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ORIGINAL ARTICLE

Competitiveness vs. Compliance: How Trade Provisions Affect Micro, Small, and Medium-Sized Enterprises in Global Value Chains?

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Abstract
Theory supports two opposing trajectories regarding the effects of trade provisions on micro, small, and medium-sized enterprises (MSMEs) and on their integration into the global value chain (GVC). On the one hand, provisions such as increased competitiveness, networking support, and cooperation provisions enhance firms' GVC participation. On the other hand, provisions that establish common standards and regulations that increase compliance costs can be burdensome for small enterprises. This paper examines the effect of such MSME-related provisions on participation in GVCs. By merging the World Trade Organization trade agreements and the World Bank Enterprise Surveys datasets, we contribute to the literature in two ways. First, we distinguish between trade-related and non-trade-related provisions. Second, we scrutinize the heterogeneity across sectors, income levels, and regions. Our results show a particularly positive effect of MSME-related provisions, with a larger effect of non-trade-related provisions compared with trade-related ones. In addition, this effect is particularly relevant to low-technology-intensive sectors, low-income countries, and Asian economies. Our results remain consistent when using alternative variables, sample characteristics, and estimation methods.

Keywords: SMEs; trade agreements; WTO; GVC; provisions

JEL classification: F10; F14; L11

1. Introduction

Micro, small, and medium-sized enterprises (MSMEs), representing a substantial share of economic activity, often face structural challenges in international markets. According to the World Bank, MSMEs constitute 90% of total businesses and employ over 50% of the workforce (Megersa, 2020; OECD, 2019; Arched et al., 2014), yet their participation in global value chains (GVCs) is relatively small. In parallel with the constantly increasing number of regional trade agreements (RTAs), the provisions related to MSMEs are rising across different chapters. Of the 360 RTAs in 2023, 201 include MSME-related provisions. In this paper, we study the moderating role of MSME-related provisions on SMEs' GVC participation and explore the effects of different provisions (trade-related versus non-trade-related) across sectors, income groups, and regions.

The reasons for MSMEs' vulnerable position in foreign markets are manifold. First, according to the new trade theory, economies of scale advantages are enjoyed solely by large enterprises (Krugman,

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1980). In addition, while MSMEs cannot endure high trade costs (Sui and Baum, 2014), large enterprises often engage in dumping against smaller counterparts to monopolize the market (Viner, 1922). Hence, according to selection theory, MSMEs are prone to exit the market following trade liberalization (Hiller et al., 2017). Given MSMEs' structural disadvantages, RTAs are expected to incentivize and support their participation in GVCs, especially through MSME-related provisions that aim to increase the competitiveness of small and vulnerable firms. MSME-related provisions refer to clauses in RTAs that explicitly aim to support the competitiveness of MSMEs and reduce barriers that disproportionately affect them. Among other measures, these include a wide range of policy areas that facilitate access to information, simplify administrative and customs procedures, and encourage cooperation on capacity building and technical assistance. For analytical clarity, MSME-related provisions can be broadly classified into two categories: trade-related and non-trade-related provisions. Trade-related provisions are closely tied to the liberalization of trade and the facilitation of export and import activities. In contrast, non-trade-related provisions address broader structural and institutional constraints that affect MSMEs' competitiveness. These include cooperation on development, services, and institutional support. While these provisions do not directly alter border measures, they strengthen the ecosystem in which MSMEs operate, thereby enhancing their ability to participate in GVCs.

The literature elucidates different potential benefits of trade-related provisions, including access to cheaper intermediate goods, larger production networks, and increased exports (Martinez, 2024). Yet, trade policy enhances foreign market access in middle- and low-income countries only when accompanied by complementary institutional and regulatory reforms. These reforms include facilitating compliance, access to finance, and skilling (WTO, 2024). On empirical grounds, a major challenge in studying the impact of trade agreements at the firm level is the lack of data concerning the extent of utilization of specific provisions or the agreement in general. Based on a sample of 595 firms in Indonesia, Malaysia, and the Philippines, 20–39% use trade agreements, and the likelihood of utilization varies with institutions and technological capabilities. For MSMEs, the primary reason for non-utilization is the lack of information (Julien, 1995; Wignaraja, 2014). Using the Association of Southeast Asian Nations (ASEAN) agreement data on utilization, Tambunan and Chandra (2014) show that MSMEs are the least active in utilizing the increasing number of trade agreements.

Conceptually, MSME-related provisions enhance GVC participation through various channels. First, capacity-building tailored provisions facilitate market access and solidify MSMEs' position in foreign markets. Small businesses that use trade-related provisions pursue entry strategies into new foreign markets (Zimmerman et al., 2009). Second, simplifying trade procedures and streamlining customs procedures reduces the burdens on MSMEs by lowering trade costs. Third, facilitating access to finance and export promotion programs allows MSMEs to invest in product quality and exporting activities (Nguyen and Su, 2021). Nevertheless, increased access to foreign markets can be counterproductive for firms' survival due to heightened foreign competition (Hiller et al., 2017).

From another angle, engaging in trade agreements involves burdensome compliance costs for MSMEs. Hence, increased costs may reduce their capacity to engage in export and import activities (Bagchi, 2014). Empirical studies show that among firms in selected Asian countries using trade agreements' provisions, 20% report increased costs due to rules-of-origin complexity (Kawai and Wignaraja, 2011). Rules of origin significantly increase business costs, creating a 'spaghetti bowl' in which multiple rules overlap, adding up transaction costs (Kawai and Wignaraja, 2011). In Thailand, using administrative records, rules of origin are equivalent to a 2–8% tariff applied to manufacturing exports (Kohpaiboon, 2009). To compare preference schemes across RTAs, using data on Japan's imports from neighboring countries, the utilization rate increases when tariffs under Japan's own RTA decrease and when tariffs under other RTAs increase (Hayakawa, 2019). Hence, direct and cross

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effects interfere with the utilization rate, making it challenging to track the RTA effect on firms' trade activities.

At the firm level, the determinants of agreement utilization and GVC participation are intertwined. First, large firms participate more in GVC and are more likely to utilize trade agreements (Hiratsuka et al., 2008). Second, the ratio of exports to total sales is positively associated with RTAs (Takahashi and Urata, 2008) and is one of the GVC determinants (Dovis and Zaki, 2020; Urata and Baek, 2020). Indeed, active engagement in product fragmentation is associated with the use of trade-related provisions (Hiratsuka et al., 2008), particularly in manufacturing activities (Kordalska and Olczyk, 2021; Hiratsuka et al., 2008).

In this paper, we contribute to the scant literature on MSME-related provisions and GVC participation in two ways. First, we differentiate between the benefits of MSME-related provisions to small versus large firms. Second, we differentiate between the trade-related and non-trade-related policy areas of the provisions. To do that, we merge the World Bank Enterprise Surveys (WBES) comprehensive dataset with the World Trade Organization (WTO) dataset on trade agreements. Our results show a consistent positive effect of MSME-related provisions on MSMEs' participation in GVCs. In addition, non-trade-related provisions matter more than trade-related ones. This effect is more pronounced in low-technology-intensive sectors and in Asian economies. Our results remain robust when we use alternative variables, methodologies, and when we control for the sample characteristics.

The rest of the paper is organized as follows. Section 2 reviews the literature on the link between provisions and GVCs. Section 3 presents the data and some stylized facts. Section 4 explains the methodology. Section 5 shows the empirical results, and Section 6 concludes. ‘

2. A Review of Literature

Through his seminal model, Melitz (2003) suggests that firm heterogeneity influences firms' exporting decisions. Larger and more productive firms tend to export and are more likely to maintain their presence in foreign markets, whereas smaller and less productive counterparts are more likely to exit foreign markets. More recent empirical studies extend the analysis to GVC participation and indicate that firms' characteristics, such as age and technological readiness, as well as country-level determinants, such as trade agreements, are critical to overcoming entry barriers, including scale and knowledge.

