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Effect of the Multilateral Surveillance of Trade Policies on Economic Institutions, Participation in Global Value Chains and Export Upgrading in Developing Countries

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Abstract

The present analysis investigates the effect of the World Trade Organization (WTO)'s surveillance of trade policies (MSTP) on its member states' economic institutions (regulatory quality and government effectiveness), participation in global value chains (GVCs) and export upgrading. The analysis shows that the MSTP helps improve economic institutions in NonAfrican countries than on African countries, although to a greater extent in the former than in the latter. However, there is no significant effect of the MSTP on backward GVC participation and export upgrading in African countries, reflecting the fact that the review of trade policies has not led to a diversification of manufactured exports across different types of manufactures. On the other hand, the MSTP promotes backward GVC participation and export upgrading in NonAfrican countries. The analysis has also shown that member states that are subject to a higher frequency of trade policy reviews enjoy a greater participation in GVCs, and a higher export upgrading. However, there is no systematic evidence that the MSTP enhances economic institutions, fosters GVC participation and export upgrading, as countries undertake greater liberalization commitments. Overall, the analysis shows that by enhancing multilateral trade cooperation and helping member states (e.g., NonAfrican countries) improve domestic policy and institutional reforms, the MSTP can be instrumental in enhancing GVC participation and export upgrading in reviewed member states. These findings are particularly relevant in the present context of intensification of geopolitical tensions.

Keywords: Multilateral Surveillance of Trade Policies; Economic institutions; Participation in GVCs; Export upgrading.

JEL Classification: F13 ; F14; H11 ; O1.

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1. Introduction

Created in 1995 with a wider covered areas than its predecessor², the World Trade Organization (WTO) aims to ensure that trade flows as smoothly, predictably, and freely as possible across borders. A core function of the WTO is the multilateral surveillance of member states' trade policies, which is performed by the Trade Policy Review Body (TPRB) under the umbrella of the Trade Policy Review Mechanism (TPRM). The stated purpose³ of the TPRM is *“to contribute to improved adherence by all Members to rules, disciplines and commitments made under the Multilateral Trade Agreements and, where applicable, the Plurilateral Trade Agreements, and hence to the smoother functioning of the multilateral trading system, by achieving greater transparency in, and understanding of, the trade policies and practices of Members.”* Thus, the transparency⁴ and understanding of WTO Members' trade policies and practices is at heart of the MSTP, in line with the role of international regimes to collect information with a view to evaluating their own performance or the performance of individual parties (Mitchell, 1998: p113). Despite the vagueness of the concept of “transparency” (e.g., Turnes and Ernst, 2015), the WTO Glossary has defined “transparency in trade policies and practices” as the “degree to which trade policies and practices, and the process by which they are established, are open and predictable”. In the WTO parlance, the concept of “transparency” is narrowly conceived to encompass a requirement to furnish trade-related information (e.g., through notification of obligations contained in WTO Agreements and Decisions) and, to administer the relevant rules reasonably and in a non-discriminatory way (e.g., Delimatsis, 2014). The TPRM is a top-down mechanism (Delimatsis, 2014) designed to enhance the effectiveness of the domestic policy-making process through informed public understanding (Ostry, 1997). Annex 3.B⁵ of the Marrakesh Agreement establishing the WTO underscores the importance of the TPRM for domestic transparency. It states that *“Members recognize the inherent value of domestic transparency of government decision-making on trade policy matters for both Members' economies and the multilateral trading system, and agree to encourage and promote greater transparency within their own systems, acknowledging that the implementation of domestic transparency must be on a voluntary basis and take account of each Member's legal and political systems.”*

Karlas and Parízek (2019) have observed that the participation rates in the trade policy review (TPR) meetings were high (accounting for up to 95 per cent of the imports into the reviewed state), and many studies have reported that the TPRM has been well performing, but still needs to improve (e.g., Chaisse and Chakraborty, 2007; Karlas and Parízek, 2019, 2021; Kende, 2018; Reigado et al. 2023). In a recent analysis, Gnanngnon (2024a) has found that the multilateral surveillance of trade policies (henceforth, MSTP) (i.e., the trade policy transparency exercise under the TPRM) has helped promote trade policy liberalization in WTO member states, especially in non-poorest countries, and non-African countries. Conversely, it has been associated with the adoption of trade restrictive measures in African countries and poorest countries (yet many African countries are part of the poorest countries). This can be explained by the very high prevalence of trade restrictions in African countries, including compared to other countries in the world (Estefania-Flores, 2024). On the other

² The predecessor of the WTO is the General Agreement on Tariffs and Trade (GATT).

