No 460 – October 2025

La Lettre du CEPII

# Has the Deepening of Trade Agreements in Developing Countries Benefited the Exports of Firms?

Matteo Neri-Lainé and Gianluca Orefice*

Over the past two decades, regional trade agreements have increased not only in number but also in scope and in the number of provisions they contain. Their coverage is no longer limited to reducing customs barriers; instead, it extends to a wide range of areas such as competition, investment, and labor regulation. Many developing countries have signed these agreements to improve the integration of their firms into international markets and thereby stimulate exports. While this objective has been achieved for large companies, small firms, faced with increased competition, have experienced a decline in exports. As a result, sectors dominated by large companies have benefited from these deeper trade agreements, while others have been adversely affected.

Many developing countries have increasingly entered into deep trade agreements (DTAs) during the past two decades. Unlike first-generation agreements, which were limited to tariff reductions, DTAs concluded since the 2000s have aimed to foster much broader and deeper economic integration. They cover a wide range of areas, from taxation and labor regulation to competition, investment, and intellectual property (Mattoo *et al.*, 2020).[1] These agreements seek to strengthen the integration of signatory countries into global trade and, in particular, to enhance the export performance of their firms. While the impact of DTAs on aggregate trade flows is well documented (Mattoo *et al.*, 2022), their effect on firms' export performance at the microeconomic level remains less clear.[2] The depth of DTAs, measured by the number of provisions they contain, may have heterogeneous effects on firms' exports depending on firm size. Large firms, which are better equipped to take advantage of market openings, may benefit from such agreements, whereas smaller firms may face intensified competition in destination markets, potentially leading to the exit of the least productive ones.[3] What, then, is the empirical reality?

## The deepening of trade agreements in developing countriess

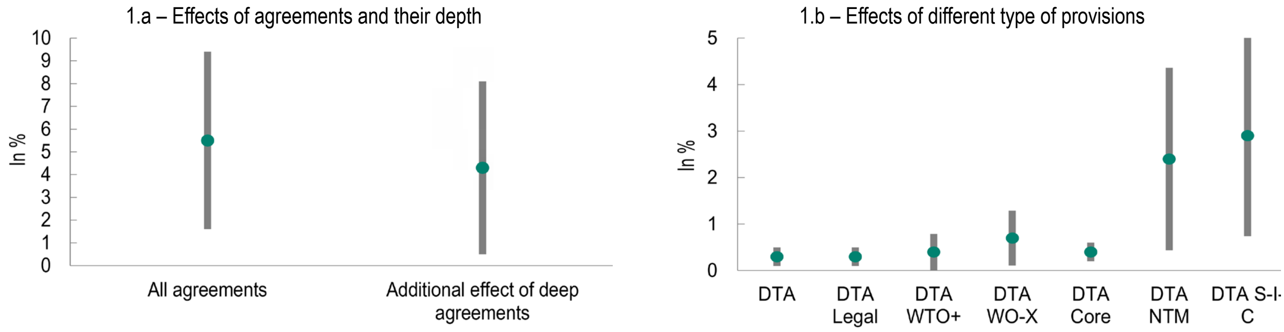
The nature of preferential trade agreements has evolved considerably over the past few decades. These deep agreements are no longer limited to reducing trade costs but now include a broad set of provisions that affect even the functioning of national economies. The World Bank's *Deep Trade Agreements* database provides detailed information on the content and depth of approximately 300 agreements and makes it possible to better understand the deepening of trade agreements.[4] Almost all DTAs include tariff reductions, 85% contain customs-related provisions, and 78% include fiscal provisions related to exports. Moreover, provisions that were previously less common such as the free movement of capital (57% of agreements), competition policy (38%), regulation of migration flows (18%), labor market harmonization (15%), and intellectual property protection (10%) – are now increasingly within the scope of DTAs. This expansion reflects both the growing complexity of the issues addressed and

* Matteo Neri-Lainé is a postdoctoral researcher at the Paris School of Economics. Gianluca Orefice is a scientific advisor at CEPII and a professor at Paris Dauphine University, PSL.

1. Mattoo, A., Rocha, N. and Ruta, M. (2020). Handbook of Deep Trade Agreements. *World Bank Publications.*
2. Mattoo, A., Mulabdic, A. and Ruta, M. (2022). Trade Creation and Trade Diversion in Deep Agreements. *Canadian Journal of Economics*, 55: 1598-1637.
3. Neri-Lainé, M., Orefice, G. and Ruta, M. (2025). Deep Trade Agreements and Heterogeneous Firms' Exports. *CEPII Working Paper 2025*-11.
4. Hofmann, C., Osnago, A. and Ruta, M. (2017). Horizontal Depth: A New Database on the Content of Preferential Trade Agreements. *Policy Research Working Paper* 7981, World Bank Group, Washington, DC.