In this section, we review the theoretical and empirical literature as follows. First, we present the theoretical background behind the bottlenecked GVC participation for MSMEs. Second, we relate the different policy areas of MSME-related provisions to the probability that MSMEs participate in GVCs.

Although MSMEs are the backbone of employment and entrepreneurship (Mayangsari et al., 2024), they face challenges to their participation in GVCs. The lower participation is explained in international trade theory in terms of two dimensions. First, a core insight of the new trade theory is that firms exploiting economies of scale can participate in international markets. Accordingly, larger firms are better positioned in GVCs because they can spread fixed costs across a larger volume, lowering average costs and increasing competitiveness (Krugman, 1980, 1998). In contrast, MSMEs often operate below the scale threshold, making compliance and upgrading investments relatively more costly. In that sense, vulnerable firms either shrink due to foreign exposure or are forced to exit. On empirical grounds, studies consistently find that smaller firms are less likely to export or integrate into GVCs (Eissa and Zaki, 2025; Epede and Wang, 2022; Del Prete et al., 2017). Second, MSMEs face structural barriers, such as low access to information and finance due to regulatory and risk-based constraints (Mignamissi, 2025; Beck, 2020).

While the twofold constraints restrict MSMEs' participation in GVCs, as a policy tool, RTAs play a significant role in encouraging global and inclusive integration of firms. On the one hand, RTAs reduce border restrictions by reducing tariffs (Blanchard et al., 2025; Grossman et al., 2024; Yanikaya

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et al., 2024). On the other hand, RTAs establish deep regulatory and institutional frameworks that soothe non-border barriers to trade (Sanguinet et al., 2022). By addressing 'behind-the-border' measures, such as customs procedures, regulatory cooperation, and standards harmonization, modern trade agreements enable firms and countries to import intermediates and export final goods more efficiently (Reddy and Sasidharan, 2025). In addition, signing and enforcing trade agreements signal transparency and predictability, which are vital for fostering GVCs and global interlinkages (Katebi et al., 2025). Despite the advantages, some literature notes the unequal gains from RTAs and highlights the need for tailored provisions to address particular challenges for MSMEs (Chowdhury, 2025; Martinez, 2024; Park and Park, 2023).

The barriers to MSMEs' participation in GVCs require tailored provisions in regional trade agreements to promote their inclusion in global markets. Relevant provisions aiming at enhancing cooperation and competitiveness can be broadly classified into two main policy areas: trade-related and non-trade-related. Trade-related clauses tailored to MSMEs include simplified rules of origin, customs procedures, and trade facilitation, ensuring that disadvantaged small enterprises, when negotiating complex compliance requirements, gain meaningful and equitable access to GVCs. Empirical evidence across Asia, Africa, and Latin America shows that trade facilitation, including customs modernization and improved logistics, is among the strongest policy drivers of GVC participation, particularly for MSMEs (Kowalski et al., 2015).

Non-trade-related clauses aim at enhancing institutional quality, access to services, and development for MSMEs. First, by reducing transaction costs, enhancing contract enforcement, and promoting predictability, institutional provisions enable MSMEs to overcome structural entry barriers to financial and foreign markets (Nasser and Ouerghi, 2024; Nan et al., 2023; Le et al., 2022). Second, service-related provisions, such as government procurement, investment facilitation, digital trade, and e-commerce, substantially lower barriers to international linkages, which is especially beneficial for MSMEs facing high fixed costs. Moreover, this is of particular importance given the servicifcation of the manufacturing sector (Karam and Zaki, 2020). Recent empirical literature highlights that digitalization and e-commerce platforms reduce transaction costs, streamline cross-border operations, and improve the performance of MSMEs (Teng et al., 2022), allowing them to participate in foreign markets. Likewise, government procurement and investment provisions open new channels for market access and finance for MSMEs (Cusolito et al., 2016). Studies on Southeast Asia (OECD, 2019) and on global data (Reddy, 2023) find that Information and Communication Technology (ICT) investment, enabled by service provision, increases the probability of SMEs' participation in GVCs. Reddy (2023) quantifies an up to 20% increase in GVCs for MSMEs following digitization reforms. Third, enhancing development policies through MSME-related provisions improves management skills and innovation readiness, thereby reducing barriers to SMEs' entry into foreign markets by bridging the competitiveness gap (Urata, 2021). Furthermore, using firm-level competitiveness data in Vietnam shows that management skills and labor productivity are strongly linked to forward GVC participation (Korwatanasakul and Hue, 2022). Through improved development policies, MSMEs benefit from increased productivity, management skills, and knowledge acquisition, especially in developing economies where productivity and knowledge gaps are significant (Urata, 2021; Huchet-Bourdon et al., 2009).

However, drawing on 'protection-for-sale models', the literature warns that provisions intended to help MSMEs can be exploited and controlled by large, politically connected companies (Grossman and Helpman, 1994). Recent research indicates that organized sectors and politically linked firms lobby more effectively for favorable trade agreements, securing exemptions, privileged market access, and regulatory benefits that MSMEs cannot access (Aboushady and Zaki, 2025; Ludema et al., 2021). This pattern is observed in multiple regions, especially in the Middle East and North Africa and Southeast Asia, where policy enforcement often benefits large firms with ties to government or trade associations (Faccio, 2010; Diwan and Schiffbauer, 2018).

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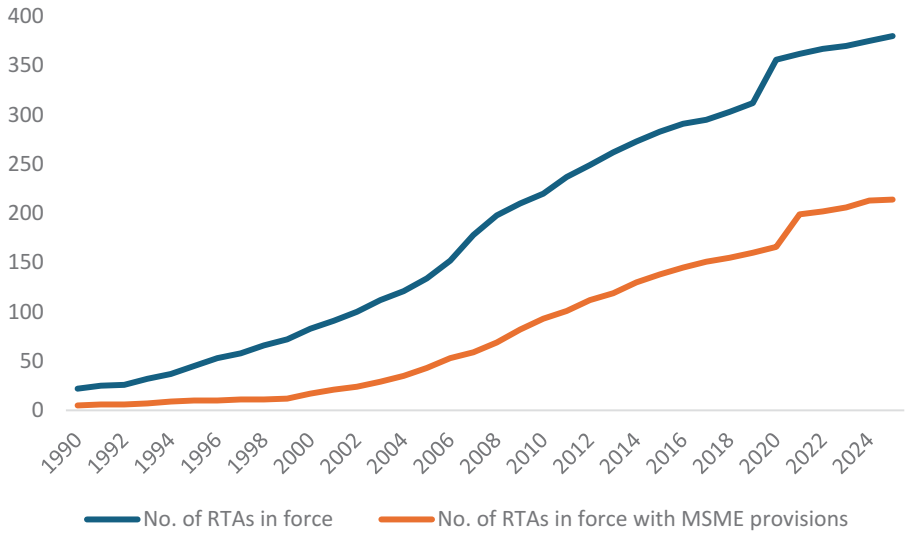


Figure 1. The number of RTA and MSME-related provisions in force over time.
Source: Own elaboration based on the World Trade Organization data.

To our knowledge, evidence on the effects of different types of MSME-related provisions on the inclusion of marginalized enterprises is scarce. Grounding on theoretical and empirical literature, our contribution is twofold. First, we examine the causal effect of MSME-related provisions on GVC participation for MSMEs and differentiate between trade-related and non-trade-related provisions. Second, we explore the effect of heterogeneity across sectors, income groups, and regions. In our empirical analysis, we use alternative variables, methodologies, and sample characteristics.