³ Annex 3 of the Marrakesh Agreement establishing the WTO provides for the formal rules of the TPRM (see https://www.wto.org/english/tratop_e/tpr_e/annex3_e.htm). See also the information on the amended TPRM by the WTO's General Council, effective as of 1 January 2019 (https://www.wto.org/english/docs_e/legal_e/29-tprm_e.htm).

⁴ Transparency is also ensured through the notification obligation requirement in many WTO Agreements. This transparency exercise is carried out by relevant WTO Committees and Councils (in their respective sectoral domains- for example, Council for Trade in Goods; the Council for Trade in Services; the Committee on Agriculture; the Committee on Trade and Development) that monitor the implementation of WTO agreements by the member states, as well as their trade policies (e.g., Collins-Williams and Wolfe 2010).

⁵ See information online at: https://www.wto.org/english/tratop_e/tpr_e/annex3_e.htm and at https://www.wto.org/english/docs_e/legal_e/tpr_e.htm

side, to the best of our knowledge, only one study (Kuenzel, 2019) has explored the trade flows effect of the MSTP. The author has specifically investigated whether the bilateral nudges through the trade policy review process have been effective in promoting bilateral trade. The study has revealed that the submission of trade policy concerns (by the reviewed country's trading partners) enhances bilateral trade flows when the reviewed country is less concerned about terms-of-trade losses, when it is an active pursuer of trade disputes against the importer in the past, and if the submitting country challenges trade policies in the nonchemical manufacturing sector. As for the agricultural sector, the author reports no significant effect of bilateral nudges through the TPRM on agricultural trade flows, possibly due to the fact that agriculture is a highly contentious negotiation area.

The present study aims to complement the still nascent literature on the trade effect of the MSTP by investigating the effect of the MSTP⁶ (undertaken through the trade policy review exercises under the TPRM) on economic institutions, participation in global value chains (GVCs) and export product upgrading in reviewed member states. The analysis is based on the premise that the MSTP would affect economic institutions, participation in GVCs and export product upgrading not only through its effect on trade policies (as observed by Gnanngnon, 2024a), but also by helping improve economic institutions, especially the regulatory policy quality and the government effectiveness. The empirical analysis has covered 135 developing countries⁷ and the period from 1996 to 2022. It has primarily utilized the feasible generalized least squares, and established several findings. The MSTP has been instrumental in fostering economic institutions in both African and NonAfrican countries, to the greater extent on NonAfrican countries than on African countries. However, it has fostered backward GVC participation by NonAfrican countries and promoted export upgrading in these countries, but has exerted no significant effect on backward GVC participation and export upgrading in African countries. Finally, the analysis has also explored and revealed mixed evidence concerning the effect of the MSTP on economic institutions, as well as on participation in GVCs and export upgrading across different sub-groups of the full sample, including depending on the frequency of review of member states' trade policies, and their degree of trade liberalization commitments.

The remainder of the study is organized around 6 sections. Section 2 presents the background on the MSTP, including how it helps reviewed member states improve their domestic policies. Section 3 discusses how the MSTP can affect export-related outcomes, and section 4 lays down the baseline model specification that will be used to test the effect of the MSTP on export-related outcomes. Section 5 presents the different econometric approaches used in the analysis, and Section 6 interprets empirical outcomes. Section 7 deepens the analysis, and Section 8 concludes.

⁶ It is important to emphasize that as noted above, trade policy transparency is not confined solely to the MSTP through TPR exercises. Instead, the MSTP contributes to enhancing trade policy transparency. As a result, the present study does not pretend to assess the effect of trade policy transparency (in its full extent) on economic institutions and export-related outcomes, but the effect of the MSTP (an important contributor to trade policy transparency) on economic institutions and export-related outcomes.

⁷ We use as “developing countries” countries that not founding Members of the General Agreement on Tariffs and Trade (GATT), the predecessor of the WTO. In fact, in the WTO framework, there is no formal criteria to categorize “developed countries” and “developing countries”. This is because when joining the WTO, member states self-designate as ‘developed country’ or ‘developing country’, but other members can challenge the decision of a member to make use of provisions available to developing countries (see information online at: https://www.wto.org/english/tratop_e/devel_e/d1who_e.htm#:~:text=Developing%20country%20status%20in%20the,countries%20can%20receive%20technical%20assistance.)