Figure 1 – Positive aggregate effects magnified by the depth of agreements

Effects of trade agreements on the exports of firms




Notes: The circles indicate the effect of trade agreements (Figure 1.a) and provisions (Figure 1.b) on exports. "Deep agreements" are trade agreements with a number of provisions above the median. The vertical lines represent 90% confidence intervals. When these lines do not cross the x-axis at zero, the effect is statistically significant.

Reading notes: The effect of deep agreements (Figure 1.a) must be read as the sum of the two coefficients: +6% on average for all agreements, +5% additional for deep agreements, for a total of +11%. The effect of shallow agreements corresponds to the coefficient common to all agreements.

Sources: Authors' calculations based on World Bank, Deep Trade Agreement and Exporter Dynamics databases.

the ambition of signatory countries to strengthen their international integration. Within this process of deepening trade agreements, the European Union plays a central role, both through the integration of its newest member states in 2004 and 2007 and through its trade partnership strategy with developing countries. In recent years, developing countries have concluded their deepest agreements with the EU. This European-driven dynamic in DTAs is part of a broader global trend involving countries in Africa, South America, and Asia. However, participation by developing countries remains highly uneven; only 15 countries account for 87% of the deepening of trade agreements observed between 2000 and 2020 – namely South Africa, Chile, Colombia, Croatia, Ecuador, Georgia, Guatemala, Mauritius, Madagascar, Malawi, Nicaragua, Peru, Serbia, Slovenia, and Tanzania.

If the deepening of trade agreements is largely driven by a limited number of developing countries, this unequal distribution is also reflected in their content. On average, a DTA contains 15 provisions, with a maximum of 48. When considering only legally enforceable provisions, the average falls to 8, with a maximum of 43. These figures highlight the considerable diversity in content and the heterogeneity of approaches adopted by developing countries. This diversity is a key element in understanding the differentiated impact of agreements on firms; it is not merely the signing of a treaty but rather the effective depth of its commitments that determines the observed effects on exports.

## DTAs favor exports

The main challenge in assessing the effect of DTAs on firms' export performance lies in isolating the causal impact of DTAs from other factors related to firm characteristics, destination markets, bilateral relationships, or changes in customs duties. In other words, it requires distinguishing the impact of increased trade commitments from that attributable to other economic or cyclical factors. To address this challenge, the effect of DTAs is estimated by comparing the evolution of each firm's exports to countries with which the depth of trade agreements has increased—either through the signing of a new DTA or the deepening of an existing agreement (701 country pairs identified from the combined World Bank *Deep Trade Agreements and Exporter Dynamics* databases) – with exports to countries where the depth of agreements has remained stable (1,004 country pairs).[5] This approach also makes it possible to estimate the effect of adding new provisions beyond simple tariff reductions, whether these provisions relate to competition, investment, or non-tariff measures (see Box).

### Box – Depth Indicators of Agreements

The depth of agreements is assessed using seven indicators:

1. The total number of provisions included (DTA);
2. The number of legally binding provisions (DTA Legal);
3. The number of provisions covered by the WTO mandate (DTA WTO+);
4. The number of provisions that go beyond the WTO scope (DTA WTO-X);
5. A core grouping WTO provisions and those related to competition (DTA Core);
6. Provisions on non-tariff measures (DTA NTM);
7. Provisions on services, investment, and competition (DTA S-I-C).

While all trade agreements stimulate exports – including the simplest ones, which are limited to tariff-reduction provisions and lead to an increase of nearly 6% – the deepening of agreements (here proxied by agreements with a number of provisions above the median) significantly amplifies this effect, generating an additional gain of almost 5%. As a result, DTAs increase exports by approximately 11% (Figure 1.a). Figure 1.b presents the effects of each of the seven indicators of depth. As expected, greater agreement depth significantly increases exports. In particular, the inclusion of an additional legally enforceable provision (legal DTA)

5. This database tracks the export flows of firms from 31 developing countries between 2000 and 2020.

raises exports by about 0.3% (Figure 1.b). Thus, moving from a shallow agreement, in which only customs duties are negotiated (two provisions), to an agreement among the deepest 25% (at least 14 provisions) leads to a 3.6% increase in exports (12 × 0.3%). However, not all types of provisions stimulate trade in the same way. Non-tariff measures have the strongest impact, increasing exports by around 2.5% for provisions related to technical barriers to trade and sanitary and phytosanitary measures (DTA NTM), and by up to 3% for provisions covering services, investment, and competition (DTA S-I-C).