3. Data and Stylized Facts

This section outlines key patterns in the evolution and distribution of MSME-related provisions in trade agreements, as well as their relationship to SME participation in GVCs. Our merged dataset, spanning the years 2006 to 2023, includes 190,820 observations across 136 countries in six emerging regions. All firm-level characteristics are drawn from the WBES comprehensive dataset, and measures of MSME-related provisions are drawn from the WTO trade agreements dataset.[1] To construct our variables, the counting of provisions was conducted manually at the country–year level. For the empirical work, we construct two variables measuring MSMEs provisions: one at the extensive margin (whether there are MSME provisions in the agreements or not) and one the intensive margin (number of provisions within agreements).

As shown in Figure 1, the total number of RTAs in force has increased over time, and the share of agreements incorporating MSME provisions has expanded in parallel. Since 1999, there has been a clear, consistent upward trend in the number of RTAs with MSME-related provisions. As the number of RTAs in force has increased over time, MSME-oriented measures, such as those facilitating access to finance, cooperation, government procurement, customs, and digital trade have expanded in parallel. The trend reflects growing policy recognition and broader efforts to integrate development and inclusivity goals into trade frameworks.

Because the provisions aim to enhance competitiveness, we expect them to be positively associated with GVC participation. Using the simple GVC definition of simultaneous importing and exporting

[1] Table A1 summarizes the variables used in our analysis and Table A2 in the Appendix presents the descriptive statistics.

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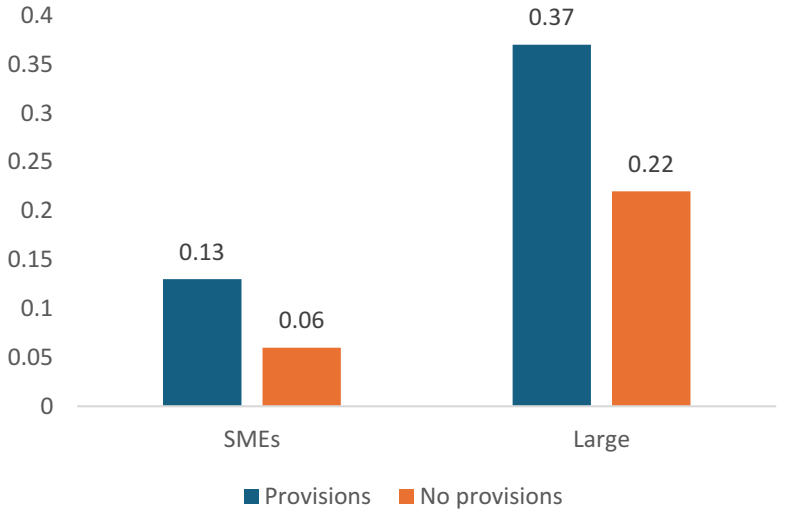


Figure 2. GVC participation over provisions across firm sizes.
Source: Own construction based on the World Bank Enterprise Surveys and WTO datasets.

Table 1. Share of SMEs and large firms' GVC participation over areas of provision

		SMEs			Large		
Provisions		Non GVC	GVC	Total	Non GVC	GVC	Total
Trade-related	NO	93	7	100	67	33	100
	YES	85	15		66	34	
Non-trade related	NO	95	5	100	67	33	100
	YES	88	12		66	34	

Source: Own construction based on the World Bank Enterprise Surveys and WTO datasets.
Note: YES refers to the inclusion of the provision in question. NO refers to the non-inclusion of the provision in question.

(Dovis and Zaki, 2020), Figure 2 compares the relationship between MSME provisions and GVC participation across MSMEs and large firms. The data suggest that the scope of MSME-related provisions is more associated with GVC engagement among smaller firms than larger counterparts. As shown, a higher share of GVC participation is positively associated with the presence of MSME provisions. While this holds true for both SMEs and large firms, the difference in GVC participation is larger for SMEs (13% versus 6% with and without provisions, respectively) than for large ones (37% versus 22%). While large firms are typically well integrated into GVCs regardless of policy provisions,[2] SMEs appear more responsive to trade agreements that include targeted support measures. This pattern highlights the potential of MSME provisions to narrow participation gaps and enhance SMEs' inclusiveness in international production networks.

Preliminary association between provisions related to SMEs and the latter's participation in GVCs is clear. Yet, because the provisions cover multiple topics and areas, it is important to disentangle the relevant policy areas. Accordingly, Table 1 presents the probability of GVCs' participation by firm size (SMEs versus large) across trade-related and non-trade-related provisions.

The two areas reflect distinct policy dimensions through which trade agreements can affect firms' integration into international production networks. Trade policy provisions cover market access,

[2]The GVC participation share is higher for large enterprises due to higher competitiveness and possessing the economies of scale to further grow and dominate foreign markets.

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customs facilitation, and the reduction of non-tariff barriers that directly influence the tradability of intermediate inputs and final goods. However, non-trade-related provisions span institutional, development, and services provisions. First, institutional provisions include measures that strengthen coordination, transparency, and the administrative environment supporting MSMEs. These may involve establishing cooperation platforms and capacity-building mechanisms. Second, service provisions address access to finance, business services, and digital infrastructure that enable firms to upgrade within GVCs. The latter are important given the servicification of the manufacturing sector (Crozet and Millet, 2017). Third, development-related provisions encompass technical assistance, training, and knowledge-sharing initiatives that enhance firms' absorptive capacity and linkages.

The data reveal a consistent pattern: SMEs operating under agreements with MSME-related provisions are more likely to participate in GVCs than those without. That is 15% of SMEs with trade-related provisions and 12% with non-trade-related provisions participate in GVCs, whereas only 7% SMEs without trade-related provisions and 5% without non-trade-related provisions trade in GVCs. In other words, GVC participation among SMEs rises from 7% to 15 % when trade-related provisions are present and from 5% to 12% when non-trade-related provisions are included. For large enterprises, GVC participation rises from 33% to 34% when either trade-related or non-trade-related provisions are included. Although the data show that provisions benefit both SMEs and large enterprises, the marginal gains for SMEs are higher, suggesting that MSME-oriented measures are particularly effective in reducing fixed costs and informational barriers that constrain SMEs' engagement in cross-border production. This aligns with evidence in the literature that improving digital connectivity, trade facilitation, and institutional coordination have been shown to enhance small-firm internationalization and innovation capacity (Añón and Bonvin, 2024; López González et al., 2019).

To scrutinize the association between MSME-related provisions and GVCs, Figures 3a and 3b show that the share of provisions for GVC participants is higher than that for non-GVC participants for SMEs and large enterprises across regions and sectors.[3] At the sectoral level, this association is clearer in manufacturing than in services. When classifying the manufacturing sector by technology level across SMEs and large enterprises, we observe a strong association with low- and medium-tech-intensive industries relative to high-technology-intensive sectors.

Besides the association with GVCs, we observe that, overall, the share of provisions in large enterprises exceeds that in SMEs. Because large enterprises are advantaged in capacity, connectivity, and the utilization of agreements, we suspect a lobbying effect of the provisions. Although the provisions target small and disadvantaged enterprises, the benefits may also be realized by larger enterprises that outsource some activities to MSMEs. To this end, it is important to control the lobbying effect of large firms in the empirical strategy to ensure the benefit to SMEs is captured.

