Salvador	NS				0.66 (3)	0.50 (3)
		SS	0.09 (2)	0.03 (4)	0.22 (6)	0.61 (3)	0.31 (3)
	Guatemala	NS				0.65 (3)	0.69 (2)
		SS	0.02 (1)	0.01 (3)	0.21 (7)	0.43 (5)	0.41 (4)
	Honduras	NS				0.66 (3)	0.55 (4)
		SS	0.01 (1)	0.02 (3)	0.26 (5)	0.61 (3)	0.70 (2)
Pacific Alliance	Chile	NS	0.01 (1)	0.03 (1)	0.44 (1)	0.66 (7)	0.75 (4)
		SS		0.03 (2)	0.25 (11)	0.40 (8)	0.44 (8)
	Colombia	NS				0.78 (3)	0.77 (4)
		SS		0.03 (8)	0.15 (9)	0.31 (6)	0.62 (5)
	Peru	NS	0.01 (1)	0.03 (1)		0.78 (3)	0.79 (8)
		SS		0.06 (4)	0.13 (5)	0.28 (7)	0.52 (7)
South America	Argentina	NS		0.03 (1)		0.26 (1)	
		SS	0.01 (1)	0.03 (11)	0.10 (9)	0.14 (10)	0.33 (3)
	Bolivia	NS		0.03 (1)			
		SS		0.09 (2)	0.19 (8)	0.15 (3)	
	Brazil	NS	0.01 (1)	0.03 (1)		0.26 (1)	
		SS		0.02 (6)	0.12 (8)	0.14 (11)	0.09 (4)
	Ecuador	NS		0.03 (1)			0.51 (2)
		SS		0.06 (4)	0.09 (7)	0.18 (4)	0.02 (2)
	Guyana	NS	0.04 (2)	0.13 (3)		0.50 (2)	
		SS	0.12 (1)		0.11 (6)	0.24 (4)	
	Paraguay	NS	0.01 (1)			0.26 (1)	0.02 (1)
		SS		0.04 (2)	0.13 (6)	0.15 (10)	0.14 (2)
	Suriname	NS	0.04 (2)	0.18 (2)		0.50 (2)	
		SS	0.12 (1)		0.13 (5)	0.24 (4)	
	Uruguay	NS	0.01 (1)	0.03 (1)		0.26 (1)	
		SS	0.01 (1)	0.03 (7)	0.11 (7)	0.17 (11)	0.30 (3)
	Venezuela	NS		0.03 (1)			
		SS		0.04 (9)	0.13 (10)	0.06 (4)	0.06 (2)

Figure 2.4. Trade Agreement Depth by Partner Type Across Pacific Alliance, Central and South America, 1970s-2010s

Notes: The integration index ranges from 0 to 1, where higher values indicate deeper trade agreement integration. Values in parentheses show the number of agreements each country negotiated during that decade. NN = North-North agreements (developed-developed), NS = North-South agreements (developed-developing), SS = South-South agreements (developing-developing). Colors indicate integration levels: red (low), gray (moderate), green (high). Pacific Alliance countries are shown separately to highlight their distinct integration trajectory compared to other South American nations.

may find it less costly to include similar commitments in subsequent South-South negotiations, suggesting a spillover effect that propagates new negotiating standards. This pattern emerges in the Americas. Since the 2000s, Central America and the Pacific Alliance have shown increases in South-South agreement depth following their engagement with developed country partners, which is consistent with a learning or adaptation process. In contrast, the Caribbean and South

America, both regions with fewer agreements with developed nations, show no similar pattern, suggesting that limited exposure to partners may partially explain why these regions struggle to incorporate modern provisions into their agreements.

Partner choice and partner development level, thus, emerge as potentially critical strategic decisions, as the patterns we observe suggest they may be associated with the depth of future negotiations. Mercosur's objective of South integration, which prioritizes South-South negotiations, may have inadvertently limited the depth of its agreements. Although regional integration represents a valuable goal, this strategy may be associated with shallower agreements that address fewer contemporary issues than those other countries are incorporating into their trade deals. While this strategy may partly explain why member countries lag behind, other factors may also play a role, including the negotiation strategy itself, limited familiarity with contemporary provisions, and capacity constraints.

2.5.4 Coverage Ratios

To better understand what drives the regional differences observed in DITA, we examine how coverage in each policy area has evolved by analyzing average coverage ratios across the 1970s to the 2010s. To understand negotiation patterns, we distinguish between core provisions and expanded scope provisions. Core provisions include market access, competition, trade defense instruments, capital movement, and dispute settlement, foundational areas that have been present in trade agreements since the 1970s. Expanded scope provisions extend beyond these core areas, incorporating commitments in services, investment, intellectual property rights, public procurement, regulatory cooperation, sanitary and phytosanitary measures, technical barriers to trade, and non-trade issues. These provisions represent deeper integration commitments that emerged primarily from the 1990s onward. Figure 2.5 presents results for the five American regions for the period.

All core provisions have evolved over time, with varying rates of change across regions. Market access and dispute settlement have increased faster than the other three provisions for most regions, with South America being the notable exception. South America shows relatively shallow coverage across most core provisions, with moderate progress primarily in market access. Although the Caribbean also lags behind other regions, the gap is less pronounced. The low scores in South America are particularly notable, as one would expect better performance in at least the core provisions. This pattern indicates that even the most basic provisions remain underutilized in the region. The average values suggest that even new agreements differ little from what the region negotiated decades ago. This stagnation is surprising and suggests that trade agreements are not being utilized to their full potential; instead, they primarily serve as tools for market access.

Figure 2.6 presents results for expanded scope provisions. We omitted several provisions with limited coverage for clearer visualization. However, Appendix A.11 shows values for all policy areas across all regions and decades. Figure 2.6 reveals a similar pattern to the core provisions.



Figure 2.5. Core Provision Coverage by Decade, 1970s-2010s

Notes: Values represent average provision coverage indices (0-1 scale) for agreements signed in each decade, where higher values indicate deeper integration in that policy area. Cell colors follow a continuous gradient from red (low coverage) through yellow (moderate coverage) to green (high coverage).

Coverage in these policy areas has deepened over time, driven primarily by North America, the Pacific Alliance, and, to a lesser extent, Central America. This growth concentrates in regulatory areas such as technical barriers to trade and sanitary and phytosanitary measures, as well as services, non-trade issues, and intellectual property rights, which were negotiated more intensively from the 2000s onward.

The gap between the Caribbean and South America becomes more evident in these expanded scope provisions. Both regions show limited engagement, with South America demonstrating particularly shallow coverage in services, investment, and intellectual property rights. Both regions have been constrained by their negotiation choices, prioritizing market access and basic regulatory areas while neglecting engagement in other evolving policy areas. These regions not only lag significantly behind but appear increasingly excluded from negotiations in certain areas. The Caribbean has at least achieved some progress in dispute settlement, trade defense instruments, and sanitary and phytosanitary measures. In contrast, South America has focused primarily on sanitary and phytosanitary measures.

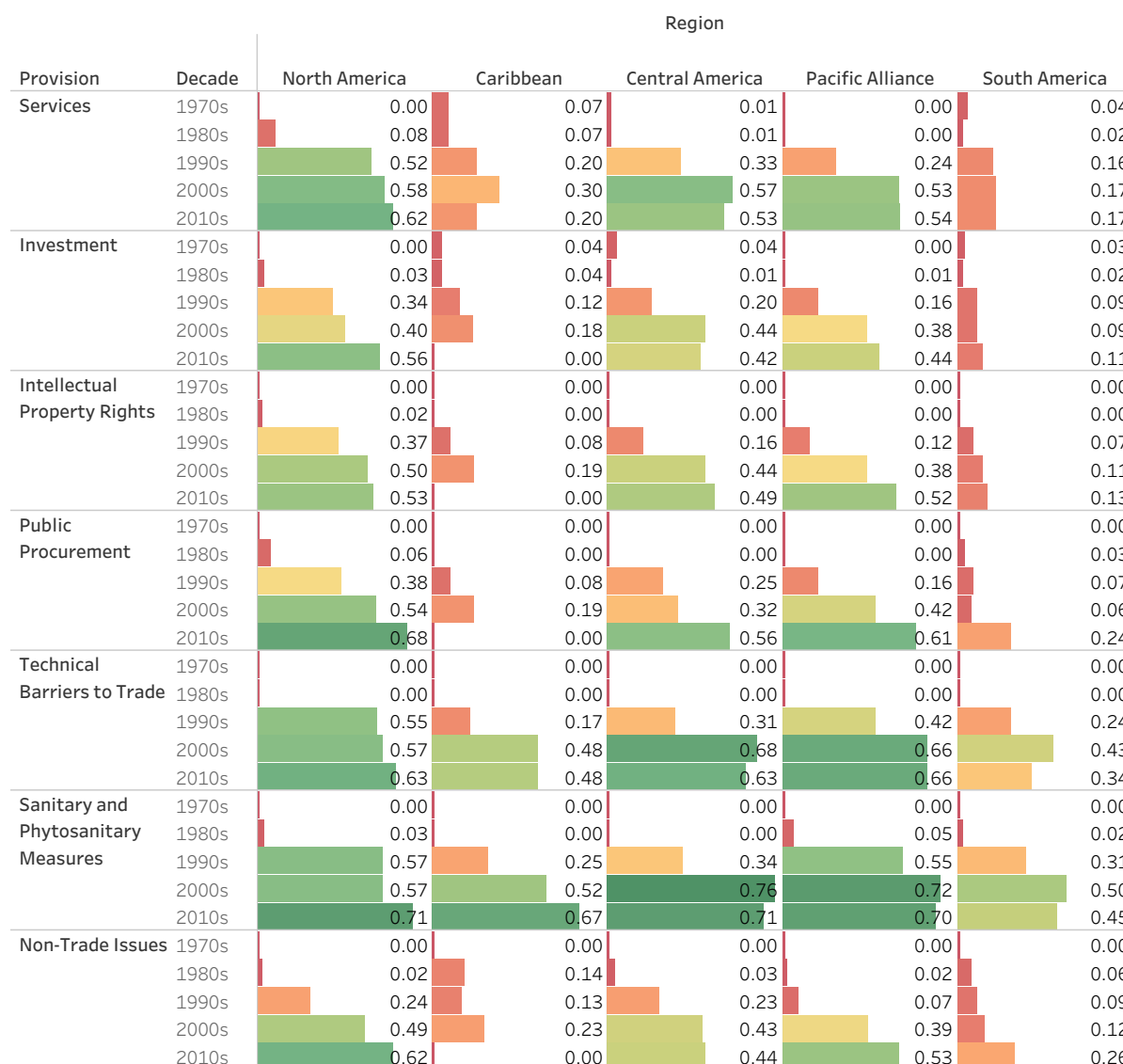


Figure 2.6. Expanded Scope Provision Coverage by Decade, 1970s-2010s

Notes: Values represent average provision coverage indices (0-1 scale) for agreements signed in each decade, where higher values indicate deeper integration in that policy area. Cell colors follow a continuous gradient from red (low coverage) through yellow (moderate coverage) to green (high coverage).

North America, Central America, and the Pacific Alliance have used their trade agreements to deepen core provisions while simultaneously exploring expanded scope areas and negotiating deeper agreements with more comprehensive commitments. The opposite pattern emerges in the Caribbean and South America, which appear not only to have been left behind but also to be unable to keep pace with modern trade negotiations. They lack commitment in both new policy areas and traditional provisions. Their agreements focus more on market access than on economic integration.

2.5.5 Trade Effects of Agreement Depth

To assess the effect of agreement depth on bilateral trade flows, specifically whether deeper agreements generate larger trade effects than shallow ones, we estimate a gravity model for both the global sample and for the Americas. Table 2.4 presents a summary of the estimated results.¹⁷

Table 2.4. The Effect of Trade Agreement Depth on Bilateral Trade

	Global		Americas	
	Increase in Trade	95% C.I.	Increase in Trade	95% C.I.
<i>Continuous</i>				
DITA	48.1%	[24.6%, 76.1%]	39.7%	[7.1%, 82.2%]
<i>Categorical</i>				
DITA – Low	—	—	—	—
DITA – High	38.3%	[25.8%, 52.1%]	46.9%	[20.3%, 79.4%]
<i>Temporal - High Depth</i>				
Anticipatory	27.7%	[17.0%, 39.4%]	—	—
Short-run	33.6%	[21.8%, 46.5%]	—	—
Medium-run	42.4%	[27.9%, 58.4%]	36.2%	[9.1%, 69.9%]
Long-run	45.3%	[28.1%, 64.8%]	80.0%	[38.7%, 133.6%]
<i>Temporal - Low Depth</i>				
Anticipatory	—	—	—	—
Short-run	—	—	—	—
Medium-run	26.6%	[9.7%, 46.0%]	—	—
Long-run	—	—	—	—

Note: Entries are the estimated percentage increase in bilateral trade, calculated as $(e^{\hat{\beta}} - 1) \times 100$. — indicates a statistically insignificant coefficient. Confidence intervals derived from 95% bounds $(\hat{\beta} \pm 1.96 \cdot SE)$ and converted to percentage trade effects. High and Low refer to above- and below-median DITA depth at entry into force. Temporal dummies are defined relative to the year of entry into force of the first agreement for each country pair: the anticipatory (–5 to –1), short-run (1 to 5), medium-run (6 to 14), and long-run (≥ 15). Full results are reported in Appendix A.12.

Overall, agreement depth has a positive and significant impact on trade in both samples. The deeper the agreement, the greater the effect on trade flows among its members. Moving from the shallowest to the deepest observed agreement is associated with a 48.1% increase in bilateral exports for the global sample and 39.7% for the Americas only. When we classify agreements into low- and high-depth categories relative to the median DITA value, this pattern becomes even clearer. Globally, high-depth agreements are associated with a 38.3% increase in bilateral trade, while low-depth agreements show no statistically significant effect. The same pattern

¹⁷Complete estimation results are reported in Appendix A.12

holds in the Americas, where high-depth agreements generate an even larger increase (46.9%), whereas low-depth agreements remain insignificant.

To examine how trade effects evolve and compare our findings with those of [Dür, Baccini, and Elsig \(2014\)](#), we also estimate temporal effects relative to the year of entry into force of the first agreement for each country pair. For high-depth agreements in the global sample, the results are clearly monotonic: trade effects emerge five years before entry into force and increase steadily thereafter, reaching 45.3% in the long run. The Americas tell a similar story, with one notable difference: the anticipatory and short-run effects are not statistically significant, suggesting that the trade response begins only five years after the agreements enter into force. However, once in force, the medium-run effects are smaller than the global estimates, whereas the long-run effect is 80%, nearly double the global figure. This pattern is consistent with the progressive implementation of agreement commitments: as members harmonize their procedures and regulatory frameworks over time, trade flows increase accordingly, and this process appears to be both slower to materialize and ultimately larger in magnitude in the Americas.

For low-depth agreements, the dynamic results are mostly insignificant in both samples. Globally, only the medium-run shows a significant effect of 26.6%, whereas in the Americas, effects are not statistically significant in any period. These results reinforce the importance of agreement design. When countries choose to negotiate shallow agreements, the resulting trade effects fall far short of what deeper integration could achieve, and this conclusion holds both globally and within the Americas.

These findings are broadly consistent with [Dür, Baccini, and Elsig \(2014\)](#), who also find that agreement design matters for trade creation. Using a different measure of depth based on the DESTA database, they find that deep agreements increase trade by approximately 47% in the medium run and 45% in the long run, while shallow agreements reach only 13%. A pattern similar to ours, despite differences in how depth is measured. Our results thus reinforce their conclusion that the design of trade agreements drives trade creation. In contrast, [Berger et al. \(2020\)](#) include a depth variable as a control in their analysis of environmental provisions in preferential trade agreements and find no statistically significant effect of depth on bilateral trade. However, this difference is likely attributable to their research design. Taken together, these results suggest that agreement design matters for trade and that treating all agreements as equivalent may underestimate their true effects, as shallow agreements likely attenuate the estimates when mixed with deeper ones.

2.6 Conclusion

This article examines the depth of trade agreements negotiated in Latin America from the 1970s to the 2010s, investigating whether countries in the region are keeping pace with or falling behind the global trend toward more comprehensive agreements. We make three key contributions to the literature. First, we provide a systematic regional analysis of trade agreement depth for Latin America, examining the full range of provisions rather than focusing on specific types.

Second, we use factor analysis to endogenously determine provision weights, revealing two distinct integration dimensions and addressing the limitations of existing equal-weighting approaches. Third, we document substantial heterogeneity across Latin American subregions, quantify decade-long gaps, and identify patterns consistent with spillover effects, whereby provisions from North-South agreements appear to influence subsequent South-South negotiations. Our results show large variation across the region, with Pacific Alliance and Central American countries keeping pace with developed-country standards, while South America and the Caribbean lag by approximately two to three decades. Beyond the regional patterns, our gravity model estimates confirm that agreement design matters for trade creation: deeper agreements generate substantially larger trade effects than shallow ones, and treating all agreements as equivalent understates this heterogeneity.

The Pacific Alliance, Central America, and Mexico negotiate agreements at levels comparable to those of developed countries, such as Canada, the United States, and the European Union. These regions use trade agreements to enforce commitments, deepen integration, and raise regulatory standards, while also updating old agreements with existing partners to maintain comprehensive coverage.

South America and the Caribbean, in contrast, are falling behind in comprehensive negotiations. At their current pace, these regions would need nearly a century to achieve the integration levels North America reached in the 2010s. Their agreements primarily serve as market-access tools rather than integration instruments, with shallow coverage even in basic provisions. Whereas the Caribbean has not negotiated new agreements since 2008, South America continues signing agreements that remain shallow and lack comprehensive commitments. The prolonged negotiations between Mercosur and the European Union illustrate these difficulties, with the agreement ratified only in 2026.

A common characteristic of the lagging regions is their limited engagement with developed nations. This pattern suggests that limited exposure to developed partners may be associated with weaker subsequent negotiation capacity. In contrast, regions that frequently negotiate with developed countries tend to incorporate more comprehensive provisions into their agreements with other developing partners, suggesting a spillover effect. The experience of the Pacific Alliance shows that keeping pace with developed-country standards is achievable for Latin American nations, suggesting that current delays reflect policy choices rather than inherent regional constraints.

Our findings are broadly consistent with the theoretical framework of [Maggi and Rodríguez-Clare \(2007\)](#). The substantial heterogeneity in agreement depth across Latin America aligns with the model's prediction that differences in capital mobility, lobby strength, and governments' political orientation should produce systematically different negotiating outcomes. The patterns we document for partner selection are also consistent with the domestic commitment mechanism: countries that engage with developed partners appear to subsequently negotiate deeper South-South agreements, suggesting that prior engagement reduces the cost of commit-

ting to modern provisions in future negotiations. While we cannot formally test these mechanisms, the regional patterns we document suggest that the theoretical framework offers a convincing explanation for why Latin America's integration trajectory varies so substantially.

These findings have important implications for trade policy. For regions lagging, our results suggest an urgent need to reconsider negotiation strategies. The continued pursuit of shallow agreements creates a self-reinforcing cycle: fewer commitments reduce immediate adoption costs but isolate these countries from the evolving system of comprehensive trade rules that other nations are adopting. These countries face a critical choice: begin negotiating more comprehensive agreements now, accepting necessary adoption costs, or risk increasing isolation, as potential partners prefer countries already aligned with contemporary trade standards. As adoption costs rise over time, the longer countries remain behind, the more difficult convergence becomes and the more likely they are to resist negotiating modern provisions. Being excluded from comprehensive negotiations limits integration opportunities and restricts market access, potentially complicating these countries' ability to participate fully in global value chains.

Limited engagement with developed nations appears to be a factor in South America's lag. The patterns we document are consistent with spillover effects, whereby countries that engage with developed partners tend to negotiate deeper South-South agreements subsequently. However, we acknowledge that alternative explanations could be plausible. Countries may negotiate deeper agreements only when they are mature and ready to do so, independent of any learning or adaptation from previous North-South engagements. Both hypotheses are consistent with the patterns we observe, and distinguishing between them would require formal econometric models that go beyond the scope of this article.

North-South engagement, however, is not without risks for developing countries. These countries typically negotiate from a weaker bargaining position and may end up accepting deeper commitments in exchange for market access gains that are far from guaranteed. Restrictive rules of origin and the maintenance of agricultural subsidies by developed countries often limit the actual benefits that can be extracted from these agreements. Deeper agreements also tend to reduce the policy space available to support domestic industries and pursue development strategies, removing important instruments for industrial upgrading and structural change. As [United Nations Conference on Trade and Development \(2007\)](#) warns, while the gains from improved market access may be short-lived, the loss of policy space is certain.

Future research could employ such methods to quantify the magnitude of potential spillover effects, identify the specific channels through which provisions may transfer across agreements, and test these competing explanations. Additionally, future research could investigate potential links between agreement depth and economic performance, examining whether countries that lag in trade agreement depth also experience slower growth or convergence. Understanding these mechanisms could inform strategies for accelerating the adoption of modern trade provisions in lagging regions.

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Appendix A

A.1 Construction of Coverage Ratios

This appendix provides detailed information on the construction of the 17 coverage ratios used to measure the depth of trade agreements. Each ratio represents a distinct policy area, with variables grouped and weighted according to their level of liberalization. All missing values are replaced with 0 before calculations, and all factor indices range from 0-1, where higher values indicate greater trade agreement depth.

A.1.1 Market Access

A.1.1.1 Individual Variables

- **mar_typedepth** (weight: 1.0): Market access type depth
 - Values: 1=Partial Scope Agreement, 2=Free Trade Agreement, 3=Customs Union, 4=Services Agreement, 5=Framework Agreement
 - Rescaled: $1 \rightarrow 0.33$, $2 \rightarrow 0.67$, $3 \rightarrow 1.0$, $4 \rightarrow 0.0$, $5 \rightarrow 0.0$
- **mar_goods_nt** (weight: 1.0): Is there a provision on national treatment (NT) for goods?
 - Values: 0=No, 1=Yes
- **mar_goods_mfn** (weight: 1.0): Is there a provision on most-favoured nation (MFN) treatment for goods?
 - Values: 0=No, 1=Yes

A.1.1.2 Calculation Method Average of 3 components with equal weights:

$$(2.1) \text{ Market Access Index} = \frac{\text{mar_typedepth (rescaled)} + \text{mar_goods_nt} + \text{mar_goods_mfn}}{3}$$

A.1.2 Services

A.1.2.1 Individual Variables

- **ser_gatsref** (weight: 1.0): Does the agreement contain a reference to the General Agreement on Trade in Services (GATS)?
 - Values: 0=No mention of the GATS, 1=GATS mentioned
- **ser_mfn** (weight: 1.0): Does the service chapter contain a most-favoured nation (MFN) clause?
 - Values: 0=No MFN clause included in the service chapter, 1=MFN clause included in the service chapter
- **ser_nonestablishment** (weight: 1.0): Does the service chapter grant the right of non-establishment (that is, does it allow the provision of services without local presence)?

- Values: 0=The right of non-establishment is not explicitly allowed (it may be either omitted or explicitly excluded), 1=The right of non-establishment is explicitly granted
- **ser_review_outdated** (weight: 1.0): What is the level of implementation of the continuous review provision?
 - Values: 0=Provision is vague, 1=Provision is outdated
- **ser_review_body_specific** (weight: 1.0): Is there a body responsible of the continuous review provision?
 - Values: 0=Provision is vague, 1=Provision installs body and/or specific plan-of-action

A.1.2.2 Grouped Variables

A.1.2.2.1 Group 1: General vs Specific Provisions

- **ser_general** (weight: 0.5): Does this agreement include general provisions stipulating the liberalization of trade in services?
 - Values: 0=No mention of services trade liberalization, 1=Services trade liberalization mentioned as general objective
- **ser_specific** (weight: 1.0): Does this agreement include specific provisions stipulating the liberalization of trade in services?
 - Values: 0=No mention of services trade liberalization, 1=Substantive provisions liberalizing trade in services
- **Method**: Take maximum value

A.1.2.2.2 Group 2: List Approach

- **ser_list_positive** (weight: 1.0): Are services liberalized following a positive list approach?
 - Values: 0=No substantive service provisions, 1=Positive list approach (list of sectors to be covered)
- **ser_list_negative** (weight: 0.67): Are services liberalized following a negative list approach?
 - Values: 0=No substantive service provisions, 1=Negative list approach (all sectors are covered except those listed)

- **ser_list_mixed** (weight: 0.33): Are services liberalized following a positive and negative list approach?
 - Values: 0=No substantive service provisions, 1=Positive and negative list approach (all sectors are covered except those listed)
- **Method:** Take maximum value

A.1.2.2.3 Group 3: National Treatment

- **ser_nt** (weight: 1.0): Does the service chapter contain a general national treatment (NT) clause?
 - Values: 0=No national treatment clause included in the service chapter, 1=National treatment clause included in the service chapter
- **ser_nt_limited** (weight: 0.5): Does the service chapter contain a national treatment (NT) clause that is limited to certain sectors?
 - Values: 0=No national treatment clause included in the service chapter, 1=National treatment clause included in the service chapter is limited in scope to specific sector
- **Method:** Take maximum value

A.1.2.2.4 Group 4: Review Provisions

- **ser_review** (weight: 0.5): Does the service chapter include a general review provision?
 - Values: 0=No review provision in service chapter, 1=General review provision in service chapter
- **ser_review_specific_sector** (weight: 1.0): Does the service chapter include a specific review provision?
 - Values: 0=No review provision in service chapter, 1=Specific review provision in service chapter
- **Method:** Take maximum value

A.1.2.2.5 Group 5: Sectoral Coverage Average of 11 service sectors, where each sector score is calculated as:

Sector Score = Single provisions (weight: 0.5) + Group provisions (weight: 1.0)

The 11 sectors are:

1. Professional/Business Services

- **ser_single_provisions_professional_business** (weight: 0.5): Are there specific provisions for business and professional services sectors scattered in the agreement?
 - Values: 0=No, 1=Yes
- **ser_group_provisions_professional_business** (weight: 1.0): Is there a group of provisions for business and professional services sectors?
 - Values: 0=No, 1=Yes

2. **Communication Services** (includes telecommunications)

- **ser_single_provisions_communication** (weight: 0.5): Are there specific articles for communication services sectors?
 - Values: 0=No, 1=Yes
- **ser_group_provisions_communication** (weight: 1.0): Are there specific chapters for communication services sectors?
 - Values: 0=No, 1=Yes

3. **Construction and Related Services**

- **ser_single_provisions_construction** (weight: 0.5): Are there specific articles for construction and related services sectors?
 - Values: 0=No, 1=Yes
- **ser_group_provisions_construction** (weight: 1.0): Are there specific chapters for construction and related services sectors?
 - Values: 0=No, 1=Yes

4. **Distribution Services**

- **ser_single_provisions_distribution** (weight: 0.5): Are there specific articles for distribution services sectors?
 - Values: 0=No, 1=Yes
- **ser_group_provisions_distribution** (weight: 1.0): Are there specific chapters for distribution services sectors?
 - Values: 0=No, 1=Yes

5. **Education Services**

- **ser_single_provisions_education** (weight: 0.5): Are there specific articles for education services sectors?
 - Values: 0=No, 1=Yes

- **ser_group_provisions_education** (weight: 1.0): Are there specific chapters for education services sectors?
 - Values: 0=No, 1=Yes

6. Energy Services

- **ser_single_provisions_energy** (weight: 0.5): Are there specific articles for energy services sectors?
 - Values: 0=No, 1=Yes
- **ser_group_provisions_energy** (weight: 1.0): Are there specific chapters for energy services sectors?
 - Values: 0=No, 1=Yes

7. Environmental Services

- **ser_single_provisions_environmental** (weight: 0.5): Are there specific articles for environmental services sectors?
 - Values: 0=No, 1=Yes
- **ser_group_provisions_environmental** (weight: 1.0): Are there specific chapters for environmental services sectors?
 - Values: 0=No, 1=Yes

8. Financial Services

- **ser_single_provisions_financial** (weight: 0.5): Are there specific articles for financial services sectors?
 - Values: 0=No, 1=Yes
- **ser_group_provisions_financial** (weight: 1.0): Are there specific chapters for financial services sectors?
 - Values: 0=No, 1=Yes

9. Health and Social Services

- **ser_single_provisions_health_social** (weight: 0.5): Are there specific articles for health and social services sectors?
 - Values: 0=No, 1=Yes
- **ser_group_provisions_health_social** (weight: 1.0): Are there specific chapters for health and social services sectors?
 - Values: 0=No, 1=Yes

10. Tourism Services

- **ser_single_provisions_tourism** (weight: 0.5): Are there specific articles for tourism services sectors?
 - Values: 0=No, 1=Yes
- **ser_group_provisions_tourism** (weight: 1.0): Are there specific chapters for tourism services sectors?
 - Values: 0=No, 1=Yes

11. Transport Services

- **ser_single_provisions_transport** (weight: 0.5): Are there specific articles for transport services sectors?
 - Values: 0=No, 1=Yes
- **ser_group_provisions_transport** (weight: 1.0): Are there specific chapters for transport services sectors?
 - Values: 0=No, 1=Yes

A.1.2.3 Calculation Method The Services Index is calculated as the average of 10 components:

$$\begin{aligned}
 (2.2) \text{ Services Index} = & \frac{1}{10} \times \left(\text{ser_gatsref} + \text{ser_mfn} + \text{ser_nonestablishment} \right. \\
 & + \text{ser_review_outdated} + \text{ser_review_body_specific} \\
 & + \max(\text{ser_general}_{0.5}, \text{ser_specific}_{1.0}) \\
 & + \max(\text{ser_list_positive}_{1.0}, \text{ser_list_negative}_{0.67}, \text{ser_list_mixed}_{0.33}) \\
 & + \max(\text{ser_nt}_{1.0}, \text{ser_nt_limited}_{0.5}) \\
 & + \max(\text{ser_review}_{0.5}, \text{ser_review_specific_sector}_{1.0}) \\
 & \left. + \frac{1}{11} \sum_{i=1}^{11} \text{Sector}_i \text{ Score} \right)
 \end{aligned}$$

A.1.3 Global Value Chains

A.1.3.1 Grouped Variables

A.1.3.1.1 Group 1: Reference Provisions

- **gvc_reference_general** (weight: 0.5): Does the agreement contain a general reference to global value chains (GVCs)?
 - Values: 0=No mention of global value chains, 1=Global value chains mentioned in the preamble or objectives of the agreement

- **gvc_reference_specific** (weight: 1.0): Does the agreement contain a specific reference to global value chains?
 - Values: 0=No mention of global value chains, 1=Provisions specifically dealing with global value chains
- **Method**: Take maximum value

A.1.3.1.2 Group 2: Cooperation Provisions

- **gvc_cooperation_general** (weight: 0.5): Is there a general mechanism mentioned to deal specifically with GVC issues or related issues between the parties?
 - Values: 0=No mechanism, 1=Co-operation is mentioned but not organised
- **gvc_cooperation_specific** (weight: 1.0): Is there a specific mechanism defined to deal specifically with GVC issues or related issues between the parties?
 - Values: 0=No mechanism, 1=Provisions organising the co-operation
- **Method**: Take maximum value

A.1.3.2 Calculation Method The Global Value Chains Index is calculated as the average of 2 grouped components:

$$(2.3) \text{ GVC Index} = \frac{1}{2} \times \left(\max(\text{gvc_reference_general}_{0.5}, \text{gvc_reference_specific}_{1.0}) + \max(\text{gvc_cooperation_general}_{0.5}, \text{gvc_cooperation_specific}_{1.0}) \right)$$

A.1.4 Investment

A.1.4.1 Individual Variables

- **inv_schedule_market_access** (weight: 1.0): Is there a market access obligation applicable to investments across all sectors (goods and services), integrated scheduling approach?
 - Values: 0=No, 1=Yes
- **inv_mfn** (weight: 1.0): Does the agreement grant most-favoured nation (MFN) treatment for investment?
 - Values: 0=No, 1=Yes
- **inv_nt** (weight: 1.0): Does the agreement grant national treatment (NT) for investment?
 - Values: 0=No, 1=Yes
- **inv_pre_est_oper** (weight: 1.0): Are pre-establishment operations covered by non-discrimination provisions (before investment)?

- Values: 0=No, 1=Yes
- **inv_est_oper** (weight: 1.0): Is establishment (i.e. greenfield) covered by non-discrimination provisions?
 - Values: 0=No, 1=Yes
- **inv_post_est_oper** (weight: 1.0): Are post-establishment operations (i.e. free movement of capital and resale) covered by non-discrimination provisions?
 - Values: 0=No, 1=Yes
- **inv_acquisition_merger** (weight: 1.0): Are acquisition (i.e. merger) covered by non-discrimination provisions?
 - Values: 0=No, 1=Yes
- **inv_stand_treat_minimum** (weight: 1.0): Does the agreement grant a minimum standard of treatment for investment?
 - Values: 0=No treatment, 1=Minimum standard of treatment (no specific definition)
- **inv_reference_trims** (weight: 1.0): Does the agreement contain a reference to the Agreement on Trade Related Investment Measures (TRIMs)?
 - Values: 0=No, 1=Yes
- **inv_transf_pay** (weight: 1.0): Does the agreement grant transfers and payments without restrictions?
 - Values: 0=Restrictions, 1=No restrictions specifically mentioned
- **inv_free_transfers_restrictions** (weight: 1.0): Does the agreement include a restricted provision on free transfer of funds (repatriation of profits)?
 - Values: 0=No, 1=Yes
- **inv_direct_expropriation** (weight: 1.0): Does the agreement have measures on expropriation (prohibition, limitation, no provision)?
 - Values: 0=No, 1=Yes
- **inv_compensation_expropriation** (weight: 1.0): Does the agreement grant a compensation to investors in the case of expropriation?
 - Values: 0=No treatment, 1=Compensation
- **inv_compensation_strife** (weight: 1.0): Does the agreement grant a compensation to investors in the case of strife?
 - Values: 0=No treatment, 1=Compensation in case of strife

- **inv_transparency** (weight: 1.0): Does the agreement include transparency provisions that cover investment?
 - Values: 0=No, 1=Yes
- **inv_rule_inconsistency_service** (weight: 1.0): Does the agreement include rules for the interaction between the investment and service chapter (inconsistency)?
 - Values: 0=Not relevant (no chapter for services, only investment) OR no rule, 1=Rules stating the interaction
- **inv_consistency** (weight: 1.0): Does the agreement include rules for the relation with other overlapping PTAs?
 - Values: 0=No, 1=Yes
- **inv_reference_bit** (weight: 1.0): Does the agreement contain a reference to a bilateral investment treaty or bilateral investment treaties in general?
 - Values: 0=No mention, 1=Reference to bilateral investment treaty (BIT)
- **inv_bits_inconsistency** (weight: 1.0): Does the agreement include rules for the relation with bilateral investment treaties (BITs) in the case of inconsistencies?
 - Values: 0=No rule, 1=Rules in case of inconsistency
- **inv_bits_terminate** (weight: 1.0): Does the agreement include rules for the relation with bilateral investment treaties such as termination/replacement?
 - Values: 0=No rule, 1=The agreement terminates and replaces the BIT
- **inv_dtts** (weight: 1.0): Does the agreement include rules for the relation with double taxation treaties (DTTs)?
 - Values: 0=No, 1=Yes
- **inv_regulatory_coordination** (weight: 1.0): Does the agreement include regulatory co-operation provisions that cover investment?
 - Values: 0=No, 1=Yes
- **inv_responsible_business_conduct** (weight: 1.0): Does the investment chapter refer to responsible business conduct?
 - Values: 0=No, 1=Yes

A.1.4.2 Grouped Variables

A.1.4.2.1 Group 1: Reference Provisions

- **inv_reference_general** (weight: 0.33): Does the agreement contain a general reference to investment protection or promotion?
 - Values: 0=No mention, 1=General reference, endeavours without specific scope
- **inv_reference_service** (weight: 0.67): Does the agreement refer to investment only in the service chapter or article?
 - Values: 0=No mention, 1=Investment only included in services chapter
- **inv_chapter** (weight: 1.0): Does the agreement contain a specific chapter on investment?
 - Values: 0=No mention, 1=Investment chapter beyond services (separate chapter)
- **Method**: Take maximum value

A.1.4.2.2 Group 2: Definition Provisions

- **inv_definition_business_operations** (weight: 0.33): Does the investment definition require substantial business operations/activities?
 - Values: 0=No, 1=Yes
- **inv_definition_enterprise** (weight: 0.67): Is investment defined as enterprise-based?
 - Values: 0=No definition or not enterprise-based, 1=Enterprise-based
- **inv_definition_asset** (weight: 1.0): Is investment defined as asset-based?
 - Values: 0=No definition or not asset-based, 1=Asset-based
- **Method**: Take maximum value

A.1.4.2.3 Group 3: Strategic Partnerships Average of 9 strategic partnership variables:

- **inv_strategic_partnership_contract** (weight: 1.0): Does the definition of investment include contracts?
 - Values: 0=No, 1=Yes
- **inv_strategic_partnership_manufacturing_services** (weight: 1.0): Contract manufacturing and/or service outsourcing
 - Values: 0=No, 1=Yes
- **inv_strategic_partnership_farming_marketing_agricultural** (weight: 1.0): Contract farming and/or marketing of agricultural products
 - Values: 0=No, 1=Yes

- **inv_strategic_partnership_licensing** (weight: 1.0): Licensing
 - Values: 0=No, 1=Yes
- **inv_strategic_partnership_franchising** (weight: 1.0): Franchising
 - Values: 0=No, 1=Yes
- **inv_strategic_partnership_management_contracts** (weight: 1.0): Management contracts
 - Values: 0=No, 1=Yes
- **inv_strategic_partnership_concessions** (weight: 1.0): Concessions
 - Values: 0=No, 1=Yes
- **inv_strategic_partnership_strategic_alliances_contractual_joint_ventures** (weight: 1.0): Strategic alliances and/or contractual joint ventures
 - Values: 0=No, 1=Yes
- **inv_strategic_partnership_dummy** (weight: 1.0): Does the definition of investment cover any of the types of strategic partnerships coded above?
 - Values: 0=No, 1=Yes

Method: Average of 9 variables

A.1.4.2.4 Group 4: Denial of Benefits

- **inv_denial_benefits** (weight: 0.5): Can non-party companies be denied the benefit of the investment provisions?
 - Values: 0=No, 1=Yes
- **inv_denial_benefits_business_operations** (weight: 1.0): Can non-party companies be denied the benefit of the investment provisions if enterprise has no substantive (or substantial) business activities in the host country?
 - Values: 0=No denial of benefit (or limited to diplomatic reasons), 1=Substantive business operations
- **Method:** Take maximum value

A.1.4.2.5 Group 5: List Approach

- **inv_list_mixed** (weight: 0.33): Is investment liberalised following a mixed (negative AND positive) list approach?
 - Values: 0=No investment liberalisation, 1=Mixed approach
- **inv_list_positive** (weight: 0.67): Is investment liberalised following a positive list approach?
 - Values: 0=No investment liberalisation, 1=Positive list approach
- **inv_list_negative** (weight: 1.0): Is investment liberalised following a negative list approach?
 - Values: 0=No investment liberalisation, 1=Negative list approach
- **Method:** Take maximum value

A.1.4.2.6 Group 6: Fair & Equitable Treatment

- **inv_stand_treat_fet** (weight: 0.5): Does the agreement grant a fair and equitable treatment (FET) for investment?
 - Values: 0=No treatment or no FET, 1=Fair and equitable treatment (FET)
- **inv_stand_treat_fet_defined** (weight: 1.0): Does the agreement define a fair and equitable treatment (FET) for investment?
 - Values: 0=No definition, 1=Definition of FET
- **Method:** Take maximum value

A.1.4.2.7 Group 7: Full Protection & Security

- **inv_stand_treat_fps** (weight: 0.5): Does the agreement grant full protection and/or security (FPS) for investment?
 - Values: 0=No treatment or no FPS, 1=Full protection and security (FPS)
- **inv_stand_treat_fps_defined** (weight: 1.0): Does the agreement define full protection and/or security (FPS) for investment?
 - Values: 0=No definition, 1=Definition of FPS
- **Method:** Take maximum value

A.1.4.2.8 Group 8: Performance Requirements

- **inv_performance_limitation** (weight: 0.33): Does the agreement limit the use of performance requirements?
 - Values: 0=No provision, 1=Limitation
- **inv_performance_trimsplus** (weight: 0.67): Does the agreement prohibit the use of performance requirements?
 - Values: 0=No provision, 1=Prohibition (TRIMs-plus)
- **inv_performance_trimsextra** (weight: 1.0): Does the agreement prohibit the use of performance requirements?
 - Values: 0=No provision, 1=Prohibition (TRIMs-extra)
- **Method:** Take maximum value

A.1.4.2.9 Group 9: Indirect Expropriation

- **inv_indirect_expropriation** (weight: 0.5): Does the agreement include a provision on indirect expropriation?
 - Values: 0=No indirect expropriation, 1=Indirect expropriation
- **inv_indirect_expropriation_defined** (weight: 1.0): Does the agreement include a definition of indirect expropriation?
 - Values: 0=No definition, 1=Definition of indirect expropriation
- **Method:** Take maximum value

A.1.4.2.10 Group 10: Coordination Body

- **inv_coordination_general_body** (weight: 0.5): Is there a consultation or co-ordination mechanism for investment?
 - Values: 0=No, 1=Yes
- **inv_coordination_specific_body** (weight: 1.0): Is there a consultation or co-ordination mechanism specifically for investment?
 - Values: 0=No, 1=Yes
- **Method:** Take maximum value

A.1.4.2.11 Group 11: Country DSM

- **inv_ctype_dsm** (weight: 0.5): Is there an investor-state dispute settlement mechanism (DSM) for investment (investor-country)?
 - Values: 0=No dispute settlement mechanism (DSM), 1=Investor-state dispute settlement mechanism (DSM)
- **inv_ctype_ctype_dsm** (weight: 1.0): Is there a state-state dispute settlement mechanism (DSM) for investment (country-country)?
 - Values: 0=No dispute settlement mechanism (DSM), 1=State-state dispute settlement mechanism (DSM)
- **Method:** Take maximum value

A.1.4.3 Calculation Method The Investment Index is calculated as the average of 34 components (23 individual + 11 grouped):

$$\begin{aligned}
 (2.4) \text{ Investment Index} = & \frac{1}{34} \times \left(\sum_{i=1}^{23} \text{Individual Variable}_i \right. \\
 & + \max(\text{inv_ref_gen}_{0.33}, \text{inv_ref_ser}_{0.67}, \text{inv_chap}_{1.0}) \\
 & + \max(\text{inv_def_bus_op}_{0.33}, \text{inv_def_ent}_{0.67}, \text{inv_def_asset}_{1.0}) \\
 & + \frac{1}{9} \sum_{j=1}^9 \text{Strategic Partnership}_j \\
 & + \max(\text{inv_denial_ben}_{0.5}, \text{inv_denial_ben_bus_op}_{1.0}) \\
 & + \max(\text{inv_list_mix}_{0.33} + \text{inv_list_pos}_{0.67} + \text{inv_list_neg}_{1.0}) \\
 & + \max(\text{inv_treat_fet}_{0.5}, \text{inv_treat_fet_def}_{1.0}) \\
 & + \max(\text{inv_treat_fps}_{0.5}, \text{inv_treat_fps_def}_{1.0}) \\
 & + \max(\text{inv_perf_lim}_{0.33}, \text{inv_perf_plus}_{0.67}, \text{inv_perf_extra}_{1.0}) \\
 & + \max(\text{inv_indir_exp}_{0.5}, \text{inv_indir_exp_def}_{1.0}) \\
 & + \max(\text{inv_coord_gen}_{0.5}, \text{inv_coord_spec}_{1.0}) \\
 & \left. + \max(\text{inv_ctype_dsm}_{0.5}, \text{inv_ctype_ctype_dsm}_{1.0}) \right)
 \end{aligned}$$

A.1.5 Temporary Entry of Business Persons

A.1.5.1 Individual Variables

- **temp_visa_cooperation_transparency** (weight: 1.0): Are there provisions on transparency and co-operation to facilitate visa for business persons?
 - Values: 0=No provision on visas, 1=Co-operation and transparency

- **temp_visa_mechanism** (weight: 1.0): Are there provisions on specific mechanisms to facilitate visa for business persons?
 - Values: 0=No provision on visas, 1=Mechanism facilitating the delivery of visas
- **temp_visa_freedom** (weight: 1.0): Does the agreement create for a visa-free movement?
 - Values: 0=No provision on visas, 1=Visa-free movement

A.1.5.2 Grouped Variables

A.1.5.2.1 Group 1: Services Movement Provisions

- **temp_ser_movement** (weight: 0.33): Does the agreement allow the movement of natural persons in the provision of services?
 - Values: 0=Movement of natural persons is not explicitly allowed (it may be either omitted or explicitly excluded), 1=Movement of natural persons in the provision of services is explicitly allowed
- **temp_ser_movement_gatsplus** (weight: 0.67): If there are provisions on the movement of natural persons: do the provisions match GATS-commitments or go beyond GATS-commitments?
 - Values: 0=Matches GATS-commitments, 1=GATS-plus
- **temp_ser_movement_gatsextra** (weight: 1.0): If there are provisions on the movement of natural persons: do the provisions match GATS-commitments or do they even include new areas of regulation for each member of the agreement?
 - Values: 0=Matches GATS-commitments, 1=GATS-extra
- **Method**: Take maximum value

A.1.5.2.2 Group 2: Investment Movement Provisions

- **temp_inv_mov_bus_per** (weight: 0.33): Does the agreement allow for the temporary Movement of Business or Natural People?
 - Values: 0=Restrictions, 1=No restrictions specifically mentioned
- **temp_inv_boardmembers_requiremen** (weight: 0.67): Does the agreement include limiting or prohibiting provisions on the free appointment of board members and senior managers?
 - Values: 0=No provision, 1=Nationality or residency requirements are limited OR nationality requirements are prohibited
- **Method**: Weighted sum (weights sum to 1.0)

A.1.5.3 Calculation Method Average of 5 components with equal weights:

$$(2.5) \text{ Temp Entry Index} = \frac{1}{5} \times \left(\max(\text{temp_ser_mov}_{0.33}, \text{temp_ser_mov_gatsplus}_{0.67}, \text{temp_ser_mov_gatsextra}_{1.0}) + (0.33 \times \text{temp_inv_mov_bus_per} + 0.67 \times \text{temp_inv_boardmembers_req}) + \text{temp_visa_coop_transp} + \text{temp_visa_mech} + \text{temp_visa_freedom} \right)$$

A.1.6 Intellectual Property Rights

A.1.6.1 Individual Variables

- **ipr_gen_stat** (rescaled): Does the treaty only include a general statement on the protection of intellectual property rights (IPRs) or substantive provisions protecting IPRs?
 - Values: 0=No mention of IPRs protection, 1=IPRs protection mentioned as general objective, 2=Substantive provisions protecting IPRs
 - Rescaled: 0→0.0, 1→0.5, 2→1.0
- **ipr_specific_prov** (weight: 1.0): Are there specific provisions in relation to substantive standards of intellectual property rights protection?
 - Values: 0=No, 1=Yes
- **ipr_pharma** (weight: 1.0): Are there references to pharmaceuticals?
 - Values: 0=No, 1=Yes
- **ipr_geo_indic** (weight: 1.0): Are there references to geographical indications (GIs)?
 - Values: 0=No, 1=Yes
- **ipr_trips_1994_dummy** (weight: 1.0): Does the agreement contain a reference to the Agreement on Trade Related Intellectual Property Rights (TRIPS)?
 - Values: 0=No, 1=Yes
- **ipr_scope_substantial_dummy** (weight: 1.0): Are there specific provisions in relation to substantive standards of protection?
 - Values: 0=No, 1=Yes
- **ipr_specific_enforcement_dummy** (weight: 1.0): Are there specific provisions in relation to enforcement?
 - Values: 0=No, 1=Yes
- **ipr_mfn** (weight: 1.0): Is most-favoured nation (MFN) treatment granted in relation to IPRs (without considering investment chapters)?