2. Background on the effect of the MSTP on domestic policymaking

Transparency does not only improve the predictability and legal certainty for traders, but it also enhances the accountability and legitimacy of regulatory authorities at all stages of regulatory policymaking. In so doing, transparency reduces the asymmetrical information about each member state's trade policies, especially in a world of asymmetric information (Collins-Williams and Wolfe, 2010). According to Helble et al. (2009), trade policy transparency has two main dimensions, namely the "predictability in trade policy" and the "simplification of trade policy". A predictable trade policy helps reduce the uncertainty cost, and in this regard, the costs for undertaking business. Trade policy simplification helps reduce information costs by making less costly and easier for importers and exporters to identify, assess and comply with trade regulation. Helble et al. (2009) have shown that trade policy transparency complements the traditional tariff and non-tariff liberalization measures in promoting trade, especially for differentiated products.

The MSTP undertaken under TPRM contributes to enhancing transparency by allowing the collective appreciation and economic evaluation of individual Members' set of trade policies and practices. It analyses the extent to which they contribute to the efficient allocation of resources, as well as assessing their consistency with the broad principles of non-discrimination and predictability that underlie the WTO (Daly, 2011). Hence, the TPRM is a forum (an important WTO's institutional platform) that allows member states to undertake a comprehensive review of their peers' trade policies and practices. The implied transparency (monitoring) exercise aims primarily to supply information on the reviewed member states' trade policies and practices, and spans practically all sectors⁸ covered by WTO agreements (e.g., Ghosh, 2010; Laird, 1999; WTO, 1995). In so doing, the TPRM throws light on whether (and if so, how) policies and measures⁹ that do not necessarily contravene WTO rules, or are not necessarily covered by those rules may significantly affect the cross-border movement of goods, services, capital, and labour, and exert effects similar to more conventional measures (e.g., import tariffs and direct subsidies) that are subject to existing WTO disciplines (Daly, 2011). Nonetheless, WTO Trade Ministers have not conceived the Trade Policy Review (TPR) exercise as a policy exercise that will serve as a basis for the enforcement of specific WTO obligations under the WTO rules, or for dispute settlement procedures, or to impose new policy commitments (new obligations) on members states. Instead, the Mechanism focuses on improved adherence by all Members to rules, disciplines and commitments made under the Multilateral Trade Agreements and, where applicable, the Plurilateral Trade Agreements¹⁰. Thus, while the Mechanism evaluates the conformity of member states' trade policies with WTO rules¹¹ (e.g., Laird and Valdés, 2012; Qureshi, 1990), its findings have no binding effect on the reviewed members. However, according to Chaisse and Chakraborty (2007: p161), several members have had to revise their national legislation to adapt to WTO rules in the wake of certain TPRs: *"even if the TPR issues no condemnation from the WTO, diplomatic pressure is sometimes so severe that a country will have to conform to the report, if only to avoid a potential litigation."* Chaisse and Chakraborty (2007) have additionally clarified that while the TPRM deals with the compatibility of a particular member's trade policy with WTO rules, the prevalence of such policies can be successfully challenged at the Dispute Settlement Body ("DSB"), which makes decisions on trade disputes between governments that are adjudicated by the WTO. Thus, the TPR can be considered as an *"extended wing of the Dispute Settlement Mechanism"* (see Ratnesh, p42). Along the same

⁸ This peer-review exercise provides an opportunity for member states to raise all possible thematic (sectoral) concerns relating to trade policies and practices of the reviewed member state.

⁹ These are for example, fiscal policy, exchange rate protection, export taxes, private anti-competitive practices, and regulatory subsidies (Daly 2011).

¹⁰ See World Trade Organization, Ministerial Conference of 30 Nov.-3 Dec. 1999, Appraisal of the Operation of the Trade Policy Review Mechanism, 15, WT/MIN(99)/2 (Oct. 8, 1999).

¹¹ See the Report of the Trade Policy Review Body for 2006, 10, WT/TPR/W/36, (Oct. 23, 2006).

lines, Wolfe (2018) has argued that the surveillance activity to enhance transparency in trade policies and practices is more about “nudging the reviewed member state toward the adoption of good policy” rather than ensuring the member state’s compliance¹² with WTO rules. Kuenzel (2019) has noted that by serving as a platform for member states to understand and provide feedback on the reviewed country’s trade policies and practices, the TPRM allows the reviewed country to unilaterally adjust its trade policies and practices. Likewise, Qureshi (1995) has pointed out that the TPRM has the potential for influencing member states’ conduct. Specifically, for developing countries, TPR meetings have precipitated an internal co-ordination of trade policy and practice, heightened consciousness in this field, and led to concentrated minds with respect to trade policy. By reducing the costs of learning about trading partners’ commercial policies (e.g., Josling, 2013), the trade policy transparency exercises undertaken through TPR meetings encourage WTO member states to adopt better policies (e.g., Blackhurst, 1998; Laird, 1999; Laird and Valdes, 2012; Wolfe, 2018). Francois (2002) has shown that the TPRM has the potential of improving trade policy transparency and promoting policy stability in developing countries, which in turn, help enhance the credibility of domestic policy and policy reform, boost investor confidence, and reduce country risk in developing economies.