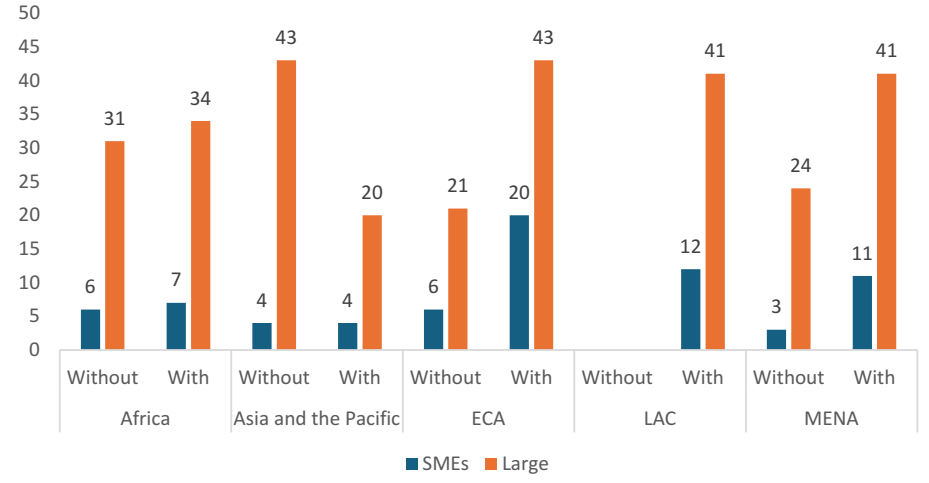
Taken together, the stylized facts indicate that MSME-specific provisions are correlated with a higher share of GVC participation among smaller enterprises. Furthermore, manufacturing and low-technology-intensive sectors have higher shares than services or higher-technology sectors. Across regions, large enterprises have a higher share of provisions than SMEs. These facts signal the role of well-designed, targeted trade-agreement clauses in making global integration more inclusive. Yet, econometric modeling is necessary to determine the causal and robust effect of provisions on GVCs.

4. Methodology

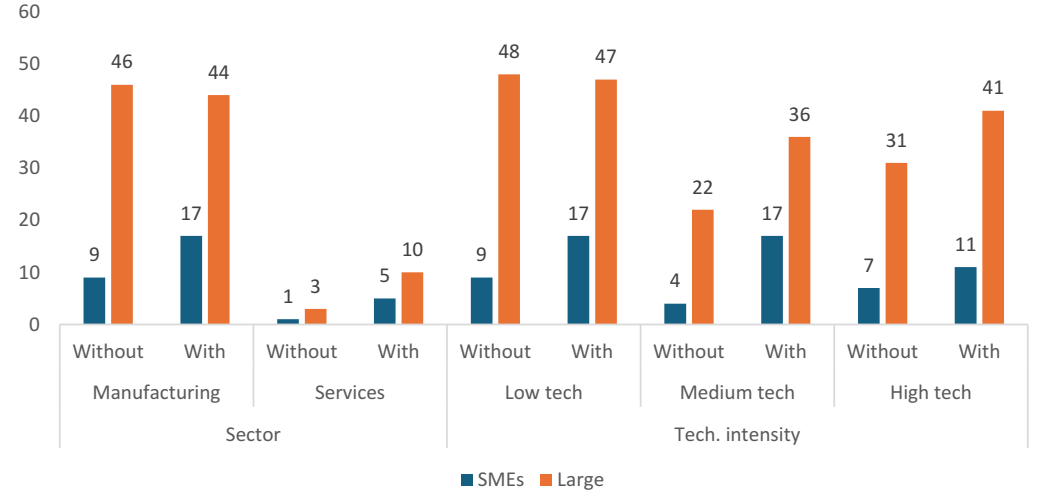
Our empirical strategy estimates the effect of MSME-related provisions in RTAs on firms' participation in GVCs. Following Dovis and Zaki (2020), we construct a GVC binary variable equal to 1 if the firm simultaneously imports foreign inputs and exports, and 0 otherwise. This measure is the least strict definition and includes vertical integration, as the firm imports intermediate goods

[3]Except for Asia and the Pacific. Asia is the most integrated in GVCs pertaining to the manufacturing sector (De Vries et al., 2019).

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(a) Across regions



(b) Across sectors

Figure 3. MSME-related provisions and GVCs participation (SMEs versus large firms).
Note: 'With' refers to the inclusion of the provision in question. 'Without' refers to the non-inclusion of the provision in question.
Source: Own construction based on the World Bank Enterprise Surveys and WTO datasets.

and exports. Because this extensive measure does not capture the firm's position along the chain, it remains a proxy for GVCs' participation at the extensive margin level rather than a comprehensive indicator of the depth of integration or the position within the value chain. In that sense, our analysis focuses on the relative participation across firms rather than detailed participation mechanisms and positions.

Using a probit regression, we estimate the MSME effect on GVC participation as follows:

$$GVC_{ijt} = a_o + a_1 Provisions_{jt} + a_2 SME_{ijt} + a_3(provisions_{jt} * SME_{ijt}) + a_4 Z_{ijt} + \delta_{jt} + \delta_s + \varepsilon_{ijt} \quad (1)$$

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where GVC_{ijst} is the constructed GVC participation extensive measure in firm *i,* country *j,* and year *t.* $Provisions_{jt}$ is the extensive measure of MSME-related provisions in country *j* at year *t* corresponding to a binary variable that is equal to 1 if the MSME-related provisions exist within the country's signed agreements and equals 0 otherwise. SME_{ijt} is a binary variable equal 1 if the firm is a micro, medium, or small enterprise with total number of employees less than 100 and equals 0 otherwise. Z_{ijt} is a vector of control variables including firm age, and government ownership. We control for firm age, defined as the number of years since operation, because mature firms have lower sunk costs and are less financially constrained than younger counterparts (Minetti and Zhu, 2011; De and Nagaraj, 2014). Accordingly, we expect a positive association between firm age and GVC participation. Finally, government ownership controls for firms' connectivity because more connected firms participate more in GVCs (De and Nagaraj, 2014; Aboushady and Zaki, 2025). Besides the observed control variables, we include country-year fixed effects δ_{jt} to and sector fixed effects δ_s control for unobservable heterogeneity.

Because larger firms with higher competitiveness and productivity derive economies of scale, we expect the SME variable to be negatively associated with GVC, as large firms participate more in GVCs (Urata and Baek, 2020). Yet, the interacting variable is key to emphasizing the strengthening role of provisions in SMEs' participation in GVCs. Although the direct association between SMEs and GVCs is expected to be negative, provisions may mitigate this effect by supporting SMEs' penetration of foreign markets.[4]

To assess the robustness of our results, we first alternate the dependent variable, using the strict definition of GVC (GVC 4), incorporating foreign ownership and international certification, with GVC 1 to define participation. As for the independent variable, we alternate it with the number of provisions included in the signed RTA. In that sense, we examine the relevance of the intensity of provisions and not only their mere presence.

Second, we suspect that the effect might be driven by large enterprises who might lobby for the inclusion or the exclusion of such provisions. To control for potential lobbying effects arising from large enterprises, we exclude the top 10% and 1% by number of full-time employees based on the country-level firm size distribution. Moreover, MSMEs that are already active in GVCs may demand, and obtain, the inclusion of MSME-related provisions in trade agreements. This is especially plausible in countries where MSMEs represent a large share of the economy and are well organized. Thus, we extend the sample trimming procedures by excluding the country with the largest number of MSMEs. Finally, the effects of provisions might also be driven by countries actively including MSME provisions in their RTAs. To overcome this problem, we exclude the region with the highest concentration of MSME provisions in trade agreements.

Third, we control for endogeneity in provisions using alternative methodologies. Because firms engaged in GVCs may already be in countries with a high concentration of RTAs and provisions, we suspect reverse causality. Accordingly, we use a two-stage instrumental variable approach to ensure the causal effect of provisions on GVCs. We instrument the provisions with the quality of institutions of the main trade partner. Conceptually, higher institutional quality in a partner country may increase the likelihood and depth of trade agreement provisions (Aly and Zaki, 2025), while it is unlikely to affect directly the country's GVC participation except through its influence on agreement design. Moreover, we apply a leave-one-out strategy where the average of provisions is computed by aggregating provisions at the country–year level while excluding those related to the firm in question.