- Values: 0=No, 1=Yes
- **iipr_nt** (weight: 1.0): Is national treatment (NT) granted in relation to IPRs (without considering investment chapters)?
 - Values: 0=No, 1=Yes
- **iipr_as_investment** (weight: 1.0): Are IPRs defined as investment?
 - Values: 0=No, 1=Yes
- **iipr_investment_mfn** (weight: 1.0): If IPR defined as investment: Is most-favoured nation (MFN) treatment granted in relation to IPRs in investment chapters?
 - Values: 0=No, 1=Yes
- **iipr_investment_nt** (weight: 1.0): If IPR defined as investment: Is national treatment (NT) granted in relation to IPRs in investment chapters?
 - Values: 0=No, 1=Yes

A.1.6.2 Grouped Variables

A.1.6.2.1 Group 1: IPR Conventions

- **iipr_rome** (weight: 1.0): Rome Convention
 - Values: 0=No, 1=Yes
- **iipr_paris** (weight: 1.0): Paris Convention
 - Values: 0=No, 1=Yes
- **iipr_bern** (weight: 1.0): Convention Bern
 - Values: 0=No, 1=Yes
- **iipr_copy_right** (weight: 1.0): WIPO Copyright Treaty
 - Values: 0=No, 1=Yes
- **iipr_phono** (weight: 1.0): WIPO Phonograms Treaty
 - Values: 0=No, 1=Yes
- **Method**: Average of all 5 conventions

A.1.6.2.2 Group 2: IPR Investment Strategic Partnerships

- **ipr_investment_strategic_partnership_contract** (weight: 1.0): If IPR defined as investment: Does the definition of investment include contracts?
 - Values: 0=No, 1=Contracts are included in investment definition
- **ipr_investment_strategic_partnership_manufacturing_services** (weight: 1.0): If IPR defined as investment: Does the investment chapter include non-equity relationships (NEMs) in the form of contract manufacturing and/or service outsourcing?
 - Values: 0=No, 1=Yes
- **ipr_investment_strategic_partnership_farming_marketing_agricultural** (weight: 1.0): If IPR defined as investment: Does the investment chapter include non-equity relationships (NEMs) in the form of contract farming and/or marketing of agricultural products?
 - Values: 0=No, 1=Yes
- **ipr_investment_strategic_partnership_licensing** (weight: 1.0): If IPR defined as investment: Does the investment chapter include non-equity relationships (NEMs) in the form of licensing?
 - Values: 0=No, 1=Yes
- **ipr_investment_strategic_partnership_franchising** (weight: 1.0): If IPR defined as investment: Does the investment chapter include non-equity relationships (NEMs) in the form of franchising?
 - Values: 0=No, 1=Yes
- **ipr_investment_strategic_partnership_management_contracts** (weight: 1.0): If IPR defined as investment: Does the investment chapter include non-equity relationships (NEMs) in the form of management contracts?
 - Values: 0=No, 1=Yes
- **ipr_investment_strategic_partnership_concessions** (weight: 1.0): If IPR defined as investment: Does the investment chapter include non-equity relationships (NEMs) in the form of concessions?
 - Values: 0=No, 1=Yes
- **ipr_investment_strategic_partnership_strategic_alliances_contractual_joint_ventures** (weight: 1.0): If IPR defined as investment: Does the investment chapter include non-equity relationships (NEMs) in the form of strategic alliances and/or contractual joint ventures?

- Values: 0=No, 1=Yes
- **iپر_investment_strategic_partnership_dummy** (weight: 1.0): If IPR defined as investment: Does the definition of investment cover any of the types of strategic partnerships coded above?
 - Values: 0=No, 1=Yes
- **Method**: Average of all 9 strategic partnership variables

A.1.6.3 Calculation Method Average of 14 components with equal weights:

$$(2.6) \text{ IPR Index} = \frac{1}{14} \times \left(\text{iپر_gen_stat}_{\text{rescaled}} + \frac{1}{5} \sum_{i=1}^5 \text{IPR Convention}_i \right. \\
+ \text{iپر_specific_prov} + \text{iپر_pharma} + \text{iپر_geo_indic} + \text{iپر_trips_1994_dummy} \\
+ \text{iپر_scope_substantial_dummy} + \text{iپر_specific_enforcement_dummy} \\
+ \text{iپر_mfن} + \text{iپر_nt} + \text{iپر_as_investment} \\
\left. + \text{iپر_investment_mfن} + \text{iپر_investment_nt} + \frac{1}{9} \sum_{j=1}^9 \text{Strategic Partnership}_j \right)$$

A.1.7 Public Procurement

A.1.7.1 Individual Variables

- **proc_prov** (rescaled): Does the agreement contain substantive provisions on public procurement?
 - Values: 0=No public procurement provisions, 1=General aim, 2=Substantive provisions
 - Rescaled: 0→0.0, 1→0.5, 2→1.0
- **proc_national** (weight: 1.0): Does the agreement guarantee national treatment (NT) with respect to public procurement?
 - Values: 0=No, 1=Yes
- **proc_transparency** (weight: 1.0): Does the chapter on public procurement include a transparency provision?
 - Values: 0=No, 1=Yes
- **proc_entities** (rescaled): Which entities are covered by the agreement's procurement provisions?
 - Values: 0=No public procurement provisions, 1=Central government, 2=Central+Regional government, 3=Central+Regional+Government enterprises

- Rescaled: 0→0.0, 1→0.33, 2→0.67, 3→1.0
- **proc_coverage** (rescaled): What is the scope of the public procurement provisions in the agreement?
 - Values: 0=No public procurement provisions, 1=Goods only, 2=Services only, 3=Goods and services
 - Rescaled: 0→0.0, 1 or 2→0.5, 3→1.0
- **proc_wto** (weight: 1.0): Does the agreement contain a reference to the WTO/GATT procurement agreements?
 - Values: 0=No, 1=Yes

A.1.7.2 Calculation Method Average of 6 components with equal weights:

$$(2.7) \text{ Procurement Index} = \frac{1}{6} \times \left(\text{proc_prov}_{\text{rescaled}} + \text{proc_national} + \text{proc_transparency} + \text{proc_entities}_{\text{rescaled}} + \text{proc_coverage}_{\text{rescaled}} + \text{proc_wto} \right)$$

A.1.8 Competition

A.1.8.1 Individual Variables

- **comp_chap** (weight: 1.0): Does this agreement include a competition chapter?
 - Values: 0=No competition chapter, 1=Competition chapter
- **comp_com_autho** (weight: 1.0): Is there a provision on the creation of a common authority/institution on competition?
 - Values: 0=No provision, 1=Creation of a common authority

A.1.8.2 Grouped Variables

A.1.8.2.1 Group 1: Co-operation and Institution-building Provisions

- **comp_not_distort** (weight: 1.0): Is there a provision on undertakings not to distort competition?
 - Values: 0=No provision, 1=Undertaking not to distort competition
- **comp_info** (weight: 1.0): Is there a provision on the exchange of information or notification?
 - Values: 0=No provision, 1=Provisions including an exchange of information or notification requirements in relation to competition

- **comp_general_body** (weight: 0.5): Is there a provision on a general institution responsible for competition?
 - Values: 0=No provision, 1=Existence of a Joint Committee responsible for competition
- **comp_specific_body** (weight: 1.0): Is there a provision on the establishment of specific bodies for competition?
 - Values: 0=No provision, 1=Establishing a working group dealing with competition-related issues
- **Method**: For competition body provisions, take the maximum value (general vs. specific)

A.1.8.2.2 Group 2: Coordination Authority Provisions

- **comp_coor_autho_non_binding** (weight: 0.5): Is there a non-binding provision on the coordination among national authorities?
 - Values: 0=No provision, 1=Non-binding provisions describing co-operation among national authorities
- **comp_coor_autho_binding** (weight: 1.0): Is there a binding provision on the coordination among national authorities?
 - Values: 0=No provision, 1=Binding provisions describing co-operation among national authorities
- **Method**: Take maximum value (non-binding vs. binding)

A.1.8.2.3 Group 3: Competition Coverage Provisions

- **comp_monopoly_cartels** (weight: 1.0): Is there a provision on monopolies and/or cartels?
 - Values: 0=No provision, 1=Monopolies and/or cartels
- **comp_merger_acquisitions** (weight: 1.0): Is there a provision on mergers and/or acquisitions?
 - Values: 0=No provision, 1=Mergers and/or acquisitions (M&As)
- **comp_soe** (weight: 1.0): Is there a provision on state-owned enterprises?
 - Values: 0=No provision, 1=State-owned enterprises
- **comp_state_aid** (weight: 1.0): Is there a provision on state aid?
 - Values: 0=No provision, 1=State aid

- **comp_subsidies** (weight: 1.0): Is there a provision on subsidies?
 - Values: 0=No provision, 1=Subsidies
- **comp_na** (weight: 1.0): Is there a reference to an annex/protocol on competition, which is unavailable?
 - Values: 0=No missing competition data, 1=Missing competition data (competition annex/protocol is missing)
- **Method**: Average of all 6 coverage provisions

A.1.8.3 Calculation Method Average of 3 main components with equal weights:

$$(2.8) \text{ Competition Index} = \frac{1}{3} \times \left(\text{comp_chap} + \frac{1}{5} \left(\text{comp_not_distort} + \text{comp_info} + \max(\text{comp_gen_body}_{0.5}, \text{comp_spec_body}_{1.0}) + \max(\text{comp_coor_non_bind}_{0.5}, \text{comp_coor_bind}_{1.0}) + \text{comp_com_autho} \right) + \frac{1}{6} \sum_{i=1}^6 \text{Coverage Provision}_i \right)$$

A.1.9 Technical Barriers to Trade

A.1.9.1 Individual Variables

- **tbt_prov** (weight: 1.0): Does the agreement contain a TBT chapter or provision(s)?
 - Values: 0=No, 1=Yes
- **tbt_wto** (weight: 1.0): Does the agreement contain a reference to the WTO Agreement on TBTs (the GATT Standards code)?
 - Values: 0=No, 1=Yes
- **tbt_coop** (weight: 1.0): Does the agreement call for co-operation and information exchange on TBTs?
 - Values: 0=No, 1=Yes
- **tbt_distort** (weight: 1.0): Does the agreement contain a requirement for standards to be least trade-distorting?
 - Values: 0=No, 1=Yes
- **tbt_dispute** (weight: 1.0): Does the agreement contain a dispute settlement provision for TBTs?
 - Values: 0=No, 1=Yes

- **tbt_intstand** (weight: 1.0): Does the agreement encourage the use of international standards?
 - Values: 0=No, 1=Yes
- **tbt_harmon** (rescaled): Does the agreement contain provisions that stipulate the (partial) harmonization of TBT?
 - Values: 0=No, 1=Harmonization as a general aim, 2=Selective harmonization for specific sectors, 3=Full harmonization
 - Rescaled: 0→0.0, 1→0.33, 2→0.67, 3→1.0

A.1.9.2 Calculation Method Average of 7 components with equal weights:

$$(2.9) \text{ TBT Index} = \frac{1}{7} \times \left(\text{tbt_prov} + \text{tbt_wto} + \text{tbt_coop} + \text{tbt_distort} + \text{tbt_dispute} + \text{tbt_intstand} + \text{tbt_harmon}_{\text{rescaled}} \right)$$

A.1.10 Sanitary and Phytosanitary Measures

A.1.10.1 Individual Variables

- **sps_prov** (weight: 1.0): Does the agreement contain a sanitary and phytosanitary (SPS) chapter or provision(s)?
 - Values: 0=No, 1=Yes
- **sps_wto** (weight: 1.0): Does the agreement contain a reference to the WTO Sanitary and Phytosanitary (SPS) agreement?
 - Values: 0=No, 1=Yes
- **sps_coop** (weight: 1.0): Does the agreement contain provisions calling for information exchange and technical cooperation on SPS measures?
 - Values: 0=No, 1=Yes
- **sps_harmon** (rescaled): Does the agreement contain provisions that stipulate the harmonization of SPS provisions?
 - Values: 0=No, 1=Harmonization as a general aim, 2=Full harmonization
 - Rescaled: 0→0.0, 1→0.5, 2→1.0

A.1.10.2 Calculation Method Average of 4 components with equal weights:

$$(2.10) \text{ SPS Index} = \frac{1}{4} \times \left(\text{sps_prov} + \text{sps_wto} + \text{sps_coop} + \text{sps_harmon}_{\text{rescaled}} \right)$$

A.1.11 Regulatory Cooperation and Transparency

A.1.11.1 Individual Variables

- **regulation_online_publication** (weight: 1.0): Is there the obligation to publish regulations online?
 - Values: 0=No, 1=Yes
- **regulation_national_coordination** (weight: 1.0): Does the agreement establish a national point for regulatory co-ordination?
 - Values: 0=No, 1=Yes
- **regulation_information_exchange** (weight: 1.0): Does the agreement include reference to information exchanges?
 - Values: 0=No, 1=Yes
- **regulation_cooperation_private_standards** (weight: 1.0): Does the agreement include reference to co-operation on private standards?
 - Values: 0=No, 1=Yes

A.1.11.2 Grouped Variables

A.1.11.2.1 Group 1: Transparency Provisions

- **regulation_transparency_article** (weight: 0.5): Does the agreement contain an obligation on transparency (article, provision)?
 - Values: 0=No, 1=Yes
- **regulation_transparency_chapter** (weight: 1.0): Does the agreement contain a chapter on transparency?
 - Values: 0=No, 1=Yes
- **Method:** Take maximum value

A.1.11.2.2 Group 2: Cooperation Provisions

- **regulation_cooperation_article** (weight: 0.5): Does the agreement contain an article (provision) on regulatory cooperation?
 - Values: 0=No, 1=Yes
- **regulation_cooperation_chapter** (weight: 1.0): Does the agreement contain a chapter on regulatory co-operation?

- Values: 0=No, 1=Yes

- **Method:** Take maximum value

A.1.11.2.3 Group 3: Coherence Provisions

- **regulation_coherence_article** (weight: 0.5): Does the agreement contain an article (provision) on regulatory coherence?

- Values: 0=No, 1=Yes

- **regulation_coherence_chapter** (weight: 1.0): Does the agreement contain a chapter on regulatory coherence?

- Values: 0=No, 1=Yes

- **Method:** Take maximum value

A.1.11.2.4 Group 4: Comment Provisions

- **regulation_new_comment_public** (weight: 0.5): Does the agreement include a public comment obligation for new regulations?

- Values: 0=No, 1=Public comment obligation/information exchange with the public

- **regulation_new_comment_public_foreign** (weight: 1.0): Does the agreement include a public comment obligation for new regulations that is open for foreigners?

- Values: 0=No, 1=Public comment obligation/information exchange that are open to foreigners

- **Method:** Take maximum value

A.1.11.2.5 Group 5: Consultation Provisions

- **regulation_new_consultation_public** (weight: 0.25): Does the agreement include a public consultation obligation that is open to foreigners?

- Values: 0=No, 1=Yes

- **regulation_new_consultation_foreign_parties** (weight: 0.5): Does this obligation explicitly provide for consultation with foreign parties?

- Values: 0=No, 1=Yes

- **regulation_new_consultation_private_sector** (weight: 0.75): Does this obligation explicitly provide for consultation with the private sector?

- Values: 0=No, 1=Yes

- **regulation_new_consultation_mixed** (weight: 1.0): Does this obligation explicitly provide for consultation with foreign parties AND the private sector?
 - Values: 0=No, 1=Yes
- **Method:** Mutually exclusive, add directly with weights

A.1.11.3 Calculation Method Average of 9 components with equal weights:

$$(2.11) \text{ Regulation Index} = \frac{1}{9} \times \left(\begin{aligned} &\max(\text{reg_transp_art}_{0.5}, \text{reg_transp_chap}_{1.0}) \\ &+ \max(\text{reg_coop_art}_{0.5}, \text{reg_coop_chap}_{1.0}) \\ &+ \max(\text{reg_coher_art}_{0.5}, \text{reg_coher_chap}_{1.0}) \\ &+ \text{reg_online_pub} + \text{reg_nat_coord} + \text{reg_info_exch} + \text{reg_coop_priv_stand} \\ &+ \max(\text{reg_comment_pub}_{0.5}, \text{reg_comment_pub_for}_{1.0}) \\ &+ (0.25 \times \text{reg_consult_pub} + 0.5 \times \text{reg_consult_for} \\ &\quad + 0.75 \times \text{reg_consult_priv} + 1.0 \times \text{reg_consult_mix}) \end{aligned} \right)$$

A.1.12 Trade Defense Instruments

A.1.12.1 Grouped Variables

A.1.12.1.1 Group 1: Structural adjustment

- **tr_struct_adjust** (weight: 1.0): Does the agreement mention structural adjustment?
 - Values: 0=No, 1=Yes
- **tr_bop** (weight: 1.0): Does the agreement mention balance of payment (BOP)?
 - Values: 0=No mentioning, 1=Balance of payment mentioned
- **Method:** Average of both structural adjustment

A.1.12.1.2 Group 2: Anti-Dumping Provisions

- **tr_ad_prov** (weight: 1.0): Is there an anti-dumping provision?
 - Values: 0=No, 1=Yes
- **tr_ad_wto** (weight: 1.0): Is there a reference to GATT/WTO?
 - Values: 0=No, 1=Yes
- **tr_ad_outruled** (weight: 1.0): Is the use of anti-dumping measures explicitly out-ruled?
 - Values: 0=No mentioning, 1=Yes

Combine the allowed anti-dumping measures:

- **tr_ad_allowed** (weight: 0.5): Is it allowed to use anti-dumping measures?
 - Values: 0=No mentioning, 1=Yes
- **tr_adallowedspec** (weight: 1.0): Is the allowance of the use of anti-dumping measures further specified?
 - Values: 0=Allowed without further specification, 1=Allowed with specific provisions
- **Method for allowed anti-dumping measures:** For allowed provisions, take maximum value
- **Method:** Average of all the 4 procedures

A.1.12.1.3 Group 3: Anti-Dumping Procedures

- **tr_admas** (weight: 1.0): Do parties search for mutually accepted solutions prior to investigation?
 - Values: 0=No mentioning, 1=Yes
- **tr_addeminimis** (weight: 1.0): Do parties explicitly agree on a de minimis dumping margin (or dumped volume) that differs from the GATT/WTO?
 - Values: 0=No mentioning, 1=Yes
- **tr_adsunset** (weight: 1.0): Do parties agree on a duration of anti-dumping duty that differs from GATT/WTO?
 - Values: 0=No mentioning, 1=Yes
- **tr_adlesserduty** (weight: 1.0): Do parties explicitly agree on a lesser duty rule?
 - Values: 0=No mentioning, 1=Yes
- **tr_adpublic** (weight: 1.0): Do parties agree on taking broader public interest in account (beyond sector interests)?
 - Values: 0=No mentioning, 1=Yes
- **tr_adlegal** (weight: 1.0): Does the PTA's dispute settlement not apply to anti-dumping (AD)?
 - Values: 0=No mentioning, 1=Yes
- **tr_adlegalwto** (weight: 1.0): Do the parties agree that the resolution of a dispute can occur in the WTO?

– Values: 0=No mentioning, 1=Yes

- **Method:** Average of all 7 procedures

A.1.12.1.4 Group 4: Subsidies Provisions Combine the general subsidy provisions

- **tr_sub_gen_ref** (weight: 0.5): Is there a general reference to subsidies?

– Values: 0=No, 1=Yes

- **tr_sub_prov** (weight: 1.0): Are there any subsidy provisions?

– Values: 0=No, 1=Yes

- **Method:** For subsidy provisions, take maximum value

Combine:

- **tr_sub_allowed** (weight: 0.5): Is there an explicit reference to allowing subsidies?

– Values: 0=No, 1=Yes

- **tr_sub_outruled** (weight: 1.0): Is there an explicit reference to outrule subsidies?

– Values: 0=No, 1=Yes

- **Method:** For subsidy provisions, take maximum value

- **tr_sub_wto** (weight: 1.0): Is there a reference to GATT/WTO?

– Values: 0=No, 1=Yes

- **tr_sub_policy** (weight: 1.0): Do parties develop a common policy on subsidies?

– Values: 0=No, 1=Yes

- **tr_countervail** (weight: 1.0): Are countervailing duties mentioned in the agreement?

– Values: 0=No, 1=Yes

- **Method:** Average of all 5 procedures

A.1.12.1.5 Group 5: Safeguards Provisions

- **tr_safe_prov** (weight: 1.0): Does the agreement contain specific safeguard provisions for PTA parties?

– Values: 0=No, 1=Yes

- **tr_safe_wto** (weight: 1.0): Does the agreement refer to GATT/WTO provisions on safeguards?

- Values: 0=No, 1=Yes
- **tr_safe_outruled** (weight: 1.0): Does the agreement outrule the use of safeguards?
 - Values: 0=No, 1=Yes
- **tr_safe_globexcl** (weight: 1.0): Do PTA members agree on conditions under which partners will be excluded from multilateral safeguard measures?
 - Values: 0=No, 1=Yes
- **tr_safe_trans** (weight: 1.0): Do parties allow safeguard measures only during a transition period?
 - Values: 0=No, 1=Yes
- **tr_safe_ceiling** (weight: 1.0): Do parties allow safeguard measures on products up to the most-favoured nation (MFN) duty or the temporal suspension of a duty reduction?
 - Values: 0=No, 1=Yes
- **tr_safe_dur** (weight: 1.0): Parties agree on a duration (and extension) of safeguard duty that is different from GATT/WTO?
 - Values: 0=No, 1=Yes
- **Method**: Average of all 7 safeguards provisions

A.1.12.2 Calculation Method Average of 5 main components with equal weights:

$$\begin{aligned}
 (2.12) \text{ Trade Defense Index} = & \frac{1}{5} \times \left(\frac{1}{4} \left(\text{tr_ad_prov} + \text{tr_ad_wto} + \text{tr_ad_outruled} \right. \right. \\
 & \left. \left. + \max(\text{tr_ad_allowed}_{0.5}, \text{tr_adallowedspec}_{1.0}) \right) \right. \\
 & + \frac{1}{7} \sum_{i=1}^7 \text{AD Procedure}_i \\
 & + \frac{1}{5} \left(\max(\text{tr_sub_gen_ref}_{0.5}, \text{tr_sub_prov}_{1.0}) + \text{tr_sub_wto} + \text{tr_sub_policy} \right. \\
 & \left. + \max(\text{tr_sub_allowed}_{0.5}, \text{tr_sub_outruled}_{1.0}) + \text{tr_countervail} \right) \\
 & + \frac{1}{7} \sum_{i=1}^7 \text{Safeguard Provision}_i \\
 & \left. + \frac{1}{2} (\text{tr_struct_adjust} + \text{tr_bop}) \right)
 \end{aligned}$$

A.1.13 E-Commerce

A.1.13.1 Individual Variables

- **ecommerce_nt** (weight: 1.0): Does the agreement provide for national treatment (NT) in e-commerce?
 - Values: 0=No, 1=Yes
- **ecommerce_mfn** (weight: 1.0): Does the agreement provide for most-favoured nation (MFN) treatment in e-commerce?
 - Values: 0=No, 1=Yes
- **ecommerce_technology_neutrality** (weight: 1.0): Does the agreement include a principle of technology neutrality (i.e. same treatment for digital supply)?
 - Values: 0=No, 1=Yes
- **ecommerce_inconsistency_rules** (weight: 1.0): Does the e-commerce chapter indicate which provisions prevail in case of inconsistencies?
 - Values: 0=No reference to other chapters or no e-commerce chapter, 1=Rule in case of inconsistency with other chapters
- **ecommerce_service_investment_provisions** (weight: 1.0): Does the e-commerce chapter refer to provisions on services and investment in other chapters?
 - Values: 0=No reference to other chapters or no e-commerce chapter, 1=Specific reference to services and investment provisions
- **ecommerce_barriers** (weight: 1.0): Does the agreement mention avoiding unnecessary barriers to e-commerce?
 - Values: 0=No, 1=Yes
- **ecommerce_wto** (weight: 1.0): Does the agreement mention the applicability of WTO rules?
 - Values: 0=No, 1=Yes
- **ecommerce_duty** (weight: 1.0): Is there a provision on the non-imposition of customs duties?
 - Values: 0=No, 1=Yes
- **ecommerce_dispute_settlement_yes** (weight: 1.0): Does the dispute settlement mechanism apply to e-commerce provisions?
 - Values: 0=No, 1=Yes

A.1.13.2 Grouped Variables

A.1.13.2.1 Group 1: E-Commerce Provisions

- **ecommerce_provisions** (weight: 0.5): Does the agreement contain provisions on e-commerce?
 - Values: 0=No provision on e-commerce, 1=Provisions on e-commerce in selected chapters
- **ecommerce_chapter** (weight: 1.0): Does the agreement contain a chapter on e-commerce?
 - Values: 0=No provision on e-commerce, 1=Full chapter on e-commerce
- **Method**: Take maximum value

A.1.13.2.2 Group 2: E-Commerce Services Commitments

- **ecommerce_services_ma_nt_computer** (weight: 1.0): Are there services (and investment) market access (MA) and national treatment (NT) commitments for the computer and related services sectors needed for e-commerce?
 - Values: 0=No, 1=Yes
- **ecommerce_services_ma_nt_telecommunications** (weight: 1.0): Are there services (and investment) market access (MA) and national treatment (NT) commitments for the telecommunications sectors needed for e-commerce?
 - Values: 0=No, 1=Yes
- **ecommerce_services_ma_nt_financial** (weight: 1.0): Are there services (and investment) market access (MA) and national treatment (NT) commitments for the financial sectors needed for e-commerce?
 - Values: 0=No, 1=Yes
- **Method**: Average of all 3 services commitments

A.1.13.3 Calculation Method Average of 11 components with equal weights:

$$\begin{aligned}
 (2.13) \text{ E-Commerce Index} &= \frac{1}{11} \times \left(\max(\text{ecom_prov}_{0.5}, \text{ecom_chap}_{1.0}) \right. \\
 &\quad \left. + \frac{1}{3} \sum_{i=1}^3 \text{Services MA/NT}_i \right. \\
 &\quad \left. + \text{ecom_nt} + \text{ecom_mfn} + \text{ecom_tech_neutral} + \text{ecom_inconsist_rules} \right)
 \end{aligned}$$

$$+ \text{ecom_serv_inv_prov} + \text{ecom_barriers} + \text{ecom_wto} \\ + \text{ecom_duty} + \text{ecom_dispute_yes} \Bigg)$$

A.1.14 Data Flows

A.1.14.1 Individual Variables

- **data_flow_free_movement** (weight: 1.0): Does the agreement include a provision on the free movement of data?
 - Values: 0=No, 1=Yes
- **data_flow_barrier** (weight: 1.0): Is there a mechanism to address barriers to data flows?
 - Values: 0=No, 1=Yes

A.1.14.2 Grouped Variables

A.1.14.2.1 Group 1: Data Localisation Requirements

- **data_flow_impose_localisation_requirements** (weight: 1.0): Is there a provision imposing data localisation requirement?
 - Values: 0=No provision on data localisation, 1=Provision imposing data localisation requirements
- **data_flow_limit_prohibit_localisation_requirements** (weight: 0.5): Is there a provision limiting or prohibiting data localisation requirement?
 - Values: 0=No provision on data localisation, 1=Provision limiting or prohibiting data localisation requirements
- **Method:** Take maximum value

A.1.14.3 Calculation Method Average of 3 components with equal weights:

$$(2.14) \text{ Data Flow Index} = \frac{1}{3} \times \left(\text{data_flow_free_movement} + \text{data_flow_barrier} \right. \\ \left. + \max(\text{data_flow_impose_local}_{1.0}, \text{data_flow_limit_prohib_local}_{0.5}) \right)$$

A.1.15 Capital Movement and Exchange Rates

A.1.15.1 Individual Variables

- **capital_movement_beyond_investment_services** (weight: 1.0): Does the agreement contain general provisions on the movement of capital beyond the investment (FDI flows) and services (transactions)?

- Values: 0=No, 1=Yes
- **capital_movement_imf_obligations** (weight: 1.0): Does the agreement invoke IMF obligations not to impose restrictions?
 - Values: 0=No, 1=Yes
- **capital_movement_oecd_codes_liberalisation** (weight: 1.0): Does the agreement refer to OECD Codes of Liberalisation?
 - Values: 0=No, 1=Yes
- **capital_movement_restricted_regulation** (weight: 1.0): Is the freedom of movement of capital only partially regulated for services (restricted to schedules, i.e. sectors, modes)?
 - Values: 0=No, 1=Yes
- **capital_movement_exceptions_balance_of_payments** (weight: 1.0): Does the agreement contain exceptions for balance of payment (BOP) reasons?
 - Values: 0=No, 1=Yes
- **capital_movement_exception_prudential_carveout** (weight: 1.0): Does the agreement contain exceptions for prudential carve-outs?
 - Values: 0=No, 1=Yes
- **capital_movement_exception_imf_restriction** (weight: 1.0): Does the agreement contain exceptions for IMF imposed restrictions?
 - Values: 0=No, 1=Yes
- **exchange_rates_reference_general** (weight: 1.0): Does the agreement address exchange rates in any way?
 - Values: 0=No, 1=Yes
- **exchange_rates_reference_restriction** (weight: 1.0): Does the agreement contain currency exchange restrictions?
 - Values: 0=No, 1=Yes

A.1.15.2 Grouped Variables

A.1.15.2.1 Group 1: Capital Movement Freedom Direction

- **capital_movement_freedom_inward** (weight: 0.67): Is the freedom of movement confined to inward capital flows?
 - Values: 0=No, 1=Yes

- **capital_movement_freedom_outward** (weight: 0.33): Is the freedom of movement confined to outward capital flows?
 - Values: 0=No, 1=Yes
- **capital_movement_freedom_mixed** (weight: 1.0): Is the freedom of movement confined to inward AND outward capital flows?
 - Values: 0=No, 1=Yes
- **Method:** Mutually exclusive, add directly with weights

A.1.15.2.2 Group 2: Capital Movement Coverage

- **capital_movement_coverage_payments** (weight: 0.5): Does the coverage and treatment of capital flows apply (only) to payments?
 - Values: 0=No, 1=Only payments (not transfers)
- **capital_movement_coverage_payments_transfers** (weight: 1.0): Does the coverage and treatment of capital flows apply to payments AND transfers?
 - Values: 0=No, 1=Payments AND transfers
- **Method:** Take maximum value

A.1.15.3 Calculation Method Average of 11 components with equal weights:

$$(2.15) \text{ Capital Movement Index} = \frac{1}{11} \times \left(\begin{aligned} &\text{cap_mov_beyond_inv_serv} \\ &+ \text{cap_mov_imf_oblig} + \text{cap_mov_oecd_codes} + \text{cap_mov_restrict_reg} \\ &+ (0.67 \times \text{cap_mov_freedom_inward} + 0.33 \times \text{cap_mov_freedom_outward} \\ &\quad + 1.0 \times \text{cap_mov_freedom_mixed}) \\ &+ \max(\text{cap_mov_cov_payments}_{0.5}, \text{cap_mov_cov_pay_transf}_{1.0}) \\ &+ \text{cap_mov_except_bop} + \text{cap_mov_except_prudent} + \text{cap_mov_except_imf} \\ &\quad + \text{exch_rates_ref_general} + \text{exch_rates_ref_restrict} \end{aligned} \right)$$

A.1.16 Non-Trade Issues

A.1.16.1 Grouped Variables

A.1.16.1.1 Group 1: Corruption Provisions

- **nti_corruption** (weight: 0.5): Does the agreement refer to corruption?
 - Values: 0=No, 1=Yes

- **nti_corruption_chapter** (weight: 1.0): Is there a chapter on corruption?
 - Values: 0=No, 1=Yes
- **Method**: Take maximum value

A.1.16.1.2 Group 2: Labour Provisions

- **nti_labour** (weight: 0.5): Does the agreement refer to labour standards?
 - Values: 0=No, 1=Yes
- **nti_labour_chapter** (weight: 1.0): Is there a chapter on labour?
 - Values: 0=No, 1=Yes
- **Method**: Take maximum value

A.1.16.1.3 Group 3: Environment Provisions

- **nti_env** (weight: 0.5): Does the agreement refer to environmental standards?
 - Values: 0=No, 1=Yes
- **nti_env_chapter** (weight: 1.0): Is there a chapter on environment?
 - Values: 0=No, 1=Yes
- **Method**: Take maximum value

A.1.16.2 Calculation Method Average of 3 components with equal weights:

$$(2.16) \text{ Non-Trade Issues Index} = \frac{1}{3} \times \left(\max(\text{nti_corr}_{0.5}, \text{nti_corr_chap}_{1.0}) \right. \\ \left. + \max(\text{nti_labour}_{0.5}, \text{nti_labour_chap}_{1.0}) \right. \\ \left. + \max(\text{nti_env}_{0.5}, \text{nti_env_chap}_{1.0}) \right)$$

A.1.17 Dispute Settlement

A.1.17.1 Individual Variables

- **ds_chain** (weight: 1.0): Is there a provision requiring for a Joint Committee or (Association) Commission to address the dispute before the establishment of the arbitral panel?
 - Values: 0=No, 1=Yes
- **ds_time_frames** (weight: 1.0): Does the treaty list time frames related to stages and implementation of dispute settlement decisions?
 - Values: 0=No, 1=Yes

- **ds_interim** (weight: 1.0): Does the panel issue an initial/draft/interim report prior to the issuance of the final report?
 - Values: 0=No, 1=Yes
- **ds_separate_ops** (weight: 1.0): Does the process allow for separate opinions to be included in the panel report?
 - Values: 0=No, 1=Yes

A.1.17.2 Grouped Variables

A.1.17.2.1 Group 1: Basic Dispute Settlement Provisions

- **ds_prov** (weight: 1.0): Does this agreement include provisions for solving disputes?
 - Values: 0=No, 1=Yes
- **ds_del_con** (weight: 1.0): Is there a provision on consultation?
 - Values: 0=No, 1=Yes
- **ds_del_med** (weight: 1.0): Is there a provision on mediation?
 - Values: 0=No, 1=Yes
- **ds_del_arb** (weight: 1.0): Is there a provision on arbitration?
 - Values: 0=No, 1=Yes
- **ds_del_sb** (weight: 1.0): Is there a provision on the creation of a standing body with delegated powers?
 - Values: 0=No, 1=Yes
- **ds_del_ext** (weight: 1.0): Is there a reference to external DS institutions?
 - Values: 0=No, 1=Yes
- **ds_forum** (weight: 1.0): Is there a provision on the choice of DS fora?
 - Values: 0=No, 1=Yes
- **ds_forum_complain** (weight: 1.0): Does the ultimate option for forum choice foresee the complainant to choose the forum?
 - Values: 0=No, 1=Yes
- **ds_forum_parties** (weight: 1.0): Does the ultimate option for forum choice foresee the parties to chose the forum jointly?
 - Values: 0=No, 1=Yes

- **ds_forum_restrict** (weight: 1.0): Are there restrictions/limits to the use of multiple fora?
 - Values: 0=No restriction (non-exclusive), 1=Restriction to one forum (exclusive)

- **ds_binding_prov** (weight: 1.0): Is there a provision on bindingness?

- Values: 0=No, 1=Yes

Combine:

- **ds_binding_exp_yes** (weight: 1.0): Is it explicitly mentioned that provisions on DS are binding?

- Values: 0=No, 1=Yes

- **ds_binding_exp_no** (weight: 0.5): Is it explicitly mentioned that provisions on DS are NOT binding?

- Values: 0=No, 1=Yes

- **Method for combined binding provisions:** Take maximum value

- **Method:** Average all 12 basic provisions

A.1.17.2.2 Group 2: Sanctions Provisions

- **ds_sanc_prov** (weight: 1.0): Are there any provisions related to retaliation in case of non-implementation?

- Values: 0=No, 1=Yes

- **ds_sanc_dp** (weight: 1.0): Do both parties select jointly the appropriate level of retaliation/compensation/sanctions?

- Values: 0=No, 1=Yes

- **ds_sanc_compl** (weight: 1.0): Does the complainant select the appropriate level of retaliation/compensation/sanctions?

- Values: 0=No, 1=Yes

- **ds_sanc_tp** (weight: 1.0): Does a third part select the appropriate level of retaliation/compensation/sanctions?

- Values: 0=No, 1=Yes

- **ds_sanc_seq** (weight: 1.0): Is there an order in the process of selecting appropriate levels of retaliation/compensation/sanctions?

- Values: 0=No, 1=Yes (sequencing)

- **ds_sanc_sect** (weight: 1.0): Are there provisions on retaliation in the same sector?