## What type of firms benefits most from DTAs?

While the deepening of trade agreements undoubtedly increases aggregate trade and, consequently, generates welfare gains, its effects are likely to be unevenly distributed across firms. International trade theory suggests that large firms are more likely to expand their exports, while smaller firms—facing intensified competition—may experience export declines.[6] This pattern is confirmed in Figure 2: Firms among the top 10% in terms of exports (prior to the deepening of the agreement) see their exports increase by 0.6% after deepening, whereas the exports of other firms decline by 0.5% (Figure 2). Export gains are therefore concentrated among firms that were already the largest exporters before the deepening of trade agreements.

These gains, concentrated in the hands of a few firms, may have important implications for sectors with different levels of concentration. Sectors composed of highly productive firms that are already well integrated into international markets are likely to benefit more from deep agreements, while sectors that are more fragmented and dominated by smaller firms may suffer from increased competition.

This is indeed what the data show: The depth of DTAs positively affects most sectors, with particularly strong effects in those dominated by large firms (such as transport and plant products). Conversely, sectors where many small, low-productivity firms operate (such as animal products and leather and fur) experience negative effects on average, due to the intensified competition associated with deepening. Thus, DTAs tend to strengthen sectors characterized by a wide distribution of firm productivity, where large firms can take advantage of market openings, while they harm exports in sectors dominated by small and more vulnerable firms. The depth of agreements therefore not only differentiates impacts across firms of different sizes but also reshapes sectoral hierarchies. Industries populated by productive firms gain from DTAs, whereas those dominated by low-productivity small firms are harmed by the deepening of trade agreements.

Figure 2 – Large firms benefit from DTAs

Effect of DTAs (number of legally enforceable provisions of agreements) on firms' exports by size


Note: The circles represent the effect of DTAs on exports. Large companies are those in the last decile in terms of exports prior to the deepening of agreements. The vertical lines represent 95% confidence intervals. When these lines do not cross the x-axis at zero, the effect is statistically significant.

Reading notes: The effect of deepening on large companies must be read as the sum of the two coefficients: -0.5% for all companies, +1.1% additional for large companies, for a total of +0.6%. The effect on small companies corresponds to that common to all companies.

Sources: Authors' calculations based on World Bank, Deep Trade Agreement and Exporter Dynamics databases.

## Immediate adjustments and stable increases in exports

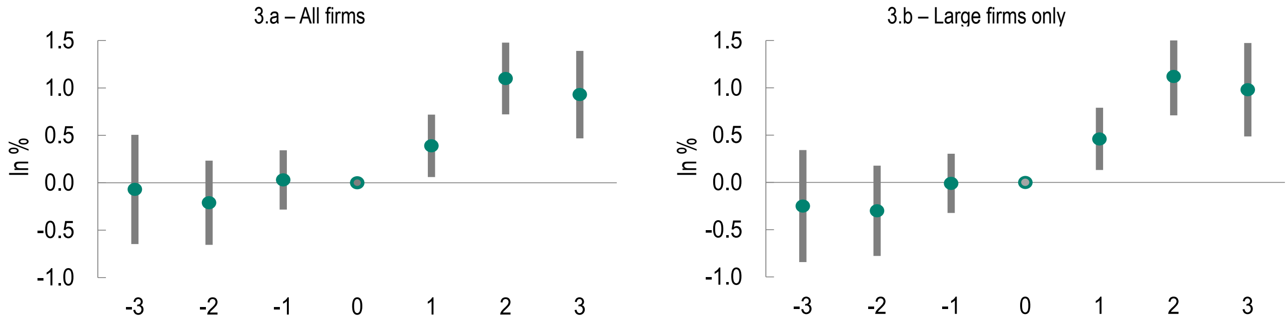
The redistribution of market shares toward larger and more productive firms, generated by the deepening of DTAs, is well documented in the international trade literature. This phenomenon is known as the pro-competitive effect, which implies an increase in average firm productivity and a reallocation of both market share and resources – capital, labor, and innovation capacity – toward the most efficient firms.[7] Over time, this reallocation raises the average productivity of exporters in the country, contributes to lower export prices, and leads to higher wages, as workers benefit from the productivity gains of firms that benefit from the deepening of agreements.