Given the nature of our multi-level dataset, we use a multilevel modeling framework to account for the nested structure of firms within country–year contexts, thereby controlling for both across- and within-country correlations in outcomes. Because our regressors are at both the firm and the

[4]Our analysis is limited to the information that the country includes a provision on trade agreements with MSMEs. Yet, as the WBES does not include the main trade partners of each firm, we cannot really identify whether a firm might benefit from provisions when trading with a certain country but not with another one. Moreover, the WBES suffers from another drawback, i.e. the panel dimension is very weak. Hence, we cannot observe the within firm variation.

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country–year level, ignoring this hierarchical structure may bias standard errors and confuse firm-level and country-level sources of variation (Snijders, 2011; Rabe-Hesketh and Skrondal, 2010; Searle et al., 1992), in which firm-specific factors are modeled at the first level while country-level characteristics, represented by the MSMEs provisions, are modeled at the second level. This approach accounts for within-country correlation in outcomes and provides a more appropriate specification when combining micro and macro determinants.

After ensuring a robust effect of provisions on GVCs, we extend the analysis in several ways. First, to scrutinize the effect of varying types, we divide the MSME-related contents into trade-related and non-trade-related provisions. This will help identify the relevant provisions for SMEs and examine whether trade policy is sufficient to enhance SMEs' participation in GVCs, or whether complementary non-border measures are more relevant (Di Ubaldo and Gasiorek, 2022). To do that, we construct a dummy variable for trade-related provisions that takes the value of 1 if the agreement includes at least one of the following: customs, administration of the agreement, goods trade, subsidies, or rules of origin. For non-trade related provisions, we construct a dummy variable that takes the value of 1 if the agreement includes at least one of the following: cooperation, transparency, competition, preamble, regulatory practice/coherence, industrial policy, state owned enterprises, and institutional provisions, government procurement, investment, intellectual property, services, e-commerce, and digital trade, development, SMEs, labor, and environment. We alternate between the types in the regressions and observe the direct and SMEs moderating effects of each on GVC participation. As a third extension, we explore heterogeneity in effects across sectors by classifying economic activity by technology intensity, income levels, and geographical region. We expect that the manufacturing sector and low or medium-technology sectors are likely to benefit more from such provisions, given that large firms outsource such activities to MSMEs, which increases their integration into GVCs. As per income level, the lower a country's absorptive capacity, the greater the spillover effect of international interlinkages. Thus, low and middle-income countries are more likely to benefit from such provisions. Finally, at the regional level, regions where SMEs face disproportionately high barriers to international integration (such as Africa), such provisions can be less effective.

5. Empirical Results

In this section, we present the results on the effect of MSME-related provisions on firms' GVC participation. To guarantee a robust effect, we use alternative measures of the variables of interest, different methodologies, and control for different sample characteristics. Our analysis focuses on the differential effect of trade-related and non-trade-related provisions. Additionally, we examine the heterogeneity in the effects across sectors, income levels, and regions.

5.1 Baseline Results

As presented in Table 2, the presence of MSME-related provisions is positively associated with firms' GVC participation. In countries with MSME-related provisions, column 1 shows that firms are 20 percentage points more likely to participate in GVCs. Because our analysis focuses on SMEs, we examine the moderating effect of provisions on their participation. Although MSME-related provisions are expected to primarily support smaller firms, trade agreements' provisions generally serve larger counterparts, often with a similar or even higher momentum than SMEs, due to their greater lobbying and connectivity (Antoine et al., 2023). Moreover, the inclusion of MSME provisions can be an indicator of the depth of the agreement that can benefit SMEs and large firms. Finally, the inclusion of MSME provisions can help SMEs that are part of clusters with large firms that often rely on SMEs as suppliers, distributors, or service providers. In addition, such provisions can help SMEs better comply with trade standards and certification processes, which simplify operations for large firms.

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Table 2. Baseline results

	(1)	(2)
	Extensive GVC1	
MSME provisions	1.163***	0.947***
	(0.009)	(0.066)
SME	−0.882***	−1.187***
	(0.038)	(0.104)
SME*provisions		0.336***
		(0.109)
Log Age	0.034***	0.035***
	(0.013)	(0.013)
Log Gov ownership	0.035	0.031
	(0.035)	(0.035)
Constant	−1.352***	−1.161***
	(0.057)	(0.08)
Observations	165,321	165,321
R-squared	0.278	0.278
Country–year FE	Yes	Yes
Sector FE	Yes	Yes

Notes: Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

As column 2 shows, the presence of MSME-related provisions mitigates the negative association between SMEs and GVCs, underscoring their relevance, particularly for SMEs. The baseline findings align with the empirical literature, which shows that supportive policies are necessary to overcome structural constraints (Anand and Kaur, 2021; De and Nagaraj, 2014). In that sense, the disadvantages of firm size are mutable with institutional and cooperation support.[5] As for the control variables, older firms participate more in GVCs due to better-established networks (Karakara et al., 2025). Older firms are not only better integrated into foreign markets but also have a higher probability of establishing local networks, thereby facilitating access to finance and credit lines and fostering foreign market entry (Elsharawy and Ezzat, 2023). Including firm age as a control variable accounts for factors such as connectivity, access to knowledge, and lower risk.

5.2 Robustness Checks

To guarantee the robustness of the effect of MSME-related provisions on SMEs' participation in GVCs, we proceed by employing alternative measures for the variables of interest, sample trimming to control for possible lobbying effects and sample biases, and alternative methodologies to circumvent endogeneity and cross-country variations.

Table 3 presents the results of employing different measures of provisions (an intensive measure) and GVC (the strict definition). As column 1 shows, a consistent positive and significant effect remains for intensive provisions on GVCs. Recall that this variable shows the total number of MSMEs related provisions in trade agreements. As the number of provisions increases by 1 unit, the probability of GVC participation increases by 10.5%. Beyond consistency with baseline results, we find that the

[5]If MSME status is a condition to benefit from provisions, this may generate disincentives for firm growth. This is why, in Table A3 in the appendix, we regress the log of employment as a proxy for the firm size on different provisions, for the total sample and for SMEs only. We find that such provisions can help firm growth, pointing out that there are no disincentives for firm growth.

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Table 3. Alternative measures for the dependent and independent variables

	(1)	(2)
	Changing the independent variable	Changing the dependent variable
	GVC 1 (intensive provisions)	GVC 4 (extensive provisions)
MSME provisions	0.105***	0.639***
	(0.001)	(0.036)
SME	−0.931***	−1.048***
	(0.046)	(0.094)
SME*provisions	0.002***	0.017
	(0.001)	(0.097)
Log Age	0.035***	−0.005
	(0.013)	(0.019)
Log Gov ownership	0.032	0.041*
	(0.036)	(0.022)
Constant	−1.323***	−1.801***
	(0.059)	(0.077)
Observations	165,321	165,240
R-squared	0.278	0.276
Country–year FE	Yes	Yes
Sector FE	Yes	Yes

Notes: Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

intensity of trade agreements matters for GVC participation (Delera and Foster-McGregor, 2020). As the number of provisions related to MSMEs increases, the probability of GVC participation increases, with a positive interaction with SMEs. Although the intensive margin matters, the extensive margin of provisions has a higher effect on GVC participation.

In column 2, we show the results of MSMEs provisions (measured by the extensive variable) on the strict definition of GVCs (GVC 4 that includes two-way traders, foreign ownership, and foreign certification). The positive effect of MSME-related provisions remains significant, indicating that their presence is associated with a 2.4% higher probability of engaging in GVCs. Yet when we use the strict GVC measure, the interaction with SMEs becomes insignificant. Our results show that although provisions strengthen SMEs' two-way trade, they do not affect the covariates of foreign ownership and international certification. This is consistent with empirical evidence on ASEAN economies showing that foreign ownership is relevant to large but not too small or medium-sized enterprises (Bozsik et al., 2023). Accordingly, the interaction of MSME-related provisions with SMEs is insignificant, indicating that, when it comes to foreign investments, large firms are the sole beneficiaries of these provisions. In addition, it aligns with Bozsik et al. (2023), showing that the positive effect of FDIs on SMEs is unguaranteed and conditional on contextual factors such as absorptive capacities.