- Values: 0=No, 1=Yes
- **ds_sanc_cross** (weight: 1.0): Is cross-retaliation possible (sanctions in other sector)?
 - Values: 0=No, 1=Yes
- **ds_sanc_money** (weight: 1.0): Are monetary sanctions (compensation) possible?
 - Values: 0=No, 1=Yes
- **Method**: Average of all 8 sanctions provisions

A.1.17.2.3 Group 3: Exemptions Provisions

- **ds_exempt** (weight: 1.0): Are there any exemptions from dispute settlement (DS)?
 - Values: 0=No, 1=Yes
- **ds_exempt_pos** (weight: 1.0): Is there an explicit positive list of areas covered under the DSM of the PTA?
 - Values: 0=No, 1=Yes
- **ds_pos_count** (rescaled): We count the number of areas mentioned
 - Values: 0-6
 - Rescaled: Range from 0 to 6, rescaled to 0-1 scale (divide by 6)
- **ds_exempt_neg** (weight: 1.0): Is there an explicit negative list of exemptions from DS?
 - Values: 0=No, 1=Yes
- **ds_neg_count** (rescaled): We count the number of areas mentioned
 - Values: 0-12
 - Rescaled: Range from 0 to 12, rescaled to 0-1 scale (divide by 12)
- **ds_priv_standing** (weight: 1.0): Is there a provision allowing private actors to bring a case against the other party breaching the agreement?
 - Values: 0=No, 1=Yes
- **Method**: Average of all 6 exemption provisions

A.1.17.2.4 Group 4: Chairman Selection

- **ds_chairman_cons** (weight: 0.25): The chairman is selected by consultation of parties
 - Values: 0=No, 1=Yes
- **ds_chairman_joint** (weight: 0.5): The chairman is selected by arbitrators jointly
 - Values: 0=No, 1=Yes
- **ds_chairman_lot** (weight: 0.75): The chairman is selected by lot
 - Values: 0=No, 1=Yes
- **ds_chairman_third** (weight: 1.0): The chairman is selected a third party (e.g. WTO DG)
 - Values: 0=No, 1=Yes
- **Method:** Take maximum value

A.1.17.3 Calculation Method Average of 8 components with equal weights:

$$\begin{aligned}
 (2.17) \text{ Dispute Settlement Index} = & \frac{1}{8} \times \left(\frac{1}{12} \left(\sum_{i=1}^{11} \text{Basic DS Provision}_i \right. \right. \\
 & + \max(\text{ds_bind_exp_yes}_{1.0}, \text{ds_bind_exp_no}_{0.5}) \Big) \\
 & + \frac{1}{8} \sum_{i=1}^8 \text{Sanctions Provision}_i \\
 & + \frac{1}{6} \left(\text{ds_exempt} + \text{ds_exempt_pos} + \text{ds_pos_count}_{\text{rescaled}} \right. \\
 & + \text{ds_exempt_neg} + \text{ds_neg_count}_{\text{rescaled}} + \text{ds_priv_standing} \Big) \\
 & + \max(\text{ds_chair_cons}_{0.25}, \text{ds_chair_joint}_{0.5}, \text{ds_chair_lot}_{0.75}, \text{ds_chair_third}_{1.0}) \\
 & \left. + \text{ds_chain} + \text{ds_time_frames} + \text{ds_interim} + \text{ds_separate_ops} \right)
 \end{aligned}$$

A.2 Trade Agreements

This appendix lists all trade agreements included in the analysis, organized alphabetically by agreement name, along with the year of signature. Some agreements appear more than once in different years; this indicates they were renegotiated in that year, and a new version of the agreement was signed to supersede the previous one.

Afghanistan-India (2003)	Argentina-Chile (1991)
African Continental Free Trade Area (AfCFTA) (2018)	Argentina-Chile (2017)
African Economic Community (1991)	Argentina-Colombia (1988)
Agadir Agreement (2004)	Argentina-Cuba (1999)
Albania-Bosnia and Herzegovina (2003)	Argentina-Ecuador (1984)
Albania-Bulgaria (2003)	Argentina-Ecuador (1993)
Albania-Croatia (2002)	Argentina-Mexico (1986)
Albania-European Community Association Agreement (2006)	Argentina-Paraguay (1989)
Albania-European Free Trade Association (EFTA) (2009)	Argentina-Peru (1988)
Albania-Kosovo (2003)	Argentina-Uruguay (1974)
Albania-Macedonia (2002)	Argentina-Uruguay (1982)
Albania-Moldova (2003)	Argentina-Uruguay (1984)
Albania-Romania (2003)	Argentina-Uruguay (2003)
Albania-Serbia (2003)	Argentina-Venezuela (1986)
Albania-Turkey (2006)	Argentina-Venezuela (1992)
Algeria-EC-Mediterranean Association Agreement (2002)	Armenia-European Community (2017)
Algeria-Jordan (1997)	Armenia-Estonia (2002)
Algeria-Morocco (1989)	Armenia-Georgia (1995)
Algeria-Tunisia (2008)	Armenia-Iran (1995)
Andean Community (1996)	Armenia-Kazakhstan (1999)
Andean Community (1997)	Armenia-Kyrgyzstan (1994)
Andean Countries-Argentina (2000)	Armenia-Moldova (1993)
Andean Countries-Brazil (1999)	Armenia-Russia (1992)
Andean Countries-MERCOSUR (2004)	Armenia-Turkmenistan (1995)
Andean Countries-United Kingdom (2019)	Armenia-Ukraine (1994)
Andean Group (1987)	Asia Pacific Trade Agreement (Bangkok Agreement) (2005)
Andorra-European Community (1990)	Association of Caribbean States (1994)
Arab Maghreb Union (AMU) (1989)	Association of Southeast Asian Nations (ASEAN)-
Argentina-Brazil (1986)	Australia-New Zealand Free Trade Agreement (AANZFTA) (2009)
Argentina-Brazil (1988)	Association of Southeast Asian Nations (ASEAN)-
Argentina-Brazil (1990)	China (2004)
	Association of Southeast Asian Nations (ASEAN)-
	China (2007)

Association of Southeast Asian Nations (ASEAN) Free Trade Agreement (1992)	Baltic Free Trade Area (BAFTA) Non-Tariff Barriers (1997)
Association of Southeast Asian Nations (ASEAN) Goods Agreement (2009)	Bangkok Agreement (1975)
Association of Southeast Asian Nations (ASEAN)-Hong Kong (2018)	Belarus-Russia (Union State) (1999)
Association of Southeast Asian Nations (ASEAN)-India (2009)	Belarus-Serbia (2009)
Association of Southeast Asian Nations (ASEAN)-Japan (2008)	Belarus-Ukraine (1992)
Association of Southeast Asian Nations (ASEAN)-Korea (2007)	Belize-Guatemala (2006)
Association of Southeast Asian Nations (ASEAN) Preferential Trading Arrangements (PTA) (1977)	Bhutan-India (1972)
Association of Southeast Asian Nations (ASEAN) Preferential Trading Arrangements (PTA) (1995)	Bhutan-India (2006)
Australia-Chile (2008)	Bolivia-Chile (1993)
Australia-China (2015)	Bolivia-Cuba (2000)
Australia-Hong Kong (2019)	Bolivia-MERCOSUR (1996)
Australia-Indonesia (2019)	Bolivia-Mexico (1994)
Australia-Japan (2014)	Bolivia-Paraguay (1994)
Australia-Korea (2014)	Bolivia-Uruguay (1991)
Australia-Malaysia (2012)	Bosnia and Herzegovina-Bulgaria (2003)
Australia-New Zealand (ANZCERTA) (1983)	Bosnia and Herzegovina-Croatia (2000)
Australia-New Zealand (ANZCERTA) (1988)	Bosnia and Herzegovina-European Community Association Agreement (2008)
Australia-Papua New Guinea (1976)	Bosnia and Herzegovina-European Free Trade Association (EFTA) (2013)
Australia-Papua New Guinea (1991)	Bosnia and Herzegovina-Macedonia (2002)
Australia-Peru (2018)	Bosnia and Herzegovina-Moldova (2002)
Australia-Singapore (2003)	Bosnia and Herzegovina-Romania (2003)
Australia-Singapore (2016)	Bosnia and Herzegovina-Serbia and Montenegro (2002)
Australia-Thailand (2004)	Bosnia and Herzegovina-Slovenia (2001)
Australia-United States of America (2004)	Bosnia and Herzegovina-Turkey (2002)
Austria-European Community (1972)	Bosnia and Herzegovina-Turkey (2019)
Azerbaijan-Georgia (1996)	Brazil-Chile (2018)
Azerbaijan-Russia (1992)	Brazil-Cuba (1989)
Azerbaijan-Ukraine (1995)	Brazil-Cuba (1999)
Bahrain-Jordan (2001)	Brazil-Guyana (2001)
Bahrain-United States of America (2004)	Brazil-Mexico (2002)
Baltic Free Trade Area (BAFTA) Agriculture (1996)	Brazil-Peru (1993)
Baltic Free Trade Area (BAFTA) Industrial (1993)	Brazil-Suriname (2005)
	Brazil-Uruguay (1982)
	Brazil-Uruguay (1986)
	Brazil-Venezuela (2012)
	Brunei-Japan (2007)
	Bulgaria-European Community (1993)

Bulgaria-European Free Trade Association (EFTA) (1993)	Partnership Agreement (2008)
Bulgaria-Estonia (2001)	Central America-Chile (1999)
Bulgaria-Finland (1974)	Central America-Dominican Republic (1998)
Bulgaria-Israel (2001)	Central America-European Community (2012)
Bulgaria-Latvia (2002)	Central America-European Free Trade Association (EFTA) (2013)
Bulgaria-Lithuania (2001)	Central America-Korea (2018)
Bulgaria-Macedonia (1999)	Central America-Mexico (2011)
Bulgaria-Moldova (2004)	Central America-Panama (2002)
Bulgaria-Serbia (2003)	Central America-United Kingdom (2019)
Bulgaria-Slovakia (1995)	Central American Common Market (CACM) (1993)
Bulgaria-Slovenia (1996)	Central American Free Trade Agreement (CAFTA) (2004)
Bulgaria-Turkey (1998)	Central American Free Trade Agreement (CAFTA)-Dominican Republic (2004)
Canada-Chile (1996)	Central American Integration System (1991)
Canada-Colombia (2008)	Central European Free Trade Agreement (CEFTA) (1992)
Canada-Costa Rica (2001)	Central European Free Trade Agreement (CEFTA) (2006)
Canada-European Community (CETA) (2016)	Chile-China (2005)
Canada-European Free Trade Association (EFTA) (2008)	Chile-Colombia (1993)
Canada-Honduras (2013)	Chile-Colombia (2006)
Canada-Israel (1996)	Chile-Cuba (1999)
Canada-Jordan (2009)	Chile-European Community (2002)
Canada-Korea (2014)	Chile-Ecuador (1994)
Canada-New Zealand (1981)	Chile-Ecuador (2008)
Canada-Panama (2010)	Chile-European Free Trade Association (EFTA) (2003)
Canada-Peru (2008)	Chile-Hong Kong (2012)
Canada-Ukraine (2016)	Chile-India (2006)
Canada-United States of America (1988)	Chile-Indonesia (2017)
Caribbean Community (CARICOM) (1973)	Chile-Japan (2007)
Caribbean Community (CARICOM) (1997)	Chile-Korea (2003)
Caribbean Community (CARICOM)-Colombia (1994)	Chile-Malaysia (2010)
Caribbean Community (CARICOM)-Costa Rica (2004)	Chile-MERCOSUR (1996)
Caribbean Community (CARICOM)-Cuba (2000)	Chile-MERCOSUR (2009)
Caribbean Community (CARICOM)-Dominican Republic (1998)	Chile-Mexico (1991)
Caribbean Community (CARICOM) (2001)	Chile-Mexico (1998)
Caribbean Community (CARICOM)-Venezuela (1992)	Chile-Panama (2006)
CARIFORUM-European Community Economic	

- Chile-Peru (1998)
- Chile-Peru (2006)
- Chile-Thailand (2013)
- Chile-Turkey (2009)
- Chile-United Kingdom (2019)
- Chile-Uruguay (1985)
- Chile-Uruguay (2016)
- Chile-United States of America (2003)
- Chile-Venezuela (1993)
- Chile-Vietnam (2011)
- China-Costa Rica (2010)
- China-Georgia (2017)
- China-Hong Kong (2003)
- China-Iceland (2013)
- China-Korea (2015)
- China-Macao (2003)
- China-Mauritius (2019)
- China-New Zealand (2008)
- China-Pakistan (2006)
- China-Pakistan (2009)
- China-Peru (2009)
- China-Singapore (2008)
- China-Switzerland (2013)
- Colombia-Costa Rica (2013)
- Colombia-Cuba (2000)
- Colombia-European Community-Peru (2012)
- Colombia-European Free Trade Association (EFTA) (2008)
- Colombia-El Salvador (1984)
- Colombia-Guatemala (1984)
- Colombia-Honduras (1984)
- Colombia-Israel (2013)
- Colombia-Korea (2013)
- Colombia-MERCOSUR (2017)
- Colombia-Mexico (2011)
- Colombia-Mexico-Venezuela (1994)
- Colombia-Nicaragua (1984)
- Colombia-Northern Triangle (2007)
- Colombia-Panama (1993)
- Colombia-Panama (2013)
- Colombia-United States of America (2006)
- Colombia-Costa Rica (1984)
- Common Economic Zone (2003)
- Common Market for Eastern and Southern Africa (COMESA) (1993)
- Common Market for Eastern and Southern Africa (COMESA)-East African Community (EAC)-Southern African Development Community (SADC) (2015)
- Commonwealth of Independent States (CIS) (1994)
- Commonwealth of Independent States (CIS) (2011)
- Comprehensive and Progressive Agreement for Transpacific Partnership (CPTPP) (2018)
- Costa Rica-Mexico (1982)
- Costa Rica-Mexico (1994)
- Costa Rica-Panama (1973)
- Costa Rica-Peru (2011)
- Costa Rica-Singapore (2010)
- Costa Rica-Venezuela (1986)
- Cote d'Ivoire-European Community Economic Partnership Agreement (2008)
- Cotonou Agreement (2000)
- Croatia-European Community (2001)
- Croatia-European Free Trade Association (EFTA) (2001)
- Croatia-Lithuania (2002)
- Croatia-Macedonia (1997)
- Croatia-Macedonia (2002)
- Croatia-Moldova (2004)
- Croatia-Serbia and Montenegro (2004)
- Croatia-Slovenia (1997)
- Croatia-Turkey (2002)
- Cuba-Ecuador (2000)
- Cuba-El Salvador (2011)
- Cuba-Guatemala (1999)
- Cuba-MERCOSUR (2006)
- Cuba-Mexico (1985)
- Cuba-Mexico (2000)
- Cuba-Paraguay (2000)
- Cuba-Peru (2000)

- Cuba-Uruguay (1999)
- Cuba-Venezuela (1999)
- Cyprus-European Community (1972)
- Czech and Slovak Republic-European Free Trade Association (EFTA) (1992)
- Czech Republic-European Community (1991)
- Czech Republic-Estonia (1996)
- Czech Republic-Israel (1996)
- Czech Republic-Latvia (1996)
- Czech Republic-Lithuania (1995)
- Czech Republic-Slovakia (1992)
- Czech Republic-Slovenia (1993)
- Czech Republic-Turkey (1997)
- Czechoslovakia-Finland (1974)
- Dominican Republic-Panama (1985)
- East African Community (EAC) (1999)
- East African Community Common Market (2009)
- Eastern and Southern Africa States (ESA)-European Community Interim Economic Partnership Agreement (2009)
- Eastern and Southern African States (ESA)-United Kingdom (2019)
- European Community (1986)
- European Community-Algeria (1976)
- European Community (Amsterdam) (1997)
- European Community-Egypt (1977)
- European Community-Egypt Agreement (1972)
- European Community-Egypt Euro-Mediterranean Association Agreement (2001)
- European Community-Estonia (1993)
- European Community-Estonia Agreement (1995)
- European Community-Faroe Islands (1991)
- European Community-Faroe Islands (1996)
- European Community-Finland (1972)
- European Community-Georgia (2014)
- European Community-Greece Association Agreement (1975)
- European Community-Hungary (1991)
- European Community-Iceland (1972)
- European Community-Israel (1970)
- European Community-Israel (1975)
- European Community-Israel Euro-Mediterranean Association Agreement (1995)
- European Community-Japan (2018)
- European Community-Jordan (1977)
- European Community-Jordan Euro-Mediterranean Association Agreement (1997)
- European Community-Kazakhstan (2015)
- European Community-Korea (2010)
- European Community-Latvia (1994)
- European Community-Latvia Agreement (1995)
- European Community-Lebanon (1972)
- European Community-Lebanon (1977)
- European Community-Lebanon Euro-Mediterranean Association Agreement (2002)
- European Community (Lisbon) (2007)
- European Community-Lithuania (1994)
- European Community-Lithuania Agreement (1995)
- European Community (Maastricht) (1992)
- European Community-Macedonia Stabilization and Association Agreement (SAA) (2001)
- European Community-Malta (1970)
- European Community-Mexico (2000)
- European Community-Moldova (2014)
- European Community-Montenegro Stabilization and Association Agreement (SAA) (2007)
- European Community-Morocco (1976)
- European Community-Morocco Euro-Mediterranean Association Agreement (1996)
- European Community (Nice) (2001)
- European Community-Norway (1973)
- European Community-Pacific States-Fiji-Papua New Guinea Economic Partnership Agreement (EPA) (2009)
- European Community-Poland (1991)
- European Community-Portugal (1972)
- European Community-Portugal (1976)
- European Community-Romania (1993)
- European Community-San Marino (1991)
- European Community-Serbia Stabilization and Association Agreement (SAA) (2008)

European Community-Singapore (2018)	(2018)
European Community-Slovakia (1993)	Ecuador-El Salvador (2017)
European Community-Slovenia (1993)	Ecuador-Guatemala (2011)
European Community-Slovenia Agreement (1996)	Ecuador-Mexico (1987)
European Community-South Africa (1999)	Ecuador-Paraguay (1994)
European Community-South African Development Community (SADC) Economic Partnership Agreement (EPA) (2016)	Ecuador-Uruguay (1994)
European Community-Spain (1970)	European Free Trade Association (EFTA) (2001)
European Community-Sweden (1972)	European Free Trade Association (EFTA)-Egypt (2007)
European Community-Switzerland Bilaterals I (1999)	European Free Trade Association (EFTA)-Estonia (1995)
European Community-Switzerland-Liechtenstein (1972)	European Free Trade Association (EFTA)-Georgia (2016)
European Community-Syria (1977)	European Free Trade Association (EFTA)-Gulf Cooperation Council (GCC) (2009)
European Community-Tunisia (1976)	European Free Trade Association (EFTA)-Hong Kong (2011)
European Community-Tunisia Euro-Mediterranean Association Agreement (1995)	European Free Trade Association (EFTA)-Hungary (1993)
European Community-Turkey (1995)	European Free Trade Association (EFTA)-Indonesia (2018)
European Community-Turkey Additional Protocol (1973)	European Free Trade Association (EFTA)-Israel (1992)
European Community-Ukraine (2014)	European Free Trade Association (EFTA)-Jordan (2001)
European Community-Vietnam (2019)	European Free Trade Association (EFTA)-Korea (2005)
European Community-Yugoslavia (1980)	European Free Trade Association (EFTA)-Latvia (1995)
European Community-Kosovo Stabilization and Association Agreement (SAA) (2015)	European Free Trade Association (EFTA)-Lebanon (2004)
Economic and Monetary Community of Central Africa (CEMAC) (1994)	European Free Trade Association (EFTA)-Lithuania (1995)
Economic and Monetary Community of Central Africa (CEMAC) (2008)	European Free Trade Association (EFTA)-Macedonia (2000)
Economic Community of Central African States (ECCAS-CEEAC) (1983)	European Free Trade Association (EFTA)-Mexico (2000)
Economic Community of West African States (ECOWAS) (1975)	European Free Trade Association (EFTA)-Montenegro (2011)
Economic Community of West African States (ECOWAS) (1993)	European Free Trade Association (EFTA)-Morocco (1997)
Economic Cooperation Organization (ECO) Preferences (1991)	
Economic Cooperation Organization Trade Agreement (ECOTA) (2003)	
Ecuador-European Free Trade Association (EFTA)	

European Free Trade Association (EFTA)-Peru (2010)	Estonia-Finland (1992)
European Free Trade Association (EFTA)-Philippines (2016)	Estonia-Hungary (1998)
European Free Trade Association (EFTA)-Poland (1992)	Estonia-Norway (1992)
European Free Trade Association (EFTA)-Romania (1992)	Estonia-Slovakia (1996)
European Free Trade Association (EFTA)-Serbia (2009)	Estonia-Slovenia (1996)
European Free Trade Association (EFTA)-Singapore (2002)	Estonia-Sweden (1991)
European Free Trade Association (EFTA)-Slovenia (1995)	Estonia-Switzerland (1992)
European Free Trade Association (EFTA)-Southern African Customs Union (SACU) (2006)	Estonia-Turkey (1997)
European Free Trade Association (EFTA)-Spain (1979)	Estonia-Ukraine (1995)
European Free Trade Association (EFTA)-Tunisia (2004)	Eurasian Economic Community (EAEC) (1999)
European Free Trade Association (EFTA)-Turkey (1991)	Eurasian Economic Union (EAEU) (2014)
European Free Trade Association (EFTA)-Turkey (2018)	Eurasian Economic Union (EAEU)-Iran (2018)
European Free Trade Association (EFTA)-Ukraine (2010)	Eurasian Economic Union (EAEU)-Serbia (2019)
Egypt-Jordan (1998)	Eurasian Economic Union (EAEU)-Vietnam (2015)
Egypt-MERCOSUR (2010)	European Economic Area (EEA) (1992)
Egypt-Morocco (1998)	Faroe Islands-Finland (1992)
Egypt-State of Palestine (1998)	Faroe Islands-Iceland (1992)
Egypt-Syria (1991)	Faroe Islands-Iceland (2005)
Egypt-Turkey (2005)	Faroe Islands-Norway (1992)
Egypt-United Kingdom (2019)	Faroe Islands-Poland (1998)
El Salvador-Guatemala (1991)	Faroe Islands-Switzerland (1994)
El Salvador-Honduras-Taiwan (2007)	Faroe Islands-United Kingdom (2019)
El Salvador-Mexico (1986)	Finland-German Democratic Republic (1975)
El Salvador-Panama (1970)	Finland-Hungary (1974)
El Salvador-Panama (1976)	Finland-Latvia (1992)
El Salvador-Panama Protocol (1986)	Finland-Lithuania (1992)
El Salvador-Venezuela (1986)	Finland-Poland (1976)
Estonia-Faroe Islands (1997)	Georgia-Hong Kong (2018)
	Georgia-Kazakhstan (1997)
	Georgia-Russia (1994)
	Georgia-Turkey (2007)
	Georgia-Turkmenistan (1996)
	Georgia-United Kingdom (2019)
	Georgia-Ukraine (1995)
	Global System of Trade Preferences (GSTP) (1988)
	Greater Arab Free Trade Agreement (1997)
	Group of Eight Developing Countries Preferential Trade Agreement (2006)
	Group of Three (1994)

Group of Three (2004)	Israel-Jordan (1995)
GUAM/GUAM Organization for Democracy and Economic Development (2002)	Israel-MERCOSUR (2007)
Guatemala-Mexico (1985)	Israel-Mexico (2000)
Guatemala-Mexico (2000)	Israel-State of Palestine (1994)
Guatemala-Panama (1974)	Israel-Poland (1997)
Guatemala-Peru (2011)	Israel-Romania (2001)
Guatemala-Taiwan (2005)	Israel-Slovakia (1996)
Guatemala-Trinidad and Tobago (2015)	Israel-Slovenia (1998)
Guatemala-Venezuela (1985)	Israel-Turkey (1996)
Guinea-Morocco (1997)	Israel-United Kingdom (2019)
Gulf Cooperation Council (GCC) (1981)	Israel-Ukraine (2019)
Gulf Cooperation Council (GCC) (2001)	Israel-United States of America (1985)
Gulf Cooperation Council (GCC)-Singapore (2008)	Japan-Malaysia (2005)
Guyana-Venezuela (1990)	Japan-Mexico (2004)
Honduras-Mexico (1985)	Japan-Mongolia (2015)
Honduras-Panama (1973)	Japan-Peru (2011)
Honduras-Peru (2015)	Japan-Philippines (2006)
Honduras-Venezuela (1986)	Japan-Singapore (2002)
Hong Kong-Macao (2017)	Japan-Switzerland (2009)
Hong Kong-New Zealand (2010)	Japan-Thailand (2007)
Hungary-Israel (1997)	Japan-Vietnam (2008)
Hungary-Latvia (1999)	Jordan-Kuwait (1986)
Hungary-Lithuania (1998)	Jordan-Kuwait (2001)
Hungary-Slovenia (1994)	Jordan-Lebanon (1992)
Hungary-Turkey (1997)	Jordan-Lebanon (2002)
India-Japan (2011)	Jordan-Libya (1992)
India-Korea (2009)	Jordan-Morocco (1994)
India-Malaysia (2011)	Jordan-State of Palestine (1995)
India-MERCOSUR (2004)	Jordan-Qatar (1980)
India-Nepal (1991)	Jordan-Singapore (2004)
India-Nepal (2009)	Jordan-Sudan (1989)
India-Singapore (2005)	Jordan-Sudan (2003)
India-Sri Lanka (1998)	Jordan-Syria (1975)
Indonesia-Japan (2007)	Jordan-Syria (2001)
Indonesia-Pakistan (2012)	Jordan-Tunisia (1998)
Inter-Arab Trade Agreement (1981)	Jordan-Turkey (2009)
Iran-Pakistan (2004)	Jordan-United Arab Emirates (2000)
Iran-Syria (2006)	Jordan-United Kingdom (2019)
Iraq-United Arab Emirates (1977)	Jordan-United States of America (2000)
	Kazakhstan-Kyrgyzstan (1995)
	Kazakhstan-Moldova (1995)

Kazakhstan-Russia (1992)	Lome IV (1989)
Kazakhstan-Serbia (2010)	Macedonia-Moldova (2004)
Kazakhstan-Ukraine (1994)	Macedonia-Romania (2003)
Kazakhstan-Uzbekistan (1997)	Macedonia-Slovenia (1996)
Korea-New Zealand (2015)	Macedonia-Turkey (1999)
Korea-Peru (2011)	Macedonia-Ukraine (2001)
Korea-Singapore (2005)	Malawi-Mozambique (2005)
Korea-Turkey (2012)	Malawi-Zimbabwe (2006)
Korea-United Kingdom (2019)	Malaysia-New Zealand (2009)
Korea-United States (2007)	Malaysia-Pakistan (2007)
Korea-Vietnam (2015)	Malaysia-Turkey (2014)
Kosovo-United Kingdom (2019)	Mano River Union (1973)
Kuwait-United Arab Emirates (1972)	Mauritania-Morocco (1986)
Kyrgyzstan-Moldova (1995)	Mauritius-Pakistan (2007)
Kyrgyzstan-Russia (1992)	Mauritius-Turkey (2011)
Kyrgyzstan-Ukraine (1995)	Melanesian Spearhead Group (MSG) (1993)
Kyrgyzstan-Uzbekistan (1996)	MERCOSUR (1991)
Laos-Thailand (1991)	MERCOSUR (1997)
Laos-United States of America (2003)	MERCOSUR-Mexico Auto Agreement (2002)
Latin American Integration Association (ALADI	MERCOSUR-Peru (2005)
LAIA) (1980)	MERCOSUR-Southern African Customs Union
Latvia-Norway (1992)	(SACU) (2004)
Latvia-Poland (1997)	MERCOSUR-Southern African Customs Union
Latvia-Slovakia (1996)	(SACU) (2008)
Latvia-Slovenia (1996)	Mexico-Nicaragua (1985)
Latvia-Sweden (1992)	Mexico-Nicaragua (1997)
Latvia-Switzerland (1992)	Mexico-Northern Triangle (2000)
Latvia-Turkey (1998)	Mexico-Panama (1985)
Lebanon-United Kingdom (2019)	Mexico-Panama (2014)
Libya-Morocco (1990)	Mexico-Peru (1987)
Liechtenstein-United Kingdom (2019)	Mexico-Peru (2011)
Lithuania-Norway (1992)	Mexico-Uruguay (1986)
Lithuania-Poland (1996)	Mexico-Uruguay (2004)
Lithuania-Slovakia (1996)	Moldova-Romania (1994)
Lithuania-Slovenia (1996)	Moldova-Serbia (2003)
Lithuania-Sweden (1991)	Moldova-Turkey (2014)
Lithuania-Switzerland (1992)	Moldova-Ukraine (2003)
Lithuania-Turkey (1997)	Montenegro-Turkey (2008)
Lome I (1975)	Montenegro-Ukraine (2011)
Lome II (1979)	Morocco-Tunisia (1999)
Lome III (1984)	Morocco-Turkey (2004)

- Morocco-United Arab Emirates (2001)
 Morocco-United Kingdom (2019)
 Morocco-United States of America (2004)
 Namibia-Zimbabwe (1992)
 Namibia-Zimbabwe (2009)
 New Zealand-Singapore (2000)
 New Zealand-Taiwan (2013)
 New Zealand-Thailand (2005)
 Nicaragua-Panama (1973)
 Nicaragua-Taiwan (2006)
 Nicaragua-Venezuela (1986)
 North American Free Trade Agreement (NAFTA) (1992)
 Oman-United States of America (2006)
 Organization of Eastern Caribbean States (OECS) (1981)
 Pacific Agreement on Closer Economic Relations (PACER) Plus (2017)
 Pacific Alliance (2012)
 Pacific Island Countries Trade Agreement (PICTA) (2001)
 Pacific States-United Kingdom (2019)
 Pakistan-Sri Lanka (2002)
 Panama-Peru (2011)
 Panama-Singapore (2006)
 Panama-Taiwan (2003)
 Panama-Trinidad and Tobago (2013)
 Panama-United States (2007)
 Paraguay-Taiwan (2017)
 Paraguay-Venezuela (2008)
 Peru-Singapore (2008)
 Peru-Thailand (2005)
 Peru-United States of America (2006)
 Peru-Venezuela (2012)
 Poland-Turkey (1999)
 Protocol on Trade Negotiations (PTN) (1971)
 Preferential Trade Agreement for Eastern and Southern African States (1982)
 Romania-Serbia (2003)
 Romania-Slovakia (1994)
 Romania-Turkey (1997)
 Russia-Serbia and Montenegro (2000)
 Russia-Tajikistan (1992)
 Russia-Ukraine (1993)
 Saudi Arabia-United Arab Emirates (1978)
 Serbia-Turkey (2009)
 Singapore-Sri Lanka (2018)
 Singapore-Taiwan (2013)
 Singapore-Turkey (2015)
 Singapore-United States of America (2003)
 Slovakia-Slovenia (1993)
 Slovakia-Turkey (1997)
 Slovenia-Turkey (1998)
 South Asian Association for Regional Cooperation, Preferential Trading Arrangement (SAPTA) (1993)
 South Asian Free Trade Area (SAFTA) (2004)
 South Pacific Trade and Economic Co-operation Agreement (SPARTECA) (1980)
 Southern African Customs Union (SACU) (2002)
 Southern African Customs Union-Mozambique (SACUM)-United Kingdom (2019)
 Southern African Development Community (SADC) (1992)
 SADC (1996)
 Switzerland-United Kingdom (2019)
 Syria-Turkey (2004)
 Tajikistan-Ukraine (2001)
 Trans-Pacific Strategic Economic Partnership Agreement (EPA) (2005)
 Trans-Pacific Partnership (TPP) (2016)
 Trinidad and Tobago-Venezuela (1989)
 Tunisia-Turkey (2004)
 Tunisia-United Kingdom (2019)
 Turkmenistan-Ukraine (1994)
 Ukraine-Uzbekistan (1994)
 Uruguay-Venezuela (2008)
 United States of America-Mexico-Canada Agreement (USMCA) (2018)
 United States of America-Vietnam (2000)
 West African Economic and Monetary Union (1994)
 West African Economic Community (CEAO) (1973)

A.3 Country Classification by Region

North America: United States (USA), Canada (CAN), Mexico (MEX)

Central America: Guatemala (GTM), Honduras (HND), El Salvador (SLV), Nicaragua (NIC), Costa Rica (CRI), Panama (PAN), Belize (BLZ)

Caribbean: Cuba (CUB), Dominican Republic (DOM), Haiti (HTI), Jamaica (JAM), Trinidad and Tobago (TTO), Bahamas (BHS), Barbados (BRB), Grenada (GRD), Saint Lucia (LCA), Saint Vincent and the Grenadines (VCT), Antigua and Barbuda (ATG), Dominica (DMA), Saint Kitts and Nevis (KNA), Montserrat (MSR)

South America: Brazil (BRA), Argentina (ARG), Uruguay (URY), Paraguay (PRY), Venezuela (VEN), Guyana (GUY), Suriname (SUR), French Guiana (GUF), Bolivia (BOL), Ecuador (ECU)

Pacific Alliance: Chile (CHL), Peru (PER), Colombia (COL)

European Union: Austria (AUT), Belgium (BEL), Bulgaria (BGR), Croatia (HRV), Cyprus (CYP), Czech Republic (CZE), Denmark (DNK), Estonia (EST), Finland (FIN), France (FRA), Germany (DEU), Greece (GRC), Hungary (HUN), Ireland (IRL), Italy (ITA), Latvia (LVA), Lithuania (LTU), Luxembourg (LUX), Malta (MLT), Netherlands (NLD), Poland (POL), Portugal (PRT), Romania (ROU), Slovakia (SVK), Slovenia (SVN), Spain (ESP), Sweden (SWE)

Europe (Non-EU): Albania (ALB), Andorra (AND), Armenia (ARM), Azerbaijan (AZE), Belarus (BLR), Bosnia and Herzegovina (BIH), Faroe Islands (FRO), Georgia (GEO), Iceland (ISL), Kosovo (XKX), Liechtenstein (LIE), Moldova (MDA), Monaco (MCO), Montenegro (MNE), North Macedonia (MKD), Norway (NOR), Russia (RUS), San Marino (SMR), Serbia (SRB), Switzerland (CHE), Ukraine (UKR), United Kingdom (GBR), Vatican City (VAT)

Middle East: Saudi Arabia (SAU), United Arab Emirates (ARE), Jordan (JOR), Lebanon (LBN), Syria (SYR), Iraq (IRQ), Iran (IRN), Yemen (YEM), Oman (OMN), Kuwait (KWT), Bahrain (BHR), Qatar (QAT), Israel (ISR), Palestine (PSE), Turkey (TUR)

Africa: Algeria (DZA), Egypt (EGY), Libya (LBY), Morocco (MAR), Tunisia (TUN), Sudan (SDN), South Sudan (SSD), Nigeria (NGA), Ghana (GHA), Cote d'Ivoire (CIV), Senegal (SEN), Mali (MLI), Burkina Faso (BFA), Niger (NER), Guinea (GIN), Benin (BEN), Togo (TGO), Liberia (LBR), Sierra Leone (SLE), Mauritania (MRT), Gambia (GMB), Guinea-Bissau (GNB), Cape Verde (CPV), Democratic Republic of Congo (COD), Republic of Congo (COG), Cameroon (CMR), Central African Republic (CAF), Chad (TCD), Gabon (GAB), Equatorial Guinea (GNQ), Sao Tome and Principe (STP), Ethiopia (ETH), Kenya (KEN), Tanzania (TZA), Uganda (UGA), Rwanda (RWA), Burundi (BDI), Somalia (SOM), Djibouti (DJI), Eritrea (ERI), South Africa (ZAF), Angola (AGO), Mozambique (MOZ), Zambia (ZMB), Zimbabwe (ZWE), Botswana (BWA), Namibia (NAM), Lesotho (LSO), Eswatini (SWZ), Malawi (MWI), Madagascar (MDG), Mauritius (MUS), Seychelles (SYC), Comoros (COM)

Asia: China (CHN), Japan (JPN), South Korea (KOR), North Korea (PRK), Mongolia (MNG), Taiwan (TWN), Hong Kong (HKG), Macao (MAC), Indonesia (IDN), Thailand (THA), Vietnam (VNM), Philippines (PHL), Malaysia (MYS), Singapore (SGP), Myanmar

(MMR), Cambodia (KHM), Laos (LAO), Brunei (BRN), Timor-Leste (TLS), India (IND), Pakistan (PAK), Bangladesh (BGD), Afghanistan (AFG), Sri Lanka (LKA), Nepal (NPL), Bhutan (BTN), Maldives (MDV), Kazakhstan (KAZ), Uzbekistan (UZB), Turkmenistan (TKM), Kyrgyzstan (KGZ), Tajikistan (TJK)

Oceania: Australia (AUS), New Zealand (NZL), Papua New Guinea (PNG), Fiji (FJI), Solomon Islands (SLB), Vanuatu (VUT), New Caledonia (NCL), Samoa (WSM), Tonga (TON), Kiribati (KIR), Micronesia (FSM), Marshall Islands (MHL), Palau (PLW), Tuvalu (TUV), Cook Islands (COK), Nauru (NRU), Niue (NIU)

A.4 Sample of Countries for the Bilateral Trade Model

Table A.1. Countries in the Sample

<i>Importers and Exporters (202)</i>		
Afghanistan	Albania	Algeria
Andorra	Angola	Anguilla
Antigua and Barbuda	Argentina	Armenia
Aruba	Australia	Austria
Azerbaijan	Bahamas	Bahrain
Bangladesh	Barbados	Belarus
Belgium	Belize	Benin
Bermuda	Bhutan	Bolivia
Bosnia Herzegovina	Botswana	Brazil
Brunei Darussalam	Bulgaria	Burkina Faso
Burundi	Cabo Verde	Cambodia
Cameroon	Canada	Cayman Isds
Central African Rep.	Chile	China
China, Hong Kong SAR	China, Macao SAR	Colombia
Comoros	Congo	Cook Isds
Costa Rica	Croatia	Cuba
Curaçao	Cyprus	Czechia
Côte d'Ivoire	Dem. Rep. of the Congo	Denmark
Djibouti	Dominica	Dominican Rep.
Ecuador	Egypt	El Salvador
Estonia	Eswatini	Ethiopia
FS Micronesia	Faroe Isds	Fiji
Finland	France	French Guiana
French Polynesia	Gabon	Gambia
Georgia	Germany	Ghana
Greece	Greenland	Grenada
Guatemala	Guinea	Guinea-Bissau

(continued)

Guyana	Haiti	Honduras
Hungary	Iceland	India
Indonesia	Iran	Iraq
Ireland	Israel	Italy
Jamaica	Japan	Jordan
Kazakhstan	Kenya	Kiribati
Kuwait	Kyrgyzstan	Lao People's Dem. Rep.
Latvia	Lebanon	Lesotho
Liberia	Libya	Lithuania
Luxembourg	Madagascar	Malawi
Malaysia	Maldives	Mali
Malta	Martinique	Mauritania
Mauritius	Mayotte	Mexico
Mongolia	Montenegro	Montserrat
Morocco	Mozambique	Myanmar
Namibia	Nepal	Netherlands
New Caledonia	New Zealand	Nicaragua
Niger	Nigeria	North Macedonia
Norway	Oman	Pakistan
Palau	Panama	Papua New Guinea
Paraguay	Peru	Philippines
Poland	Portugal	Qatar
Rep. of Korea	Rep. of Moldova	Romania
Russian Federation	Rwanda	Réunion
Saint Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines
Samoa	Sao Tome and Principe	Saudi Arabia
Senegal	Serbia	Seychelles
Sierra Leone	Singapore	Slovakia
Slovenia	Solomon Isds	South Africa
Spain	Sri Lanka	State of Palestine
Sudan	Suriname	Sweden
Switzerland	Syria	Tajikistan
Thailand	Timor-Leste	Togo
Tonga	Trinidad and Tobago	Tunisia
Turkmenistan	Turks and Caicos Isds	Tuvalu
Türkiye	USA	Uganda
Ukraine	United Arab Emirates	United Kingdom
United Rep. of Tanzania	Uruguay	Uzbekistan
Vanuatu	Venezuela	Viet Nam
Wallis and Futuna Isds	Yemen	Zambia

(continued)

Zimbabwe

Exporters Only (37)

American Samoa	Antarctica	Bonaire
Bouvet Island	Br. Indian Ocean Terr.	Br. Virgin Isds
Chad	Christmas Isds	Cocos Isds
Dem. People's Rep. of Korea	Equatorial Guinea	Eritrea
Falkland Isds (Malvinas)	Fr. South Antarctic Terr.	Gibraltar
Guadeloupe	Guam	Heard Isds and McDonald Isds
Holy See	Marshall Isds	N. Mariana Isds
Nauru	Niue	Norfolk Isds
Pitcairn	Saint Barthélemy	Saint Helena
Saint Pierre and Miquelon	San Marino	Sint Maarten
Somalia	South Georgia	South Sudan
Tokelau	United States Minor Outlying Isds	Western Sahara

A.5 Factor Loadings

Table A.2 presents the factor loadings of each policy area on both factors. Areas are classified into the factor where they exhibit their highest loading.

Table A.2. Complete Factor Loadings for All Policy Areas

Policy Area	Factor 1 (Traditional Trade)	Factor 2 (Modern Trade)
Market Access	0.540	0.030
Services	0.590	0.670
Global Value Chains	0.000	0.650
Investment	0.510	0.730
Temporary Entry of Business Persons	0.430	0.650
Intellectual Property Rights	0.620	0.610
Public Procurement	0.510	0.540
Competition	0.640	0.370
Technical Barriers to Trade	0.770	0.360
Sanitary and Phytosanitary Measures	0.770	0.240
Regulatory Cooperation	0.440	0.690
Trade Defense Instruments	0.830	0.030
E-commerce	0.170	0.840
Data Flows	0.100	0.840
Capital Movement	0.610	0.540
Dispute Settlement	0.710	0.460
Non-Trade Issues	0.500	0.630
Variance Explained	31.47%	33.09%

Notes: Factor loadings from varimax-rotated principal component analysis. Bold values indicate the primary factor for each policy area (highest absolute loading). Total variance explained by both factors: 64.56%.

A.6 Robustness Checks for Factor Structure

This appendix presents detailed results for the robustness checks described in Section 1.4.5. We conduct five tests to assess the validity, stability, and sensitivity of our two-factor solution.

A.6.1 Scree Plot

Figure 2.1 presents the scree plot of eigenvalues after factor extraction (Cattell, 1966). The plot shows a sharp decline from Factor 1 (eigenvalue = 9.44) to Factor 2 (eigenvalue = 1.54), followed by a clear elbow. Factor 3 has an eigenvalue of exactly 1.00, sitting precisely on the Kaiser criterion threshold, and the remaining factors decline progressively to 0.12 for Factor 17.