Daly (2011) also argues that the policy exercise under the TPRM is very welcomed by WTO member states under review as a catalyst for introspection and, as such, it can encourage unilateral reform, including trade liberalization. This is particularly the case for less developed countries that lack the requisite institutional capacity to undertake the evaluation of their own policies and measures and, therefore, consider the TPRM as a kind of technical assistance that allows them to improve domestic transparency and thus the effectiveness of their policies. The WTO’s 2013 Report by the TPRB underscores the importance of the TPRM technical assistance for LDCs, including for a better understanding of the WTO Agreements and, a better compliance and integration into the multilateral trading system. The report also points out that this policy exercise under the TPRM enables LDC Members to identify any shortcomings in policy and specific areas where further technical assistance may be required. It, therefore, requests that *the Member concerned, the Secretariat organizes follow-up seminars to discuss the outcome of the trade policy review process with domestic stakeholders* (see WTO, 2013: paragraph 9). The Report of the Trade Policy Review Body for 2023 indicates that TPRs have helped LDCs improve their understanding of WTO Agreements, enhance their compliance with those Agreements, and ultimately permit them to further integrate into the multilateral trading system. By the end of 2023, 33 out of 35 WTO LDC Members had been reviewed, and the WTO Secretariat organized a follow-up workshop to discuss the outcomes of the Review with domestic stakeholders for LDCs and developing countries. The workshop disseminates the outcomes of the TPR, reflects on Members’ priorities and technical assistance needs and the concerns expressed by other Members during the TPR. In 2023, several TPR-related technical assistance activities were held (see WTO, 2023).

Members’ states trade policies and practices are regularly¹³ scrutinized under the TPRM, the frequency of the review being dependent on each member state’s share in the world trade volume, in a recent representative period. In fact, the frequency for reviewing each WTO member¹⁴ state’s trade policies is determined by the average share of the value of a member state’s global trade in goods and services over a three-year period (using figures taken from the World Trade Statistical Review). Until 2018, this frequency was a 2-year review cycle for the first four major trading entities (currently China; the European Union; the United States, and Japan); a 4-year review cycle for the next 16 entities; and

¹² The function of ensuring compliance of WTO Members’ trade policies with WTO rules is carried out by WTO’s Committees, and more importantly by the Dispute Settlement Body.

¹³ The rationale for the regular review of member states’ trade policies and practices is to ensure that their import policies in major import destinations have the least trade diversion effects.

¹⁴ The TPRs of some WTO members are undertaken as group reviews (e.g., the European Union; the West African Economic and Monetary Union (WAEMU)).

a 6-year review cycle for other WTO Members, although the review cycle can be longer for Least developed countries (LDCs) that are considered as the poorest¹⁵ countries in the world. From 1 January 2019, the review cycle has been amended¹⁶ respectively to three, five and seven years.

A standard TPR meeting entails the consideration of two separate reports on the reviewed country's relevant commercial policies (including trade policies and trade policymaking institutions) and major societal and economic developments (especially macroeconomic situation) over a given time frame, especially since the last meeting of the TPRB concerning the country. One report is prepared by the WTO Secretariat (on its own responsibility), and the other report is prepared by the reviewed country's government. WTO Members receive the two reports prior to the TPR meeting of the reviewed country, period during which they may submit written questions to the member under review. The reviewed country has the obligation to provide a written response to these questions. The two-day TPRB meeting is concluded by the TPRB Chairperson's concluding remarks, which are published¹⁷ shortly after the meeting, along with the two above-mentioned reports.

It is important to note that as a unique cross-cutting platform for transparency on members' trade measures, the WTO Secretariat prepares a WTO-wide monitoring report, using the information provided by Members (in between their reviews) on significant trade policy changes. The report¹⁸ titled "Overview of Developments in the International Trading Environment" is prepared on an annual basis, under the responsibility of the WTO Director-General, as called for by Annex 3.G¹⁹ of the Marrakesh Agreement establishing the WTO²⁰.