Although these reallocations result in overall welfare gains, they also entail adjustment costs. Indeed, they take time, and in the short term the transition from a shallow to a deep agreement is accompanied by a 5% reduction in the number of firms active in export markets.[8] This result illustrates the concrete cost of the selection process: while overall productivity increases, the number of firms that survive in export markets declines, raising social concerns related to firm exit. To better understand how these effects unfold over time, it is important to compare, within the same country and before and after the deepening of trade agreements, the export performance of two groups of exporters: those that export to destinations where the agreement has been deepened (so-called "treated" firms) and those that export to destinations where the agreement has not changed ( "untreated" firms). In other words, within the same exporting country, some firms are exposed

6. Atkeson, A. and Burstein, A. (2008). Pricing-to-Market, Trade Costs, and International Relative Prices. *American Economic Review*, 98(5), 1998–2031.
7. Mrázová, M. and Neary, J. P. (2020). IO for exports (s). *International Journal of Industrial Organization*, 70, 102561.
8. Neri-Lainé, M., Orefice, G. and Ruta, M. (2025). Deep Trade Agreements and Heterogeneous Firms' Exports. *CEPII Working Paper 2025-11*, section 5.2.

Figure 3 – Large firms benefit from the deepening of agreements

Difference in exports between treated and untreated firms, before and after the deepening of an agreement, by firm size




Notes: The circles represent the effect of DTAs on exports. Large companies are those in the last quartile in terms of exports prior the deepening of agreements. Each period indicates the year from the date of deepening (t = 0). The vertical lines represent 90% confidence intervals. When these lines do not cross the x-axis at zero, the effect is statistically significant.

Sources: Authors' calculations based on World Bank, Deep Trade Agreement and Exporter Dynamics databases.

to increased market access (i.e. a deeper agreement) with certain partners, while others continue to operate in a stable international trade environment. Comparing these trajectories makes it possible to neutralize general trends related to the economic climate or national characteristics, and to isolate the specific impact of the deepening of trade agreements. Specifically, if exports increase more toward countries that have signed deeper agreements than toward destinations where agreements remain stable, the observed difference can be attributed to the increase in trade commitments. This analysis shows that, following the deepening of an agreement, treated firms increase their exports more rapidly than untreated firms. Specifically, treated firms experience a 1.1% increase in exports per additional provision two years after the deepening. This corresponds to an export increase of approximately 13% in the case of a shift from a shallow agreement to a deep agreement – i.e. with at least 14 provisions, 1.1% × 12 – (Figure 3.a). It should be noted that, before the deepening of the agreement, there was no difference in export dynamics between treated and untreated firms, confirming that the observed divergence can be attributed to the modification (or signing) of the agreement. However, since the depth of agreements does not benefit all firms equally, it is informative to focus on large firms. When the same analysis is repeated for firms whose initial total exports fall within the top quartile, we find similar magnitudes (Figure 3.b).[9] This similarity suggests that large firms capture the bulk of the gains, and that these gains are persistent over time. The deepening of trade agreements has transformed the way in which developing countries integrate into the international trading system. Beyond reducing customs duties, DTAs now cover areas that are essential to the functioning of national economies and have direct implications for firms.

The results presented above highlight a dual aspect of DTAs. They stimulate exports and enhance overall welfare, but they also trigger a reallocation of market shares that benefits large firms while harming smaller ones. Sectors dominated by productive firms gain from DTAs, whereas sectors that rely on small, low-productivity firms suffer from intensified competition.

These findings underscore that the benefits of trade integration extend beyond aggregate welfare gains. They also emphasize the importance of adjustment costs, which can lead to firm exit and increased inequalities across firms and sectors. For developing countries, the challenge is therefore not only to negotiate more ambitious agreements, but also to implement complementary policies that support the most vulnerable actors and maximize long-term benefits. In particular, these results highlight the relevance of unemployment benefits and job-search assistance to facilitate the transition of workers toward more productive firms.

9. The same exercise was replicated on a sub-sample of small firms. The results show a weak (or even non-existent) negative effect of DTAs on their exports. However, it should be noted that this analysis is difficult to conduct for small businesses due to their limited presence in destination markets (it is rare for a small firm to export to the same destination for six consecutive years).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Centre d'études prospectives
et d'informations internationales
20, avenue de Ségur
TSA 10726
75334 Paris Cedex 07

contact@cepii.fr
www.cepii.fr – @CEPII_Paris
Press contact: presse@cepii.fr


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ISSN 2493-3813

July 2026

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