To further ensure that the positive effect of provisions is not driven by sample characteristics (see Table 4). First, to control for the lobbying effect, columns 1 and 2 present the results after excluding the top 10% and 1% of full-time employment, based on the country-level firm size distribution. Excluding the superstar firms is important to ensure that the largest enterprises do not exploit their connectivity and benefit exclusively from the trade agreement's provisions. The results are in line with the baseline ones.

In columns 3 and 4, we exclude the country with the largest number of SMEs and the region with the highest number of MSME provisions in RTAs, respectively. The rationale behind this trimming is

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Table 4. Alternative samples

	(1)	(2)	(3)	(4)
	Excluding large 90th percentile	Excluding large 99th percentile	Excluding largest number of SMEs	Excluding largest number of provisions
MSME provisions	1.074***	1.158***	0.964***	0.883***
	(0.123)	(0.073)	(0.064)	(0.054)
SME	−1.06***	−1.16***	−1.193***	−1.374***
	(0.126)	(0.108)	(0.103)	(0.085)
SME*provisions	0.369***	0.331***	0.319***	0.459***
	(0.129)	(0.112)	(0.106)	(0.095)
Log Age	0.039***	0.034***	0.033**	0.03*
	(0.013)	(0.013)	(0.013)	(0.018)
Log Gov ownership	0.045	0.024	0.017	0.087*
	(0.051)	(0.038)	(0.035)	(0.046)
Constant	−1.463***	−1.384***	−1.136***	−1.068***
	(0.13)	(0.086)	(0.08)	(0.083)
Observations	147,807	162,797	147,453	115,289
R-squared	0.256	0.276	0.283	0.244
Country–year FE	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes

Notes: Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

that countries with many SMEs in the sample are more prone to demand and use the MSME-related provisions and hence drive the results. In the same sense, signing RTAs, including a large number of MSME provisions, can signal high engagement in global networks and GVCs for SMEs. The results across different sample trimmings are consistent with our baseline evidence, showing that the effect is not driven by large enterprises, many SMEs, or RTAs that are intensive in MSME provisions.

Although sample trimming reduces bias, it does not control for endogeneity between GVC and MSME provisions. To control for this, Table 5 presents results from instrumental variables, multilevel, and leave-one-out methodologies in columns 1, 2, and 3, respectively. Because GVCs can encourage countries to increase the number of RTAs to enhance or deepen their participation, reverse causality is suspected. Accordingly, we employ an instrumental variables two-stage method, using the quality of institutions in the main trade partner to instrument the provisions. The rationale behind the instrument is that higher institutional quality in a partner country may increase the likelihood and depth of trade agreement provisions (Aly and Zaki, 2025), while it is unlikely to directly affect the country's GVC participation, except through its influence on agreement design. As presented in column 1, the SME interaction with provisions is significant and positive.[6] Circumventing endogeneity reveals a particular relevance of provisions to SMEs only.

Second, we construct the 'leave-one-out mean' of provisions, which is computed by aggregating provisions at the country–year level while excluding those related to the firm in question. This approach prevents mechanical correlation between firm-level outcomes and contextual regressors constructed from the same sample. Column 3 shows consistent effects with the baseline estimates.

Third, given the structure of the data, we employ a multilevel analysis to ensure that country-specific conditions do not drive a positive effect. This specification introduces random intercepts to

[6]Appendix 3 presents the first stage regression results showing the significance of the quality of institutions of the main trade partner (see Table A4).

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Table 5. Alternative methodologies

	(1)	(2)	(3)
	IV	Multi-level analysis	Leave-one-out
MSME provisions	2.003***	0.021	0.946***
	(0.438)	(0.02)	(0.066)
SME	−1.052***	−0.241***	−1.188***
	(0.061)	(0.006)	(0.104)
SME*provisions	0.192***	0.041***	0.337***
	(0.07)	(0.007)	(0.108)
Log Age	0.034***	0.008***	0.035***
	(0.007)	(0.001)	(0.013)
Log Gov ownership	0.033***	0.005**	0.031
	(0.01)	(0.002)	(0.035)
Constant	−2.308***	0.336***	−1.161***
	(0.441)	(0.016)	(0.08)
Observations	162,966	165,983	165,284
R-squared	0.279		0.278
Country–year FE	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes

Notes: Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

capture unobserved heterogeneity such as institutional quality, market structures, and trade policy. As presented in column 2, the multi-level analysis shows a particular relevance of provisions to SMEs with a positive and significant interaction term and an insignificant direct effect. The consistency of results across robustness checks strengthens our confidence in the finding that MSME provisions positively shape SMEs' participation in GVCs.

5.3 Extensions

Our baseline and robustness checks results show the positive effect of MSME-related provisions on SMEs' participation in GVCs, revealing patterns that are not only consistent with theoretical expectations but also raise questions about the specific contents driving firms' engagement in GVCs. As mentioned earlier, because the provisions span multiple policy areas, we proceed by compiling relevant content into two categories: trade-related and non-trade-related. By allocating the contents into these two groups, Table 6 presents the results for each group on GVCs' participation. Although both types show a positive effect, our analysis depicts that non-trade-related provisions exert a larger magnitude and significance of the interaction term. This greater magnitude and significance suggest that auxiliary support and access to services are transformative in shaping GVC participation (Aboushady, 2022; Di Ubaldo and Gasiorek, 2022) and matter more than border and direct trade policy measures.

The higher impact of non-trade-related provisions aligns with recent evidence that digitalization, e-commerce, and government support services are crucial for SME resilience and competitiveness (Sharma et al., 2024). Undoubtedly, digitization and e-commerce reduce logistics and communication costs, thereby facilitating integration with foreign markets (Gopalan et al., 2022). Recent evidence shows that policy instruments such as public procurement strengthen resilience by diversifying supply chains and incentivizing local upgrading (Baraldi et al., 2025), particularly for SMEs (Pushp and Ahmed, 2023). In addition, investment clauses and financial constraints are positioned to be the biggest barrier to GVC participation (Reddy and Sasidharan, 2021).

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Table 6. Provisions heterogeneity

	(1)	(2)
	Trade	Non-trade
MSME provisions	0.367***	0.96***
	(0.042)	(0.064)
SME	−0.956***	−1.163***
	(0.052)	(0.1)
SME*provisions	0.132*	0.313***
	(0.069)	(0.104)
Log Age	0.034***	0.035***
	(0.013)	(0.013)
Log Gov ownership	0.031	0.031
	(0.036)	(0.035)
Constant	−1.304***	−1.175***
	(0.06)	(0.079)
Observations	165,321	165,321
R-squared	0.278	0.278
Country–year FE	Yes	Yes
Sector FE	Yes	Yes

Notes: Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

While the comparatively small effect of trade-related clauses is unexpected, the rationale behind it is threefold. First, trade-related provisions often focus on customs and trade regulations, which tend to benefit firms already capable of engaging in two-way trade rather than directly supporting the capacity of domestic SMEs to penetrate foreign markets. Second, unlike service-oriented or institutional provisions, trade policy measures may not provide the finance, networks, or technical assistance that small firms need in order to overcome the barriers to participation. Third, the effectiveness of export promotion provisions is dampened by large disparities in institutional quality across countries. Accordingly, as Aboushady et al. (2025) suggest, institutional quality-related reforms shall be considered by donors of trade integration in recipient countries. In addition, development and institutional provisions bridge the gap between partners, which is necessary for increased integration (Ben et al., 2024). Our findings align with the World Trade Organization's World Development Report, which suggests the indispensable domestic policies for inclusive trade in low- and middle-income countries (WTO, 2024).[7]

As another relevant extension, we examine heterogeneity in the effects of MSME-oriented provisions across sectoral, income, and regional groups. As shown in Table 7, while the direct effect of these provisions is positive across both aggregate sectoral categories (manufacturing and services) and technological classifications (low-, medium-, and high-technology),[8] the interaction with SMEs

[7] Appendix 4 presents the results of policy areas and individual contents. For the four policy areas (trade policy, services, development, and institutions, see Table A5), supporting policies targeting services (such as investment, government procurement, and digital trade) enhance GVCs integration with a higher level of momentum. However, provisions related to institutions and development likely play a complementary role by reducing transaction costs and improving the predictability of engaging in cross-border trade. Regarding the individual provisions (Figure A1), while most of the interactions with the SMEs variable is positive and significant, some of them are negative. This is primarily due to clauses of provisions related to sustainability in value chains that impose direct obligations, which can be burdensome on firms. Again, SMEs are particularly vulnerable and do not tolerate increased trade costs, as shown in the negative interaction effect.