A relevant question for the TPRM - which applies as well to many other international organizations is whether the TPRM has been performing well its functions (Hale, 2017). A number of studies have tried to address this question. At the start of its operationalization, the TPRM was criticized²¹ and was found to contribute little to the enhancement of transparency (e.g., Conzelmann, 2008; Ghosh, 2010; Keesing, 1998; Zahrnt, 2009). However, recent studies have shown that the TPRM had been well performing, although it still needs to improve (e.g., Chaisse and Chakraborty, 2007; Karlas and Parízek, 2019, 2021; Kende, 2018; Reigado et al. 2023). For example, according to Chaisse and Chakraborty (2007), the WTO has been able to ensure a satisfactory enforcement of its laws in national legal orders and to influence national trade policies, but the system still needs to be improved. In the same vein, Karlas and Parízek (2019) have found that WTO member states' participation rates in the TPR meetings were high (accounting for up to 95 per cent of the imports into the reviewed state). In addition, the TPRM provides opportunity for substantial critical review by peers of member's trade policies and practices, especially in some areas such as agriculture. However, there are some areas of improvement of the operation of the TPRM, which are for example, the excessive formalism and

¹⁵ See information online at: <https://www.un.org/ohrrls/content/least-developed-countries>

¹⁶ This is the amendment to Annex 3 in July 2017. It is Available online at: <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/L/1014.pdf&Open=True>

¹⁷ The reports discussed at the TPR meetings and other relevant information are available online at: https://www.wto.org/english/tratop_e/tpr_e/tpr_e.htm

¹⁸ The Trade Monitoring Database that provides an overview of global trade developments, including major trade policy changes (and hence the Director-General report on the matter) is accessible online at: <https://tmdb.wto.org/en/reports>

¹⁹ See information online at: https://www.wto.org/english/tratop_e/tpr_e/annex3_e.htm and at https://www.wto.org/english/docs_e/legal_e/tpr_e.htm

²⁰ Further details on the Trade Monitoring Exercise is accessible online at: https://www.wto.org/english/tratop_e/tpr_e/trade_monitoring_e.htm

²¹ Some of the criticisms related to the trade policy review meetings that took place under the umbrella of the Trade Policy Review Body (TPRB). These included the low participation of member states in the meetings; the formalistic and unproductive nature of the meetings (in the sense of a mere diplomatic exercise rather than a review exercise per se) rather low. The TPRB meetings were characterized as formalistic and unproductive, as resembling a diplomatic exercise more than a review process. Overall, some of the existing studies concluded that the TPRM contributes to transparency in the global trade regime only in a very limited way.

lack of interactive discussion in the review process (Karlas and Parízek, 2019). Kende, (2018) and Reigado et al. (2023) have also noted the TPRM has been well performing but must improve its performance.

Overall, the MSTP has the potential for affecting domestic policymaking in reviewed countries, especially the adoption of better policies (including trade policy liberalization – see Gnanngnon, 2024a), an improvement in economic institutions (regulatory framework, and government effectiveness), with all of these influencing these countries' export-related outcomes.

3. MSTP, economic institutions, GVC participation and export upgrading

This section provides a discussion on the theoretical effects of the MSTP on economic institutions (sub-section 3.1). It, then, builds on this discussion as well as the findings by Gnanngnon (2024a) concerning the trade policy effects of the MSTP to elaborate on the effect of the MSTP on export upgrading and participation in GVCs (sub-section 3.2).

3.1. Effect of the MSTP on economic institutions

North (1981) has defined “institutions” as a suite of measures that reduce the degree of uncertainty and increase personal utility, and economic rules that govern social, political, and economic behaviours. Hence, institutions represent the rules of the game in society, which once established, provide a stable structure for interpersonal interaction, help reduce the degree of uncertainty, and determine the opportunities and costs of various activities (North, 1990). A good institutional quality helps alleviate the inefficiency (or improve the efficiency) of resource allocation, reduce transaction costs, facilitate a favourable capital market and investment environment, encourage factor accumulation, innovation, and productivity, and promote long-run economic growth and development (e.g., Acemoglu et al. 2005; Chang, 2023; Easterly and Levine, 2003; Mauro, 1995; Rodrik et al., 2004; Shleifer and Vishny, 1993). The quality of institutions can take various forms, including legal institutional quality, economic institutional quality, and political-institutional quality. The present analysis focuses on two types of economic institutions, namely regulatory quality, and government effectiveness. Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.” (Kaufmann et al., 2010). Government effectiveness captures “perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies” (Kaufmann et al., 2010). According to Langbein and Knack (2009), even though these two types of economic institutions seem to be distinct, they tend to measure the same broad concept of “governance quality”, and are closely linked not only to each other, but also to other types of institutional quality (i.e., political and legal institutional quality) defined by Kaufmann et al. (2010) that are: Voice and Accountability²²; Control of Corruption²³; Political Stability and Absence of Violence/Terrorism²⁴; and Rule of law²⁵. In general, “regulatory quality” and “government effectiveness” have in common to measure the soundness of policy formulation, proper implementation of policies that are citizen centric.