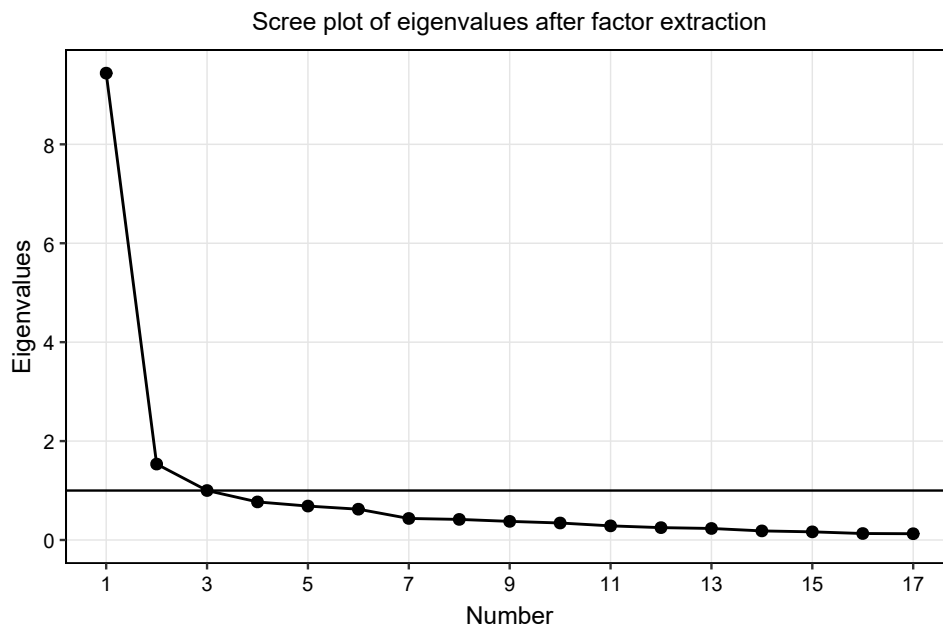


Figure 2.1. Scree Plot of Eigenvalues

Notes: Plot shows eigenvalues for all 17 factors. The horizontal line at $y = 1$ represents the Kaiser criterion threshold. The pronounced elbow after Factor 2 suggests that subsequent factors primarily capture noise rather than meaningful structure.

The steep initial decline and clear inflection point at Factor 2 support our two-factor solution. Although Factor 3 reaches the Kaiser threshold (eigenvalue = 1.00), parallel analysis (1,000 iterations) does not support its retention, its eigenvalue is indistinguishable from what would be expected from random data of equivalent dimensions. Factor 1 alone explains 55.53% of total variance, while Factor 2 explains an additional 9.03%, bringing cumulative explained variance to 64.56%. The marginal contribution of Factor 3 (5.88%) lacks substantive interpretability, and the flat scree after Factor 2 represents noise rather than meaningful structure. This visual diagnostic, combined with parallel analysis, strongly supports the two-factor solution as the optimal balance between parsimony and explanatory power.

A.6.2 Parallel Analysis

Parallel analysis compares the eigenvalues from our data with those generated from random data of the same dimensions (Horn, 1965). Table A.3 presents results from 1,000 random data replications. The adjusted eigenvalues for the first two factors (8.16 and 0.32) exceed the retention threshold of zero, while all subsequent factors fall below this criterion. This test provides rigorous statistical confirmation that two factors capture genuine structure in the data, rather than artifacts of sampling variation.

Table A.3. Parallel Analysis Results

Component	Observed Eigenvalue	Adjusted Eigenvalue	Simulated Eigenvalue	Decision
1	9.44	8.16	1.28	Retain
2	1.54	0.32	1.22	Retain
3	1.00	-0.18	1.18	Discard
4	0.77	-0.37	1.14	Discard
5	0.69	-0.42	1.11	Discard
6	0.62	-0.46	1.08	Discard
7	0.44	-0.61	1.05	Discard
8	0.42	-0.60	1.02	Discard
9	0.38	-0.61	0.99	Discard
10	0.34	-0.63	0.97	Discard
11	0.29	-0.65	0.94	Discard
12	0.25	-0.66	0.91	Discard
13	0.23	-0.65	0.88	Discard
14	0.18	-0.67	0.85	Discard
15	0.16	-0.66	0.82	Discard
16	0.13	-0.66	0.79	Discard
17	0.13	-0.62	0.75	Discard

Notes: Results from Horn's parallel analysis with 1,000 iterations. Observed eigenvalues are from a principal component analysis of the 17 trade agreement provisions. Simulated eigenvalues are the mean eigenvalues from 1,000 random matrices of equivalent dimensions. Adjusted eigenvalues are the difference between observed and simulated eigenvalues. A component is retained when its observed eigenvalue exceeds the simulated eigenvalue (adjusted eigenvalue > 0). Only the first two components satisfy this criterion, confirming the two-factor solution.

A.6.3 Internal Consistency (Cronbach's Alpha)

To verify the reliability of our two-factor structure, we conduct Cronbach's alpha tests for each factor. Cronbach's alpha measures internal consistency by assessing how closely related a set of items is as a group. The coefficient ranges from 0 to 1, with values above 0.70 considered acceptable, above 0.80 indicating good reliability, and above 0.90 representing excellent reliability (Johnson and Wichern, 2007).

Our analysis yields alpha coefficients of 0.898 for the Traditional Trade Index and 0.913 for the Modern Trade Index, both substantially exceeding the 0.80 threshold for good reliability. The item-test correlations are consistently high across both factors, and removing any single variable would have minimal impact on overall reliability, demonstrating that both factors are robust.

Table A.4. Internal Consistency Analysis: Cronbach's Alpha

Policy Area	Item-Test Correlation	Item-Rest Correlation	Alpha if Deleted	Factor Alpha
<i>Traditional Trade Index (Factor 1)</i>				0.898
Technical Barriers to Trade	0.877	0.821	0.871	
Dispute Settlement	0.836	0.767	0.876	
Sanitary and Phytosanitary Measures	0.825	0.739	0.881	
Intellectual Property Rights	0.822	0.759	0.878	
Capital Movement	0.769	0.708	0.885	
Trade Defense Instruments	0.751	0.688	0.886	
Competition	0.735	0.652	0.888	
Market Access	0.521	0.393	0.909	
<i>Modern Trade Index (Factor 2)</i>				0.913
Investment	0.890	0.850	0.892	
Services	0.887	0.836	0.893	
Non-Trade Issues	0.826	0.757	0.900	
Regulatory Cooperation	0.819	0.770	0.900	
E-commerce	0.800	0.742	0.901	
Temporary Entry of Business Persons	0.791	0.732	0.901	
Public Procurement	0.768	0.664	0.912	
Data Flows	0.735	0.695	0.909	
Global Value Chains	0.506	0.460	0.919	

Notes: Internal consistency statistics for each factor. Item-test correlation measures the correlation between each variable and the total factor score. Item-rest correlation measures the correlation between each variable and the sum of all other variables in the factor. Alpha if deleted shows the Cronbach's alpha of the factor if that variable were removed. Both factors exceed the 0.80 threshold for good reliability. Variables are listed in descending order of item-test correlation within each factor.

A.6.4 *Alternative Extraction Methods*

To verify that our two-factor solution is not dependent on the specific extraction technique, we re-estimate the factor structure using two alternative methods: Principal Axis Factoring (PAF) and Maximum Likelihood (ML). Each method makes different assumptions about the data structure. Principal Component Factor (PCF), our primary method, assumes no measurement error and maximizes total variance explained, making it ideal for data reduction. Principal Axis Factoring accounts for measurement error by focusing only on shared variance among variables, providing a more conservative estimate. Maximum Likelihood employs a statistical model-based approach that provides goodness-of-fit statistics and enables hypothesis testing, although it may be more sensitive to departures from multivariate normality (Johnson and Wichern, 2007).

Table A.5 compares the rotated factor loadings across all three methods. PCF and PAF demonstrate identical results, with factor loadings highly correlated at 0.990 and 0.982 for factors 1 and 2, respectively, indicating strong agreement between these methods. Maximum Likelihood shows somewhat different patterns, with correlations of 0.869 for Factor 1 and 0.890 for Factor 2 compared to PCF. In ML, the policy areas Competition, Intellectual Property Rights, and Capital Movement switch factors, moving to the second one. This difference reflects ML's distinct optimization criteria and its greater sensitivity to the data's correlation structure.

Despite these differences, all three methods consistently identify the same core two-factor structure. The clearest indicators of each factor remain stable across methods: Trade Defense Instruments, Technical Barriers to Trade, and Sanitary and Phytosanitary Measures consistently define Factor 1 (Traditional Trade), while E-commerce, Data Flows, and Investment consistently define Factor 2 (Modern Trade). No variables assigned to Factor 2 in PCF/PAF switch to Factor 1 in ML, preserving the fundamental distinction between traditional and modern trade provisions. The substantive interpretation of our two factors thus remains robust across extraction methods, even as ML reveals additional complexity in how certain provisions relate to both dimensions of trade agreement depth.

Table A.5. Robustness Check: Factor Loadings Across Alternative Extraction Methods

Policy Area	PCF		PAF		ML	
	F1	F2	F1	F2	F1	F2
<i>Traditional Trade (Factor 1)</i>						
Trade Defense Instruments	0.825	0.031	0.745	0.071	0.663	0.190
Technical Barriers to Trade	0.775	0.364	0.778	0.340	0.838	0.370
Sanitary & Phytosanitary Measures	0.775	0.243	0.748	0.237	0.831	0.252
Dispute Settlement	0.708	0.459	0.705	0.440	0.609	0.565
Competition	0.636	0.374	0.597	0.372	0.465	0.485
Intellectual Property Rights	0.621	0.613	0.630	0.594	0.512	0.707
Capital Movement	0.608	0.541	0.607	0.518	0.436	0.678
Market Access	0.537	0.034	0.404	0.118	0.355	0.173
<i>Modern Trade (Factor 2)</i>						
E-commerce	0.174	0.843	0.197	0.820	0.230	0.689
Data Flows	0.101	0.838	0.141	0.794	0.194	0.635
Investment	0.507	0.733	0.522	0.718	0.363	0.850
Regulatory Cooperation	0.441	0.694	0.459	0.660	0.395	0.702
Services	0.585	0.666	0.600	0.648	0.444	0.790
Global Value Chains	0.003	0.653	0.108	0.520	0.133	0.428
Temporary Entry of Business Persons	0.425	0.648	0.440	0.609	0.264	0.756
Non-Trade Issues	0.498	0.633	0.505	0.603	0.396	0.664
Public Procurement	0.506	0.539	0.499	0.511	0.469	0.523
<i>Correlations Between Factor Loadings Across Methods:</i>						
	Factor 1		Factor 2			
PCF vs. PAF	0.982		0.990			
PCF vs. ML	0.890		0.869			
PAF vs. ML	0.908		0.895			

Notes: Comparison of rotated factor loadings across three extraction methods: Principal Component Factor (PCF), Principal Axis Factoring (PAF), and Maximum Likelihood (ML). All methods use varimax rotation. Bold values indicate the primary factor for each policy area within each method. F1 = Traditional Trade Index; F2 = Modern Trade Index. PAF factor ordering adjusted to match PCF for comparability. Correlations show the Pearson correlation coefficients between corresponding factor loadings across methods.

A.6.5 Communalities Analysis

Communalities measure the proportion of each variable's variance that is explained by the retained factors. Higher communalities indicate that the variable is well-represented by the factor solution. A commonly used threshold suggests that communalities should exceed 0.30 for adequate representation, though values above 0.50 are preferred (Johnson and Wichern, 2007).

Table A.6 presents the communalities for all 17 policy areas. The communalities range from 0.289 to 0.794, with a mean of 0.645. Sixteen of the seventeen provisions exceed the 0.30 threshold, and fifteen exceed 0.50, indicating that the two-factor solution adequately captures the variance structure of the data. Only Market Access shows a communality below 0.30 (0.289), suggesting that this provision contains substantial unique variance not captured by the two common factors. This is consistent with Market Access being a foundational provision that may vary independently of the broader traditional-modern trade dimension. The highest communalities are observed for Investment (0.794), Services (0.787), E-commerce (0.740), and TBT (0.732), indicating these provisions are particularly well-explained by the two-factor structure.

Table A.6. Communalities for Policy Areas

Policy Area	Uniqueness	Communality	Assessment	Factor
<i>Traditional Trade Index (Factor 1)</i>				
Technical Barriers to Trade	0.268	0.732	Excellent	Factor 1
Dispute Settlement	0.289	0.711	Excellent	Factor 1
Trade Defense Instruments	0.318	0.682	Excellent	Factor 1
Sanitary & Phytosanitary Measures	0.341	0.659	Excellent	Factor 1
Capital Movement	0.338	0.662	Excellent	Factor 1
Intellectual Property Rights	0.239	0.761	Excellent	Factor 1
Competition	0.455	0.545	Good	Factor 1
Market Access	0.711	0.289	Poor	Factor 1
<i>Modern Trade Index (Factor 2)</i>				
Investment	0.206	0.794	Excellent	Factor 2
Services	0.213	0.787	Excellent	Factor 2
E-commerce	0.260	0.740	Excellent	Factor 2
Data Flows	0.288	0.712	Excellent	Factor 2
Regulatory Cooperation	0.324	0.676	Excellent	Factor 2
Non-Trade Issues	0.352	0.648	Excellent	Factor 2
Temporary Entry of Business Persons	0.399	0.601	Excellent	Factor 2
Public Procurement	0.453	0.547	Good	Factor 2
Global Value Chains	0.574	0.426	Acceptable	Factor 2
Mean	0.355	0.645	Good	
Minimum	0.206	0.289	Poor	
Maximum	0.711	0.794	Excellent	
Provisions > 0.60		13 of 17	Excellent	
Provisions > 0.50		15 of 17	Good+	
Provisions > 0.30		16 of 17	Acceptable+	

Notes: Communalities represent the proportion of each variable's variance explained by the two retained factors. Uniqueness represents the proportion of variance not explained by the factors. Communality = 1 - Uniqueness. Variables are grouped by their primary factor assignment. Assessment thresholds: > 0.60 = Excellent, 0.50–0.60 = Good, 0.30–0.50 = Acceptable, < 0.30 = Poor.

A.7 Sensitivity Analysis

Residualization is a statistical technique used to isolate variation in variables that is independent of potential confounders. By regressing each policy area on country characteristics and then extracting the residuals, we eliminate the portion of variation explained by observable factors. This process isolates the variation that can be attributed specifically to negotiation choices.

Certain policy areas are more likely to be influenced by country characteristics such as proximity, size, or level of development. Thus, an issue that could arise is that correlations among the negotiated areas could be driving our results. To address this, we use residualization to remove the effects of these characteristics from the coverage ratios of each area. We then construct the DITA index using the PCA method as before. Still, this time we use the regression residuals as the coverage ratios, ensuring that country-specific influences have been accounted for.

We use Structural Equation Modeling (SEM) as an alternative method to isolate the influence of the confounders. Residualization is a two-step method: we first remove the influence of confounders, then extract the factors. In contrast, SEM is a one-step approach that simultaneously estimates the factor structure and the effects of covariates. This integrated modeling accounts for measurement error more efficiently than the residualization approach, offering certain advantages.

We use this method as a robustness check for the same reasons as residualization: to control for country characteristics that could influence the latent factors. To test this, we estimate two SEM models: an exploratory factor analysis (EFA) SEM, where the data determines which policy areas load onto each factor, and a confirmatory factor analysis (CFA) SEM, which imposes the factor structure from our original PCA of the DITA measure to test its robustness.

A.7.1 Robustness of the Model

Tables A.7, A.8, and A.9 present the results for the four methodologies: (1) the original PCA we employed, (2) the residualization method, (3) EFA-SEM, and (4) CFA-SEM. Tables A.7 and A.8 present the factor loadings for all models, allowing us to compare which policy areas loaded into each factor and determine whether these different methodologies would change the structure. As the tables show, few changes are made to the factor structure, and we can still separate the factors into Modern and Traditional categories.

Table A.9 presents the estimated coefficients for the covariates in the SEM models. We choose the covariates based on the usual controls in gravity models: GDP per capita, distance, contiguity, common language, colonial ties, number of members, an intra-regional dummy, and decade dummy. When the agreements are multilateral, we use an average measure of those variables, and for GDP, we use a weighted average weighted by population. Both estimates are nearly identical because the EFA-SEM and the CFA-SEM have very similar factor structures.

Regarding model fit, the CFI (Comparative Fit Index) and TLI (Tucker-Lewis Index) compare the estimated model against a null model with no relationships; values above 0.95 indicate a good fit. The RMSEA (Root Mean Square Error of Approximation) measures the discrepancy between the model and the population covariance matrix, with values below 0.06 considered good and below 0.08 acceptable. While our CFI, TLI, and RMSEA values are above their respective thresholds, this is a well-known issue in large-sample SEM (ours has $N = 681$), as these indices are sensitive to sample size. The SRMR (Standardized Root Mean Square Residual) measures the average difference between observed and model-

Table A.7. Factor Loadings Comparison: Original vs Residualized PCA

	Original PCA		Residualized PCA	
Policy Area	RC1	RC2	RC1	RC2
Market Access	0.54	0.03	0.47	0.09
Services	0.59	0.67	0.54	0.64
Global Value Chains	0.00	0.65	-0.03	0.57
Investment	0.51	0.73	0.46	0.73
Temporary Entry of Business Persons	0.43	0.65	0.34	0.62
Intellectual Property Rights	0.62	0.61	0.53	0.59
Public Procurement	0.51	0.54	0.41	0.48
Competition	0.64	0.37	0.51	0.36
Technical Barriers to Trade	0.77	0.36	0.78	0.17
Sanitary and Phytosanitary Measures	0.77	0.24	0.75	0.07
Regulatory Cooperation	0.44	0.69	0.41	0.63
Trade Defense Instruments	0.83	0.03	0.76	0.05
E-commerce	0.17	0.84	0.06	0.81
Data Flows	0.10	0.84	0.01	0.79
Capital Movement	0.61	0.54	0.56	0.53
Dispute Settlement	0.71	0.46	0.70	0.31
Non-Trade Issues	0.50	0.63	0.38	0.62
Variance				
Variance Explained	31.47%	33.09%	25.97%	28.35%
Total Variance	64.56%		54.32%	
Diagnostic Tests				
KMO Statistic	0.941		0.916	
Bartlett’s Test (p-value)	< 0.001		< 0.001	
Kaiser Criterion (eigenvalues > 1)	3		3	
Parallel Analysis (suggested factors)	2		2	
RMSR	0.04		0.05	
Model Fit (off-diagonal)	0.99		0.99	
Cronbach’s α	0.898	0.913	0.818	0.892

Notes: Factor loadings from varimax-rotated principal component analysis. RC1 is the Traditional Trade Index and RC2 the Modern Trade Index. Bold values indicate the primary factor for each policy area (highest absolute loading). Original PCA uses raw coverage ratios. Residualized PCA controls for GDP per capita, distance, contiguity, common language, colonial ties, number of members, regional integration, and decade fixed effects before extracting factors. **Diagnostic Tests:** KMO (Kaiser-Meyer-Olkin) measures sampling adequacy; values above 0.7 indicate data are suitable for factor analysis. Bartlett's test of sphericity tests whether variables are correlated; p-values below 0.05 indicate suitability for PCA. Kaiser criterion retains factors with eigenvalues greater than 1. Parallel analysis compares observed eigenvalues with those from random data; it is the recommended method for determining how many factors to retain. RMSR (root mean square of residuals) measures model fit; values below 0.08 indicate a good fit. Model fit (off-diagonal) measures how well the factor solution reproduces the correlation matrix; values above 0.90 indicate an excellent fit. Cronbach's alpha measures internal consistency of items loading on each factor; values above 0.7 indicate acceptable reliability.

implied correlations and is less sensitive to sample size. Our value of 0.057 falls below the 0.08 benchmark, indicating that the models reproduce the correlation structure well. The conclusions are consistent across both methods, regardless of absolute fit.

Table A.8. SEM Models: Factor Structure and Fit Statistics

Policy Area	EFA-SEM		CFA-SEM	
	Factor 1	Factor 2	Factor 1	Factor 2
Market Access	0.355	0.173	✓	
Services	0.444	0.790		✓
Global Value Chains	0.133	0.428		✓
Investment	0.363	0.850		✓
Temporary Entry	0.264	0.756		✓
Intellectual Property	0.512	0.707	✓	
Public Procurement	0.469	0.523		✓
Competition	0.465	0.485	✓	
Technical Barriers	0.838	0.370	✓	
Sanitary & Phytosanitary	0.831	0.252	✓	
Regulatory Cooperation	0.395	0.702		✓
Trade Defense	0.663	0.190	✓	
E-commerce	0.230	0.689		✓
Data Flows	0.194	0.635		✓
Capital Movement	0.436	0.678	✓	
Dispute Settlement	0.609	0.565	✓	
Non-Trade Issues	0.396	0.664		✓
Variance Explained	23.74%	35.11%	—	—
Total Variance		58.85%	—	—
Model Fit				
χ^2 (df)	2298.59 (283)		2546.68 (283)	
χ^2 p-value	< 0.001		< 0.001	
CFI	0.808 (poor)		0.784 (poor)	
TLI	0.781 (poor)		0.754 (poor)	
RMSEA	0.102 [0.098, 0.106] (poor)		0.108 [0.105, 0.112] (poor)	
SRMR	0.060 (good)		0.059 (good)	
AIC	−10150.65		−9902.56	
BIC	−9892.81		−9644.72	
R ² (Covariates)	0.538	0.442	0.539	0.437

Notes: Factor 1 is the Traditional Trade Index and Factor 2 the Modern Trade Index. EFA-SEM uses a MIMIC model with a factor structure derived from exploratory factor analysis using maximum-likelihood extraction; the values shown are factor loadings. Bold values indicate the primary factor assignment for each policy area. CFA-SEM imposes the factor structure from the original PCA: ✓ indicates the policy area was assigned to that factor based on the highest loading in the original PCA. Both models control for GDP per capita, distance, contiguity, common language, colonial ties, number of members, regional integration, and decade fixed effects in the structural component. **Model fit:** CFI and TLI above 0.95 indicate excellent fit, above 0.90 acceptable; RMSEA below 0.06 indicates excellent fit, below 0.08 acceptable; SRMR below 0.08 indicates good fit.

Table A.9 presents the covariates estimates for both SEM models (EFA and CFA), and it shows consistency across both specifications. Richer countries negotiate deeper provisions, which is expected. Distant countries also negotiate deeper provisions. This may sound counterintuitive, but distance is negatively correlated with trade, meaning distant countries trade less. Thus, as trade agreements are tools for accessing foreign markets, countries may be more willing to negotiate deeper provisions with distant

countries to reach those markets. Colonial ties have a negative effect across all models, which could be driven by the fact that former colonies are making agreements among themselves and that those former colonies are usually developing countries that negotiate shallower provisions than developed ones do. Time also has a highly significant effect, with the 2000s and 2010s showing that the negotiation of provisions was indeed becoming deeper.

The R^2 values indicate that covariates explain 44-54% of variance in the latent factors. However, around half of the variation is explained by strategic negotiation choices rather than by those structural characteristics.

A.7.2 Regional Comparison

Our main result on the regional growth of the DITA shows that North America leads in the depth of trade agreements, followed closely by the Pacific Alliance countries and Central America, while South America and the Caribbean lag by around 2 to 3 decades. The same pattern emerges across all other specifications, as shown in Table A.10.

The residualization method shows the same pattern: South America and the Caribbean are being left behind. The difference here is that, after controlling for time, the results show that both regions peaked during the 1980s, and their average DITA has been decreasing since then. All other regions are growing, while these two have been negotiating agreements that are shallow relative to what would be expected given their economic and geographic characteristics. Thus, our results stand even after controlling for covariates that account for country characteristics. Figure 2.2 illustrates how this pattern manifests across each method.

In summary, the robustness checks confirm that our main findings are not artifacts of methodological choices. Across all four approaches, original PCA, residualized PCA, EFA-SEM, and CFA-SEM, the two-factor structure (Modern and Traditional Trade) remains stable, and the regional pattern of North American leadership and South American and the Caribbean lagging persists. The SEM models reveal that while country characteristics (GDP, distance, colonial ties) explain approximately half of the variation in agreement depth, strategic negotiation choices remain a dominant driver. Most importantly, the widening gap between North America and South America is robust to controlling for economic and geographic characteristics, confirming that this divergence reflects genuine differences in negotiations rather than structural constraints.

A.7.3 Temporal Aggregation Sensitivity

We aggregate our analysis by decade to facilitate the visualization and interpretability of the results. To assess that this choice of aggregation did not drive our results, we tested alternative time specifications: yearly averages, 5-year intervals, and our original 10-year interval. Figure 2.3 presents the results across all three specifications for both the original and residualized DITA indices.

The yearly specification proves too noisy for meaningful interpretation. Trade agreement negotiations occur irregularly across years, many years without new agreements for certain regions, resulting in substantial volatility that obscures underlying trends. This volatility makes it difficult to distinguish genuine shifts in negotiation strategy from year-specific data in agreement timing.

The 5-year interval specification offers an interesting middle ground. While it still reveals the fundamental divergence between North America/Pacific Alliance and South America/Caribbean, this interval shows additional nuances. For instance, we observe a temporary increase in South America's DITA val-

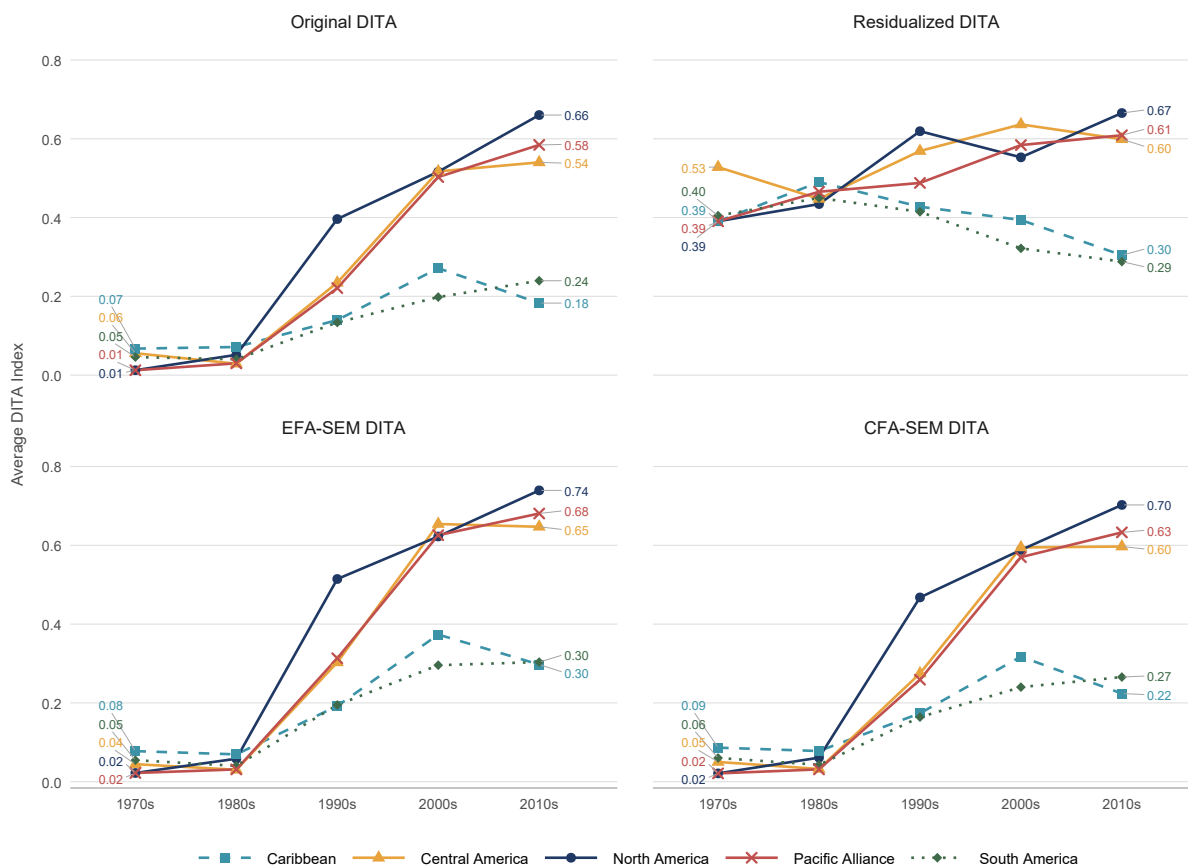


Figure 2.2. Evolution of DITA Across American Regions: Four DITA Approaches

Notes: Each panel shows average DITA index values by region and decade. Panel (a) uses our original DITA. Panel (b) controls for GDP per capita, distance, contiguity, common language, colonial ties, number of members, regional integration, and time before extracting factors. Panels (c) and (d) use MIMIC models where the same covariates predict latent factors; (c) uses exploratory factor analysis, and (d) imposes the factor structure from the original PCA. DITA values are standardized to a 0-1 scale within each method. The Pacific Alliance consists of Chile, Colombia, and Peru.

ues in the late 2010s, and a sharp decline in Central America during the same period. However, this has fewer agreements per interval; thus, a single outlier can disproportionately influence regional averages, potentially misrepresenting broader negotiation strategies.

We selected the 10-year decade specification to balance the temporal framing of agreement negotiation and the number of agreements negotiated over the period. Trade agreement negotiations are lengthy processes, often spanning multiple years from initiation to ratification. Decade-length windows provide sufficient time for multiple agreements to accumulate, offering a more representative picture of countries' negotiation approaches rather than capturing the effects of specific agreements.

Despite these different intervals, all three time specifications confirm our core finding: the gap between North America and South America/Caribbean widens consistently over time. Whether measured in 5-year intervals or by decade, the pattern of regional divergence remains robust. The 5-year specification reveals additional details and short-term fluctuations. Still, they do not alter the fundamental conclusion that North America and the Pacific Alliance are negotiating progressively deeper agreements while South America and the Caribbean fall further behind.

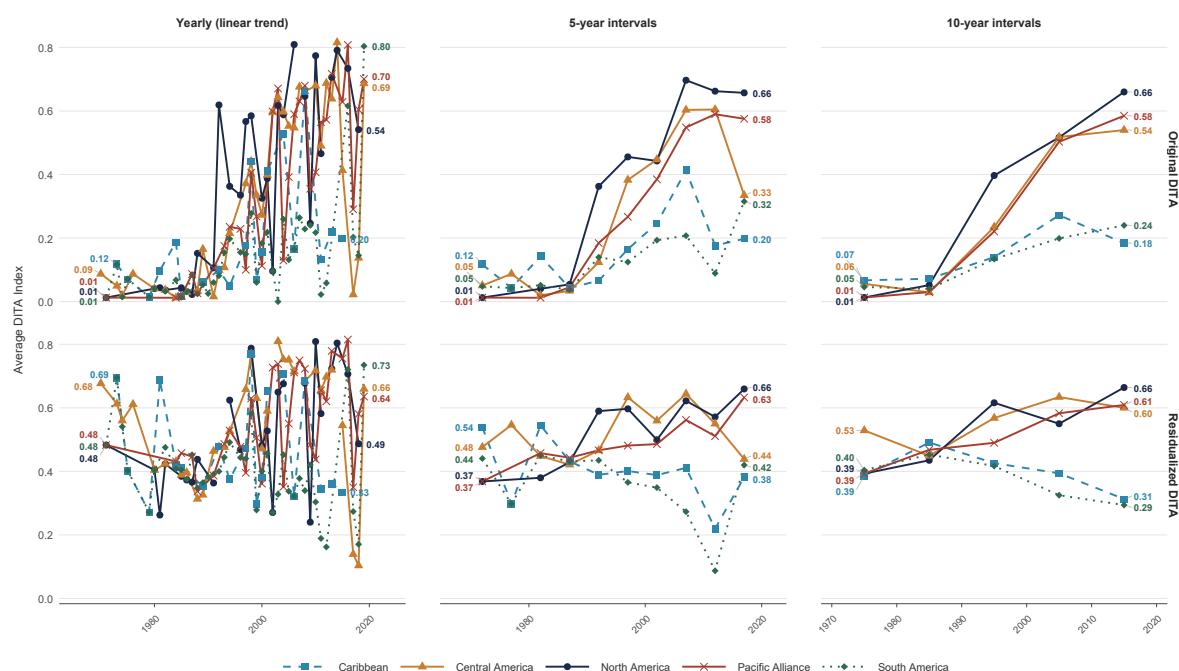


Figure 2.3. Regional DITA Trends: Sensitivity to Time Aggregation Method

Notes: Comparison of regional trade agreement depth trends using yearly (left), 5-year interval (middle), and 10-year decade (right) aggregations. The top row shows original DITA; the bottom row shows residualized DITA controlling for economic, geographic, and temporal factors.

A.7.4 Weighting Choice Sensitivity

While creating our coverage ratios, we chose a 2:1 scale because we believe that general provisions should not have the same weight as specific ones, as they require different compromises from members. Weighting everything equally would mean that a vague mention of investment protection is worth the same as an investment chapter with full dispute settlement, which we do not believe is the case.

To ensure that this weighting choice does not drive our results, we tested two alternatives. Since our only subjective choice concerns the weight assigned to general provisions, we tested a high scheme, assigning them a value of 0.75, and a low scheme, assigning them a value of 0.25.

The DITA is robust to alternative weighting assumptions. Across all three schemes, the results are very similar, as shown in Tables ?? and A.12. Correlations between the original and residualized DITA are stable at 0.728–0.729, indicating that controlling for economic and geographic characteristics produces consistent results regardless of how provisions are weighted. The factor structure is very similar across all schemes, the same two dimensions emerge, and all diagnostic tests pass ($KMO > 0.91$, Cronbach's $\alpha > 0.81$, parallel analysis consistently suggests 2 components). The exception is procurement and non-trade issues, which cross-load on both factors across all specifications.

The rankings for the most and least deep agreements are preserved across all three specifications, and they are presented in Tables A.13 and A.14. Pacific Alliance and Central America consistently outperform South America and the Caribbean, and the gap between regions is stable in both magnitude and direction.

In summary, the paper's main findings are not driven by the specific 1.0/0.5 weighting choice. Whether we assign lower or higher values to general provisions, the substantive conclusions remain unchanged.

Table A.9. Structural Model Results: Covariate Effects on Latent Factors

Covariate	EFA-SEM		CFA-SEM	
	Factor 1	Factor 2	Factor 1	Factor 2
<i>Economic & Geographic</i>				
GDP per capita (log)	0.212*** (0.040)	0.302*** (0.039)	0.330*** (0.041)	0.276*** (0.039)
Distance (log)	0.243*** (0.055)	0.307*** (0.053)	0.250*** (0.055)	0.343*** (0.054)
Contiguity (share)	0.112 (0.146)	0.264* (0.139)	0.105 (0.145)	0.321** (0.140)
Common language (share)	0.031 (0.102)	0.304*** (0.097)	0.023 (0.101)	0.389*** (0.098)
Colonial ties (share)	−0.590*** (0.132)	−0.309** (0.125)	−0.509*** (0.131)	−0.291** (0.126)
Number of members	0.003 (0.005)	0.003 (0.005)	0.002 (0.005)	0.003 (0.005)
Intra-regional	−0.169* (0.099)	−0.103 (0.094)	−0.147 (0.098)	−0.113 (0.095)
<i>Time Trends (relative to 1970s)</i>				
1980s	−0.295 (0.212)	−0.279 (0.202)	−0.352* (0.211)	−0.291 (0.204)
1990s	0.948*** (0.176)	0.242 (0.164)	0.614*** (0.173)	0.222 (0.166)
2000s	1.915*** (0.190)	0.839*** (0.172)	1.493*** (0.184)	0.779*** (0.173)
2010s	1.866*** (0.212)	1.086*** (0.196)	1.450*** (0.207)	1.099*** (0.198)
Model Fit				
R ²	0.538	0.442	0.539	0.437
N agreements	681		681	

Notes: Coefficients from the structural component of MIMIC models. Standard errors in parentheses. EFA-SEM uses a factor structure derived from exploratory factor analysis. CFA-SEM imposes factor structure from the original PCA. Factor 1 represents Traditional Trade provisions; Factor 2 represents Modern Trade provisions. All continuous variables are log-transformed except shares. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

Table A.10. Average DITA by Region and Decade

Region	1970s	1980s	1990s	2000s	2010s
<i>Original DITA</i>					
North America	0.013	0.052	0.396	0.516	0.660
Central America	0.056	0.029	0.235	0.517	0.540
Caribbean	0.067	0.071	0.140	0.271	0.183
South America	0.046	0.040	0.134	0.198	0.240
Pacific Alliance	0.013	0.030	0.221	0.503	0.584
<i>Residualized DITA</i>					
North America	0.391	0.434	0.619	0.553	0.665
Central America	0.528	0.447	0.569	0.636	0.599
Caribbean	0.391	0.490	0.428	0.394	0.305
South America	0.405	0.450	0.415	0.322	0.288
Pacific Alliance	0.391	0.465	0.488	0.584	0.609
<i>EFA-SEM DITA</i>					
North America	0.022	0.058	0.515	0.622	0.739
Central America	0.045	0.030	0.303	0.654	0.647
Caribbean	0.078	0.069	0.192	0.373	0.297
South America	0.055	0.040	0.195	0.296	0.304
Pacific Alliance	0.022	0.031	0.313	0.626	0.681
<i>CFA-SEM DITA</i>					
North America	0.021	0.061	0.468	0.588	0.703
Central America	0.050	0.032	0.275	0.595	0.597
Caribbean	0.086	0.078	0.174	0.318	0.224
South America	0.060	0.043	0.164	0.240	0.266
Pacific Alliance	0.021	0.031	0.259	0.570	0.633
<i>Number of Agreements</i>					
North America	1	16	11	31	13
Central America	7	21	14	20	21
Caribbean	3	7	12	13	3
South America	5	27	32	27	12
Pacific Alliance	1	11	20	29	30

Notes: DITA values are standardized to a 0-1 scale. Original DITA uses raw coverage ratios. Residualized DITA controls for GDP per capita, distance, contiguity, common language, colonial ties, number of members, regional integration, and decade fixed effects. EFA-SEM uses a MIMIC model with factor structure derived from exploratory factor analysis. CFA-SEM imposes the factor structure from the original PCA. The Pacific Alliance consists of Chile, Colombia, and Peru.

Table A.11. PCA Factor Loadings: Robustness to Alternative Weighting Schemes

Sub-Index	Baseline		High Weights		Low Weights	
	RC1	RC2	RC1	RC2	RC1	RC2
Panel A: Original DITA						
Market Access	0.54	0.03	0.53	0.01	0.52	0.04
Services	0.59	0.67	0.61	0.64	0.57	0.68
GVC	0.00	0.65	0.02	0.67	−0.02	0.59
Investment	0.51	0.73	0.53	0.72	0.50	0.74
Temporary Entry	0.43	0.65	0.46	0.65	0.40	0.62
IPR	0.62	0.61	0.63	0.60	0.62	0.62
Procurement	0.51	0.54	0.53	0.51	0.48	0.57
Competition	0.64	0.37	0.65	0.35	0.63	0.39
TBT	0.77	0.36	0.77	0.36	0.78	0.36
SPS	0.77	0.24	0.77	0.24	0.78	0.24
Regulation	0.44	0.69	0.46	0.69	0.43	0.70
Trade Defense	0.83	0.03	0.82	0.02	0.82	0.03
E-Commerce	0.17	0.84	0.19	0.84	0.17	0.85
Data Flows	0.10	0.84	0.10	0.84	0.11	0.83
Capital Movement	0.61	0.54	0.62	0.53	0.61	0.54
NTI	0.50	0.63	0.57	0.57	0.37	0.68
Dispute Settlement	0.71	0.46	0.72	0.45	0.71	0.46
Variance	0.31	0.33	0.33	0.32	0.30	0.33
Total	0.65		0.65		0.63	
Panel B: Residualized DITA						
Market Access	0.47	0.09	0.46	0.06	0.46	0.10
Services	0.54	0.64	0.57	0.61	0.51	0.65
GVC	−0.03	0.57	−0.02	0.59	−0.03	0.50
Investment	0.46	0.73	0.49	0.71	0.45	0.73
Temporary Entry	0.34	0.62	0.38	0.63	0.31	0.59
IPR	0.53	0.59	0.55	0.58	0.53	0.59
Procurement	0.41	0.48	0.44	0.45	0.39	0.50
Competition	0.51	0.36	0.53	0.33	0.50	0.37
TBT	0.78	0.17	0.77	0.17	0.79	0.16
SPS	0.75	0.07	0.74	0.06	0.76	0.06
Regulation	0.41	0.63	0.43	0.62	0.41	0.62
Trade Defense	0.76	0.05	0.76	0.03	0.75	0.05
E-Commerce	0.06	0.81	0.07	0.81	0.06	0.81
Data Flows	0.01	0.79	0.01	0.80	0.03	0.78
Capital Movement	0.56	0.53	0.58	0.51	0.56	0.52
NTI	0.38	0.62	0.47	0.55	0.24	0.65
Dispute Settlement	0.70	0.31	0.71	0.29	0.70	0.32
Variance	0.26	0.28	0.27	0.27	0.25	0.28
Total	0.54		0.55		0.53	

Notes: Standardized loadings from principal component analysis with varimax rotation. RC1 is the Traditional Trade Index and RC2 the Modern Trade Index, following the ordering used throughout the article. Bold values indicate the dominant factor for each sub-index. Baseline: general provisions = 0.5; High Weights: general provisions = 0.75; Low Weights: general provisions = 0.25. Specific provisions are 1.0 in all schemes. Panel A applies PCA directly to the 17 sub-indices. Panel B applies PCA to residuals after controlling for GDP per capita, geographic distance, common language, colonial ties, number of members, intra-regional status, and decade fixed effects.

Table A.12. PCA Diagnostic Tests: Robustness to Alternative Weighting Schemes

Test	Original DITA			Residualized DITA		
	Baseline	High Weights	Low Weights	Baseline	High Weights	Low Weights
<i>Sampling Adequacy</i>						
KMO statistic	0.941	0.941	0.939	0.916	0.917	0.912
Bartlett χ^2	9,350	9,448	9,009	6,389	6,471	6,129
Bartlett <i>p</i> -value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<i>Number of Components</i>						
Eigenvalues > 1 (Kaiser)	3	3	3	3	3	3
Parallel analysis	2	2	2	2	2	2
<i>Variance Explained</i>						
RC1	0.315	0.329	0.301	0.260	0.273	0.250
RC2	0.331	0.319	0.331	0.284	0.272	0.281
Total	0.646	0.648	0.633	0.543	0.546	0.531
<i>Internal Consistency (Cronbach's α)</i>						
RC1	0.898	0.916	0.876	0.818	0.818	0.816
RC2	0.913	0.903	0.921	0.892	0.893	0.883
<i>Model Fit</i>						
RMSR	0.04	0.04	0.04	0.05	0.05	0.05
Fit (off-diagonal)	0.99	0.99	0.99	0.99	0.99	0.98

Notes: RC1 is the Traditional Trade Index and RC2 the Modern Trade Index, following the ordering used throughout the article. KMO = Kaiser-Meyer-Olkin measure of sampling adequacy; values above 0.7 indicate adequate sampling. Bartlett's test of sphericity assesses whether the correlation matrix is approximately an identity matrix; rejection confirms that the variables are sufficiently correlated for PCA. Parallel analysis compares observed eigenvalues to those from random data (1,000 replications) and is the preferred criterion for determining the number of components. RMSR = root mean square of residuals. Baseline: general provisions = 0.5; High Weights: general provisions = 0.75; Low Weights: general provisions = 0.25. Specific provisions = 1.0 in all schemes. Residualized DITA controls for GDP per capita, geographic distance, common language, colonial ties, number of members, intra-regional status, and decade.