[8] Sectoral technological intensity is classified following OECD taxonomy (Galindo-Rueda and Verger, 2016).

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Table 7. Sectoral heterogeneity

	Aggregate sectors		Technological intensity		
	(1) Manufacturing	(2) Services	(3) Low	(4) Medium	(5) High
MSME provisions	0.705***	0.91***	0.704***	0.453***	0.168***
	(0.067)	(0.121)	(0.076)	(0.15)	(0.045)
SME	−1.287***	−0.709***	−1.314***	−1.157***	−1.114***
	(0.096)	(0.186)	(0.111)	(0.175)	(0.024)
SME*provisions	0.293***	0.237	0.3***	0.225	0.044
	(0.1)	(0.19)	(0.115)	(0.182)	(0.094)
Log Age	0.038**	0.051***	0.035**	0.055*	−0.065
	(0.016)	(0.014)	(0.015)	(0.029)	(0.143)
Log Gov ownership	0.038	0.03	0.02	0.076*	−0.037
	(0.04)	(0.051)	(0.046)	(0.044)	(0.129)
Constant	−0.991***	−2.25***	−0.965***	−1.228***	−.276
	(0.086)	(0.126)	(0.094)	(0.182)	(0.533)
Observations	92,819	43,597	64,443	26,001	2,572
Pseudo R^2	0.233	0.182	0.228	0.283	0.288
Country–year FE	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 8. Country-level heterogeneity

	Income Level Differences			Regional Differences			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Upper middle	Lower middle	Low	Africa	Asia and the Pacific	Europe and Central Asia	Middle East
MSME provisions	−0.295***	0.613***	0.983***	−0.87***	0.117	0.578***	0.537**
	(0.108)	(0.085)	(0.063)	(0.102)	(0.202)	(0.072)	(0.267)
SME	−0.677***	−1.051***	−1.375***	−1.027***	−1.453***	−0.804***	−1.277***
	(0.169)	(0.089)	(0.114)	(0.105)	(0.08)	(0.088)	(0.277)
SME*provisions	−0.171	0.133	0.302**	0.078	0.579***	0.092	0.328
	(0.174)	(0.106)	(0.121)	(0.116)	(0.129)	(0.092)	(0.291)
Log Age	0.056**	−0.008	0.07**	0.04	−0.036	0.05***	0.017
	(0.024)	(0.025)	(0.031)	(0.035)	(0.041)	(0.014)	(0.025)
Log Gov ownership	−0.041	0.111*	0.004	0.16**	0.055	−0.026	0.01
	(0.037)	(0.061)	(0.029)	(0.073)	(0.07)	(0.03)	(0.059)
Constant	0.012	−0.446***	−1.201***	−1.017***	−0.874***	−0.684***	−0.222
	(0.143)	(0.122)	(0.143)	(0.146)	(0.208)	(0.08)	(0.283)
Observations	44,311	69,091	24,405	28,150	43,757	50,032	17,480
Pseudo R^2	0.265	0.214	0.279	0.231	0.234	0.304	0.216
Country–year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Latin America and the Caribbean region is dropped from the regression because of insufficient variability in provisions.

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is statistically significant only for manufacturing and low-technology-intensive sectors. This suggests that MSME provisions are most effective in facilitating GVC participation where production is more tangible and entry barriers are relatively low. Services and higher-technology sectors may require additional complementary measures to enhance SMEs' capabilities for the provisions to be effective in fostering GVC interlinkages. The silent effect in medium- and high-technology-intensive sectors suggests that, while provisions are effective, they are insufficient to foster SME upgrading across the chain.

Finally, Table 8 presents heterogeneity across income levels and regions to assess the inclusivity of the provisions across countries. At the income-group level, the interaction effect is only significant for the low-income group. In line with Eissa and Zaki (2023), the lower a country's absorptive capacity, the greater the spillover effect of international interlinkages.

At the regional level, a particularly noteworthy finding of this study is that MSME-related provisions significantly enhance SMEs' participation in GVCs only in Asia and the Pacific region, as shown in the positive interaction term. In Africa, the direct effect is negative, emphasizing particularly high compliance costs. In many African economies, SMEs face disproportionately high barriers to international integration, including limited access to trade-related information, weak institutional support, and high transportation and fixed trade costs (UN Trade and Development, 2025; World Bank, 2020). By improving transparency, reducing friction, and facilitating compliance with trade procedures, MSME-related provisions can play a meaningful role in alleviating the constraints in African economies to support SMEs' participation in GVCs.

The country-level heterogeneity results highlight the substantial potential for SME integration into GVCs and suggest that well-designed trade agreements serve as effective instruments for fostering inclusive GVCs.

6. Conclusion

Despite their central role in employment and economic dynamism worldwide (OECD, 2019; Arshed et al., 2014), SMEs face persistent structural barriers that limit their participation in GVCs. Over time, the parallel rise in RTAs and the growing inclusion of MSME-related provisions across chapters reflect a policy shift toward addressing these constraints. Such provisions can ease financing, regulatory, and knowledge barriers, thereby fostering competitiveness, cooperation, and integration into GVCs. However, compliance and adaptation costs remain disproportionately high for smaller firms, possibly offsetting potential benefits. Our findings reveal a positive impact of MSME-related provisions in RTAs on SMEs' GVC participation, and the results are consistent across different measures, sample trimmings, and methodologies with a greater effect of non-trade-related provisions than of trade-related ones.

In addition, trade policies appear to have a smaller magnitude than non-trade-related clauses, suggesting that non-border support – especially in services like digital trade and e-commerce – matters more to SMEs' participation in GVCs than customs and border measures. The heterogeneity analysis reveals a particular impact on low-technology-intensive manufacturing sectors, low-income countries, and Asia. The particular significance of low-technology sectors signals that, although the provisions enhance downstream GVCs' participation, they are insufficient to upgrade across the chain.

Our findings highlight the importance of targeted, well-designed policy measures to ensure SMEs can effectively benefit from provisions embedded in RTAs, particularly in economies at earlier stages of development. The consistent inclusion of MSME-related clauses across RTA chapters appears to promote SME integration into GVCs. This effect is particularly pronounced in Asia and the Pacific region. In Africa, results reveal high compliance. Embedding services and institutional provisions within the AfCFTA framework can play a key role in supporting firm participation in cross-border production networks. To boost integration, complementary and supportive domestic policies are

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equally essential to trade policy. Investment in human capital development encourages skilled labor-intensive manufacturing and attracts foreign investment, thereby strengthening local firms' adaptive capacity. At the same time, targeted financial support mechanisms can help SMEs overcome the high fixed costs associated with compliance and GVC participation. Together, these policy dimensions point to a broader strategy in which trade policy and domestic reforms jointly advance inclusive integration into global markets.