²² It measures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

²³ It captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

²⁴ It captures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism.

²⁵ It measures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

Bhattacharyya (2012) has established that trade liberalization leads to an improvement in economic institutions, especially property rights and contracts. Other studies have looked at the effect of trade liberalization on the institutional and governance quality from the perspective of the effect of the WTO membership on institutions and governance. The strong trade liberalization commitments undertaken by WTO Members that joined the WTO under Article XII²⁶ the Marrakesh Agreement establishing the WTO has allowed them to implement significant domestic reforms, especially the establishment of trade-related institutions or the improvement of existing trade-related institutions (e.g., Basu, 2008; Basu et al., 2008; Tang and Wei, 2019). According to Drabek and Bacchetta (2004), despite the costs of joining the WTO, the membership in the organization induces member states to improve governance and implement better economic policies. Aaronson and Abouharb (2014: p548) have pointed out that member states that adhere to three norms²⁷ of good governance established by the WTO can experience an improvement in governance quality. The argument put forth by the authors is that Aaronson and Abouharb (2014: p577) have put forth that prior to their accession to the WTO, countries undertake significant changes to their laws, regulations, and behaviour concerning trade and trade-related policies. Additionally, after joining the WTO, countries' trade policies are carefully reviewed by other member states under the trade policy review mechanism. Thus, as member states adhere to these core values of the WTO during and after accession, they will, over time, learn from other member states, improve or develop sound trade-related institutions and trade policies, and ultimately enjoy a better trade-related governance that will progressively spillover into the polity as a whole. Their empirical analysis has revealed that new members performed well in terms of 'access to information', showed weak performance in terms of 'evenhandedness', and experienced no significant effect their membership on the 'due process' value of the WTO. Conversely, long-standing WTO members exhibited stronger performance on metrics of 'due process' and 'access to information', but showed weaker performance on metrics of 'evenhandedness'. Additionally, the authors have found support for their hypothesis that the norms of good governance promoted by the WTO gradually filter into the polity as a whole.

Against this backdrop, and building on the discussion in section 2, we formulate the hypothesis that by providing incentives to governments to adjust their laws and regulations, and implement better policies, the MSTP can help improve the institutional quality, including regulatory policy and government effectiveness (***hypothesis 1***). Nevertheless, the effect of the MSTP on economic institutions may vary across different sub-samples. In particular, it may not be the same in African countries (Africa represents the least integrated continent in global trade) as in NonAfrican countries. Similarly, the effect may be different for LDCs (that are not only the group of the poorest countries in the world, but also the set of countries that are subject to the lowest frequency of TPR exercise at the WTO). In addition, as WTO member states are subject to different frequencies of TPR meetings, one could expect that member states with the higher frequency of TPR meetings may enjoy a larger positive effect of the MSTP on economic institutions than those that undergo the TPR exercise at a lower frequency. This is because members whose trade policies are regularly scrutinized can be more incentivized to enhance domestic reforms, including towards trade liberalization and improvement of

²⁶ Article XII of the Agreement establishing the WTO concerns the accession of states or customs territory to the WTO, and its first paragraph (i.e., Article XII.1) reads as follows: "*Any State or separate customs territory possessing full autonomy in the conduct of its external commercial relations and of the other matters provided for in this Agreement and the Multilateral Trade Agreements may accede to this Agreement, on terms to be agreed between it and the WTO. Such accession shall apply to this Agreement and the Multilateral Trade Agreements annexed thereto*". See information online at: https://www.wto.org/english/docs_e/legal_e/04-wto.pdf and https://www.wto.org/english/thewto_e/acc_e/acces_e.htm

²⁷ These norms are even-handedness (i.e., 'non-discrimination' in the WTO jargon), access to information (or 'transparency' in the WTO jargon), and the administrative due process (i.e., the ability of members to review, comment upon, and challenge trade-related policies).

domestic economic institutions than member states whose trade policies are subject to a lower frequency of review by peers.