Table A.13. Top 10 Trade Agreements by DITA Index: Robustness to Alternative Weighting Schemes

Agreement	Baseline	High Weights	Low Weights
<i>Original DITA</i>			
Transpacific Partnership (TPP) (2016)	1.000 (1)	1.000 (1)	1.000 (1)
CPTPP (2018)	0.885 (2)	0.875 (6)	0.889 (3)
Colombia–Korea (2013)	0.879 (3)	0.877 (4)	0.892 (2)
Korea–Peru (2011)	0.878 (4)	0.891 (2)	0.867 (4)
Peru–US (2006)	0.867 (5)	0.883 (3)	0.852 (6)
Australia–Korea (2014)	0.862 (6)	0.874 (7)	0.853 (5)
Singapore–Turkey (2015)	0.853 (7)	—	0.845 (7)
Korea–US (2007)	0.850 (8)	0.868 (9)	0.834 (10)
EC–Japan (2018)	0.850 (9)	0.876 (5)	—
Canada–Colombia (2008)	0.846 (10)	—	0.841 (9)
Pacific Alliance (2012)	—	0.871 (8)	—
Australia–Peru (2018)	—	0.861 (10)	—
Colombia–Panama (2013)	—	—	0.844 (8)
<i>Residualized DITA</i>			
China–Korea (2015)	1.000 (1)	1.000 (1)	1.000 (1)
Central America–Dominican Rep. (1998)	0.972 (2)	0.994 (2)	0.953 (3)
Nicaragua–Taiwan (2006)	0.966 (3)	0.956 (3)	0.973 (2)
Colombia–Panama (2013)	0.941 (4)	0.931 (4)	0.950 (4)
Transpacific Partnership (TPP) (2016)	0.927 (5)	0.912 (6)	0.928 (5)
Colombia–Costa Rica (2013)	0.915 (6)	0.927 (5)	0.905 (6)
Singapore–Sri Lanka (2018)	0.895 (7)	0.893 (7)	0.894 (7)
Canada–Colombia (2008)	0.885 (8)	—	0.885 (8)
Mexico–Panama (2014)	0.878 (9)	0.877 (10)	0.878 (9)
Pacific Alliance (2012)	0.867 (10)	0.887 (8)	—
Mexico–Nicaragua (1997)	—	0.879 (9)	—
Central America–Mexico (2011)	—	—	0.865 (10)

Notes: Standardized DITA scores (0–1 scale) with ranking in parentheses. Baseline: general provisions = 0.5; High Weights: general provisions = 0.75; Low Weights: general provisions = 0.25. Specific provisions = 1.0 in all schemes. Original DITA applies PCA directly to the 17 sub-indices. Residualized DITA first removes variation attributable to GDP per capita, geographic distance, common language, colonial ties, number of members, intra-regional status, and decade fixed effects before applying PCA. Dashes (—) indicate the agreement does not appear in the top 10 under that specification.

Table A.14. Bottom 10 Trade Agreements by DITA Index: Robustness to Alternative Weighting Schemes

Agreement	Baseline	High Weights	Low Weights
<i>Original DITA</i>			
Argentina–Uruguay (1984)	0.000 (1)	0.000 (1)	0.000 (1)
Argentina–Uruguay (2003)	0.000 (2)	0.000 (2)	0.000 (2)
ESA–European Community EPA (2009)	0.000 (3)	0.000 (3)	0.000 (3)
Jordan–Syria (1975)	0.000 (4)	0.000 (4)	0.000 (4)
Paraguay–Venezuela (2008)	0.000 (5)	0.000 (5)	0.000 (5)
Uruguay–Venezuela (2008)	0.000 (6)	0.000 (6)	0.000 (6)
Cuba–Mexico (1985)	0.002 (7)	0.002 (7)	0.002 (7)
Mexico–Panama (1985)	0.002 (8)	0.002 (8)	0.002 (8)
Brazil–Cuba (1989)	0.004 (9)	—	0.004 (9)
El Salvador–Mexico (1986)	0.004 (10)	—	0.004 (10)
Brazil–Venezuela (2012)	—	0.003 (9)	—
ESA–UK (2019)	—	0.003 (10)	—
<i>Residualized DITA</i>			
ESA–UK (2019)	0.000 (1)	0.000 (1)	0.000 (1)
SACUM–UK (2019)	0.014 (2)	0.015 (2)	0.014 (2)
ESA–European Community EPA (2009)	0.021 (3)	0.016 (3)	0.027 (4)
EFTA–Indonesia (2018)	0.026 (4)	0.029 (4)	0.025 (3)
Pacific States–UK (2019)	0.032 (5)	0.036 (5)	0.032 (5)
Paraguay–Taiwan (2017)	0.038 (6)	0.040 (6)	0.036 (6)
Brazil–Venezuela (2012)	0.042 (7)	0.043 (7)	0.041 (7)
Israel–Ukraine (2019)	0.058 (8)	0.059 (8)	0.058 (8)
Australia–Indonesia (2019)	0.077 (9)	0.078 (10)	0.078 (10)
EFTA–Turkey (2018)	0.078 (10)	—	0.077 (9)
Uruguay–Venezuela (2008)	—	0.075 (9)	—

Notes: Standardized DITA scores (0–1 scale) with ranking in parentheses (1 = lowest). Baseline: general provisions = 0.5; High Weights: general provisions = 0.75; Low Weights: general provisions = 0.25. Specific provisions = 1.0 in all schemes. Original DITA applies PCA directly to the 17 sub-indices. Residualized DITA first removes variation attributable to GDP per capita, geographic distance, common language, colonial ties, number of members, intra-regional status, and decade fixed effects before applying PCA. Dashes (—) indicate the agreement does not appear in the bottom 10 under that specification. EFTA = European Free Trade Association; ESA = Eastern and Southern Africa States; SACUM = Southern African Customs Union Mozambique.

A.8 Regional Depth Trends

Table A.15 presents the values of DITA and Cumulative DITA by decade from the 1970s through the 2010s for the eleven regions we analyze. Numbers in parentheses indicate the count of agreements: new agreements signed in each decade for DITA, and all cumulative active agreements for Cumulative DITA.

Table A.15. Regional Comparison of DITA Over Time

Regions		Decade				
		1970s	1980s	1990s	2000s	2010s
North America	DITA	0.01 (01)	0.05 (16)	0.40 (11)	0.52 (31)	0.66 (13)
	Cum. DITA	0.01 (01)	0.05 (17)	0.19 (28)	0.38 (55)	0.46 (60)
Central America	DITA	0.06 (07)	0.03 (21)	0.23 (14)	0.52 (20)	0.54 (21)
	Cum. DITA	0.06 (07)	0.03 (27)	0.10 (40)	0.25 (57)	0.37 (64)
Caribbean	DITA	0.07 (03)	0.07 (07)	0.14 (12)	0.27 (13)	0.18 (03)
	Cum. DITA	0.07 (03)	0.07 (10)	0.11 (20)	0.18 (31)	0.18 (29)
South America	DITA	0.05 (05)	0.04 (27)	0.13 (32)	0.20 (27)	0.24 (12)
	Cum. DITA	0.05 (05)	0.04 (32)	0.09 (58)	0.13 (76)	0.16 (71)
Pacific Alliance	DITA	0.01 (01)	0.03 (11)	0.22 (20)	0.50 (29)	0.58 (30)
	Cum. DITA	0.01 (01)	0.03 (12)	0.15 (32)	0.32 (59)	0.46 (76)
Europe	DITA	0.07 (19)	0.02 (01)	0.15 (122)	0.27 (70)	0.33 (48)
	Cum. DITA	0.07 (19)	0.07 (19)	0.14 (136)	0.20 (181)	0.25 (125)
European Union	DITA	0.08 (25)	0.15 (04)	0.27 (28)	0.34 (18)	0.65 (14)
	Cum. DITA	0.08 (25)	0.10 (25)	0.19 (49)	0.27 (52)	0.40 (44)
Middle East	DITA	0.06 (12)	0.05 (07)	0.13 (37)	0.23 (39)	0.28 (13)
	Cum. DITA	0.06 (12)	0.05 (17)	0.11 (53)	0.17 (89)	0.20 (75)
Africa	DITA	0.05 (11)	0.07 (10)	0.12 (25)	0.21 (26)	0.20 (11)
	Cum. DITA	0.05 (11)	0.06 (20)	0.10 (43)	0.14 (62)	0.16 (66)
Asia	DITA	0.03 (04)	0.03 (01)	0.05 (34)	0.40 (67)	0.49 (59)
	Cum. DITA	0.03 (04)	0.03 (05)	0.05 (39)	0.28 (104)	0.37 (155)
Oceania	DITA	0.06 (03)	0.12 (06)	0.08 (02)	0.52 (13)	0.61 (15)
	Cum. DITA	0.06 (03)	0.10 (09)	0.11 (08)	0.39 (19)	0.49 (33)

Notes: DITA measures the average depth of new trade agreements signed in each decade. Cumulative DITA measures the average depth of all existing active agreements from 1970 through the end of each decade, excluding agreements that were terminated or replaced. Numbers in parentheses indicate the count of agreements included in each calculation. Higher values indicate deeper integration as measured by our factor-analysis-based index.

A.9 Country-Level Integration Depth

Table A.16 presents the DITA for all countries in the Americas from the 1970s to the 2010s, organized by region. The DITA values represent the average depth of newly negotiated agreements in each decade, with higher values indicating more comprehensive trade integration. Numbers in parentheses indicate the count of new agreements signed by each country in the respective decade.

Table A.17 presents the Cumulative DITA for the same countries and time period. Unlike Table A.16, which measures the average depth of new agreements per decade, the Cumulative DITA reflects the overall integration exposure by accounting for all active agreements in force during each decade. Numbers in parentheses show the total count of active agreements for each country.

Both metrics reveal consistent regional hierarchies: North America leads in integration depth, followed closely by the Pacific Alliance countries, while South American and Caribbean countries lag behind by multiple decades. Country rankings remain largely stable across both metrics, with one notable exception: Mexico’s position shifts from 4th to 12th when measured cumulatively, as its 32 active agreements include several shallow ones that dilute the cumulative average despite having highly comprehensive agreements like NAFTA/USMCA.

Table A.16. Trade Agreement Integration Index by Decade - Americas (1970s-2010s)

Country	1970s	1980s	1990s	2000s	2010s
North America					
Canada	—	0.16 (02)	0.43 (03)	0.51 (05)	0.69 (08)
Mexico	0.01 (01)	0.02 (13)	0.41 (09)	0.30 (11)	0.64 (08)
United States	—	0.24 (02)	0.62 (01)	0.68 (15)	0.60 (02)
Central America					
Belize	0.12 (01)	0.16 (01)	0.11 (06)	0.37 (06)	—
Costa Rica	0.06 (01)	0.02 (03)	0.31 (06)	0.56 (05)	0.63 (09)
El Salvador	0.09 (02)	0.03 (04)	0.22 (06)	0.63 (06)	0.41 (06)
Guatemala	0.02 (01)	0.01 (03)	0.21 (07)	0.51 (08)	0.51 (06)
Honduras	0.01 (01)	0.02 (03)	0.26 (05)	0.63 (06)	0.60 (06)
Nicaragua	0.02 (01)	0.02 (04)	0.31 (06)	0.70 (04)	0.57 (04)
Panama	0.05 (06)	0.04 (04)	0.06 (04)	0.63 (05)	0.61 (09)
Caribbean					
Antigua & Barbuda	0.07 (03)	0.15 (03)	0.13 (05)	0.39 (05)	—
Barbados	0.07 (03)	0.18 (02)	0.13 (05)	0.39 (05)	—
Cuba	—	0.02 (04)	0.06 (07)	0.16 (09)	0.13 (01)
Dominica	0.07 (03)	0.15 (03)	0.13 (05)	0.39 (05)	—
Dominican Republic	—	0.10 (02)	0.30 (03)	0.56 (03)	—
Grenada	0.07 (03)	0.15 (03)	0.13 (05)	0.39 (05)	—
Haiti	0.07 (03)	0.13 (03)	0.13 (05)	0.39 (05)	—
Jamaica	0.07 (03)	0.18 (02)	0.13 (05)	0.39 (05)	—
Saint Kitts & Nevis	0.07 (03)	0.15 (03)	0.13 (05)	0.39 (05)	—
Saint Lucia	0.07 (03)	0.15 (03)	0.13 (05)	0.39 (05)	—
St. Vincent & Grenadines	0.07 (03)	0.15 (03)	0.13 (05)	0.39 (05)	—
The Bahamas	0.07 (03)	0.18 (02)	0.13 (05)	0.39 (05)	—
Trinidad & Tobago	0.07 (03)	0.10 (04)	0.13 (05)	0.39 (05)	0.21 (02)
Pacific Alliance					
Chile	0.01 (01)	0.03 (03)	0.26 (12)	0.52 (15)	0.54 (12)
Colombia	—	0.03 (08)	0.15 (09)	0.46 (09)	0.69 (09)
Peru	0.01 (01)	0.06 (05)	0.13 (05)	0.43 (10)	0.67 (15)
South America					
Argentina	0.01 (01)	0.03 (12)	0.10 (09)	0.16 (11)	0.33 (03)
Bolivia	—	0.07 (03)	0.19 (08)	0.15 (03)	—
Brazil	0.01 (01)	0.02 (07)	0.12 (08)	0.15 (12)	0.09 (04)
Ecuador	—	0.05 (05)	0.09 (07)	0.18 (04)	0.26 (04)
Guyana	0.07 (03)	0.13 (03)	0.11 (06)	0.33 (06)	—
Paraguay	0.01 (01)	0.04 (02)	0.13 (06)	0.16 (11)	0.10 (03)
Suriname	0.07 (03)	0.18 (02)	0.13 (05)	0.32 (06)	—
Uruguay	0.01 (02)	0.03 (08)	0.11 (07)	0.18 (12)	0.30 (03)
Venezuela	—	0.04 (10)	0.13 (10)	0.06 (04)	0.06 (02)

Notes: Integration index ranges from 0 to 1, where higher values indicate deeper trade agreement integration. Numbers in parentheses show the count of agreements each country participated in during that decade. Pacific Alliance countries (Chile, Colombia, Peru) are shown separately from other South American nations. — indicate no agreements signed in that decade.

Table A.17. Cumulative Trade Agreement Integration Index by Decade - Americas (1970s-2010s)

Country	1970s	1980s	1990s	2000s	2010s
North America					
Canada	—	0.16 (02)	0.32 (05)	0.43 (09)	0.55 (17)
Mexico	0.01 (01)	0.02 (14)	0.17 (23)	0.23 (31)	0.36 (32)
United States	—	0.24 (02)	0.37 (03)	0.65 (17)	0.64 (18)
Central America					
Belize	0.12 (01)	0.14 (02)	0.12 (08)	0.24 (13)	0.25 (11)
Costa Rica	0.06 (01)	0.03 (04)	0.20 (10)	0.34 (14)	0.43 (21)
El Salvador	0.09 (02)	0.04 (05)	0.14 (10)	0.33 (16)	0.37 (17)
Guatemala	0.02 (01)	0.01 (04)	0.14 (11)	0.29 (19)	0.38 (19)
Honduras	0.01 (01)	0.02 (04)	0.15 (09)	0.35 (15)	0.46 (16)
Nicaragua	0.02 (01)	0.02 (05)	0.18 (11)	0.34 (14)	0.38 (15)
Panama	0.05 (06)	0.04 (09)	0.04 (12)	0.22 (17)	0.41 (22)
Caribbean					
Antigua & Barbuda	0.07 (03)	0.11 (06)	0.14 (09)	0.24 (12)	0.25 (10)
Barbados	0.07 (03)	0.11 (05)	0.14 (08)	0.25 (11)	0.27 (09)
Cuba	—	0.02 (04)	0.05 (11)	0.10 (20)	0.11 (19)
Dominica	0.07 (03)	0.11 (06)	0.14 (09)	0.24 (12)	0.25 (10)
Dominican Republic	—	0.10 (02)	0.22 (05)	0.34 (08)	0.33 (06)
Grenada	0.07 (03)	0.11 (06)	0.14 (09)	0.24 (12)	0.25 (10)
Haiti	0.07 (03)	0.10 (06)	0.13 (09)	0.23 (12)	0.24 (10)
Jamaica	0.07 (03)	0.11 (05)	0.14 (08)	0.25 (11)	0.27 (09)
Saint Kitts & Nevis	0.07 (03)	0.11 (06)	0.14 (09)	0.24 (12)	0.25 (10)
Saint Lucia	0.07 (03)	0.11 (06)	0.14 (09)	0.24 (12)	0.25 (10)
St. Vincent & Grenadines	0.07 (03)	0.11 (06)	0.14 (09)	0.24 (12)	0.25 (10)
The Bahamas	0.07 (03)	0.11 (05)	0.14 (08)	0.25 (11)	0.27 (09)
Trinidad & Tobago	0.07 (03)	0.09 (07)	0.12 (10)	0.22 (13)	0.22 (13)
Pacific Alliance					
Chile	0.01 (01)	0.03 (04)	0.20 (16)	0.37 (30)	0.43 (40)
Colombia	—	0.03 (08)	0.10 (17)	0.23 (25)	0.46 (23)
Peru	0.01 (01)	0.05 (06)	0.08 (11)	0.25 (20)	0.50 (29)
South America					
Argentina	0.01 (01)	0.03 (13)	0.06 (19)	0.11 (25)	0.16 (21)
Bolivia	—	0.07 (03)	0.16 (11)	0.16 (13)	0.18 (10)
Brazil	0.01 (01)	0.02 (08)	0.08 (14)	0.12 (23)	0.12 (23)
Ecuador	—	0.05 (05)	0.08 (12)	0.10 (14)	0.15 (14)
Guyana	0.07 (03)	0.10 (06)	0.12 (10)	0.20 (14)	0.21 (12)
Paraguay	0.01 (01)	0.03 (03)	0.10 (09)	0.13 (19)	0.13 (21)
Suriname	0.07 (03)	0.11 (05)	0.14 (08)	0.23 (12)	0.24 (10)
Uruguay	0.01 (02)	0.02 (10)	0.06 (14)	0.12 (25)	0.15 (25)
Venezuela	—	0.04 (10)	0.08 (20)	0.08 (22)	0.04 (17)

Notes: Cumulative integration index ranges from 0 to 1, where higher values indicate deeper cumulative trade agreement integration across all active agreements. Numbers in parentheses show the count of active agreements for each country during that decade. Pacific Alliance countries (Chile, Colombia, Peru) are shown separately from other South American nations. — indicate no active agreements in that decade.

A.10 Partner Type Integration Depth

Tables A.18 through ?? present the DITA index and Cumulative DITA values for each region of the Americas, by country and decade from the 1970s to 2010s. DITA displays the average integration depth for agreements signed in each decade, while Cumulative DITA shows the average integration across all active agreements as of the end of each decade. The exception is the Caribbean region, which has no agreements in the 2020s.

Table A.18. Trade Agreement Integration Depth by Decade - North America

Country	Type	1970s	1980s	1990s	2000s	2010s
DITA						
Canada	NN	–	0.16 (2)	0.23 (1)	0.31 (1)	0.77 (1)
	NS	–	–	0.53 (2)	0.56 (4)	0.68 (7)
Mexico	NS	0.01 (1)	0.03 (1)	0.62 (1)	0.44 (4)	0.69 (3)
	SS	–	0.02 (12)	0.38 (8)	0.22 (7)	0.61 (5)
United States	NN	–	0.24 (2)	–	0.73 (4)	–
	NS	–	–	0.62 (1)	0.66 (11)	0.60 (2)
Cumulative DITA						
Canada	NN	–	0.16 (2)	0.18 (3)	0.19 (3)	0.34 (4)
	NS	–	–	0.53 (2)	0.55 (6)	0.62 (13)
Mexico	NS	0.01 (1)	0.02 (2)	0.22 (3)	0.34 (7)	0.45 (10)
	SS	–	0.02 (12)	0.17 (20)	0.20 (24)	0.31 (22)
United States	NN	–	0.24 (2)	0.24 (2)	0.63 (5)	0.63 (5)
	NS	–	–	0.62 (1)	0.66 (12)	0.64 (13)

Notes: Integration index ranges from 0 to 1, where higher values indicate deeper trade agreement integration. Numbers in parentheses show the count of agreements. DITA shows average integration for agreements signed in each decade. Cumulative DITA shows the average integration across all active agreements through the end of each decade.

Table A.19. Trade Agreement Integration Depth by Decade - Caribbean

Country	Type	1970s	1980s	1990s	2000s	2010s
DITA						
Antigua & Barbuda	NS	0.04 (2)	0.18 (2)	–	0.50 (2)	–
	SS	0.12 (1)	0.10 (1)	0.13 (5)	0.32 (3)	–
Bahamas, Barbados, Jamaica	NS	0.04 (2)	0.18 (2)	–	0.50 (2)	–
	SS	0.12 (1)	–	0.13 (5)	0.32 (3)	–
Cuba	NS	–	0.03 (1)	–	0.33 (1)	–
	SS	–	0.02 (3)	0.06 (7)	0.13 (8)	0.13 (1)
Dominica, Grenada, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines	NS	0.04 (2)	0.18 (2)	–	0.50 (2)	–
	SS	0.12 (1)	0.10 (1)	0.13 (5)	0.32 (3)	–
Dominican Republic	NS	–	0.16 (1)	–	0.56 (3)	–
	SS	–	0.03 (1)	0.30 (3)	–	–
Haiti	NS	0.04 (2)	0.13 (3)	–	0.50 (2)	–
	SS	0.12 (1)	–	0.13 (5)	0.32 (3)	–
Trinidad & Tobago	NS	0.04 (2)	0.13 (3)	–	0.50 (2)	–
	SS	0.12 (1)	0.01 (1)	0.13 (5)	0.32 (3)	0.21 (2)
Cumulative DITA						
Antigua & Barbuda	NS	0.04 (2)	0.11 (4)	0.18 (2)	0.39 (3)	0.50 (2)
	SS	0.12 (1)	0.11 (2)	0.12 (7)	0.19 (9)	0.19 (8)
Bahamas, Barbados, Jamaica	NS	0.04 (2)	0.11 (4)	0.18 (2)	0.39 (3)	0.50 (2)
	SS	0.12 (1)	0.12 (1)	0.13 (6)	0.20 (8)	0.20 (7)
Cuba	NS	–	0.03 (1)	0.03 (1)	0.18 (2)	0.18 (2)
	SS	–	0.02 (3)	0.05 (10)	0.09 (18)	0.10 (17)
Dominica, Grenada, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines	NS	0.04 (2)	0.11 (4)	0.18 (2)	0.39 (3)	0.50 (2)
	SS	0.12 (1)	0.11 (2)	0.12 (7)	0.19 (9)	0.19 (8)
Dominican Republic	NS	–	0.16 (1)	0.16 (1)	0.46 (4)	0.56 (3)
	SS	–	0.03 (1)	0.23 (4)	0.23 (4)	0.11 (3)
Haiti	NS	0.04 (2)	0.09 (5)	0.13 (3)	0.30 (4)	0.34 (3)
	SS	0.12 (1)	0.12 (1)	0.13 (6)	0.20 (8)	0.20 (7)
Trinidad & Tobago	NS	0.04 (2)	0.09 (5)	0.13 (3)	0.30 (4)	0.34 (3)
	SS	0.12 (1)	0.06 (2)	0.11 (7)	0.18 (9)	0.19 (10)

Notes: Integration index ranges from 0 to 1. Numbers in parentheses show the count of agreements. Countries with identical DITA values are grouped. Cumulative DITA shows average integration across all active agreements up to the end of each decade.

Table A.20. Trade Agreement Integration Depth by Decade - Central America

Country	Type	1970s	1980s	1990s	2000s	2010s
DITA						
Belize	NS	–	0.16 (1)	–	0.50 (2)	–
	SS	0.12 (1)	–	0.11 (6)	0.31 (4)	–
Costa Rica	NS	–	–	–	0.60 (3)	0.58 (5)
	SS	0.06 (1)	0.02 (3)	0.31 (6)	0.49 (2)	0.69 (4)
El Salvador	NS	–	–	–	0.66 (3)	0.50 (3)
	SS	0.09 (2)	0.03 (4)	0.22 (6)	0.61 (3)	0.31 (3)
Guatemala	NS	–	–	–	0.65 (3)	0.69 (2)
	SS	0.02 (1)	0.01 (3)	0.21 (7)	0.43 (5)	0.41 (4)
Honduras	NS	–	–	–	0.66 (3)	0.55 (4)
	SS	0.01 (1)	0.02 (3)	0.26 (5)	0.61 (3)	0.70 (2)
Nicaragua	NS	–	0.03 (1)	–	0.73 (3)	0.50 (3)
	SS	0.02 (1)	0.02 (3)	0.31 (6)	0.60 (1)	0.77 (1)
Panama	NS	–	–	–	0.74 (3)	0.58 (5)
	SS	0.05 (6)	0.04 (4)	0.06 (4)	0.47 (2)	0.63 (4)
Cumulative DITA						
Belize	NS	–	0.16 (1)	0.16 (1)	0.39 (3)	0.50 (2)
	SS	0.12 (1)	0.12 (1)	0.11 (7)	0.19 (10)	0.19 (9)
Costa Rica	NS	–	–	–	0.60 (3)	0.57 (7)
	SS	0.06 (1)	0.03 (4)	0.20 (10)	0.27 (11)	0.36 (14)
El Salvador	NS	–	–	–	0.66 (3)	0.55 (5)
	SS	0.09 (2)	0.04 (5)	0.14 (10)	0.25 (13)	0.29 (12)
Guatemala	NS	–	–	–	0.65 (3)	0.65 (4)
	SS	0.02 (1)	0.01 (4)	0.14 (11)	0.23 (16)	0.31 (15)
Honduras	NS	–	–	–	0.66 (3)	0.58 (6)
	SS	0.01 (1)	0.02 (4)	0.15 (9)	0.27 (12)	0.39 (10)
Nicaragua	NS	–	0.03 (1)	0.03 (1)	0.56 (4)	0.50 (6)
	SS	0.02 (1)	0.02 (4)	0.19 (10)	0.25 (10)	0.30 (9)
Panama	NS	–	–	–	0.74 (3)	0.64 (8)
	SS	0.05 (6)	0.04 (9)	0.04 (12)	0.10 (14)	0.28 (14)

Notes: Integration index ranges from 0 to 1. Numbers in parentheses show the count of agreements. DITA shows average integration for agreements signed in each decade. Cumulative DITA shows average integration across all active agreements up to the end of each decade.

Table A.21. Trade Agreement Integration Depth by Decade - Pacific Alliance

Country	Type	1970s	1980s	1990s	2000s	2010s
DITA						
Chile	NS	0.01 (1)	0.03 (1)	0.44 (1)	0.66 (7)	0.75 (4)
	SS	–	0.03 (2)	0.25 (11)	0.40 (8)	0.44 (8)
Colombia	NS	–	–	–	0.78 (3)	0.77 (4)
	SS	–	0.03 (8)	0.15 (9)	0.31 (6)	0.62 (5)
Peru	NS	0.01 (1)	0.03 (1)	–	0.78 (3)	0.79 (8)
	SS	–	0.06 (4)	0.13 (5)	0.28 (7)	0.52 (7)
Cumulative DITA						
Chile	NS	0.01 (1)	0.02 (2)	0.16 (3)	0.51 (10)	0.58 (14)
	SS	–	0.03 (2)	0.21 (13)	0.29 (20)	0.34 (26)
Colombia	NS	–	–	–	0.78 (3)	0.78 (7)
	SS	–	0.03 (8)	0.10 (17)	0.15 (22)	0.32 (16)
Peru	NS	0.01 (1)	0.02 (2)	0.02 (2)	0.48 (5)	0.67 (13)
	SS	–	0.06 (4)	0.10 (9)	0.18 (15)	0.35 (16)

Notes: Integration index ranges from 0 to 1. Numbers in parentheses show the count of agreements. DITA shows average integration for agreements signed in each decade. Cumulative DITA shows average integration across all active agreements up to the end of each decade.

Table A.22. Trade Agreement Integration Depth by Decade - South America

Country	Type	1970s	1980s	1990s	2000s	2010s
DITA						
Argentina	NS	–	0.03 (1)	–	0.26 (1)	–
	SS	0.01 (1)	0.03 (11)	0.10 (9)	0.14 (10)	0.33 (3)
Bolivia	NS	–	0.03 (1)	–	–	–
	SS	–	0.09 (2)	0.19 (8)	0.15 (3)	–
Brazil	NS	0.01 (1)	0.03 (1)	–	0.26 (1)	–
	SS	–	0.02 (6)	0.12 (8)	0.14 (11)	0.09 (4)
Ecuador	NS	–	0.03 (1)	–	–	0.51 (2)
	SS	–	0.06 (4)	0.09 (7)	0.18 (4)	0.02 (2)
Guyana	NS	0.04 (2)	0.13 (3)	–	0.50 (2)	–
	SS	0.12 (1)	–	0.11 (6)	0.24 (4)	–
Paraguay	NS	0.01 (1)	–	–	0.26 (1)	0.02 (1)
	SS	–	0.04 (2)	0.13 (6)	0.15 (10)	0.14 (2)
Suriname	NS	0.04 (2)	0.18 (2)	–	0.50 (2)	–
	SS	0.12 (1)	–	0.13 (5)	0.24 (4)	–
Uruguay	NS	0.01 (1)	0.03 (1)	–	0.26 (1)	–
	SS	0.01 (1)	0.03 (7)	0.11 (7)	0.17 (11)	0.30 (3)
Venezuela	NS	–	0.03 (1)	–	–	–
	SS	–	0.04 (9)	0.13 (10)	0.06 (4)	0.06 (2)
Cumulative DITA						
Argentina	NS	–	0.03 (1)	0.03 (1)	0.15 (2)	0.15 (2)
	SS	0.01 (1)	0.03 (12)	0.06 (18)	0.11 (23)	0.16 (19)
Bolivia	NS	–	0.03 (1)	0.03 (1)	0.03 (1)	0.03 (1)
	SS	–	0.09 (2)	0.17 (10)	0.17 (12)	0.19 (9)
Brazil	NS	0.01 (1)	0.02 (2)	0.02 (2)	0.10 (3)	0.10 (3)
	SS	–	0.02 (6)	0.08 (12)	0.12 (20)	0.13 (20)
Ecuador	NS	–	0.03 (1)	0.03 (1)	0.03 (1)	0.35 (3)
	SS	–	0.06 (4)	0.08 (11)	0.11 (13)	0.10 (11)
Guyana	NS	0.04 (2)	0.09 (5)	0.13 (3)	0.30 (4)	0.34 (3)
	SS	0.12 (1)	0.12 (1)	0.11 (7)	0.16 (10)	0.16 (9)
Paraguay	NS	0.01 (1)	0.01 (1)	0.01 (1)	0.14 (2)	0.10 (3)
	SS	–	0.04 (2)	0.11 (8)	0.13 (17)	0.14 (18)
Suriname	NS	0.04 (2)	0.11 (4)	0.18 (2)	0.39 (3)	0.50 (2)
	SS	0.12 (1)	0.12 (1)	0.13 (6)	0.18 (9)	0.18 (8)
Uruguay	NS	0.01 (1)	0.02 (2)	0.02 (2)	0.10 (3)	0.10 (3)
	SS	0.01 (1)	0.02 (8)	0.07 (12)	0.12 (22)	0.16 (22)
Venezuela	NS	–	0.03 (1)	0.03 (1)	0.03 (1)	0.03 (1)
	SS	–	0.04 (9)	0.09 (19)	0.08 (21)	0.04 (16)

Notes: Integration index ranges from 0 to 1. Numbers in parentheses show the count of agreements. DITA shows average integration for agreements signed in each decade. Cumulative DITA shows average integration across all active agreements up to the end of each decade.

A.11 Coverage Ratios

Tables [A.23](#) through [A.25](#) present the average coverage ratios for each of the 17 policy areas across American regions and decades. Coverage ratios measure the depth of integration within each specific provision, ranging from 0 (no coverage) to 1 (full coverage). These tables reveal which policy areas drive overall integration depth and how provision coverage has evolved over time.

Table A.23. Provision Coverage by Decade - North America and Caribbean

Provision	1970s	1980s	1990s	2000s	2010s
NORTH AMERICA					
Market Access	0.11 (01)	0.31 (16)	0.50 (11)	0.56 (31)	0.56 (13)
Services	0.00 (01)	0.08 (16)	0.52 (11)	0.58 (31)	0.62 (13)
GVC	0.00 (01)	0.00 (16)	0.00 (11)	0.04 (31)	0.25 (13)
Investment	0.00 (01)	0.03 (16)	0.34 (11)	0.40 (31)	0.56 (13)
Temp. Entry	0.00 (01)	0.02 (16)	0.28 (11)	0.28 (31)	0.35 (13)
IPR	0.00 (01)	0.02 (16)	0.37 (11)	0.50 (31)	0.53 (13)
Procurement	0.00 (01)	0.06 (16)	0.38 (11)	0.54 (31)	0.68 (13)
Competition	0.00 (01)	0.02 (16)	0.33 (11)	0.39 (31)	0.43 (13)
TBT	0.00 (01)	0.00 (16)	0.55 (11)	0.57 (31)	0.63 (13)
SPS	0.00 (01)	0.03 (16)	0.57 (11)	0.57 (31)	0.71 (13)
Regulation	0.00 (01)	0.01 (16)	0.24 (11)	0.32 (31)	0.45 (13)
Trade Defense	0.18 (01)	0.15 (16)	0.40 (11)	0.40 (31)	0.36 (13)
E-Commerce	0.00 (01)	0.00 (16)	0.00 (11)	0.37 (31)	0.50 (13)
Data Flows	0.00 (01)	0.00 (16)	0.00 (11)	0.12 (31)	0.31 (13)
Capital Movement	0.00 (01)	0.07 (16)	0.29 (11)	0.27 (31)	0.35 (13)
NTI	0.00 (01)	0.02 (16)	0.24 (11)	0.49 (31)	0.62 (13)
Dispute Settlement	0.00 (01)	0.08 (16)	0.58 (11)	0.59 (31)	0.58 (13)
CARIBBEAN					
Market Access	0.18 (03)	0.28 (07)	0.37 (12)	0.61 (13)	0.55 (03)
Services	0.07 (03)	0.07 (07)	0.20 (12)	0.30 (13)	0.20 (03)
GVC	0.00 (03)	0.00 (07)	0.00 (12)	0.06 (13)	0.00 (03)
Investment	0.04 (03)	0.04 (07)	0.12 (12)	0.18 (13)	0.00 (03)
Temp. Entry	0.00 (03)	0.01 (07)	0.06 (12)	0.10 (13)	0.00 (03)
IPR	0.00 (03)	0.00 (07)	0.08 (12)	0.19 (13)	0.00 (03)
Procurement	0.00 (03)	0.00 (07)	0.08 (12)	0.19 (13)	0.00 (03)
Competition	0.09 (03)	0.13 (07)	0.12 (12)	0.21 (13)	0.04 (03)
TBT	0.00 (03)	0.00 (07)	0.17 (12)	0.48 (13)	0.48 (03)
SPS	0.00 (03)	0.00 (07)	0.25 (12)	0.52 (13)	0.67 (03)
Regulation	0.07 (03)	0.00 (07)	0.05 (12)	0.04 (13)	0.06 (03)
Trade Defense	0.16 (03)	0.13 (07)	0.21 (12)	0.37 (13)	0.45 (03)
E-Commerce	0.00 (03)	0.00 (07)	0.00 (12)	0.03 (13)	0.00 (03)
Data Flows	0.00 (03)	0.00 (07)	0.00 (12)	0.03 (13)	0.00 (03)
Capital Movement	0.08 (03)	0.14 (07)	0.14 (12)	0.21 (13)	0.03 (03)
NTI	0.00 (03)	0.14 (07)	0.13 (12)	0.23 (13)	0.00 (03)
Dispute Settlement	0.33 (03)	0.16 (07)	0.15 (12)	0.28 (13)	0.59 (03)

Notes: Values represent average provision coverage indices (0-1 scale) for agreements signed in each decade, where higher values indicate deeper integration in that policy area. Numbers in parentheses show the count of agreements signed in each decade. **Provision abbreviations:** GVC = Global Value Chains; IPR = Intellectual Property Rights; TBT = Technical Barriers to Trade; SPS = Sanitary and Phytosanitary Measures; NTI = Non-Trade Issues; Temp. Entry = Temporary Entry of Business Persons.

Table A.24. Provision Coverage by Decade - Central America

Provision	1970s	1980s	1990s	2000s	2010s
Market Access	0.43 (07)	0.24 (21)	0.44 (14)	0.63 (20)	0.58 (21)
Services	0.01 (07)	0.01 (21)	0.33 (14)	0.57 (20)	0.53 (21)
GVC	0.00 (07)	0.00 (21)	0.00 (14)	0.04 (20)	0.07 (21)
Investment	0.04 (07)	0.01 (21)	0.20 (14)	0.44 (20)	0.42 (21)
Temp. Entry	0.00 (07)	0.00 (21)	0.12 (14)	0.34 (20)	0.27 (21)
IPR	0.00 (07)	0.00 (21)	0.16 (14)	0.44 (20)	0.49 (21)
Procurement	0.00 (07)	0.00 (21)	0.25 (14)	0.32 (20)	0.56 (21)
Competition	0.22 (07)	0.05 (21)	0.17 (14)	0.33 (20)	0.39 (21)
TBT	0.00 (07)	0.00 (21)	0.31 (14)	0.68 (20)	0.63 (21)
SPS	0.00 (07)	0.00 (21)	0.34 (14)	0.76 (20)	0.71 (21)
Regulation	0.03 (07)	0.00 (21)	0.11 (14)	0.31 (20)	0.35 (21)
Trade Defense	0.12 (07)	0.12 (21)	0.27 (14)	0.47 (20)	0.45 (21)
E-Commerce	0.00 (07)	0.00 (21)	0.00 (14)	0.23 (20)	0.31 (21)
Data Flows	0.00 (07)	0.00 (21)	0.00 (14)	0.07 (20)	0.16 (21)
Capital Movement	0.04 (07)	0.06 (21)	0.18 (14)	0.38 (20)	0.35 (21)
NTI	0.00 (07)	0.03 (21)	0.23 (14)	0.43 (20)	0.44 (21)
Dispute Settlement	0.12 (07)	0.04 (21)	0.32 (14)	0.66 (20)	0.56 (21)

Notes: Values represent average provision coverage indices (0-1 scale) for agreements signed in each decade, where higher values indicate deeper integration in that policy area. Numbers in parentheses show the count of agreements signed in each decade. **Provision abbreviations:** GVC = Global Value Chains; IPR = Intellectual Property Rights; TBT = Technical Barriers to Trade; SPS = Sanitary and Phytosanitary Measures; NTI = Non-Trade Issues; Temp. Entry = Temporary Entry of Business Persons.

Table A.25. Provision Coverage by Decade - Pacific Alliance and South America

Provision	1970s	1980s	1990s	2000s	2010s
PACIFIC ALLIANCE					
Market Access	0.11 (01)	0.25 (11)	0.45 (20)	0.60 (29)	0.62 (30)
Services	0.00 (01)	0.00 (11)	0.24 (20)	0.53 (29)	0.54 (30)
GVC	0.00 (01)	0.00 (11)	0.00 (20)	0.05 (29)	0.13 (30)
Investment	0.00 (01)	0.01 (11)	0.16 (20)	0.38 (29)	0.44 (30)
Temp. Entry	0.00 (01)	0.00 (11)	0.08 (20)	0.26 (29)	0.32 (30)
IPR	0.00 (01)	0.00 (11)	0.12 (20)	0.38 (29)	0.52 (30)
Procurement	0.00 (01)	0.00 (11)	0.16 (20)	0.42 (29)	0.61 (30)
Competition	0.00 (01)	0.05 (11)	0.25 (20)	0.42 (29)	0.43 (30)
TBT	0.00 (01)	0.00 (11)	0.42 (20)	0.66 (29)	0.66 (30)
SPS	0.00 (01)	0.05 (11)	0.55 (20)	0.72 (29)	0.70 (30)
Regulation	0.00 (01)	0.00 (11)	0.10 (20)	0.38 (29)	0.41 (30)
Trade Defense	0.18 (01)	0.09 (11)	0.33 (20)	0.43 (29)	0.38 (30)
E-Commerce	0.00 (01)	0.00 (11)	0.00 (20)	0.23 (29)	0.30 (30)
Data Flows	0.00 (01)	0.00 (11)	0.00 (20)	0.09 (29)	0.24 (30)
Capital Movement	0.00 (01)	0.08 (11)	0.12 (20)	0.33 (29)	0.37 (30)
NTI	0.00 (01)	0.02 (11)	0.07 (20)	0.39 (29)	0.53 (30)
Dispute Settlement	0.00 (01)	0.03 (11)	0.34 (20)	0.62 (29)	0.54 (30)
SOUTH AMERICA					
Market Access	0.18 (05)	0.31 (27)	0.29 (32)	0.49 (27)	0.32 (12)
Services	0.04 (05)	0.02 (27)	0.16 (32)	0.17 (27)	0.17 (12)
GVC	0.00 (05)	0.00 (27)	0.00 (32)	0.03 (27)	0.06 (12)
Investment	0.03 (05)	0.02 (27)	0.09 (32)	0.09 (27)	0.11 (12)
Temp. Entry	0.00 (05)	0.00 (27)	0.04 (32)	0.06 (27)	0.07 (12)
IPR	0.00 (05)	0.00 (27)	0.07 (32)	0.11 (27)	0.13 (12)
Procurement	0.00 (05)	0.03 (27)	0.07 (32)	0.06 (27)	0.24 (12)
Competition	0.05 (05)	0.06 (27)	0.15 (32)	0.20 (27)	0.21 (12)
TBT	0.00 (05)	0.00 (27)	0.24 (32)	0.43 (27)	0.34 (12)
SPS	0.00 (05)	0.02 (27)	0.31 (32)	0.50 (27)	0.45 (12)
Regulation	0.04 (05)	0.00 (27)	0.04 (32)	0.04 (27)	0.14 (12)
Trade Defense	0.14 (05)	0.11 (27)	0.24 (32)	0.33 (27)	0.16 (12)
E-Commerce	0.00 (05)	0.00 (27)	0.00 (32)	0.02 (27)	0.13 (12)
Data Flows	0.00 (05)	0.00 (27)	0.00 (32)	0.01 (27)	0.17 (12)
Capital Movement	0.05 (05)	0.08 (27)	0.11 (32)	0.12 (27)	0.11 (12)
NTI	0.00 (05)	0.06 (27)	0.09 (32)	0.12 (27)	0.26 (12)
Dispute Settlement	0.20 (05)	0.04 (27)	0.16 (32)	0.29 (27)	0.23 (12)

Notes: Values represent average provision coverage indices (0-1 scale) for agreements signed in each decade, where higher values indicate deeper integration in that policy area. Numbers in parentheses show the count of agreements signed in each decade. **Provision abbreviations:** GVC = Global Value Chains; IPR = Intellectual Property Rights; TBT = Technical Barriers to Trade; SPS = Sanitary and Phytosanitary Measures; NTI = Non-Trade Issues; Temp. Entry = Temporary Entry of Business Persons.