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Appendices

Table A1. Variables definitions

Variable	Definition
GVC 1	1 if the enterprise is simultaneously exporting and importing intermediate goods and 0 otherwise
GVC 4	1 if the enterprise is simultaneously exporting, importing intermediate goods, has foreign owned shares, and has international quality certification and 0 otherwise.
MSME provisions	1 if the signed RTA includes MSME provisions and 0 otherwise
Intensive MSME	Number of MSME related provisions in signed RTAs
Institutions provisions	1 if including cooperation, transparency, competition, preamble, good regulatory practice, appendix, regulatory coherence, industrial policy, SOEs, or institutional provisions, and 0 otherwise
Services provisions	1 if including government procurement, investment, IPRs, digital trader, e-commerce, or services, and 0 otherwise.
Trade policy provisions	1 if including administration of RTA, customs and trade facilitation, goods trade, rules of origin, or subsidies provisions, and 0 otherwise.
Development provisions	1 if including labor, environment, development, or SMEs provisions, and 0 otherwise.
SME	1 if the enterprise is micro, small, or medium, and 0 otherwise
Age	Number of years the enterprise has been operating in log
Government ownership	Share of government ownership in total ownership in log
Total density rate	Total number of registered firms per 1,000 working-age people (those ages 15–64). The units of measurement are private companies with limited liability. (stock of limited liability companies across economies).
Lobbying (99th percentile)	Excluding enterprises with $\geq$ 1130 permanent full-time employees at the end of the fiscal year.
Lobbying (90th percentile)	Excluding enterprises with $\geq$ 180 permanent full-time employees at the end of the fiscal year.

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Table A2. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GVC 1	239,959	0.161	0.367	0	1
GVC 4	249,924	0.023	0.149	0	1
MSME provisions	194,944	0.889	0.314	0	1
Number	194,944	21.492	35.021	0	133
SME	251,989	0.803	0.397	0	1
Log(Age)	251,926	3.275	0.761	0	7.618
Log(Gov ownership|)	248,110	0.045	0.401	0	4.615
Sector	251,989	0.488	0.5	0	1
Employment	250,598	99.281	3380.885	0	1673000
Institutions	194,944	0.801	0.399	0	1
Services	194,944	0.587	0.492	0	1
Trade-related provisions	194,944	0.489	0.5	0	1
Non-trade-related provisions	194,944	0.879	0.325	0	1
Development	194,944	0.409	0.492	0	1
Administration of RTA	194,944	0.155	0.362	0	1
Appendix	194,944	0.008	0.089	0	1
Competition	194944	0.164	0.37	0	1
Cooperation	194944	0.801	0.399	0	1
Customs	194944	0.362	0.48	0	1
Development	194944	0.206	0.404	0	1
Digital trade	194944	0.048	0.214	0	1
Ecommerce	194944	0.254	0.435	0	1
Environment	194944	0.017	0.128	0	1
Good regulatory practice and regulatory cooperation	194944	0.025	0.157	0	1
Regulatory coherence	194944	0.006	0.079	0	1
Government procurement	194944	0.312	0.463	0	1
Industrial policy	194944	0.098	0.297	0	1
Institutional provisions	194944	0.002	0.045	0	1
Investment	194944	0.468	0.499	0	1
IPRs	194944	0.226	0.419	0	1
Labor	194944	0.156	0.363	0	1
Preamble and general	194944	0.327	0.469	0	1
Rules of origin	194944	0.051	0.22	0	1
SMEs provisions	194944	0.154	0.361	0	1
SOEs provisions	194944	0.048	0.215	0	1
Subsidies	194944	0.025	0.157	0	1
Goods trade	194944	0.255	0.436	0	1
Services trade	194944	0.36	0.48	0	1
Transparency	194944	0.116	0.321	0	1
Log(trade partner institutional quality)	194395	4.203	0.243	3.05	4.49

Source: Authors' own elaboration.

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Table A3. Empirical results: effect of trade and non-trade provisions on employment

	(1)	(2)	(3)	(4)
	Log (employment)			
	All sample		SMEs	
	Trade	Non-trade	Trade	Non-trade
Provisions	0.379***	0.223***	0.268***	0.153***
	(0.011)	(0.013)	(0.004)	(0.004)
Observations	165,229	165,229	133,442	133,442
R-squared	0.15	0.15	0.103	0.103
Fixed effects	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes

Notes: Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A4. IV First stage regression results

	MSME-Provisions
Institutions trade partner	0.25***
	(0.093)
SME	0.772*
	(0.456)
Log Age	0.459***
	(0.12)
Log Gov ownership	−0.486
	(0.353)
Constant	−2.444***
	(0.795)
Observations	272
R-squared	0.184
Year FE	Yes

Notes: Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

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Table A5. Disaggregated provisions

	(1)	(2)	(3)	(4)
	Extensive GVC 1			
Dependent variable	Institutions	Services	Dev	Trade policy
MSME provisions	1.045***	1.815***	1.078***	0.367***
	(0.063)	(0.064)	(0.051)	(0.042)
SME	−1.03***	−0.964***	−0.939***	−0.956***
	(0.089)	(0.051)	(0.043)	(0.052)
SME*provisions	0.177*	0.124*	0.123*	0.132*
	(0.096)	(0.067)	(0.069)	(0.069)
Log Age	0.035***	0.034***	0.035***	0.034***
	(0.013)	(0.013)	(0.013)	(0.013)
Log Gov ownership	0.033	0.032	0.035	0.031
	(0.035)	(0.035)	(0.035)	(0.036)
Constant	−1.256***	−1.298***	−1.317***	−1.304***
	(0.077)	(0.057)	(0.055)	(0.06)
Observations	165,321	165,321	165,321	165,321
R-squared	0.278	0.278	0.278	0.278
Country–Year FE	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes

Note: Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

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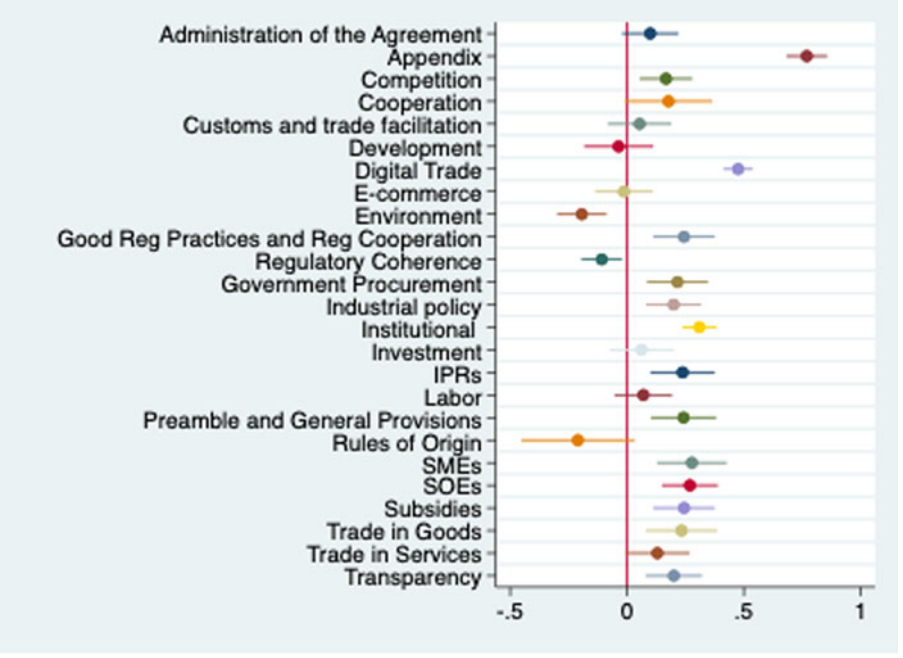


Figure A1. Content interaction with SME effect on GVC.
Source: Authors' own elaboration using Stata.
Note: Each point represents the value of the coefficient and the line represents the confidence interval. The estimated coefficient is significant if the confidence interval does not cross the zero line (in red).

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