Finally, the effect of the MSTP on economic institutions may also depend on the degree of trade liberalization commitments undertaken by countries when joining the WTO. We consider here three different groups of member states depending on their degree of trade liberalization commitments when joining the WTO. In fact, some member states, essentially former colonies of existing GATT contracting parties had the possibility of invoking Article XXVI 5(c)²⁸ of the GATT to join the GATT upon becoming independent. To join the GATT, those member states were simply sponsored by their former colonial powers (that were already GATT contracting parties), and were not required to undergo long negotiations and to undertake extensive reforms to join the GATT. Those member states subsequently joined the WTO through simple procedures. We refer to this first group of countries as Article 26 member states (denoted “ART26”). The second group of countries includes member states that did not invoke GATT Article XXVI 5(c) when by negotiating their terms of accession to the GATT. These member states joined the GATT through Article XXXIII, which required rigorous and long negotiations, including the implementation of extensive reforms. Existing contracting parties could block the accession of these states if they were of the view that the applicant countries had not undertaken the requisite free-market reforms, and the applicant country had to obtain approval from every existing GATT contracting party. Overall, Article XXXIII contracting parties of the GATT (i.e., those member states that joined the GATT through Article XXXIII GATT provision and not through Article XXVI 5(c) GATT provision) undertook extensive reforms commitments than Article XXVI 5(c)-eligible contracting parties. We refer to this group of countries as “NonArticle 26 member states”. Like Article 26 member states, NonArticle 26 member states joined the WTO through simple procedures. The main difference between Article 26 member states and NonArticle 26 member states of the WTO is that the former did not undertake greater trade liberalization commitments when joining the GATT and subsequently the WTO, while the latter undertook relatively greater trade liberalization commitments when joining the GATT and subsequently the WTO. Finally, the third and last group of member states is comprised of those that were not GATT contracting parties, but joined directly the WTO, including through under Article XII of the Marrakesh Agreement establishing the WTO. This group of member underwent more stringent procedures than the ones undergone by original WTO Members, i.e., than NonArticle26 member states and even more so than to Article26 member states (e.g., Drabek and Bacchetta, 2004). These member states are referred to as Article12 countries (defined as “ART12”). Summing-up, Article12 member states undertook stronger trade liberalization commitments than NonArticle 26 members, which in turn, undertook greater trade liberalization commitments than Article 26 member states. Against this background, we can expect that the MSTP may exert a larger positive effect on economic institutions in Article12 members states than in NonArticle26 members states. Moreover, we can expect the MSTP to exert a larger positive effect on economic institutions in NonArticle26 member states than in Article26 member states.

²⁸ The GATT Article XXVI 5(c) reads as follows: If any of the customs territories, in respect of which a contracting party has accepted this Agreement, possesses or acquires full autonomy in the conduct of its external commercial relations and of the other matters provided for in this Agreement, such territory shall, upon sponsorship through a declaration by the responsible contracting party establishing the above-mentioned fact, be deemed to be a contracting party. GATT Article XXVI 5(c) is accessible online at: https://www.wto.org/english/res_e/publications_e/ai17_e/gatt1994_art26_gatt47.pdf

3.2. Effect of the MSTP on GVC participation and export upgrading

The discussion under this section builds on the findings by Gnangnon (2024a) - that the MSTP has been instrumental in fostering trade policy liberalization in WTO member states, especially in non-poorest countries, and non-African countries - as well as on the premise that the MSTP is likely to help improve economic institutions, including regulatory policy and government effectiveness (see hypothesis 1 above). It discusses the effect of the MSTP on the participation in GVCs and export upgrading.

3.2.1. Effect of the MSTP on participation in GVCs

Antràs (2019: p3) has defined a global value chain as a series of stages involved in producing a product or service that is sold to consumers, with each stage adding value, and with at least two stages being produced in different countries. Hence, a firm participates in a GVC if it produces in at least one stage in a GVC. In the same vein, World Bank (2020: p17) has defined a GVC as "*the series of stages in the production of a product or service for sale to consumers. Each stage adds value, and at least two stages are in different countries.*" Country's participation in GVCs is captured through its backward participation in GVCs, and its forward participation in GVCs. The backward participation in GVCs captures the foreign value-added content of a country's total gross exports, and the forward participation in GVCs captures for a given country, the domestic value added (intermediate inputs) in the value-added exports of other countries (e.g., Hummels et al., 2001; Koopman et al., 2014). In other words, the backward participation in GVCs indicates how a country's export sector is dependent on foreign inputs, and the forward participation in GVCs shows how domestic exports rely on other countries' exports (e.g., Smichowski et al., 2021). For developing countries that tend to export primary commodities and labour-intensive products, the backward participation in GVCs is critical to foster economic development. This is because improving forward GVC participation entails exporting raw commodities and intermediate inputs to foreign countries that will process them, while enhancing engagement in backward GVCs is associated with higher absolute levels of gross exports, domestic value added and employment (e.g., Veeramani and Dhir, 2022), and induces higher domestic productivity than forward GVC participation does (Constantinescu et al. 2019).