A.12 Gravity Estimations

Tables [A.26](#) and [A.27](#) present the complete estimates of the gravity model. Table [A.26](#) presents the results for all 861 agreements in our dataset. Table [A.27](#) presents the results only for the American agreements. Only the agreements with at least one American country as a member are considered. That way, we could isolate the effect of trade on the region. Both models use importer and exporter-year fixed effects, and time-invariant variables as controls.

Table A.26. Estimation Results: Trade Agreement Depth and Bilateral Trade

	Continuous	Categorical	High Depth	Low Depth
DITA	0.3929*** (0.0883)			
(%)	48.1%			
Low		0.0859 (0.0810)		
(%)		—		
High		0.3246*** (0.0485)		
(%)		38.3%		
Anticipatory			0.2447*** (0.0447)	−0.0034 (0.1295)
(%)			27.7%	—
Short-run			0.2897*** (0.0470)	0.1475 (0.0967)
(%)			33.6%	—
Medium-run			0.3532*** (0.0545)	0.2355*** (0.0728)
(%)			42.4%	26.6%
Long-run			0.3736*** (0.0642)	−0.0182 (0.1062)
(%)			45.3%	—
<i>Control Variables</i>				
Number of Agreements	−0.0093 (0.0057)	−0.0117** (0.0054)	−0.0158*** (0.0055)	0.0238 (0.0177)
log(Distance)	−0.7922*** (0.0304)	−0.7600*** (0.0316)	−0.7566*** (0.0330)	−0.7227*** (0.0403)
Contiguity	0.3018*** (0.0615)	0.2884*** (0.0591)	0.3546*** (0.0565)	0.1435 (0.1004)
Common Language	0.2950*** (0.0548)	0.2782*** (0.0543)	0.2037*** (0.0539)	0.4360*** (0.0682)
Common Colonizer	0.2017*** (0.0725)	0.2086*** (0.0723)	0.1601** (0.0759)	0.0832 (0.0887)
GATT/WTO Member	0.4915*** (0.1518)	0.4860*** (0.1522)	0.1832 (0.2099)	0.4422*** (0.1466)
<i>Model Statistics</i>				
Pseudo- R^2	0.9475	0.9482	0.9548	0.9378
Observations	1,432,661	1,432,661	1,295,136	1,344,605
<i>Fixed Effects</i>				
Exporter-Year	✓	✓	✓	✓
Importer-Year	✓	✓	✓	✓

Notes: PPML estimations with exporter-year and importer-year fixed effects. The dependent variable is the annual bilateral export value. Columns (1)–(2) report main effects; Categorical DITA uses the median of agreement depth as the cutoff. Columns (3)–(4) report dynamic effects; the high (low) depth sample excludes low (high) depth dyads. Temporal dummies are defined relative to the year of entry into force of the first agreement for each country pair: the anticipatory (−5 to −1), short-run (1 to 5), medium-run (6 to 14), and long-run (≥ 15). Trade effects calculated as $(e^{\hat{\beta}} - 1) \times 100$, reported only for statistically significant coefficients. Robust standard errors clustered at the country-pair level in parentheses. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.27. Estimation Results: Trade Agreement Depth and Bilateral Trade – Americas

	Continuous	Categorical	High Depth	Low Depth
DITA	0.3344** (0.1354)			
(%)	39.7%			
Low		0.1303 (0.1003)		
(%)		—		
High		0.3848*** (0.1020)		
(%)		46.9%		
Anticipatory			−0.0094 (0.0773)	0.0393 (0.1681)
(%)			—	—
Short-run			0.0892 (0.0900)	0.1239 (0.0933)
(%)			—	—
Medium-run			0.3089*** (0.1130)	0.0625 (0.1032)
(%)			36.2%	—
Long-run			0.5878*** (0.1329)	0.2239 (0.1423)
(%)			80.0%	—
<i>Control Variables</i>				
Number of Agreements	0.0019 (0.0059)	0.0002 (0.0058)	0.0008 (0.0058)	0.0005 (0.0058)
log(Distance)	−0.8097*** (0.0303)	−0.8085*** (0.0301)	−0.7983*** (0.0301)	−0.7949*** (0.0306)
Contiguity	0.3044*** (0.0625)	0.2794*** (0.0625)	0.2531*** (0.0628)	0.2163*** (0.0631)
Common Language	0.2939*** (0.0552)	0.2913*** (0.0551)	0.3056*** (0.0558)	0.3203*** (0.0568)
Common Colonizer	0.2048*** (0.0728)	0.1861** (0.0733)	0.1637** (0.0768)	0.1409* (0.0771)
GATT/WTO Member	0.4951*** (0.1512)	0.5027*** (0.1520)	0.5194*** (0.1531)	0.5168*** (0.1528)
<i>Model Statistics</i>				
Pseudo- R^2	0.9472	0.9476	0.9489	0.9438
Observations	1,432,661	1,432,661	1,385,448	1,416,152
<i>Fixed Effects</i>				
Exporter-Year	✓	✓	✓	✓
Importer-Year	✓	✓	✓	✓

Notes: PPML estimations with exporter-year and importer-year fixed effects. The dependent variable is the annual bilateral export value. DITA is set to zero for non-Americas pairs, so coefficients capture the effect of trade agreement depth when at least one country in the pair is from the Americas. Columns (1)–(2) report main effects; Categorical DITA uses the median of agreement depth as the cutoff. Columns (3)–(4) report dynamic effects; the high (low) depth sample excludes low (high) depth dyads. Trade effects calculated as $(e^{\hat{\beta}} - 1) \times 100$, reported only for statistically significant coefficients. Robust standard errors clustered at the country-pair level in parentheses. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Chapter 3

How Do Trade Agreements Shape Agricultural Export Patterns?

The Case of Mercosur

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This study examines the impact of Mercosur and its trade agreements with Chile (1996), Bolivia (1997), Peru (2005), and Colombia and Ecuador (2005) on agricultural trade in South America. We employ a structural gravity model that incorporates the actual liberalization schedules for each agreement and decomposes trade growth into its intensive and extensive margin components following [Kehoe and Ruhl \(2013\)](#), allowing us to identify not only whether these agreements generated trade but also when and through which margin. Our results show that most agreements did not generate significant effects on total agricultural trade. Mercosur stands out as the exception, producing strong and persistent trade effects across all phases of liberalization, while the remaining agreements showed modest or short-lived results. Regarding export diversification, the share of previously undertraded products increased across all agreements. Still, the intensive margin dominates for the vast majority of bilateral pairs, indicating that trade growth came primarily from deepening existing relationships rather than creating new ones. The only clear exception is Mercosur–Bolivia, where the extensive margin drives growth. These findings suggest that the effectiveness of regional trade agreements depends on both the depth of their commitments and the structural conditions of the partner economies.

Keywords: Trade Agreements, Gravity Model, Mercosur, Agricultural Trade

JEL Codes: F13, F15, F53

3.1 Introduction

Agricultural trade plays a central role in the economic development of South American countries, where a significant share of export revenues derives from agricultural commodities.¹ Agricultural products are subject to higher tariffs and more protectionist policies compared to goods from other sectors. Empirical evidence shows that trade agreements have a greater impact on agricultural trade than on non-agricultural trade ([Grant and Lambert, 2008](#); [Afesorgbor, Fiankor, and Demena, 2024](#)). In fact, tariffs for agricultural products can be up to 12 times higher than those for non-agricultural goods ([Gibson et al., 2001](#)). As a result, trade agreements become crucial policy tools for the agricultural sector.

¹Agricultural exports account for an average of 37–41% of total exports across South American countries between 1980 and 2024. Among Mercosur’s founding members, Argentina and Paraguay show the highest dependence, with agricultural exports averaging between 51–62% and 42–68% of total exports across decades, respectively. Brazil accounts for a lower but still substantial share, ranging from 29–38%. Uruguay shows a notable upward trend, increasing from 34% in the 1980s to 56% in recent years. Among associated members, Ecuador maintains consistently high shares of 44–62%, while Colombia shows a significant decline from 58% in the 1980s to around 16–22% in more recent decades. Chile and Peru present more moderate shares, averaging 24–32% and 16–30%, respectively. The decade averages were calculated based on UN Comtrade data ([United Nations, 2026](#)).

The significant impact of these agreements can be attributed to the sector's historically stronger protection and the failure of multilateral negotiations on agricultural issues, which led to the proliferation of trade agreements. Consequently, these agreements have proven to be effective instruments in trade policy, liberalizing not only tariffs but also promoting deeper integration among member countries (Baier and Bergstrand, 2007; Grant and Lambert, 2008).

Trade agreements can affect the agricultural sector in two important ways. First, by reducing tariffs and non-tariff barriers, they expand market access for existing exporters, allowing producers to increase their revenues and scale their production. Second, trade agreements can expand the range of agricultural goods traded, creating opportunities for producers who are not yet participating in international markets to reach foreign buyers. Whether regional trade agreements deliver these outcomes has direct implications for the effectiveness of developing countries' use of trade policy to promote economic growth and diversification.

This paper addresses these questions in the context of Mercosur, South America's largest trade bloc, and its agreements with associated members Chile, Bolivia, Peru, Colombia, and Ecuador. Their status as associated members makes them central to Mercosur's broader regional integration agenda. We test two hypotheses: (i) that these agreements created trade in agricultural goods for the bloc's members, and (ii) that they expanded the variety of agricultural products traded among them.

One of Mercosur's founding objectives was to promote the economic integration of developing countries, with a particular emphasis on South-South cooperation. Pursuing this goal, the bloc not only negotiated trade agreements with its neighbors but also granted them associated member status, creating closer institutional ties and a more structured regional relationship. This paper contributes to the trade literature by providing a systematic assessment of whether this integration strategy delivered on its economic objective, specifically whether these agreements generated agricultural trade among the bloc and its associated members. Given that agriculture represents an important export sector for these countries, understanding the trade effects of these early integration efforts is essential to evaluating how far the bloc succeeded in bringing the region closer together through trade.

A second contribution of this paper is the incorporation of the actual liberalization schedules of each agreement, constructed from primary sources, to decompose the effect of trade agreements into stages. As noted by Baier and Bergstrand (2007), trade agreements can alter the terms of trade for member countries, and these changes may have a delayed impact on bilateral trade. Grant and Lambert (2008) emphasized that the effects of trade agreements can take years to become measurable due to the lengthy liberalization schedules involved. Often, trade agreements follow detailed phase-in schedules, in which tariffs are gradually reduced over extended periods that can span decades, particularly for sensitive products such as those in the agricultural sector. Measuring the effect of an agreement using a simple dummy variable at the date of entry into force may therefore dilute the true impact, since it captures periods when tariffs were still far from their agreed minimums. This decomposition reveals not only whether these agreements generated trade, but when they did so, and how the effect evolved as tariffs were progressively reduced toward full liberalization.

We further contribute by examining how trade creation occurred among the bloc's members and associated countries. While the gravity model captures the overall effect of agreements on trade flows, it does not distinguish between trade growth driven by increases in already-traded goods and that driven by the

emergence of previously undertraded or entirely new products. Using the Kehoe-Ruhl decomposition, we separate the intensive margin, which reflects growth in existing trade flows, from the extensive margin, which captures the expansion into new export products. This allows us to assess not only whether Mercosur's agreements created trade, but also the extent to which they enabled member countries to diversify their export baskets, providing a more complete picture of the integration effects of the bloc's early agreements.

We employ a structural gravity model with Poisson Pseudo Maximum Likelihood (PPML) estimation and exporter-year, importer-year, and country-pair fixed effects to evaluate the impact of trade agreements on agricultural trade flows and export diversification, following [Yotov et al. \(2016\)](#). To account for the gradual reduction of tariffs, we incorporate phase-in effects based on the actual liberalization schedules of each agreement, constructed from primary sources, extending the approach proposed by [Baier and Bergstrand \(2007\)](#) and [Grant and Lambert \(2008\)](#). Data for the analysis are sourced from the UN Comtrade database ([United Nations, 2026](#)), which covers import values for 202 countries and 239 partners from 1980 to 2024.

Our results present a nuanced picture of the effects of Mercosur's agreements on agricultural trade. Mercosur itself generated strong and growing trade effects, with the impact increasing steadily across the stages of liberalization and peaking during full liberalization. Among the associated agreements, the effects are more mixed. Colombia and Ecuador show positive agricultural trade effects, while Chile, Bolivia, and Peru show limited or no effects, reflecting differences in partner characteristics and prior trade policies. Regarding export diversification, the share of previously undertraded products increased across all agreements, suggesting that the agreements helped reduce the high trade concentration that existed before liberalization. Nevertheless, most of the trade growth was driven by the intensive margin, meaning the agreements primarily deepened existing trade relationships. Taken together, these findings suggest that Mercosur's agreements contributed to both trade creation and modest diversification, though the extent of these effects varies considerably across trade partners.

The remainder of the paper is structured as follows. Section 3.2 provides background on Mercosur, its founding objectives, and the agreements analyzed. Section 3.3 reviews the theoretical and empirical literature on trade agreements and agricultural trade. Section 3.4 describes the gravity model, the margin decomposition, and the data. Section 3.5 presents and discusses the results, and Section 3.6 concludes.

3.2 Background and Institutional Context

Mercosur was established in 1991 by Argentina, Brazil, Paraguay, and Uruguay. A central goal since its founding has been to promote the integration of developing economies, an objective the bloc has pursued, at least in part, through an expanding number of trade agreements ([Mercosur, 2025](#)). The bloc started as a free trade area but became a customs union by 1995. Mercosur's founding members collectively form the world's fifth-largest economy, surpassing those of Canada and Russia. The bloc spans nearly 6 million square miles, more than three times the size of the European Union. It is home to over 295 million people, comparable to the population of the United States. These factors position Mercosur as a significant player in international trade, thanks to its vast agricultural land, abundant natural resources, and extensive consumer market ([Mercosur, 2025](#)).

Prior to the bloc's establishment, Mercosur's members already had bilateral preferential trade agreements with one another. Brazil and Uruguay signed an agreement in 1982 that entered into force in 1986,

while Argentina and Paraguay's agreement entered into force in 1989. Both agreements already showed an asymmetry between larger and smaller economies that would carry over into Mercosur's liberalization plans: Argentina and Brazil granted more concessions than their smaller partners, and when Mercosur was established, Paraguay and Uruguay were allowed an additional year to eliminate their tariff lines under the bloc's liberalization schedule.

The agreement between Argentina and Brazil, which entered into force in 1990, served as the blueprint for Mercosur's foundation. More comprehensive in scope than the earlier bilateral agreements, it covered a larger share of goods, and much of its text was directly adapted when Paraguay and Uruguay were invited to join the bloc. This shows how the liberalization framework was largely shaped by the two larger economies before Mercosur was formally established.

[Frankel \(1997\)](#) examines the effects of trading blocs using gravity models, including an analysis of Mercosur². Analyzing data from 1965 to 1992, the findings reveal that Mercosur had the most significant trading effects among the blocs examined. Notably, these impacts began in the 1980s and intensified throughout the 1990s. The results indicated that member countries trade nearly seven times as much as similar countries would. This outcome likely captures the effects of the early bilateral liberalization, as the data ends just two years after the bloc was established, and the positive effects began to be observed around the same time that bilateral agreements were being negotiated or entering into force. Consequently, these positive effects may help explain why member countries were willing to make further compromises in pursuit of a more comprehensive agreement.

Mercosur was considerably more ambitious than the agreements its members had negotiated bilaterally. In the agricultural sector, the Brazil-Uruguay agreement liberalized around 30% of agricultural products on Brazil's side, while Uruguay liberalized only 5%. The Argentina-Paraguay agreement showed even lower coverage, with Argentina liberalizing approximately 6% and Paraguay 2%. Under Mercosur, Argentina and Brazil liberalized over 95% of their agricultural goods in the first year alone, with Paraguay reaching 90% and Uruguay 80%. By the end of the liberalization period in 1995, all members had liberalized 99.7% of their agricultural goods, with sugar as the sole exception³.

Since its formation, Mercosur has expanded its membership, with Venezuela acceding in 2012⁴ and Bolivia in 2024. Alongside this expansion, the bloc made deliberate efforts to integrate the broader South American region by granting associated member status to Chile, Colombia, Ecuador, Peru, Guyana, and Suriname, with Panama joining more recently ([Mercosur, 2025](#)). Associated states have free or

²The author uses cross-sectional and pooled data, with five-year intervals in their gravity model estimations, which was common practice at the time. They define the bloc's membership to include all members for the entire period analyzed. This choice is justified as a means of facilitating better comparisons of the estimates and evaluating their evolution over time. As a result, the estimates of the effect of Mercosur are from 1965 to 1992. The findings are significant only after 1980, a period when agreements between Argentina and Uruguay, as well as between Brazil and Uruguay, were already being negotiated. Therefore, it is more likely that these results reflect the early integration efforts rather than those of Mercosur. Interestingly, the effects were more pronounced in agriculture than in manufacturing, especially considering that previous agreements had liberalized very few agricultural products.

³Mercosur excluded sugar and automotive products from its negotiations. There were initiatives over time to include these sectors, but none were successful. Sugar is the main reason the bloc did not reach full liberalization of agricultural products ([Ministério das Relações Exteriores, 2024](#)).

⁴Venezuela was suspended in 2016 following the collapse of its democratic institutions. Since then, it has forfeited all rights and obligations within the bloc, even though it is still an official member ([Mercosur, 2017](#)).

preferential trade agreements with the bloc and may participate in its meetings, though they are not bound by the common external tariff and have no voting power in the bloc's decisions ([Mercosur, 2025](#)).

Beyond its immediate neighbors in South America, Mercosur has negotiated agreements with Egypt, Morocco, and the Southern African Customs Union (SACU),⁵ as well as India and Israel ([Organization of American States, 2025a](#)). And in 2024, it finalized its agreement with the European Union, which was ratified in 2025 and is awaiting entry into force.

The agreements analyzed in this paper represent the first wave of this broader regional integration effort, Mercosur (1991), and the initial agreements the bloc negotiated with its neighbors: Chile (1996), Bolivia (1997), Peru (2005), and Colombia and Ecuador (2005). By examining whether this close relationship, formalized through associated membership and backed by the bloc's explicit goal of regional integration, translated into increased agricultural trade and export diversification, this paper assesses the success of Mercosur's early integration strategy in bringing the region closer together through trade.

3.3 Literature Review

3.3.1 Theoretical Literature

The effect of trade agreements on their members has long been studied. [Viner \(1950\)](#) shows that such agreements can create trade, which he defines as trade creation: when countries stop producing goods at a higher cost and start importing them from a partner that produces them more cheaply. This liberates resources for the country to use in the production of goods it has an advantage in producing: the ones it produces at a lower cost.

[Melitz \(2003\)](#) identifies how exposure to trade occurs at the firm level and how industry structure and performance evolve through a dynamic industry model with monopolistic competition. The model shows how industries reallocate resources so that the most productive firms export to partner countries. A more productive firm will be larger, with higher output and revenues, and earn higher profits than a less productive one.

Prior to entry, firms are identical. To enter the market, they must make an initial investment, a fixed entry cost that is sunk. After entering, each firm draws its productivity from a common distribution. Depending on their productivity, firms face different choices. If a firm has low productivity, it can exit immediately and not produce. If it stays and produces, it faces a constant probability in every period that a bad shock forces it to exit. Because of these choices, new entrants will, on average, have lower productivity and a higher probability of exiting than incumbents. Not all firms will enter the export market either, since exporting also requires a fixed sunk investment cost. Only the more productive firms will export, as they earn higher profits and can afford to incur that cost ([Melitz, 2003](#)).

The exposure to trade forces the least productive firms out of the market. As foreign firms enter, all domestic firms incur a loss of domestic sales, reducing their total revenue. The more productive firms can absorb this loss, but the less productive ones can no longer generate enough revenue to cover their costs, resulting in negative profits. After the exits, the average profit per firm increases, market shares are reallocated toward the more efficient firms, and this contributes to an aggregate productivity gain. Although the number of domestic firms decreases in the domestic market, consumers are often better off since the entry of foreign exporters increases product variety ([Melitz, 2003](#)).

⁵SACU, one of the world's oldest customs unions, comprises Botswana, Eswatini, Lesotho, Namibia, and South Africa ([Southern African Customs Union, 2025](#)).

Thus, the dynamics that occur after the exposure to trade are that the most efficient firms grow through exports and gain market share and profits, some less efficient firms still export but incur profit losses, even less efficient ones remain in the industry without exporting and lose market share and profits, and the least productive are driven entirely out of the industry (Melitz, 2003).

When countries form trade agreements, the reduction in trade barriers creates opportunities not only for firms already exporting to partner markets to expand their sales, but also for firms that were not yet participating in international markets to reach foreign buyers for the first time. Melitz (2003) provides the theoretical foundation for this mechanism: as fixed export costs fall, firms that were previously not productive enough to enter export markets can now do so, expanding the set of goods traded between countries. This foundation suggests that trade agreements can enable countries to diversify their exports, reach new markets, and shift production toward goods that become more competitive and accessible under the new trade regime.

Building on this framework of heterogeneous firms facing fixed export costs, Kehoe and Ruhl (2013) shows the importance of the expansion of the set of traded goods on trade growth. Defining the extensive margin as changes in trade patterns driven by countries beginning to export goods they had not previously exported, the authors show that it is a significant factor in explaining the growth in total trade, especially around events that alter domestic dynamics, such as trade liberalizations and periods of structural change.

Their calculation of the extensive margin differs from that of other authors in the definition of a non-traded good. To determine the set of goods that were traded or not in a given period, other studies utilized a fixed cut-off of the trade value, either a zero trade value (Hummels and Klenow, 2005; Broda and Weinstein, 2006) or a fixed threshold (\$50,000 in Evenett and Venables (2002)). Kehoe and Ruhl (2013) instead uses a relative set, which he calls *least-traded goods*, that includes all zero-trade goods and goods with very little trade. To construct this set, he orders a country's total exports from smallest to largest until the cumulative sum reaches 10 percent of the total.

The evolution of this set captures the growth of the extensive margin relative to total trade. When the least-traded goods set grows in importance and comes to account for more than 10 percent of trade, it indicates that previously marginal products have contributed to the expansion of total trade. When it maintains its relative importance of around 10 percent, the extensive margin did not play a significant role over the period (Kehoe and Ruhl, 2013). Together, these theoretical contributions establish that trade agreements can affect both the volume and composition of trade, and that distinguishing between these two margins is essential for a complete assessment of their effects.

3.3.2 Empirical Literature Review

Agricultural trade is particularly sensitive to trade agreements because it faces higher tariffs and more protectionist policies than other sectors, meaning that reducing or eliminating these barriers generates more substantial trade responses than in sectors already operating under lower protection. Grant and Lambert (2008) and Sun and Reed (2010) confirm this pattern, with Grant and Lambert (2008) finding that agricultural trade among members increased by 72%, significantly surpassing the 27% rise observed in non-agricultural trade, in a sample of 86 countries from 1986 to 2002.

The evidence on trade creation extends across different agreements and regions. Studies focusing on NAFTA (Jayasinghe and Sarker, 2008) and US agreements with Latin American countries (Luckstead, 2022) consistently find increased agricultural trade among members, with Jayasinghe and Sarker (2008)

documenting trade creation in commodities such as red meat, vegetables, grains, and sugar. [Sun and Reed \(2010\)](#) found significant increases in agricultural trade in agreements such as ASEAN-China and the EU expansions, and highlighted SADC as a notable case where trade increased with both members and non-members simultaneously. However, not all agreements have the same effects: NAFTA showed trade diversion in its exports, and [Luckstead \(2022\)](#) found that trade with Panama did not increase, whereas all other US-Latin American agreements led to increased trade among members.

An important finding across this literature is that these effects are not immediate. Countries negotiate gradual liberalization schedules that reduce tariffs over extended periods, often spanning decades, particularly for sensitive agricultural products, and measuring the effect of an agreement without accounting for this gradual reduction dilutes the true impact. [Grant and Lambert \(2008\)](#) demonstrated that some agreements significantly increased trade only many years after implementation, with some taking decades to show substantial increases, while [Luckstead \(2022\)](#) found that the US-Colombia agreement began to show positive effects only two years after implementation, and the US-Chile agreement took seven years. [Sun and Reed \(2010\)](#) similarly highlighted that phase-in effects play a significant role, with EU-15 and SADC agreements exhibiting increasing trade over time with both member and non-member countries. To account for this gradual liberalization, [Grant and Lambert \(2008\)](#), [Sun and Reed \(2010\)](#), and [Luckstead \(2022\)](#) implement sets of dummy variables that capture the phased-in effects of trade agreements, providing a clearer picture of how their impacts evolve over time.

[Sun and Reed \(2010\)](#) also found that a country might initially experience trade creation but later shift toward trade diversion as the agreement progresses. In the early stages, the incentives for new market access encourage firms to expand their exports to newly accessible markets, generating a trade creation effect. However, as liberalization deepens and barriers fall further, firms may realize that member countries offer better market opportunities than third parties and concentrate their exports on member markets, thereby reducing their exports to non-member markets. This dynamic behavior suggests that the full assessment of trade agreements requires examining how effects evolve across the different stages of liberalization, rather than treating the agreement as a single event.

Despite this substantial evidence, the literature has focused primarily on agreements involving developed countries or specific bilateral arrangements, leaving the effects of South-South integration among developing economies with high agricultural dependence largely unexamined. Mercosur's agreements with its associated members represent precisely this kind of integration. This paper addresses that gap by providing a comprehensive assessment of whether these agreements generated agricultural trade creation, using the actual liberalization schedules of each agreement to decompose the effects across phases of liberalization and examining whether those effects operated through the intensive or extensive margin of trade.

3.4 Methodology

3.4.1 Gravity Model

We use a structural gravity model to analyze the impact of trade agreements on the agriculture sector. The most commonly used equation for estimating a gravity model for the effects of trade agreements is:

$$(3.1) \quad \ln X_{ijt} = \beta_0 + \beta_1 FTA_{ijt} + \gamma_{ij} + v_{it} + \phi_{jt} + \varepsilon_{ijt}$$

In this equation, X_{ijt} represents the trade flow between country i and country j in year t . FTA_{ijt} is a dummy variable indicating if countries i and j have a trade agreement in year t . The terms γ_{ij} , v_{it} , and ϕ_{jt} represent, respectively, the pair of countries, the import, and the exporter fixed effects. Finally, ε_{ij} is the error term that accounts for unobserved factors or random disturbances affecting trade flows.

Yotov et al. (2016) proposed six suggestions to obtain better estimates of the coefficients in trade models. These suggestions are as follows: (i) use of panel data; (ii) use of time intervals instead of consecutive years; (iii) inclusion of intranational trade; (iv) inclusion of fixed effects for importer-year and exporter-year; (v) inclusion of fixed effects for each pair of countries; and (vi) the use of Poisson Pseudo Maximum Likelihood (PPML) for estimation. The only suggestions we did not incorporate were the inclusion of intranational trade, as information for the full set of countries we use was not available⁶, and the use of time intervals. Following Egger, Larch, and Yotov (2022), we use annual data rather than time intervals. We tested alternative interval specifications and found no substantive differences in the results; we therefore retain annual data to more precisely capture the liberalization periods under investigation.

We use annual data to preserve the identification of the phase-in effects. Given that some stages of liberalization span only a few years, using intervals would substantially reduce the number of observations available to identify each stage, potentially masking the dynamic effects central to our analysis. Serial correlation concerns are mitigated by including country-pair fixed effects, which absorb time-invariant bilateral heterogeneity, and by clustering standard errors at the country-pair level.

We follow Baier and Bergstrand (2007) and Grant and Lambert (2008) by examining the phase-in effects of trade agreements. The phase-in refers to the gradual reduction of tariffs following the implementation of the liberalization plans. It is important to verify this liberalization in the agricultural sector, where tariff reductions can take several years to be fully implemented.

To evaluate this phase-in period, we examined the liberalization plans associated with each agreement and developed a comprehensive timeline of tariff reductions across sectors. Trade agreements rarely eliminate barriers immediately upon entry into force. Instead, countries negotiate gradual reductions that can span several years, particularly for sensitive agricultural products, where participants often seek to protect certain sectors from immediate competition with their partners. We therefore account for the actual timelines of these tariff reductions and assess their impact on bilateral trade across each stage of liberalization.

As a result, we modified Equation 1 to incorporate these phase-in effects, which are represented in Equation 2.

$$(3.2) \quad \ln X_{ijt} = \beta_0 + \beta_1 D_{ijt}^{ant} + \beta_2 D_{ijt}^{lib} + \beta_3 D_{ijt}^{full} + \beta_4 D_{ijt}^{mat} + \gamma_{ij} + v_{it} + \phi_{jt} + \varepsilon_{ijt}$$

⁶There is limited data available on intranational trade. As Yotov et al. (2016) points out, this information cannot be constructed from GDP because GDP is an aggregated value. To estimate intranational trade, data on gross production value and total exports are needed—the difference between them provides intranational trade values. However, gross production data is often unavailable for many countries, sectors, and years. Several initiatives have attempted to address these limitations. The International Trade and Production Database for Estimation (ITPD-E) (Larch, Shikher, and Yotov, 2025) includes intranational trade information, though not for all countries, while the United Nations Industrial Development Organization (UNIDO) provides gross production data for selected countries. Nevertheless, ITPD-E did not offer the required level of disaggregation for this study, and the UNIDO database is not freely available and requires payment. Given these limitations and the common practice in the literature of omitting this data, we did not include it in our analysis.

In this equation, X_{ijkt} represents the trade flow between country i and country j in year t . The variables D_{ijt}^{ant} , D_{ijt}^{lib} , D_{ijt}^{full} , and D_{ijt}^{mat} are dummy variables equal to one when the country pair ij is in the anticipation, liberalization, full liberalization, and mature stages of their trade agreement in year t , respectively, and zero otherwise. Since the duration of liberalization can be extensive, we decompose this period into four stages: anticipation (five years before entry into force), liberalization plan (the period when tariffs are being reduced), full liberalization (the period when tariffs have reached their minimum, up to the first decade), and mature (more than a decade after tariffs reached their minimum).

It can take years, from the announcement of trade agreement negotiations to signing, ratification, and entry into effect. Trade flows can be affected prior to liberalization, as businesses position themselves for future markets, reach out to potential buyers, and anticipate the reduction or elimination of tariffs (Frankel, 1997). Thus, we included the anticipation dummy variable to try to capture this potential movement. This variable can also capture the effect of prior agreements that were already in force between the country pair. Significant positive coefficients for this variable could indicate that prior liberalization efforts have already been important in fostering trade among them.

Since the model is in a log-linear form, the β_i coefficients represent semi-elasticities. To interpret these results, we will convert the coefficients into percentage values, indicating the percentage change in bilateral trade between countries i and j resulting from a marginal change in the independent variable. We will use the formula $(e^{\beta_i} - 1) \times 100$ to transform the coefficient into the percentage values (Afesorgbor, Fiankor, and Demena, 2024).

3.4.2 Intensive and Extensive Margins

To assess whether Mercosur's agreements generated trade through existing products or through the expansion into new ones, we decompose trade flows into intensive and extensive margins following Kehoe and Ruhl (2013). Their methodology provides two complementary approaches to this decomposition: the first classifies goods by their initial trade value to identify the least-traded goods, and the second decomposes the growth rate of total trade into its extensive- and intensive-margin components.

Several methodologies have been proposed to measure the intensive and extensive margins of trade, including variety-based decompositions (Hummels and Klenow, 2005; Broda and Weinstein, 2006), the identification of newly exported products (Evenett and Venables, 2002), and product count approaches (Flam and Nordström, 2011). We follow Kehoe and Ruhl (2013) for two reasons. First, their methodology requires only trade value data, which we already collect, unlike approaches that rely on price indices to estimate margins (Hummels and Klenow, 2005; Broda and Weinstein, 2006). Second, Kehoe and Ruhl (2013) classifies goods using a relative threshold based on the distribution of trade values within each country pair, rather than a fixed cutoff. This is particularly important in our setting, where trade flows vary considerably across Mercosur members and associated countries: a fixed threshold would represent different shares of total trade for large economies such as Brazil and small ones such as Bolivia or Uruguay, making comparisons across pairs difficult. The relative classification also has advantages over product count approaches (Flam and Nordström, 2011), which account for the number of traded products but not their relative importance. Under a count-based measure, a country pair that begins exporting many products in negligible quantities would register an increase in the extensive margin, while under Kehoe and Ruhl (2013) those flows would have limited impact given their small share of total trade.

To construct the extensive margin, we follow [Kehoe and Ruhl \(2013\)](#) definition of the set of least-traded goods for each country pair. HS6 codes are ranked by their average trade value over the five years prior to the entry into force of each agreement and cumulated into ten sets, each representing one-tenth of the total export value. The first set, containing the codes with the smallest trade values, including those with zero trade, is defined as the least-traded goods and forms the extensive margin. The remaining nine sets form the intensive margin. We adapt their approach in two ways: we use HS6 codes instead of SITC five-digit codes, which is consistent with our data, and we use a five-year pre-agreement average instead of three years to determine the initial trade status of each good, thereby reducing the sensitivity of the classification to short-term fluctuations in trade values. We then compare the evolution of these two margins over time to assess which margin is driving trade growth.

The second decomposition, which we refer to as the trade growth decomposition, uses the traded threshold $\bar{x}^{ij}$, defined over the set of least-traded goods, to formally separate the margins. For each country pair i and j , I_t is the set of goods exported (k) in period t , and $I = I_{t_0} \cap I_{t_1}$ is the set of goods traded in both the base and end periods. The intensive margin growth rate is the growth in trade of goods exported in both periods:

$$(3.3) \quad \frac{\sum_{k \in I} x_{k,t_1}^{ij}}{\sum_{k \in I} x_{k,t_0}^{ij}} = 1 + g_{IM}^{ij}$$

The extensive margin growth rate is then the ratio of total trade growth to the intensive margin growth rate:

$$(3.4) \quad \frac{\sum_{k \in I_{t_1}} x_{k,t_1}^{ij}}{\sum_{k \in I_{t_0}} x_{k,t_0}^{ij}} \div \frac{\sum_{k \in I} x_{k,t_1}^{ij}}{\sum_{k \in I} x_{k,t_0}^{ij}} = 1 + g_{EM}^{ij}$$

Taking logarithms, total trade growth decomposes additively into its two components:

$$(3.5) \quad g^{ij} \approx g_{EM}^{ij} + g_{IM}^{ij}$$

This decomposition allows us to assess the relative contribution of each margin to the overall trade effect of Mercosur's agreements with its associated members.

3.4.3 Data

We use trade data from the UN Comtrade database ([United Nations, 2026](#)), covering import values for 202 countries and 239 partners from 1980 to 2024, to include all agreements analyzed in this study. Data reported under the SITC classification, which covers the earlier years of the sample, were converted to HS codes to ensure consistency across the full period. We used the nominal values of imports. [Baldwin and Taglioni \(2006\)](#) argued that it is better to use nominal values rather than adjust for inflation, as inflation rates can exhibit trends that might bias estimates if not handled properly. They refer to this as the *bronze medal mistake*. Therefore, in our analysis, we will use nominal values for imports and apply fixed effects to account for price variation.

To construct a complete panel, all country pairs and product combinations were filled for every year in the sample, with missing trade values replaced by zero, ensuring that the dataset captures the full range of trade flows, including those with no recorded trade. All countries included in the panel are listed in Table B.1 in the Appendix.

We construct three datasets from this source. The first covers aggregate bilateral trade flows at the country-pair level, including all sectors. The second one filters trade flows to the agricultural sector, defined as HS chapters 01-24, and is also aggregated at the country-pair level. The third dataset operates at the HS6 product level, restricted to the same agricultural chapters, and is used for the margin decomposition. We use the agricultural sector as an aggregate encompassing agriculture, fisheries, and processed foods. This differs from the WTO's definition of agriculture, which excludes Chapter 3 (fisheries) ([World Trade Organization, 2025](#)); we choose to include fisheries because they constitute food. Therefore, our definition of agriculture is more closely aligned with an agri-food definition; we will nonetheless refer to it as agriculture for brevity.

The liberalization schedules for each agreement were constructed manually from the original texts and annexes of each agreement, available through the portals of the Organization of American States (SICE) ([Organization of American States, 2025b](#)) and the Latin American Integration Association (LAIA) ([Latin American Integration Association \(ALADI\), 2025](#)). We consulted the official documents for each Economic Complementarity Agreement (ECA) negotiated under the LAIA framework and coded the tariff-reduction timelines for each agreement, thereby defining the phase-in stages used in the empirical analysis. We organize each stage of the trade liberalization process according to the major years of implementation. This approach allows us to cover most of the agreements, as the number of sensitive products was smaller and took longer to liberalize. Appendix B.2 presents the liberalization plans for all 24 HS chapters representing agriculture, as well as an aggregate measure of liberalization across all HS codes. This provides a more comprehensive understanding of the liberalization process followed by each agreement.

3.5 Results and Discussion

3.5.1 Trade Effects

Table 3.1 presents the results for the estimated effects of Mercosur's trade agreement, as well as its agreements with Chile, Bolivia, Peru, Colombia, and Ecuador. We estimate two models: one using data on all products, to assess whether the agreements had a positive effect on overall bilateral trade, and one restricted to agricultural products, to examine whether the results hold for agriculture specifically.

Overall, considering total trade, only the Mercosur agreement and its agreement with Colombia show positive and significant effects, 86.6% and 36.4%, respectively. When restricted to the agricultural sector, however, more agreements show positive impacts: Mercosur shows a 41.9% effect, Colombia a strong 74.9%, while Bolivia (108.9%) and Ecuador (57.8%) also show positive effects. These results are broadly consistent with regional trade patterns. Mercosur members are known importers of fresh fruit from Ecuador, and Bolivia's geographical proximity has historically facilitated grain trade, particularly soybeans and wheat.

The second column highlights the importance of the agricultural sector for those countries, as restricting our analysis to this sector alone yields more positive effects from the agreements. The effect on total trade seems diluted by other sectors in which trade did not increase or was unaffected by the reduction or elimination of trade barriers. One limitation of this approach is that the result represents an average

Table 3.1. Trade Effects of Mercosur and its Associated Agreements

Agreement	Total Trade Effect (%)	Agriculture Effect (%)
<i>Panel A: Static Models</i>		
Mercosur (1991)	86.6***	41.9*
Mercosur - Chile (1996)	—	—
Mercosur - Bolivia (1997)	—	108.9*
Mercosur - Peru (2005)	—	—
Mercosur - Colombia (2005)	36.4*	74.9**
Mercosur - Ecuador (2005)	—	57.8**
<i>Panel B: Dynamic Models</i>		
<i>Mercosur</i>		
Anticipation (1986–1990)	67.9***	65.0**
Liberalization Plan (1991–1994)	154.5***	72.8**
Full Liberalization (1995–2004)	242.0***	155.4***
Mature (2005+)	124.3***	69.1**
<i>Mercosur - Chile</i>		
Anticipation (1991–1995)	32.6**	36.5*
Liberalization Plan (1996–2011)	—	35.0**
Full Liberalization (2012+)	—	—
<i>Mercosur - Bolivia</i>		
Anticipation (1992–1996)	–53.3**	—
Liberalization Plan (1997–2014)	—	—
Full Liberalization (2015+)	—	—
<i>Mercosur - Peru</i>		
Anticipation (2000–2004)	—	32.8*
Liberalization Plan (2005–2019)	—	—
Full Liberalization (2020+)	—	35.4*
<i>Mercosur - Colombia</i>		
Anticipation (2000–2004)	46.8***	—
Liberalization Plan (2005–2018)	38.8**	96.9***
Full Liberalization (2019+)	66.7**	—
<i>Mercosur - Ecuador</i>		
Anticipation (2000–2004)	—	49.0**
Liberalization Plan (2005–2018)	—	90.4***
Full Liberalization (2019+)	—	—

Notes: Effects computed as $(\exp(\hat{\beta}) - 1) \times 100$. All models include exporter-year, importer-year, and country-pair fixed effects. Standard errors clustered by country-pair. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. — denotes a statistically insignificant result. Complete estimation results are presented in the appendix B.3; only a summary is shown here for brevity.

effect over the years the agreement has been in force, so we cannot capture how trade evolved across the agreement's different stages.

To estimate the dynamic model, we decompose the effect of each agreement into stages, matching the liberalization schedule established in each agreement's text. The anticipation effect refers to the five years leading up to the agreement's entry into force, capturing firms' responses as they reach out to partners in anticipation of the upcoming liberalization. The liberalization stage represents the period during which tariffs are being reduced,⁷ while the full liberalization stage spans the first decade after tariffs reach their minimum. Finally, the mature stage is the period during which the agreement has maintained minimum tariffs for more than a decade. The results are presented in Panel B of the table 3.1.

When we estimate these stages separately, the effect of each agreement on the tariff elimination process becomes clearer. Mercosur and its agreement with Colombia clearly show this dynamic, in which the strongest effect is observed after tariffs reach their minimum. In the agreement with Peru, the effect appeared only after the agreement was fully liberalized. The other agreements did not show a consistent effect across stages.

Mercosur has the strongest effects on trade, as expected. It is a deeper agreement, moving beyond a free trade area toward a common market, which entails stronger commitments than those in the bloc's other agreements. Table 3.1 confirms this, showing effects that grew steadily even before the agreement entered into force, peaking in the first decade and gradually diminishing afterward. The decline in the mature stage is consistent with expectations: as the agreement matures and both economies adapt to the new trade environment, the additional trade it generates naturally diminishes. The agriculture results follow the same pattern, with somewhat smaller effects. An interesting finding is that the anticipation effect likely also captures the influence of the previous bilateral agreements among Mercosur's members.

Other studies have also identified positive effects of intratrade in Mercosur. [Grant and Lambert \(2008\)](#) identified positive effects of Mercosur during the period from 1982 to 2002. Specifically, member countries traded 79% more in agricultural goods and 29% more in non-agricultural goods. While these findings indicate a significant increase in agricultural trade, the growth was modest compared with other trade blocs such as NAFTA, the European Union, and the Andean Pact. [Cuenca García, Navarro Pabsdorf, and Gómez Herrera \(2013\)](#) found an increase in total intra-Mercosur trade of 63%, with Argentina (107%) and Brazil (57%) showing the strongest effect.

The agreement with Colombia shows a stable effect on total trade, but a strong and brief effect on the agricultural sector. One potential explanation for this pattern is the relationship between Colombia and the United States. Colombia is a strong exporter of agricultural goods but not a significant importer in this sector, and the United States is its main agricultural supplier. Colombia's trade agreement with the United States, which entered into force in 2012 while the Mercosur liberalization plan was still being implemented, may have eroded the preferential access that Mercosur members enjoyed in the Colombian agricultural market.

The agreements with Chile and Ecuador had limited effects: both showed positive effects only during the anticipation and liberalization schedule periods, and by the time tariffs were fully liberalized, the effects had disappeared. For Chile, trade increased by 36.5% and 35%. This is also pretty close to the

⁷In all agreements analyzed, tariffs were reduced to zero, as they were all focused on the full elimination of tariff barriers.

effect captured by the total trade, signaling that agriculture was the driver of those results. For Ecuador, trade increased by 49% during the anticipation period and by 90.4% once the tariffs started to be reduced. Ecuador is a supplier of fresh fruit to Mercosur's members, and the model likely captured an initial surge in trade that was not sustained and eventually returned to baseline.

The agreement with Chile is interesting, as it shows only limited results and its effects phase out very quickly. This is reasonable, as Chile had already liberalized its market unilaterally since the 1980s, reducing its import tariffs to a minimum level. Thus, the agreement with Mercosur only reduced these already low tariffs to zero, and the effect on trade was limited since the adjustment had likely occurred years earlier, when Chile first cut its tariffs. Furthermore, Chile's market share in Mercosur trade has remained relatively small, ranging between 1.5% and 2% over the years, suggesting that even Mercosur's tariff cuts were insufficient to increase trade over the long term. Chile thus represents an interesting case in which the effects of a trade agreement are limited by the partner's prior trade policies.

The results for Bolivia should be interpreted with caution here. The country has a small economy, which limits the size of bilateral trade flows. In the total trade model, even though trade increased to some extent, it was not sufficient to exceed the model's predictions; in fact, the model shows that the anticipation effect was negative, below its prediction for that time. In the agricultural model, the static model captures a borderline significant effect (at the 10% level) of 108.9%, but when decomposed into phases, no individual stage reaches statistical significance, suggesting that the effect at each stage was insufficient to produce a positive effect on its own. However, now that Bolivia has become the bloc's newest full member, its trade flows could increase in the coming years.

In summary, regarding the first hypothesis, the evidence is mixed. Mercosur was a very important agreement for promoting integration among its members, but its integration with the rest of the region was less successful. These findings speak directly to Mercosur's South-South integration strategy: while the bloc succeeded in deepening trade among its founding members, its broader regional agenda produced more limited and uneven results. This could be partly explained by the fact that these countries are predominantly agricultural exporters rather than importers, which limits the scope for trade creation in this sector.

3.5.2 *Margin Decomposition*

We now turn to the margin decomposition to assess whether the agreements enabled members to diversify their traded products. Figure 3.1 summarizes the evolution of the least-traded goods share across agreements, organized by the phase structure of each agreement. Tables B.16, B.17, and B.18 in the appendix present the full results at the agreement and country-pair level.

Figure 3.1 confirms our second hypothesis: these agreements have promoted export diversification among members. Most of the analyzed agreements show an increase in the share of least-traded goods, which reached around half of total trade in most cases. The most notable increase occurred within Mercosur, as expected given its depth and comprehensiveness. In contrast, the smallest increase was seen under the Mercosur–Peru agreement, where a reduction in the extensive margin over time was observed.

In the first stage, the liberalization stage, all agreements experienced a surge in the importance of the least-traded goods, showing growth in the extensive margin. The largest growth was seen in the bloc's agreement with Bolivia, where the least-traded goods began to account for around 70% of total trade.

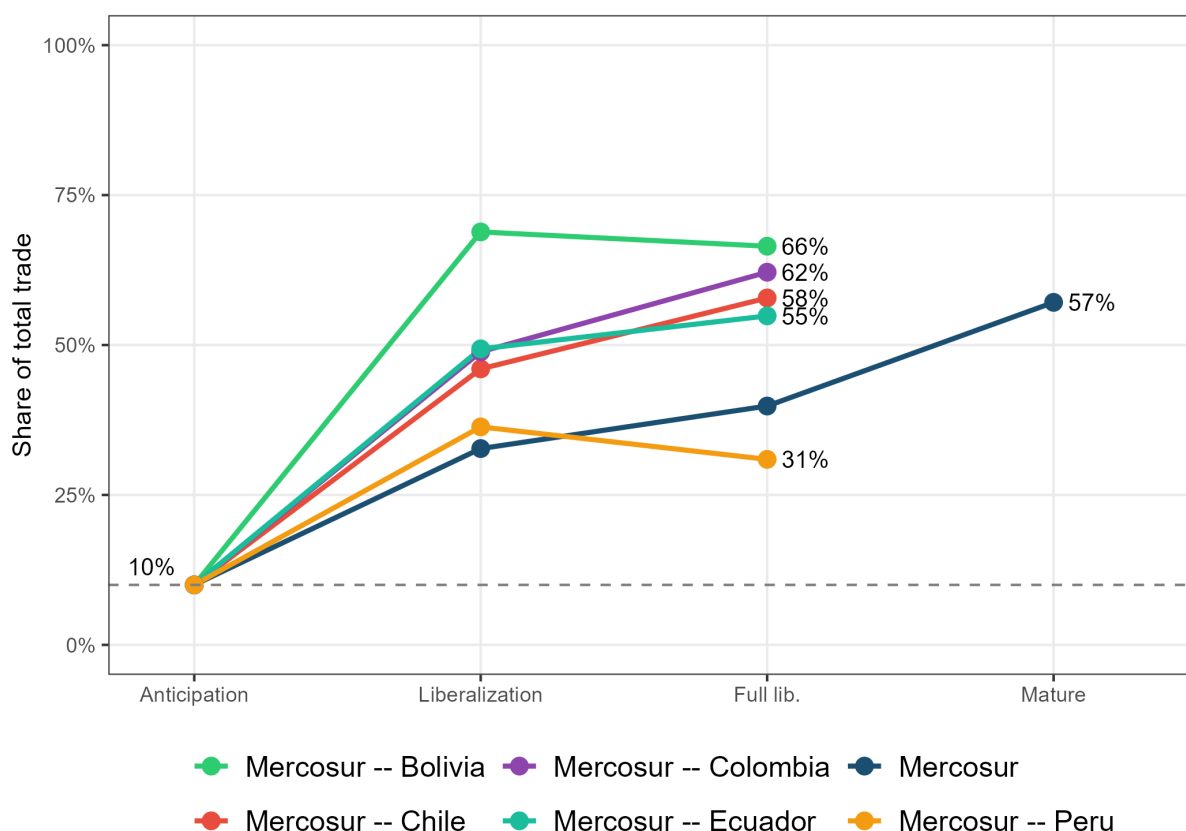


Figure 3.1. Share of Least-Traded Goods by Agreement and Phase

Notes: Each line represents the share of total trade accounted for by the least-traded goods values averaged across all bilateral pairs within each agreement. The least-traded set is defined as the goods that accounted for the bottom 10% of trade during the anticipation phase, following [Kehoe and Ruhl \(2013\)](#). The 10% starting point is by construction. The dashed line marks the 10% baseline.

Surprisingly, the lowest growth occurred within Mercosur itself, though it still saw a significant increase to 32%.

The most interesting results emerged during the stage when tariffs were eliminated. In the Mercosur-Bolivia agreement, the share of least-traded goods stabilized, continuing to account for over 65% of total trade. Other agreements within the bloc with Colombia, Ecuador, and Chile showed smaller but still substantial growth, with these goods representing around 55-62% of total trade, up from about 50% in the previous stage.

Mercosur, on the other hand, showed accelerating growth over time. The largest increase was observed when the agreement matured, marking more than 10 years since full liberalization. In contrast, other agreements showed larger increases during the tariff-reduction period. For Mercosur, these products displayed a steady increase that strengthened as integration among members deepened. This could be a reflection of producers learning and adapting to foreign markets.

The other agreements indicated that the extensive margin experienced greater growth during the liberalization period, allowing producers easier access to those markets due to the established preferences. This highlights the necessity for market access, which was facilitated by the agreements reached. Once

in the market, those producers adapted, and the stability of their margins suggests that their access was sustainable over time.

The exception is the agreement between Mercosur and Peru. Although it increased from 10% to 36% during liberalization, it appears that once producers gained market access, they struggled to compete. During the period of full tariff liberalization, the importance of the least-traded goods declined, falling to 31%. This suggests that while the agreement helped member countries access each other's markets through the established preferences, it was insufficient for maintaining a competitive presence in those markets.

The sharp growth observed across all agreements, particularly during the liberalization phase, partly reflects the pre-existing concentration of trade. The methodology categorizes goods by their trade value in the base period, identifying the bottom 10%, which includes products with zero or near-zero trade value. Since most country pairs traded a relatively narrow range of products before the agreements, the least-traded category is disproportionately large compared to total trade; in fact, most agreements involve 95-98% of all agricultural products classified as least-traded goods.

This is not an issue with the methodology; rather, it highlights the level of trade concentration among these countries. The least-traded goods methodology is a relative measure that illustrates how trade is heavily concentrated in a limited number of products, which are traded in disproportionately high values. The growth observed in the results indicates that these markets are gradually becoming less concentrated.

Thus, these findings are significant as they not only indicate that trade has increased among the member countries, confirming the effectiveness of the agreements in achieving their objectives, but also suggest that this growth has also occurred along the extensive margins. This means that products previously unable to enter certain markets can now enter them, helping these countries reduce their dependence on a limited number of products in their bilateral exports.

To better assess this growth, we need to examine the heterogeneity across pairs within each agreement. We decompose total trade into intensive and extensive margins and apply this decomposition to all bilateral pairs. Table 3.2 summarizes the classification of each pair by its dominant margin, and the full results are presented in the appendix.

The intensive margin accounts for the majority of trade growth across most country pairs, indicating that the agreements primarily increased trade in products that members were already exchanging. This suggests that export diversification, while present, was limited in scope. The only agreement showing consistent and substantial extensive-margin growth is Mercosur–Bolivia, driven by Bolivia's expansion of trade with Paraguay and Uruguay. Among the remaining pairs, ten show mixed growth, meaning the dominant margin switched between phases. In most of these cases, the initial growth occurred on the extensive margin, with trade subsequently consolidating into the intensive margin as the agreement matured.

Overall, both methodologies point to an interesting effect. The least-traded goods analysis shows that the share of previously undertraded products increased across all agreements, while the trade growth decomposition reveals that most of the total trade growth was driven by the intensive margin. Taken together, these results suggest that the agreements enabled members to diversify their traded products to some extent, but this diversification remained limited and grew only gradually, with existing trade relationships deepening more than new ones were created.

Table 3.2. Classification of Bilateral Pairs by Dominant Trade Margin

Intensive		Extensive	Mixed
ARG $\leftarrow$ BRA	BOL $\leftarrow$ ARG	ARG $\leftarrow$ BOL	ARG $\leftarrow$ PRY
ARG $\leftarrow$ URY	BOL $\leftarrow$ BRA	PRY $\leftarrow$ BOL	URY $\leftarrow$ BRA
BRA $\leftarrow$ ARG	ARG $\leftarrow$ PER	URY $\leftarrow$ BOL	BRA $\leftarrow$ BOL
BRA $\leftarrow$ PRY	BRA $\leftarrow$ PER	BOL $\leftarrow$ PRY	PRY $\leftarrow$ PER
BRA $\leftarrow$ URY	URY $\leftarrow$ PER	BOL $\leftarrow$ URY	URY $\leftarrow$ PER
PRY $\leftarrow$ ARG	PER $\leftarrow$ ARG		PRY $\leftarrow$ COL
PRY $\leftarrow$ BRA	PER $\leftarrow$ BRA		URY $\leftarrow$ COL
PRY $\leftarrow$ URY	PER $\leftarrow$ PRY		COL $\leftarrow$ PRY
URY $\leftarrow$ ARG	PER $\leftarrow$ URY		ECU $\leftarrow$ PRY
URY $\leftarrow$ PRY	ARG $\leftarrow$ COL		ECU $\leftarrow$ URY
ARG $\leftarrow$ CHL	BRA $\leftarrow$ COL		
BRA $\leftarrow$ CHL	COL $\leftarrow$ ARG		
PRY $\leftarrow$ CHL	COL $\leftarrow$ BRA		
URY $\leftarrow$ CHL	COL $\leftarrow$ URY		
CHL $\leftarrow$ ARG	ARG $\leftarrow$ ECU		
CHL $\leftarrow$ BRA	BRA $\leftarrow$ ECU		
CHL $\leftarrow$ PRY	PRY $\leftarrow$ ECU		
CHL $\leftarrow$ URY	URY $\leftarrow$ ECU		
URY $\leftarrow$ BRA	ECU $\leftarrow$ ARG		
	ECU $\leftarrow$ BRA		
<i>n</i> = 39 72%		<i>n</i> = 5 9%	<i>n</i> = 10 19%

Notes: A pair is classified as extensive if the extensive margin accounts for more than 50% of total trade growth in the majority of phases. Mixed pairs show extensive margin dominance in at least one phase and intensive in another.

3.6 Conclusion

This paper examines the role of trade agreements in shaping agricultural trade patterns among Mercosur members and their regional partners. To achieve this, we employ a structural gravity model that incorporates the actual liberalization schedules for each agreement and decomposes trade growth into its intensive- and extensive-margin components, following [Kehoe and Ruhl \(2013\)](#). By accounting for the phased nature of tariff reductions, we could identify not only whether these agreements generated trade but also when they did so and through which margin, a level of detail that a simple agreement dummy would not capture.

Our results show that most agreements had limited positive effects on total trade. Only Mercosur and its agreement with Colombia show statistically significant positive effects on total trade, and even when restricting the analysis to agricultural products, the results are modest for most agreements. Mercosur stands out as the agreement with the strongest and most persistent effects, consistent with its deeper level of integration and broader commitments relative to the other agreements analyzed. The remaining agreements had limited, short-lived effects that largely dissipated after the initial phases of liberalization.

These findings speak to the broader challenge of Mercosur's South-South regional integration strategy: while the bloc succeeded in deepening trade among its founding members, the associated agreements

produced more limited and uneven results, suggesting that shared agricultural export structures constrain the scope for trade creation even within a deliberate regional integration agenda.

Regarding our first hypothesis, that trade agreements increase bilateral trade, our results offer partial support. Mercosur generated strong and growing effects across all stages of liberalization, while agreements with Chile, Peru, Colombia, and Ecuador showed positive agricultural trade effects concentrated in specific phases. Bolivia showed no consistent evidence of trade creation in either model.

Regarding our second hypothesis, that trade agreements promote export diversification, the evidence is also mixed. Both the least-traded goods analysis and the total trade decomposition confirm that some diversification occurred across all agreements, with the share of previously undertraded products increasing substantially over time. However, the decomposition reveals that the intensive margin dominates for the vast majority of country pairs, meaning that most trade growth came from deepening existing relationships rather than creating new ones. The only clear exception is Mercosur–Bolivia, where the extensive margin drives growth, reflecting Bolivia’s expansion into new product lines in its trade, especially with Paraguay and Uruguay.

Taken together, our findings suggest that while Mercosur and its associated agreements have contributed to agricultural trade growth and some degree of export diversification in the region, these effects are more limited than the bloc’s ambitions would suggest. The depth of an agreement matters: deeper commitments generate stronger and more durable effects, but structural factors such as export similarity and prior trade policy also play an important role in shaping outcomes. For future research, it would be valuable to investigate the role of non-tariff barriers and sanitary measures, which remain significant obstacles to agricultural trade in the region even after tariff liberalization.

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Appendix B

B.1 Country List

This appendix presents the list of all 202 countries used in the dataset, along with the 239 partners.

Table B.1. Countries in the Sample

<i>Importers and Exporters (202)</i>		
Afghanistan	Albania	Algeria
Andorra	Angola	Anguilla
Antigua and Barbuda	Argentina	Armenia
Aruba	Australia	Austria
Azerbaijan	Bahamas	Bahrain
Bangladesh	Barbados	Belarus
Belgium	Belize	Benin
Bermuda	Bhutan	Bolivia
Bosnia Herzegovina	Botswana	Brazil
Brunei Darussalam	Bulgaria	Burkina Faso
Burundi	Cabo Verde	Cambodia
Cameroon	Canada	Cayman Isds
Central African Rep.	Chile	China
China, Hong Kong SAR	China, Macao SAR	Colombia
Comoros	Congo	Cook Isds
Costa Rica	Croatia	Cuba
Curaçao	Cyprus	Czechia
Côte d'Ivoire	Dem. Rep. of the Congo	Denmark
Djibouti	Dominica	Dominican Rep.
Ecuador	Egypt	El Salvador
Estonia	Eswatini	Ethiopia
FS Micronesia	Faroe Isds	Fiji
Finland	France	French Guiana
French Polynesia	Gabon	Gambia
Georgia	Germany	Ghana
Greece	Greenland	Grenada
Guatemala	Guinea	Guinea-Bissau
Guyana	Haiti	Honduras
Hungary	Iceland	India
Indonesia	Iran	Iraq
Ireland	Israel	Italy
Jamaica	Japan	Jordan
Kazakhstan	Kenya	Kiribati
Kuwait	Kyrgyzstan	Lao People's Dem. Rep.

(continued)

Latvia	Lebanon	Lesotho
Liberia	Libya	Lithuania
Luxembourg	Madagascar	Malawi
Malaysia	Maldives	Mali
Malta	Martinique	Mauritania
Mauritius	Mayotte	Mexico
Mongolia	Montenegro	Montserrat
Morocco	Mozambique	Myanmar
Namibia	Nepal	Netherlands
New Caledonia	New Zealand	Nicaragua
Niger	Nigeria	North Macedonia
Norway	Oman	Pakistan
Palau	Panama	Papua New Guinea
Paraguay	Peru	Philippines
Poland	Portugal	Qatar
Rep. of Korea	Rep. of Moldova	Romania
Russian Federation	Rwanda	Réunion
Saint Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines
Samoa	Sao Tome and Principe	Saudi Arabia
Senegal	Serbia	Seychelles
Sierra Leone	Singapore	Slovakia
Slovenia	Solomon Isds	South Africa
Spain	Sri Lanka	State of Palestine
Sudan	Suriname	Sweden
Switzerland	Syria	Tajikistan
Thailand	Timor-Leste	Togo
Tonga	Trinidad and Tobago	Tunisia
Turkmenistan	Turks and Caicos Isds	Tuvalu
Türkiye	USA	Uganda
Ukraine	United Arab Emirates	United Kingdom
United Rep. of Tanzania	Uruguay	Uzbekistan
Vanuatu	Venezuela	Viet Nam
Wallis and Futuna Isds	Yemen	Zambia
Zimbabwe		

Exporters Only (37)

American Samoa	Antarctica	Bonaire
Bouvet Island	Br. Indian Ocean Terr.	Br. Virgin Isds
Chad	Christmas Isds	Cocos Isds
Dem. People's Rep. of Korea	Equatorial Guinea	Eritrea

(continued)

Falkland Isds (Malvinas)	Fr. South Antarctic Terr.	Gibraltar
Guadeloupe	Guam	Heard Island and McDonald Isds
Holy See	Marshall Isds	N. Mariana Isds
Nauru	Niue	Norfolk Isds
Pitcairn	Saint Barthélemy	Saint Helena
Saint Pierre and Miquelon	San Marino	Sint Maarten
Somalia	South Georgia	South Sudan
Tokelau	United States Minor Outlying Isds	Western Sahara

B.2 Liberalization Plans

B.2.1 Mercosur

Mercosur was established in 1991 by Argentina, Brazil, Paraguay, and Uruguay. Building on negotiations already underway between Argentina and Brazil over a free trade agreement, the four countries decided to sign the Treaty of Asunción in 1991 to found Mercosur and set the path toward becoming a customs union by 1995.

The members already had some trade agreements among them, Argentina-Uruguay (1985), Brazil-Uruguay (1986), Argentina-Paraguay (1989), and Argentina-Brazil (1990). Those agreements vary in scope but are mostly not very comprehensive, focusing on manufacturing goods. The exception is Argentina-Brazil (1990), which served as the base for the Mercosur agreement. But those previous agreements signal that trade liberalization had already started among those countries, and that the trade relationships built are one explanation for the short transition period agreed by the members.

One unusual characteristic of Mercosur is its short transition period. Often, trade agreements take years, some decades, to reach the liberalization agreed upon, on very slow and gradual liberalization plans (as can be seen in the next sections). But Mercosur agreed on a fast 4-year (5-year for Paraguay and Uruguay) gradual liberalization for most products, and 8-year (9-year for Paraguay and Uruguay) for sensitive products. Those liberalizations were very successful, especially in agriculture, which had been poorly covered in the previous agreements.

Table B.2 presents a summary of the liberalization for each one of the 24 chapters of the HS code, at the 6-digit level. Because of the space, the year in the column represents the last year in which any product under that chapter reached a full liberalization for that country. We chose only the 24 initial chapters because they represent the agricultural goods.

The liberalization process was designed to reflect the varying sizes of the countries involved. Paraguay and Uruguay were given an additional year beyond the established schedule to ensure a smoother transition for their economies. These countries also had a higher number of products designated as sensitive. As indicated in the table, the liberalization of agricultural products for Paraguay and Uruguay occurs slightly later than for the other countries. Argentina only protected the chapter on vegetable preparations, while Brazil protected both the vegetable preparations and beverages chapters. In contrast, Paraguay protected 13 out of 24 agricultural chapters, and Uruguay protected 14.

To better understand how the liberalization occurred, beyond just knowing when it ended, Table B.3 shows the percentage of products that were tariff-free in each year of the liberalization schedule. These percentages were calculated by comparing the number of product lines with a preference margin of 100% against the total number of product lines in that category. For brevity, we have grouped all products into four sectors: agricultural products, chemicals and plastics, metals and machinery, and textiles and leather. Together, these four sectors encompass all NCM product codes.

Within the agreement, no products had their tariffs eliminated immediately. It allowed only a gradual reduction of tariffs, with the goal of complete elimination by the end of 1994 or in 1995, marking the first removal of tariffs on the majority of products. This gradual approach explains the zeros recorded in 1994, and for Paraguay and Uruguay, in 1995. The metal and machinery sector experienced the slowest liberalization among all member countries. In contrast, agriculture was extensively liberalized, especially

Table B.2. Mercosur Liberalization Schedule (ACE-18)

Ch.	Description	Argentina	Brazil	Paraguay	Uruguay
01	Live animals	1995	1995	1996	1996
02	Meat and edible offal	1995	1995	2000	1996
03	Fish and crustaceans	1995	1995	1996	1996
04	Dairy, eggs, honey	1995	1995	2000	2000
05	Other animal products	1995	1995	1996	1996
06	Live trees and plants	1995	1995	2000	1996
07	Edible vegetables	1995	1995	2000	2000
08	Edible fruits and nuts	1995	1995	2000	2000
09	Coffee, tea, spices	1995	1995	1996	1996
10	Cereals	1995	1995	2000	2000
11	Milling products	1995	1995	1996	2000
12	Oil seeds	1995	1995	1996	1996
13	Lac, gums, resins	1995	1995	1996	1996
14	Vegetable plaiting materials	1995	1995	1996	1996
15	Animal or vegetable fats	1995	1995	2000	2000
16	Meat/fish preparations	1995	1995	2000	2000
18	Cocoa and preparations	1995	1995	1996	2000
19	Cereal/flour preparations	1995	1995	2000	2000
20	Vegetable preparations	1999	1999	2000	2000
21	Miscellaneous food preparations	1995	1995	2000	2000
22	Beverages and spirits	1995	1999	2000	2000
23	Food industry residues	1995	1995	1996	1996
24	Tobacco	1995	1995	2000	2000

Notes: Each value represents the last year in which any HS6 product line within that chapter reached a zero tariff under Mercosur. Chapters 01–24 correspond to agricultural products. Under the original schedule, full liberalization was set to be completed by the end of 1994 for Argentina and Brazil, and by the end of 1995 for Paraguay and Uruguay. Products placed on exception lists were granted extended deadlines, with Argentina and Brazil required to complete liberalization by the end of 1998 and Paraguay and Uruguay by the end of 1999.

for Argentina and Brazil, while Uruguay remained the most protective in this sector. By 2000, all tariffs were fully eliminated according to the schedule.

The only sector that achieved complete liberalization was textiles and leather. The reason for this was that Mercosur excluded two sectors from its liberalization efforts: sugar and automotive (which includes automobiles and auto parts). Consequently, other sectors did not achieve full liberalization because they include products of these sectors. There have been several attempts to include these two sectors in the agreement, particularly driven by Brazil, but none have been successful. Despite their exclusion from the main agreement, the members were allowed to negotiate these sectors in bilateral agreements. Most pairs of countries utilized prior agreements to incorporate the liberalization of those products.

The complete schedule for liberalization was established in 2000. Although there have been some efforts in certain years to include the excluded sectors, there has been no active movement in that direction in recent years. The bloc's protocols now focus on new trade partnerships and other aspects, while its full free trade area has been operational for over 25 years.

Table B.3. Sectoral Cumulative Liberalization of Mercosur

Country	Sector	Year						
		1994	1995	1996	1997	1998	1999	2000
Argentina	Agricultural products	0	99.4	99.4	99.4	99.4	99.6	99.6
	Chemicals and plastics	0	99.5	99.5	99.5	99.5	99.5	99.5
	Metals and machinery	0	82.1	83.8	84.0	84.0	86.2	86.2
	Textiles and leather	0	94.5	94.8	94.8	94.8	100	100
Brazil	Agricultural products	0	99.2	99.2	99.2	99.2	99.6	99.6
	Chemicals and plastics	0	99.2	99.2	99.2	99.2	99.5	99.5
	Metals and machinery	0	86.2	86.2	86.2	86.2	86.2	86.2
	Textiles and leather	0	99.0	99.0	99.0	99.0	100	100
Paraguay	Agricultural products	0	0	91.5	91.5	91.5	91.5	99.6
	Chemicals and plastics	0	0	98.8	98.8	98.8	98.8	99.5
	Metals and machinery	0	0	85.6	85.6	85.6	85.6	86.2
	Textiles and leather	0	0	78.4	78.4	78.4	78.4	100
Uruguay	Agricultural products	0	0	89.8	89.8	89.8	89.8	99.6
	Chemicals and plastics	0	0	93.1	93.1	93.1	93.1	99.5
	Metals and machinery	0	0	80.8	80.8	80.8	80.8	86.2
	Textiles and leather	0	0	80.0	80.2	80.2	80.2	100

Notes: Each value represents the cumulative share (%) of NCM product lines facing zero tariff within Mercosur, by country and broad sector. Argentina and Brazil reached the main liberalization in 1995, while Paraguay and Uruguay were granted one extra year, reaching it in 1996. Selected product lines were granted extended deadlines, with Argentina and Brazil allowed until 1999 and Paraguay and Uruguay until 2000 to complete the elimination of tariffs on those products. Textiles and leather is the only sector reaching full liberalization by the end of the schedule, as the remaining sectors include sugar and automotive products (including automobiles and auto parts), which are not included in Mercosur's tariff elimination commitments.

B.2.2 Mercosur-Chile

The agreement between Mercosur and Chile was the first agreement established by the bloc after its formation. The ACE-35 in ALADI, as it is called, was signed in 1996 and came into effect that same year. Chile was granted the status of associated member of the bloc, allowing it to participate in meetings and discussions, although it does not have voting rights on decisions.

The agreement follows a standard structure for liberalization plans, similar to those in other trade agreements, with the liberalization process taking almost two decades to be fully implemented. This liberalization was balanced across products among all member countries. The liberalization of more general products was completed in 2004, while the liberalization of sensitive products occurred gradually from that year until 2015. Table B.4 presents the specific liberalization years for each of the 24 agricultural chapters.

Table B.5 presents the cumulative liberalization for key years throughout the entire liberalization schedule. The cumulative share represents the percentage of products in each category that have been liberalized by a specific year, relative to the total number of products in that category. The table shows that 2004 marked the first significant liberalization period, with all categories liberalizing more than 80%

Table B.4. Chile–Mercosur Liberalization Schedule (ACE-35)

Ch.	Description	Argentina	Brazil	Paraguay	Uruguay	Chile
01	Live animals	2004	2004	2004	2004	2011
02	Meat and edible offal	2011	2004	2011	2011	2011
03	Fish and crustaceans	2004	2004	2004	2004	2004
04	Dairy, eggs, honey	2011	2011	2011	2011	2006
05	Other animal products	2004	2004	2004	2004	2004
06	Live trees and plants	2006	2006	2006	2006	2004
07	Edible vegetables	2011	2011	2011	2011	2011
08	Edible fruits and nuts	2011	2011	2011	2011	2011
09	Coffee, tea, spices	2004	2004	2004	2004	2004
10	Cereals	2015	2015	2015	2015	2015
11	Milling products	2015	2015	2015	2015	2015
12	Oil seeds	2006	2006	2006	2006	2004
13	Lac, gums, resins	2011	2011	2011	2011	2004
14	Vegetable plaiting materials	2004	2004	2004	2004	2004
15	Animal or vegetable fats	2006	2006	2006	2006	2011
16	Meat/fish preparations	2004	2004	2004	2004	2004
17	Sugars	2012	2012	2012	2012	2012
18	Cocoa and preparations	2006	2006	2006	2006	2006
19	Cereal/flour preparations	2006	2006	2006	2006	2011
20	Vegetable preparations	2011	2011	2011	2011	2011
21	Miscellaneous food preparations	2011	2011	2011	2011	2011
22	Beverages and spirits	2011	2011	2011	2011	2011
23	Food industry residues	2006	2006	2006	2006	2011
24	Tobacco	2011	2011	2011	2011	2006

Notes: Each value represents the last year in which any NALADISA96 product line within that chapter reached a zero tariff under the agreement Mercosur-Chile. Columns for the countries indicate that they are importers. The agreement entered into force in 1996.

Table B.5. Sectoral Cumulative Liberalization under Chile–Mercosur Trade Agreement

Country	Sector	Year					
		1996	2002	2004	2006	2011	2015
Argentina	Agricultural products	10.8	13.0	88.0	96.0	99.3	100.0
	Chemicals and plastics	2.7	7.4	95.8	99.1	100.0	100.0
	Textiles and leather	1.3	2.9	83.6	99.0	100.0	100.0
	Metals and machinery	4.6	19.0	90.3	97.4	100.0	100.0
Brazil	Agricultural products	10.8	14.8	88.6	96.3	99.3	100.0
	Chemicals and plastics	2.7	7.6	95.9	99.2	100.0	100.0
	Textiles and leather	1.3	3.5	83.8	99.0	100.0	100.0
	Metals and machinery	4.6	19.4	90.8	97.6	100.0	100.0
Paraguay	Agricultural products	10.8	11.4	87.7	95.7	99.3	100.0
	Chemicals and plastics	2.7	3.3	94.8	98.8	100.0	100.0
	Textiles and leather	1.3	1.7	83.6	99.0	100.0	100.0
	Metals and machinery	4.7	4.9	85.1	96.9	100.0	100.0
Uruguay	Agricultural products	10.8	11.4	87.7	95.7	99.3	100.0
	Chemicals and plastics	2.7	3.3	95.5	99.1	100.0	100.0
	Textiles and leather	1.3	1.7	83.6	99.0	100.0	100.0
	Metals and machinery	4.8	5.0	89.8	97.3	100.0	100.0
Chile	Agricultural products	10.3	12.6	86.7	94.4	99.3	100.0
	Chemicals and plastics	5.7	8.9	96.9	99.2	100.0	100.0
	Textiles and leather	2.0	2.9	84.8	99.0	100.0	100.0
	Metals and machinery	6.0	13.4	93.8	99.2	100.0	100.0

Notes: Each value represents the cumulative share (%) of product lines facing zero tariff under Mercosur-Chile trade agreement, by country and broad sector. For Chile, the values are averaged across the four Mercosur exporters. The agreement entered into force in 1996.

of their products. The agriculture sector was the slowest to liberalize, taking four years longer than the other three sectors, despite initially being the highest. This is not surprising, as agriculture is a crucial sector for all five member countries.

B.2.3 Mercosur-Bolivia

The agreement between Mercosur and Bolivia was signed in 1996 and came into effect in 1997. The ACE 36, under ALADI, was the bloc's second agreement. Similar to Chile, Bolivia was granted the status of an associated member.

As a smaller country, Bolivia was given additional time to complete the transition to the free trade agreement. The liberalization for most products occurred in 2006, nine years after the agreement came into force. Although the schedule for sensitive products was extended until 2011 for Mercosur members, Bolivia was granted additional years, achieving full liberalization of sensitive products in 2014. The oilseed, animal and vegetable fats, sugar, and beverage sectors received this additional protection in the Bolivian market. Table B.6 presents each of the 24 chapters for the agricultural products, with each column indicating the final year it took for each chapter to be fully liberalized.

Table B.7 presents the cumulative data on liberalization products, allowing us to understand how this liberalization occurs among members over the years. A pattern similar to Chile's is observed, with agricultural goods experiencing the highest initial liberalization but remaining the last sector to fully liberalize. The additional three years granted by Mercosur were specifically for the agricultural sector.

Table B.6. Mercosur–Bolivia Liberalization Schedule (ACE-36)

Ch.	Description	Argentina	Brazil	Paraguay	Uruguay	Bolivia
01	Live animals	2006	2006	2006	2006	2011
02	Meat and edible offal	2006	2006	2006	2006	2011
03	Fish and crustaceans	2006	2006	2006	2006	2006
04	Dairy, eggs, honey	2006	2006	2006	2006	2011
05	Other animal products	2006	2006	2006	2006	2006
06	Live trees and plants	2006	2006	2006	2006	2006
07	Edible vegetables	2011	2011	2011	2011	2011
08	Edible fruits and nuts	2006	2006	2006	2006	2011
09	Coffee, tea, spices	2006	2006	2006	2006	2006
10	Cereals	2006	2006	2006	2006	2011
11	Milling products	2011	2011	2011	2011	2011
12	Oil seeds	2006	2006	2006	2006	2014
13	Lac, gums, resins	2006	2006	2006	2006	2006
14	Vegetable plaiting materials	2006	2006	2006	2006	2011
15	Animal or vegetable fats	2011	2011	2011	2011	2014
16	Meat/fish preparations	2006	2006	2006	2006	2011
17	Sugars	2011	2011	2011	2011	2014
18	Cocoa and preparations	2006	2006	2006	2006	2006
19	Cereal/flour preparations	2006	2006	2006	2006	2011
20	Vegetable preparations	2006	2006	2006	2006	2011
21	Miscellaneous food preparations	2006	2006	2006	2006	2011
22	Beverages and spirits	2006	2006	2006	2006	2011
23	Food industry residues	2006	2006	2006	2006	2014
24	Tobacco	2006	2006	2006	2006	2006

Notes: Each value represents the last year in which any product line within that chapter reached a zero tariff under the agreement Mercosur-Bolivia. Columns for the countries indicate that they are importers. The agreement entered into force in 1997.

Table B.7. Sectoral Cumulative Liberalization under Mercosur–Bolivia Trade Agreement

Country	Sector	Year				
		1997	2001	2006	2011	2014
Argentina	Agricultural products	19.0	19.2	99.4	100.0	100.0
	Chemicals and plastics	4.7	4.7	98.6	100.0	100.0
	Textiles and leather	9.1	9.6	97.4	100.0	100.0
	Metals and machinery	3.6	3.6	94.7	100.0	100.0
Brazil	Agricultural products	19.0	19.2	99.4	100.0	100.0
	Chemicals and plastics	4.7	4.8	98.6	100.0	100.0
	Textiles and leather	9.1	9.6	97.5	100.0	100.0
	Metals and machinery	3.6	3.6	94.7	100.0	100.0
Paraguay	Agricultural products	19.0	19.1	99.4	100.0	100.0
	Chemicals and plastics	4.7	4.9	98.7	100.0	100.0
	Textiles and leather	9.1	9.1	97.3	100.0	100.0
	Metals and machinery	3.6	3.6	94.7	100.0	100.0
Uruguay	Agricultural products	19.1	19.1	99.4	100.0	100.0
	Chemicals and plastics	4.7	4.7	98.6	100.0	100.0
	Textiles and leather	9.1	9.1	97.3	100.0	100.0
	Metals and machinery	3.6	3.6	94.7	100.0	100.0
Bolivia	Agricultural products	13.8	13.8	79.1	97.6	100.0
	Chemicals and plastics	12.5	12.8	96.7	100.0	100.0
	Textiles and leather	9.5	9.7	92.7	100.0	100.0
	Metals and machinery	13.5	13.6	93.9	100.0	100.0

Notes: Each value represents the cumulative share (%) of NALADISA96 product lines facing zero tariff under the Mercosur-Bolivia trade agreement, by country and broad sector. For Bolivia, the values are averaged across the four Mercosur exporters. The agreement entered into force in 1997.

Given that Bolivia is a smaller country, comparable to Paraguay and Uruguay, it is understandable that it was granted extra years to transition into the agreement. A similar preference was extended to the two smaller countries when the bloc was formed. In 2024, Bolivia became a full member of Mercosur. As the tariff lines have already been eliminated, the country now needs to integrate into the other rules required by the bloc.

B.2.4 Mercosur-Peru

Regional integration efforts by Mercosur continued through the late 1990s and into the early 2000s. The bloc aimed to negotiate with the other prominent trade group in the region, the Andean Community, which is composed of Bolivia, Colombia, Ecuador, and Peru. Venezuela was a member of the Andean Community until 2006, when it chose to withdraw from the bloc to join Mercosur, participating in negotiations as part of the Andean Community.

When talks began in the late 1990s, Bolivia decided to pursue its own bilateral agreement with Mercosur, resulting in the ACE-36 agreement mentioned in the previous section. The negotiations with other members progressed, leading to a framework agreement, ACE-56, to establish an initial preferential agreement and eventually create a free trade area among the members. This framework agreement was signed in 2002.

From this framework, two specific agreements emerged: ACE-58 between Mercosur and Peru, and ACE-59 among Mercosur, Colombia, Ecuador, and Venezuela. ACE-58 was signed in 2005 and came into effect that same year. This agreement established a free trade arrangement among the members and granted Peru associate member status upon its entry into force.

Table B.8 presents the liberalization schedule for this agreement, focusing on chapters related to agricultural products. The agreed liberalization period spanned seven years for most products, while those categorized as sensitive were afforded an additional five years of protection. As a result, full liberalization took place in 2017.

Similar to the agreement with Bolivia, Mercosur's members granted additional time for smaller countries to adapt to the agreement's rules. This extension was granted not only to Peru but also to Paraguay and Uruguay, allowing them to maintain their protections on sensitive products until 2017.

Table B.9 presents the cumulative share of liberalized products over the years of the agreement's liberalization. Argentina and Brazil completed all their agreed liberalizations by 2012, while the other countries, particularly Peru, progressed more slowly. It is also important to note that the agricultural and textile sectors experienced the slowest liberalizations during this period, especially in Peru. This trend reflects not only the other agreements within the bloc with Chile and Bolivia but also a global trend toward protecting these sectors. Some products were excluded from the liberalization; that is why only the metals and machinery sector reaches full liberalization for all countries.

Table B.8. Mercosur–Peru Liberalization Schedule (ACE-58)

Ch.	Description	Argentina	Brazil	Paraguay	Uruguay	Peru
01	Live animals	2012	2005	2012	2005	2005
02	Meat and edible offal	2012	2012	2017	2011	2017
03	Fish and crustaceans	2012	2012	2012	2005	2005
04	Dairy, eggs, honey	2012	2012	2017	2005	2017
05	Other animal products	2012	2012	2012	2005	2016
06	Live trees and plants	2012	2012	2017	2017	2005
07	Edible vegetables	2012	2012	2017	2017	2017
08	Edible fruits and nuts	2012	2012	2017	2017	2017
09	Coffee, tea, spices	2012	2012	2012	2011	2017
10	Cereals	2012	2012	2017	2005	2017
11	Milling products	2012	2012	2017	2017	2017
12	Oil seeds	2012	2012	2012	2011	2011
13	Lac, gums, resins	2012	2012	2012	2005	2005
14	Vegetable plaiting materials	2012	2012	2017	2017	2017
15	Animal or vegetable fats	2012	2012	2017	2017	2017
16	Meat/fish preparations	2012	2012	2017	2017	2017
17	Sugars	2012	2012	2017	2011	2017
18	Cocoa and preparations	2012	2012	2012	2011	2017
19	Cereal/flour preparations	2012	2012	2012	2011	2017
20	Vegetable preparations	2012	2012	2017	2017	2017
21	Miscellaneous food preparations	2012	2012	2017	2017	2017
22	Beverages and spirits	2012	2012	2017	2017	2017
23	Food industry residues	2012	2012	2017	2017	2017
24	Tobacco	2012	2012	2017	2017	2017

Notes: Each value represents the last year in which any NALADISA96 product line within that chapter reached a zero tariff under the agreement Mercosur-Peru. Columns for the countries indicate that they are importers. The agreement entered into force in 2005.

Table B.9. Sectoral Cumulative Liberalization under Mercosur–Peru Trade Agreement

Country	Sector	Year				
		2005	2008	2011	2012	2019
Argentina	Agricultural products	11.6	12.4	26.7	99.1	99.1
	Chemicals and plastics	2.9	4.9	19.3	99.9	99.9
	Textiles and leather	3.8	4.3	26.6	99.9	99.9
	Metals and machinery	2.7	4.8	23.8	100.0	100.0
Brazil	Agricultural products	19.0	21.6	38.2	99.1	99.1
	Chemicals and plastics	35.0	39.0	49.0	99.9	99.9
	Textiles and leather	11.0	18.0	31.7	99.9	99.9
	Metals and machinery	8.8	12.3	27.4	100.0	100.0
Paraguay	Agricultural products	9.8	9.9	9.9	91.0	99.1
	Chemicals and plastics	42.2	42.7	42.7	97.8	99.9
	Textiles and leather	4.8	4.8	4.8	87.0	99.9
	Metals and machinery	3.4	3.6	3.6	97.3	100.0
Uruguay	Agricultural products	75.0	75.0	95.4	95.4	99.1
	Chemicals and plastics	84.7	84.7	97.4	97.4	99.9
	Textiles and leather	25.0	25.0	49.3	94.3	99.9
	Metals and machinery	73.8	73.8	95.6	95.6	100.0
Peru	Agricultural products	17.4	17.6	23.2	41.0	99.1
	Chemicals and plastics	40.2	40.9	44.7	61.4	99.9
	Textiles and leather	6.0	6.2	12.7	34.7	99.9
	Metals and machinery	23.0	23.4	30.0	53.1	100.0

Notes: Each value represents the cumulative share (%) of NALADISA96 product lines facing zero tariff under the Mercosur-Peru trade agreement, by country and broad sector. For Peru, the values are averaged across the four Mercosur exporters. The agreement entered into force in 2005.

B.2.5 Mercosur-Colombia

The other successful agreement resulting from ACE-56 was the one established between Mercosur and Colombia, Ecuador, and Venezuela. This agreement was designated as ACE-59 within the ALADI framework. Since each member of the Andean Community negotiated its own granted preferences, we decided to analyze the impact on Colombia and Ecuador separately. We excluded Venezuela from the analysis due to the lack of trade data for the country from 2015 onward.

The agreement with Colombia was signed in 2004 and came into force the following year, in 2005. The liberalization agreed upon in this agreement involved an 8-year gradual liberalization program that extended until 2013 for most products, while sensitive products were granted extensions until 2015 or 2018, depending on the product. This agreement remained active until the end of the liberalization period. Towards the end of the 2010s, Colombia decided to form another agreement with Mercosur. This new agreement, signed in 2017, superseded the earlier one, but we will not analyze it here.

Table B.10 shows the liberalization time of the first 24 chapters that represent agricultural products. In ACE-59, Argentina and Brazil follow a similar pattern to their previous agreements, implementing liberalization earlier than the smaller members. However, in this case, the liberalization occurred in a more balanced manner. Most products were liberalized in Argentina in 2013 and in Brazil in 2011,

Table B.10. Mercosur–Colombia Liberalization Schedule (ACE-59)

Ch.	Description	Argentina	Brazil	Paraguay	Uruguay	Colombia
01	Live animals	2013	2005	2015	2015	2005
02	Meat and edible offal	2013	2018	2018	2018	2018
03	Fish and crustaceans	2011	2018	2018	2015	2013
04	Dairy, eggs, honey	2013	2018	2018	2018	2018
05	Other animal products	2013	2018	2015	2018	2009
06	Live trees and plants	2013	2005	2018	2018	2005
07	Edible vegetables	2013	2011	2018	2016	2018
08	Edible fruits and nuts	2013	2011	2018	2018	2015
09	Coffee, tea, spices	2018	2011	2018	2005	2013
10	Cereals	2013	2011	2018	2015	2018
11	Milling products	2013	2011	2018	2015	2018
12	Oil seeds	2013	2011	2018	2015	2018
13	Lac, gums, resins	2013	2007	2015	2015	2009
14	Vegetable plaiting materials	2013	2007	2018	2015	2013
15	Animal or vegetable fats	2013	2011	2018	2018	2018
16	Meat/fish preparations	2018	2017	2018	2018	2018
17	Sugars	2018	2018	2018	2018	2018
18	Cocoa and preparations	2018	2018	2018	2018	2018
19	Cereal/flour preparations	2013	2018	2018	2018	2018
20	Vegetable preparations	2013	2018	2018	2015	2018
21	Miscellaneous food preparations	2018	2017	2018	2015	2018
22	Beverages and spirits	2013	2017	2018	2018	2018
23	Food industry residues	2013	2011	2018	2015	2018
24	Tobacco	2013	2011	2018	2015	2013

Notes: Each value represents the last year in which any NALADISA96 product line within that chapter reached a zero tariff under the Mercosur-Colombia agreement. Columns for the countries indicate them as importers. The agreement entered into force in 2005.

Table B.11. Sectoral Cumulative Liberalization under Mercosur–Colombia Trade Agreement

Country	Sector	Year				
		2005	2009	2013	2015	2018
Argentina	Agricultural products	10.7	16.3	97.8	97.8	100.0
	Chemicals and plastics	29.1	33.1	94.5	97.2	99.9
	Textiles and leather	4.6	6.1	88.4	88.4	99.9
	Metals and machinery	5.4	9.2	95.7	97.4	100.0
Brazil	Agricultural products	29.5	58.4	93.6	93.6	100.0
	Chemicals and plastics	31.8	60.6	99.3	99.3	99.9
	Textiles and leather	9.1	29.6	99.9	99.9	99.9
	Metals and machinery	11.1	41.1	98.7	98.7	100.0
Paraguay	Agricultural products	11.1	11.1	11.1	86.4	100.0
	Chemicals and plastics	40.6	41.3	41.4	92.3	99.9
	Textiles and leather	4.5	4.8	4.8	79.7	99.9
	Metals and machinery	3.3	3.3	4.5	88.0	100.0
Uruguay	Agricultural products	17.6	19.0	32.5	88.3	100.0
	Chemicals and plastics	17.3	31.3	44.4	97.8	99.9
	Textiles and leather	2.4	4.8	21.0	98.1	99.9
	Metals and machinery	14.8	33.9	54.6	95.2	99.9
Colombia	Agricultural products	27.5	32.4	52.8	78.7	100.0
	Chemicals and plastics	39.4	55.0	76.6	97.1	99.7
	Textiles and leather	3.5	9.6	40.5	96.4	99.9
	Metals and machinery	13.8	32.5	63.8	95.1	100.0

Notes: Each value represents the cumulative share (%) of product lines facing zero tariff under the Mercosur-Colombia trade agreement, by country and broad sector. For Colombia, the values are averaged across the four Mercosur exporters. The agreement entered into force in 2005.

although both countries continue to protect a few sectors that took longer to fully liberalize. In contrast, Colombia, Paraguay, and Uruguay experienced a slower liberalization process, which often took place in 2018, the final year of the agreement.

Table B.11 presents the sectoral liberalization of the agreements for key years in the planned process. Although all the countries achieved full agreed liberalization only in the last year of the agreed schedule, Argentina and Brazil were at the forefront of this process, liberalizing a significant portion of goods around 2013. This liberalization was well-balanced across various sectors. Both agricultural products and metals and machinery were the only two sectors that were fully liberalized. The other two sectors had products that were excluded by the negotiations.

In contrast, the smaller countries, Paraguay, Uruguay, and Colombia, maintained more protection for their agricultural sectors. These sectors showed the lowest levels of liberalization over the course of the agreement, particularly in Colombia.

The new 2017 agreement followed this liberalization schedule and completed the commitments outlined in ACE-59, finalizing the elimination of tariffs in 2018 as agreed.

B.2.6 Mercosur-Ecuador

On the Ecuadorian side of the ACE-59 agreement, the liberalization pattern follows the same model as Colombia. However, Argentina and Brazil granted Ecuador earlier liberalization than Colombia. Most products were liberalized in 2011 or 2013 for these two countries. Notably, the sugar sector remained protected by Argentina until last year, while Brazil protected six sectors. Table B.12 presents the liberalization years for all members of the agreement.

Table B.13 shows the cumulative liberalization of aggregate sectors for key years in the liberalization plan. By the mid-2010s, most products from Argentina and Brazil had been liberalized, with Paraguay and Uruguay closely following this trend. Argentina and Brazil did not reach full liberalization because they excluded a few products from the negotiations.

Ecuador was granted more time for liberalization, especially in the agricultural sector, which progressed more slowly compared to Colombia. The textiles sector was also highly protected in Ecuador. Although the liberalization was gradual, it was completed for all sectors by 2018.

Table B.12. Mercosur–Ecuador Liberalization Schedule (ACE-59)

Ch.	Description	Argentina	Brazil	Paraguay	Uruguay	Ecuador
01	Live animals	2013	2005	2013	2011	2013
02	Meat and edible offal	2013	2018	2018	2018	2018
03	Fish and crustaceans	2008	2018	2016	2005	2005
04	Dairy, eggs, honey	2013	2018	2018	2018	2018
05	Other animal products	2013	2011	2013	2011	2018
06	Live trees and plants	2013	2011	2018	2018	2013
07	Edible vegetables	2013	2011	2018	2018	2018
08	Edible fruits and nuts	2013	2011	2018	2018	2018
09	Coffee, tea, spices	2018	2011	2015	2011	2015
10	Cereals	2013	2011	2018	2015	2018
11	Milling products	2013	2015	2018	2011	2018
12	Oil seeds	2013	2011	2015	2011	2018
13	Lac, gums, resins	2013	2011	2013	2011	2012
14	Vegetable plaiting materials	2013	2007	2018	2011	2013
15	Animal or vegetable fats	2013	2011	2018	2015	2018
16	Meat/fish preparations	2013	2018	2018	2015	2018
17	Sugars	2018	2018	2018	2015	2018
18	Cocoa and preparations	2013	2011	2013	2015	2015
19	Cereal/flour preparations	2013	2015	2015	2018	2018
20	Vegetable preparations	2013	2011	2018	2015	2018
21	Miscellaneous food preparations	2013	2011	2018	2015	2018
22	Beverages and spirits	2013	2018	2018	2015	2018
23	Food industry residues	2013	2011	2018	2011	2018
24	Tobacco	2013	2011	2018	2015	2015

Notes: Each value represents the last year in which any product line within that chapter reached a zero tariff under the Mercosur-Ecuador agreement. Columns for the countries indicate that they are importers. The agreement entered into force in 2005.

Table B.13. Sectoral Cumulative Liberalization under Mercosur–Ecuador Trade Agreement

Country	Sector	Year				
		2005	2008	2011	2015	2018
Argentina	Agricultural products	21.3	36.0	38.7	99.4	100.0
	Chemicals and plastics	30.4	40.3	47.4	96.3	99.9
	Textiles and leather	5.1	10.3	25.6	88.4	99.9
	Metals and machinery	6.4	20.4	32.0	97.5	100.0
Brazil	Agricultural products	23.0	48.4	93.5	94.1	100.0
	Chemicals and plastics	26.5	48.2	94.2	98.9	99.9
	Textiles and leather	9.6	15.1	98.9	99.9	99.9
	Metals and machinery	8.5	28.8	97.2	98.0	100.0
Paraguay	Agricultural products	11.8	12.0	12.2	89.7	100.0
	Chemicals and plastics	40.7	40.7	40.9	97.6	100.0
	Textiles and leather	4.4	4.4	5.1	86.3	100.0
	Metals and machinery	4.0	4.1	4.1	97.3	100.0
Uruguay	Agricultural products	23.8	23.8	87.8	94.9	100.0
	Chemicals and plastics	14.9	14.9	94.2	99.3	100.0
	Textiles and leather	1.1	1.1	60.4	97.3	100.0
	Metals and machinery	9.7	9.7	88.0	97.7	100.0
Ecuador	Agricultural products	11.8	12.1	16.7	67.7	100.0
	Chemicals and plastics	55.4	55.9	59.1	93.4	100.0
	Textiles and leather	5.0	5.1	9.0	73.9	100.0
	Metals and machinery	17.7	17.9	25.8	95.3	100.0

Notes: Each value represents the cumulative share (%) of product lines facing zero tariff under the Mercosur-Ecuador trade agreement, by country and broad sector. For Ecuador, the values are averaged across the four Mercosur exporters. The agreement entered into force in 2005.

B.3 Complete Estimations

Table B.14. PPML Estimation Results: Total Trade

	Mercosur	Mercosur – Chile	Mercosur – Bolivia	Mercosur – Peru	Mercosur – Colombia	Mercosur – Ecuador
Panel A: Static Models						
Trade Effect	0.6242*** (0.1558)	-0.1877 (0.1712)	0.1747 (0.4211)	-0.0986 (0.1094)	0.3102* (0.1642)	-0.2076 (0.1763)
(%)	86.6%	—	—	—	36.4%	—
Pseudo- R^2	0.9900					
Observations	1,329,379					
Panel B: Dynamic Models						
Anticipation	0.5185*** (0.0878)	0.2822** (0.1320)	-0.7620** (0.3842)	0.0797 (0.0933)	0.3837*** (0.1471)	0.1309 (0.1485)
(%)	67.9%	32.6%	-53.3%	—	46.8%	—
Liberalization Plan	0.9345*** (0.1349)	0.1180 (0.2276)	0.0765 (0.5907)	-0.1209 (0.1085)	0.3282** (0.1415)	-0.1846 (0.1588)
(%)	154.5%	—	—	—	38.8%	—
Full Liberalization	1.2302*** (0.1345)	-0.1650 (0.1950)	-0.2912 (0.4610)	-0.1243 (0.1986)	0.5108** (0.2172)	-0.2644 (0.2316)
(%)	242.0%	—	—	—	66.7%	—
Mature	0.8079*** (0.1647)					
(%)	124.3%					
Pseudo- R^2	0.9900					
Observations	1,329,379					

Notes: The dependent variable is the annual bilateral import value. All agreements are estimated jointly in a single model with exporter-year, importer-year, and country-pair fixed effects. Anticipation covers the 5 years before each agreement enters into force. The Liberalization Plan covers the period when tariffs were being reduced. Full Liberalization covers the period when tariffs reached their minimum, up to the first decade. Mature covers more than a decade after tariffs reached their minimum. Period dates by agreement — Mercosur: anticipation (1986–1990), liberalization plan (1991–1994), full liberalization (1995–2004), mature (2005+); Chile: anticipation (1991–1995), liberalization plan (1996–2011), full liberalization (2012+); Bolivia: anticipation (1992–1996), liberalization plan (1997–2014), full liberalization (2015+); Peru: anticipation (2000–2004), liberalization plan (2005–2019), full liberalization (2020+); Colombia: anticipation (2000–2004), liberalization plan (2005–2018), full liberalization (2019+); Ecuador: anticipation (2000–2004), liberalization plan (2005–2018), full liberalization (2019+). Trade effects calculated as $(e^{\hat{\beta}} - 1) \times 100$ and reported only for statistically significant coefficients. Robust standard errors clustered at the country-pair level in parentheses. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table B.15. PPML Estimation Results: Agricultural Trade

	Mercosur	Mercosur – Chile	Mercosur – Bolivia	Mercosur – Peru	Mercosur – Colombia	Mercosur – Ecuador
<i>Panel A: Static Models</i>						
Trade Effect	0.3498*	0.1193	0.7367*	0.0586	0.5587**	0.4556**
	(0.1865)	(0.1631)	(0.3859)	(0.1164)	(0.2670)	(0.1774)
(%)	41.9%	—	108.9%	—	74.9%	57.8%
Pseudo- R^2	0.9835					
Observations	1,160,395					
<i>Panel B: Dynamic Models</i>						
Anticipation	0.5013**	0.3111*	-0.3565	0.2840*	0.2414	0.3990**
	(0.2188)	(0.1689)	(0.3035)	(0.1602)	(0.3910)	(0.1886)
(%)	65.0%	36.5%	—	32.8%	—	49.0%
Liberalization Plan	0.5468**	0.3003**	0.4644	-0.0150	0.6776***	0.6441***
	(0.2144)	(0.1504)	(0.3975)	(0.1492)	(0.2552)	(0.1965)
(%)	72.8%	35.0%	—	—	96.9%	90.4%
Full Liberalization	0.9378***	0.2626	0.6886	0.3031*	0.5040	0.2927
	(0.2363)	(0.1729)	(0.5057)	(0.1837)	(0.4763)	(0.3010)
(%)	155.4%	—	—	35.4%	—	—
Mature	0.5253**					
	(0.2574)					
(%)	69.1%					
Pseudo- R^2	0.9835					
Observations	1,160,395					

Notes: The dependent variable is the annual bilateral agricultural import value (HS chapters 01–24). All agreements are estimated jointly in a single model with exporter-year, importer-year, and country-pair fixed effects. Anticipation covers the 5 years preceding each agreement's entry into force. The Liberalization Plan covers the period when tariffs were being reduced. Full Liberalization covers the period when tariffs reached their minimum, up to the first decade. Mature covers more than a decade after tariffs reached their minimum. Period dates by agreement — Mercosur: anticipation (1986–1990), liberalization plan (1991–1994), full liberalization (1995–2004), mature (2005+); Chile: anticipation (1991–1995), liberalization plan (1996–2011), full liberalization (2012+); Bolivia: anticipation (1992–1996), liberalization plan (1997–2014), full liberalization (2015+); Peru: anticipation (2000–2004), liberalization plan (2005–2019), full liberalization (2020+); Colombia: anticipation (2000–2004), liberalization plan (2005–2018), full liberalization (2019+); Ecuador: anticipation (2000–2004), liberalization plan (2005–2018), full liberalization (2019+). Trade effects calculated as $(e^{\hat{\beta}} - 1) \times 100$ and reported only for statistically significant coefficients. Robust standard errors clustered at the country-pair level in parentheses. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

B.4 Intensive and Extensive Margins

Table B.16. Share of Least-Traded Goods by Agreement and Phase

	Anticipation	Liberalization	Full Lib.	Mature
Mercosur	10%	32.6%	39.8%	57.1%
Mercosur – Chile	10%	46.0%	57.8%	—
Mercosur – Bolivia	10%	68.9%	66.5%	—
Mercosur – Peru	10%	36.4%	30.9%	—
Mercosur – Colombia	10%	48.9%	62.1%	—
Mercosur – Ecuador	10%	49.4%	54.9%	—

Notes: Each value represents the share of total trade accounted for by the least-traded goods averaged across all bilateral pairs within each agreement. The least-traded set is defined as the goods that accounted for the bottom 10% of trade during the anticipation phase, following [Kehoe and Ruhl \(2013\)](#). The anticipation column is 10% by construction. — denotes that the mature phase is not yet applicable for that agreement.

Table B.17. Share of Least-Traded Goods by Agreement, Pair, and Phase (Part I)

Pair	Anticipation	Liberalization	Full Liberalization	Mature
<i>Mercosur</i>				
ARG ← BRA	10%	64.0%	69.2%	73.2%
ARG ← PRY	10%	72.9%	97.5%	99.7%
ARG ← URY	10%	32.8%	61.5%	86.0%
BRA ← ARG	10%	14.6%	21.1%	24.2%
BRA ← PRY	10%	60.0%	44.9%	94.6%
BRA ← URY	10%	23.9%	41.1%	52.5%
PRY ← ARG	10%	59.6%	51.4%	53.6%
PRY ← BRA	10%	50.8%	71.5%	43.2%
PRY ← URY	10%	51.7%	78.0%	73.7%
URY ← ARG	10%	53.7%	78.1%	77.2%
URY ← BRA	10%	61.7%	69.1%	76.9%
URY ← PRY	10%	67.4%	91.7%	99.8%
<i>Mercosur - Chile</i>				
ARG ← CHL	10%	36.7%	52.4%	—
BRA ← CHL	10%	31.2%	69.5%	—
PRY ← CHL	10%	27.7%	33.0%	—
URY ← CHL	10%	28.9%	43.1%	—
CHL ← ARG	10%	52.3%	49.1%	—
CHL ← BRA	10%	71.3%	85.6%	—
CHL ← PRY	10%	20.8%	25.8%	—
CHL ← URY	10%	49.7%	60.4%	—
<i>Mercosur - Bolivia</i>				
ARG ← BOL	10%	88.1%	97.1%	—
BRA ← BOL	10%	65.3%	75.1%	—
PRY ← BOL	10%	97.6%	97.6%	—
URY ← BOL	10%	93.2%	90.7%	—
BOL ← ARG	10%	52.1%	51.5%	—
BOL ← BRA	10%	74.4%	45.3%	—
BOL ← PRY	10%	95.8%	99.0%	—
BOL ← URY	10%	96.5%	94.2%	—

Notes: Each value represents the average share of total trade accounted for by the least-traded goods across all bilateral pairs within each agreement. The least-traded set is defined as the goods that accounted for the bottom 10% of trade during the anticipation phase, following [Kehoe and Ruhl \(2013\)](#). The anticipation column is 10% by construction. — denotes that the mature phase is not yet applicable for that agreement.

Table B.18. Share of Least-Traded Goods by Agreement, Pair, and Phase (Part II)

Pair	Anticipation	Liberalization	Full Liberalization
<i>Mercosur - Peru</i>			
ARG ← PER	10%	65.1%	81.8%
BRA ← PER	10%	83.0%	86.3%
PRY ← PER	10%	84.9%	100%
URY ← PER	10%	66.8%	87.9%
PER ← ARG	10%	31.4%	22.3%
PER ← BRA	10%	43.2%	50.3%
PER ← PRY	10%	30.7%	14.6%
PER ← URY	10%	25.3%	25.8%
<i>Mercosur - Colombia</i>			
ARG ← COL	10%	58.0%	66.5%
BRA ← COL	10%	37.6%	18.5%
PRY ← COL	10%	63.1%	99.8%
URY ← COL	10%	82.1%	77.8%
COL ← ARG	10%	38.6%	43.7%
COL ← BRA	10%	58.0%	78.8%
COL ← PRY	10%	79.0%	62.9%
COL ← URY	10%	95.2%	89.6%
<i>Mercosur - Ecuador</i>			
ARG ← ECU	10%	60.8%	73.1%
BRA ← ECU	10%	53.6%	51.0%
PRY ← ECU	10%	80.3%	76.9%
URY ← ECU	10%	71.1%	63.1%
ECU ← ARG	10%	32.1%	29.4%
ECU ← BRA	10%	58.3%	71.8%
ECU ← PRY	10%	23.3%	18.5%
ECU ← URY	10%	64.4%	100%

Notes: Each value represents the average share of total trade accounted for by the least-traded goods across all bilateral pairs within each agreement. The least-traded set is defined as the goods that accounted for the bottom 10% of trade during the anticipation phase, following [Kehoe and Ruhl \(2013\)](#). The anticipation column is 10% by construction. — denotes that the mature phase is not yet applicable for that agreement.

Table B.19. Total Trade Decomposition: Fixed Base (Mercosur and Chile)

Pair	Ant → Lib			Ant → Full Lib			Ant → Mature		
	Total	Extensive	Intensive	Total	Extensive	Intensive	Total	Extensive	Intensive
<i>Mercosur</i>									
ARG ← BRA	1.9	0.5 [27.9%]	1.3 [72.1%]	2.0	0.2 [10.0%]	1.8 [90.0%]	2.7	0.0 [1.4%]	2.7 [98.6%]
ARG ← PRY	-0.2	0.7 [-361%]	-0.9 [461%]	1.0	2.2 [223%]	-1.2 [-123%]	4.3	4.8 [111%]	-0.5 [-11.4%]
ARG ← URY	2.3	0.3 [11.2%]	2.0 [88.8%]	2.4	0.3 [13.7%]	2.0 [86.3%]	3.3	0.8 [24.8%]	2.4 [75.2%]
BRA ← ARG	0.0	-0.2 [-392%]	0.2 [492%]	0.7	-0.2 [-22.5%]	0.8 [122%]	1.5	0.0 [0.1%]	1.5 [100%]
BRA ← PRY	-0.4	0.6 [-176%]	-1.0 [276%]	0.9	0.3 [35.6%]	0.6 [64.4%]	2.1	-0.6 [-29.0%]	2.7 [129%]
BRA ← URY	0.0	-0.1 [-277%]	0.1 [377%]	0.6	0.0 [-4.6%]	0.6 [105%]	1.3	0.3 [19.7%]	1.1 [80.3%]
PRY ← ARG	1.8	0.1 [4.6%]	1.7 [95.4%]	2.4	0.2 [8.6%]	2.2 [91.4%]	3.1	0.2 [6.0%]	2.9 [94.0%]
PRY ← BRA	1.0	-0.2 [-17.9%]	1.2 [118%]	2.9	0.8 [29.0%]	2.0 [71.0%]	3.7	0.1 [3.3%]	3.6 [96.7%]
PRY ← URY	0.8	-0.1 [-11.4%]	0.9 [111%]	2.8	1.2 [42.3%]	1.6 [57.7%]	3.0	0.8 [26.5%]	2.2 [73.5%]
URY ← ARG	1.5	0.5 [30.2%]	1.1 [69.8%]	2.0	-0.1 [-6.5%]	2.1 [106%]	3.1	0.3 [9.2%]	2.9 [90.8%]
URY ← BRA	1.2	0.6 [48.5%]	0.6 [51.5%]	1.4	0.4 [28.4%]	1.0 [71.6%]	2.7	0.5 [20.5%]	2.1 [79.5%]
URY ← PRY	-0.9	0.7 [-72.7%]	-1.5 [173%]	-0.7	0.5 [-69.9%]	-1.2 [170%]	2.8	0.5 [17.2%]	2.3 [82.8%]
<i>Mercosur – Chile</i>									
ARG ← CHL	0.1	0.2 [229%]	-0.1 [-129%]	0.6	0.1 [21.2%]	0.4 [78.8%]	—	—	—
BRA ← CHL	0.7	0.2 [31.6%]	0.5 [68.4%]	2.0	0.9 [45.3%]	1.1 [54.7%]	—	—	—
PRY ← CHL	0.6	0.2 [34.8%]	0.4 [65.2%]	1.5	0.1 [4.1%]	1.5 [95.9%]	—	—	—
URY ← CHL	0.6	0.0 [-2.4%]	0.6 [102%]	1.4	0.0 [-3.3%]	1.4 [103%]	—	—	—
CHL ← ARG	1.2	0.1 [10.3%]	1.1 [89.7%]	1.9	0.0 [2.3%]	1.8 [97.7%]	—	—	—
CHL ← BRA	1.4	0.4 [26.2%]	1.0 [73.8%]	2.9	0.5 [18.2%]	2.3 [81.8%]	—	—	—
CHL ← PRY	1.8	0.2 [12.3%]	1.6 [87.7%]	3.1	0.2 [7.8%]	2.9 [92.2%]	—	—	—
CHL ← URY	1.1	0.6 [49.5%]	0.6 [50.5%]	1.8	0.7 [37.9%]	1.1 [62.1%]	—	—	—

Notes: Log differences with percentage contributions in brackets. All comparisons are relative to the anticipation phase. — denotes that the mature phase does not apply to that agreement.

Table B.20. Total Trade Decomposition: Fixed Base (Bolivia and Peru)

Pair	Ant → Lib			Ant → Full Lib		
	Total	Extensive	Intensive	Total	Extensive	Intensive
<i>Mercosur – Bolivia</i>						
ARG ← BOL	2.1	1.4 [66.8%]	0.7 [33.2%]	3.1	2.0 [65.8%]	1.1 [34.2%]
BRA ← BOL	0.9	0.8 [99.1%]	0.0 [1.1%]	0.5	-0.7 [-140%]	1.2 [240%]
PRY ← BOL	3.5	2.4 [68.9%]	1.1 [31.1%]	3.3	2.2 [66.7%]	1.1 [33.3%]
URY ← BOL	3.4	2.1 [62.1%]	1.3 [37.9%]	3.8	1.4 [36.0%]	2.4 [64.0%]
BOL ← ARG	1.9	0.3 [16.9%]	1.5 [83.1%]	2.2	-0.2 [-8.4%]	2.4 [108%]
BOL ← BRA	2.3	0.2 [6.9%]	2.1 [93.1%]	3.3	-0.2 [-5.5%]	3.4 [106%]
BOL ← PRY	4.0	3.0 [74.4%]	1.0 [25.6%]	4.5	2.5 [55.2%]	2.0 [44.8%]
BOL ← URY	2.7	3.2 [119%]	-0.5 [-19.1%]	3.2	2.3 [69.7%]	1.0 [30.3%]
<i>Mercosur – Peru</i>						
ARG ← PER	1.6	0.6 [39.0%]	1.0 [61.0%]	2.6	-0.4 [-14.4%]	2.9 [114%]
BRA ← PER	1.9	0.7 [38.2%]	1.1 [61.8%]	2.0	0.4 [22.6%]	1.5 [77.4%]
PRY ← PER	1.7	1.9 [111%]	-0.2 [-11.1%]	—	—	—
URY ← PER	1.5	0.6 [42.6%]	0.9 [57.4%]	2.1	1.2 [57.8%]	0.9 [42.2%]
PER ← ARG	1.1	0.2 [20.5%]	0.9 [79.5%]	1.7	0.0 [-2.7%]	1.7 [103%]
PER ← BRA	1.8	0.3 [14.3%]	1.6 [85.7%]	2.6	0.2 [6.6%]	2.4 [93.4%]
PER ← PRY	1.0	0.3 [28.2%]	0.7 [71.8%]	1.0	0.1 [12.2%]	0.9 [87.9%]
PER ← URY	2.2	0.3 [11.3%]	2.0 [88.7%]	1.8	0.1 [6.4%]	1.7 [93.6%]

Notes: Log differences with percentage contributions in brackets. All comparisons are relative to the anticipation phase. — denotes that the mature phase does not apply to that agreement.

Table B.21. Total Trade Decomposition: Fixed Base (Colombia and Ecuador)

Pair	Ant → Lib			Ant → Full Lib		
	Total	Extensive	Intensive	Total	Extensive	Intensive
<i>Mercosur – Colombia</i>						
ARG ← COL	1.8	0.5 [25.7%]	1.4 [74.3%]	2.5	0.2 [6.4%]	2.4 [93.6%]
BRA ← COL	1.7	0.2 [10.7%]	1.5 [89.3%]	2.5	-0.3 [-11.2%]	2.7 [111%]
PRY ← COL	3.5	1.0 [28.7%]	2.5 [71.3%]	3.6	5.8 [162%]	-2.2 [-62.2%]
URY ← COL	2.6	1.6 [62.9%]	0.9 [37.1%]	2.9	1.4 [47.8%]	1.5 [52.3%]
COL ← ARG	2.0	0.4 [18.9%]	1.6 [81.1%]	1.5	0.1 [6.9%]	1.4 [93.1%]
COL ← BRA	1.6	0.6 [38.5%]	1.0 [61.6%]	2.4	0.9 [39.4%]	1.4 [60.6%]
COL ← PRY	0.5	0.8 [171%]	-0.4 [-71.1%]	-0.4	-1.2 [328%]	0.8 [-229%]
COL ← URY	2.1	1.4 [69.1%]	0.6 [30.9%]	1.7	0.5 [31.5%]	1.2 [68.5%]
<i>Mercosur – Ecuador</i>						
ARG ← ECU	2.2	0.8 [35.1%]	1.4 [64.9%]	2.1	-0.3 [-13.9%]	2.4 [114%]
BRA ← ECU	2.1	0.5 [25.7%]	1.5 [74.3%]	1.6	0.2 [13.9%]	1.4 [86.1%]
PRY ← ECU	2.6	0.9 [35.9%]	1.6 [64.1%]	3.0	1.1 [36.0%]	1.9 [64.0%]
URY ← ECU	2.9	1.1 [37.9%]	1.8 [62.1%]	3.1	0.4 [14.1%]	2.6 [85.9%]
ECU ← ARG	1.2	0.2 [17.0%]	1.0 [83.0%]	1.6	0.2 [11.1%]	1.4 [88.9%]
ECU ← BRA	2.1	0.5 [23.5%]	1.6 [76.5%]	2.9	0.6 [21.9%]	2.2 [78.1%]
ECU ← PRY	0.9	0.2 [23.2%]	0.7 [76.9%]	-0.0	-1.2 [-611%]	1.2 [711%]
ECU ← URY	1.6	0.6 [40.8%]	0.9 [59.1%]	0.9	-5.6 [-611%]	6.5 [711%]

Notes: Log differences with percentage contributions in brackets. All comparisons are relative to the anticipation phase. — denotes that the mature phase does not apply to that agreement.

Table B.22. Total Trade Decomposition: Moving Base (Mercosur and Chile)

Pair	Ant → Lib			Lib → Full Lib			Full Lib → Mature		
	Total	Extensive	Intensive	Total	Extensive	Intensive	Total	Extensive	Intensive
<i>Mercosur</i>									
ARG ← BRA	1.9	0.5 [27.9%]	1.3 [72.1%]	0.1	-0.1 [-103%]	0.3 [204%]	0.7	0.3 [42.9%]	0.4 [57.1%]
ARG ← PRY	-0.2	0.7 [-361%]	-0.9 [461%]	1.2	1.7 [140%]	-0.5 [-39.6%]	3.3	1.5 [46.8%]	1.8 [53.2%]
ARG ← URY	2.3	0.3 [11.2%]	2.0 [88.8%]	0.0	-0.3 [-604%]	0.3 [702%]	0.9	0.7 [76.0%]	0.2 [24.0%]
BRA ← ARG	0.0	-0.2 [-392%]	0.2 [492%]	0.6	0.4 [71.5%]	0.2 [28.5%]	0.8	0.4 [49.2%]	0.4 [50.8%]
BRA ← PRY	-0.4	0.6 [-176%]	-1.0 [276%]	1.3	0.2 [13.2%]	1.1 [86.8%]	1.2	0.2 [20.7%]	0.9 [79.3%]
BRA ← URY	0.0	-0.1 [-277%]	0.1 [377%]	0.6	0.1 [9.5%]	0.5 [90.5%]	0.7	0.0 [5.0%]	0.7 [94.8%]
PRY ← ARG	1.8	0.1 [4.6%]	1.7 [95.4%]	0.6	0.1 [15.6%]	0.5 [84.5%]	0.8	0.0 [4.0%]	0.7 [95.8%]
PRY ← BRA	1.0	-0.2 [-17.9%]	1.2 [118%]	1.9	0.1 [5.0%]	1.8 [95.0%]	0.9	0.0 [4.3%]	0.8 [95.7%]
PRY ← URY	0.8	-0.1 [-11.4%]	0.9 [111%]	2.0	0.1 [7.3%]	1.8 [92.7%]	0.2	0.3 [142%]	-0.1 [-42.3%]
URY ← ARG	1.5	0.5 [30.2%]	1.1 [69.8%]	0.4	-0.3 [-75.8%]	0.8 [176%]	1.2	0.2 [13.4%]	1.0 [86.7%]
URY ← BRA	1.2	0.6 [48.5%]	0.6 [51.5%]	0.2	-0.2 [-108%]	0.3 [207%]	1.3	0.1 [8.1%]	1.2 [91.9%]
URY ← PRY	-0.9	0.7 [-72.7%]	-1.5 [173%]	0.2	0.2 [107%]	0.0 [-6.9%]	3.5	0.7 [19.6%]	2.8 [80.4%]
<i>Mercosur – Chile</i>									
ARG ← CHL	0.1	0.2 [229%]	-0.1 [-129%]	0.5	-0.1 [-21.7%]	0.6 [122%]	—	—	—
BRA ← CHL	0.7	0.2 [31.6%]	0.5 [68.4%]	1.3	0.3 [24.7%]	1.0 [75.3%]	—	—	—
PRY ← CHL	0.6	0.2 [34.8%]	0.4 [65.2%]	1.0	-0.1 [-7.0%]	1.0 [107%]	—	—	—
URY ← CHL	0.6	0.0 [-2.4%]	0.6 [102%]	0.8	0.0 [-0.7%]	0.8 [101%]	—	—	—
CHL ← ARG	1.2	0.1 [10.3%]	1.1 [89.7%]	0.7	0.0 [-1.1%]	0.7 [101%]	—	—	—
CHL ← BRA	1.4	0.4 [26.2%]	1.0 [73.8%]	1.5	0.0 [2.5%]	1.5 [97.4%]	—	—	—
CHL ← PRY	1.8	0.2 [12.3%]	1.6 [87.7%]	1.3	0.0 [-0.8%]	1.3 [101%]	—	—	—
CHL ← URY	1.1	0.6 [49.5%]	0.6 [50.5%]	0.7	0.1 [21.4%]	0.5 [78.6%]	—	—	—

Notes: Log differences with percentage contributions in brackets. All comparisons are relative to the anticipation phase. — denotes that the mature phase does not apply to that agreement.

Table B.23. Total Trade Decomposition: Moving Base (Bolivia and Peru)

Pair	Ant → Lib			Lib → Full Lib		
	Total	Extensive	Intensive	Total	Extensive	Intensive
<i>Mercosur – Bolivia</i>						
ARG ← BOL	2.1	1.4 [66.8%]	0.7 [33.2%]	1.0	0.7 [67.8%]	0.3 [32.2%]
BRA ← BOL	0.9	0.8 [99.1%]	0.0 [1.1%]	-0.3	0.2 [-47.5%]	-0.5 [148%]
PRY ← BOL	3.5	2.4 [68.9%]	1.1 [31.1%]	-0.2	0.3 [-111%]	-0.5 [212%]
URY ← BOL	3.4	2.1 [62.1%]	1.3 [37.9%]	0.4	-0.3 [-74.2%]	0.6 [174%]
BOL ← ARG	1.9	0.3 [16.9%]	1.5 [83.1%]	0.3	-0.1 [-45.0%]	0.5 [145%]
BOL ← BRA	2.3	0.2 [6.9%]	2.1 [93.1%]	1.0	-0.5 [-50.5%]	1.5 [150%]
BOL ← PRY	4.0	3.0 [74.4%]	1.0 [25.6%]	0.5	-0.5 [-95.1%]	1.0 [195%]
BOL ← URY	2.7	3.2 [119%]	-0.5 [-19.1%]	0.5	-1.3 [-254%]	1.8 [355%]
<i>Mercosur – Peru</i>						
ARG ← PER	1.6	0.6 [39.0%]	1.0 [61.0%]	0.9	-0.3 [-31.9%]	1.2 [132%]
BRA ← PER	1.9	0.7 [38.2%]	1.1 [61.8%]	0.1	-0.2 [-162%]	0.3 [262%]
PRY ← PER	1.7	1.9 [111%]	-0.2 [-11.1%]	-0.4	-0.7 [180%]	0.3 [-80.5%]
URY ← PER	1.5	0.6 [42.6%]	0.9 [57.4%]	0.6	0.0 [4.2%]	0.5 [95.8%]
PER ← ARG	1.1	0.2 [20.5%]	0.9 [79.5%]	0.6	-0.2 [-29.0%]	0.8 [129%]
PER ← BRA	1.8	0.3 [14.3%]	1.6 [85.7%]	0.8	0.0 [0.4%]	0.8 [99.6%]
PER ← PRY	1.0	0.3 [28.2%]	0.7 [71.8%]	0.0	-0.1 [323%]	0.1 [-223%]
PER ← URY	2.2	0.3 [11.3%]	2.0 [88.7%]	-0.4	-0.1 [22.0%]	-0.3 [78.0%]

Notes: Log differences with percentage contributions in brackets. All comparisons are relative to the anticipation phase. — denotes that the mature phase does not apply to that agreement.

Table B.24. Total Trade Decomposition: Moving Base (Colombia and Ecuador)

Pair	Ant → Lib			Lib → Full Lib		
	Total	Extensive	Intensive	Total	Extensive	Intensive
<i>Mercosur – Colombia</i>						
ARG ← COL	1.8	0.5 [25.7%]	1.4 [74.3%]	0.7	-0.2 [-21.1%]	0.9 [121%]
BRA ← COL	1.7	0.2 [10.7%]	1.5 [89.3%]	0.7	-0.1 [-11.1%]	0.8 [111%]
PRY ← COL	3.5	1.0 [28.7%]	2.5 [71.3%]	0.1	0.1 [90.1%]	0.0 [9.9%]
URY ← COL	2.6	1.6 [62.9%]	0.9 [37.1%]	0.4	-0.2 [-52.6%]	0.6 [153%]
COL ← ARG	2.0	0.4 [18.9%]	1.6 [81.1%]	-0.5	-0.3 [70.6%]	-0.1 [29.4%]
COL ← BRA	1.6	0.6 [38.5%]	1.0 [61.6%]	0.8	-0.1 [-8.7%]	0.9 [109%]
COL ← PRY	0.5	0.8 [171%]	-0.4 [-71.1%]	-0.8	-1.5 [178%]	0.7 [-78.2%]
COL ← URY	2.1	1.4 [69.1%]	0.6 [30.9%]	-0.4	-0.1 [38.7%]	-0.2 [61.3%]
<i>Mercosur – Ecuador</i>						
ARG ← ECU	2.2	0.8 [35.1%]	1.4 [64.9%]	-0.0	-0.3 [626%]	0.2 [-526%]
BRA ← ECU	2.1	0.5 [25.7%]	1.5 [74.3%]	-0.4	-0.1 [23.7%]	-0.3 [76.3%]
PRY ← ECU	2.6	0.9 [35.9%]	1.6 [64.1%]	0.4	-0.1 [-34.1%]	0.6 [134%]
URY ← ECU	2.9	1.1 [37.9%]	1.8 [62.1%]	0.2	-0.2 [-85.1%]	0.4 [185%]
ECU ← ARG	1.2	0.2 [17.0%]	1.0 [83.0%]	0.3	-0.1 [-35.1%]	0.5 [135%]
ECU ← BRA	2.1	0.5 [23.5%]	1.6 [76.5%]	0.8	0.0 [-5.6%]	0.8 [106%]
ECU ← PRY	0.9	0.2 [23.2%]	0.7 [76.9%]	-0.9	-0.3 [35.0%]	-0.6 [65.1%]
ECU ← URY	1.6	0.6 [40.8%]	0.9 [59.1%]	-0.7	-1.8 [270%]	1.1 [-171%]

Notes: Log differences with percentage contributions in brackets. All comparisons are relative to the anticipation phase. — denotes that the mature phase does not apply to that agreement.

Chapter 4

Conclusion

This dissertation examines trade agreements as a policy tool and addresses two complementary questions about their effectiveness. The first is whether the design of agreements matters, specifically whether the depth and modernization of provisions negotiated shape their impact on trade. The second is whether regionalism works, examining the success of Mercosur and its first wave of trade agreements in promoting agricultural trade and export diversification in South America. Together, the two papers move beyond the question of whether trade agreements increase trade to ask under what conditions they do so and what limits their effectiveness.

The two papers jointly suggest that trade agreements are a more conditional policy tool than often assumed. The first paper shows that design matters: deeper agreements, those that incorporate a broader and more modern set of provisions, generate substantially larger trade effects than shallow ones. Countries that fail to keep pace with the modernization of provisions not only fall behind in content but also limit the potential impact of the agreements on trade. The second paper shows that even when agreements are in place, structural factors shape how much they can deliver. Export similarity among Mercosur members and their partners limits the scope for trade creation, and the effects of most agreements were modest and short-lived. Together, the papers show that the effectiveness of trade agreements depends on both what countries negotiate and the structural conditions under which those agreements operate.

The heterogeneity of trade policy across Latin America emerges as a central concern from both papers. The regions that are keeping pace with the modernization of trade agreements have adopted fundamentally different negotiation strategies from those falling behind, and the consequences of this divergence are visible in the results. Mercosur countries are among those lagging in agreement depth across the sample, and this is reflected in the Mercosur paper: only the Mercosur agreement itself produced robust and persistent trade effects, while the remaining agreements showed modest or short-lived results. This pattern is consistent with the first paper's finding that shallow agreements limit the effectiveness of trade policy. For the countries falling behind, the implications are clear: the current approach to designing and negotiating trade agreements is not delivering the results that deeper integration could generate, and a reassessment of trade policy priorities is needed.

This dissertation opens several avenues for future research. The patterns documented here, both the heterogeneity in agreement design and the structural limits on trade creation, raise questions that go beyond what either paper could address individually. Understanding why some countries in Latin America have been able to modernize their agreements while others have not, and whether deeper agreements would have generated stronger effects in the Mercosur context, are questions that future work could explore. More broadly, the two papers together suggest that the relationship between trade policy design and trade outcomes is more complex than the literature has typically assumed, and that accounting for both dimensions simultaneously could yield important insights for research on regional integration in developing economies.