An important body of the literature has emphasized that trade liberalization promotes participation in GVCs (e.g., Aichele and Heiland, 2018; Antràs, 2020; Antràs and Chor, 2022; Jakubik and Stolzenburg, 2020; Shepherd, 2022; Yi, 2010). The adverse impact of trade barriers is magnified in the presence of GVCs where intermediate inputs cross borders several times (e.g., Baldwin, 2013; Blanchard, 2014). James (2018) argues that trade protectionism can offset any gains associated with cross-border sourcing and encourage firms to source locally. International trade protectionism has disrupted significantly the functioning of GVCs, making them exposed to future external policy risks, and ultimately altering the GVCs landscape. Industries that are more global in nature are the hardest hit (Zahoor et al. 2023). On the other hand, the institutional and governance contributes significantly to fostering GVC participation (e.g., Antràs, 2016; 2020; Dollar and Kidder, 2017; Fernandes et al., 2022; Hammoudeh et al., 2023; Kowalski et al. 2015). Antràs (2016; 2020) have stressed the importance of the institutional quality in fostering participation in GVCs. In particular, GVC participation is distinct from traditional trade by the complexity of international contracting for specialized products and investment in the GVCs (e.g., Antràs, 2016; Fernandes et al., 2022). As a result, weak institutions lead to weak contract enforcement, and significantly deter GVC participation. Dollar and Kidder (2017) have noted that the institutional quality affects comparative advantage and consequently firms' participation in GVCs, especially in developing countries. As a result, measures such as increasing the enforceability of contracts, improving transparency, making customs processes efficient, reducing corruption and providing equitable protection of rights, are likely to reduce transaction costs and facilitate firms' participation in GVCs. Hammoudeh et al. (2023) have observed

that the improvement in business regulations in the context of sound economic management, social inclusion, structural and public sector management policies, fosters African countries' participation in GVCs. Building on these empirical findings, we argue that by promoting domestic reforms - especially trade policy liberalization - and improving economic institutions, the MSTP can enhance countries' engagement in GVCs by promoting their backward GVC participation, and eventually reducing their forward GVC participation, ultimately leading to the improvement of their position in the GVCs (*hypothesis 2*). Here as well, the effect of the MSTP on countries' GVC participation can vary across sub-samples, including African countries versus NonAfrican countries, LDCs, groups with different frequencies of TPR meetings, and degrees of trade liberalization commitments. The arguments developed above under hypothesis 3 apply here as well, especially for backward GVC participation, which is more critical for economic development than forward GVC participation.

3.2.2. Effect of the MSTP on export upgrading

Export upgrading entails here export product diversification and improvement in economic complexity. The concept of “economic complexity” refers to the production and exports of products that have a low ubiquity, that is, products with a unique set of capabilities such that they cannot be easily reproduced by other countries (e.g., Hartmann et al., 2017; Hausmann and Hidalgo, 2009; Hausmann et al., 2014; Hidalgo, 2021). As a result, an economy is considered as complex (or sophisticated) if it exports a diversity of products that are featured by a low ubiquity. Trade liberalization allows developing countries to import a variety of inputs (e.g., Bas and Strauss-Kahn, 2015; Fan et al 2015; Verhoogen, 2008), which in turn, permits access to external knowledge and technology adoption, encourages incremental innovation (e.g., Chen et al 2017; Coelli et al., 2022; Liu and Qiu, 2016; Şeker et al., 2024; Puga and Trefler, 2010) and ultimately encourages the export of sophisticated goods (e.g., Castellani and Fassio, 2019; Kugler and Verhoogen, 2009). Trade liberalization is associated with export upgrading (e.g., Adityaa and Acharyya, 2015; Cadot et al., 2011; Chen and Juvenal, 2022; Dutt, 2020; Dutt et al., 2013; Fan et al., 2015; Regolo, 2013; Weldemicael, 2014). On the other hand, improvement in the institutional quality can foster export upgrading (e.g., Sheng and Yang, 2016; Omgba, 2014; Vogel, 2024). Drawing from these findings, we postulate that the MSTP can promote export upgrading (*hypothesis 3*). Here as well, the export upgrading effect of the MSTP can vary across sub-samples, including African countries versus NonAfrican countries, LDCs, and groups with different frequencies of TPR meetings, and levels of trade liberalization commitments. In particular, one may expect the MSTP to exert a larger positive effect on export upgrading in NonAfrican countries than on African countries given that the MSTP is associated with a greater trade policy liberalization in NonAfrican countries, and with restrictive trade policies in African countries (this argument may hold even if the MSTP is associated with an improvement in economic institutions). Likewise, the MSTP may not necessarily lead to a greater export upgrading in LDCs not only because of the very limited trade capacity of these countries (due to limited resources and human capacities), but also because the MSTP has not resulted in a greater trade policy liberalization in these countries (Gnangnon, 2024). On the other hand, the MSTP can exert a larger positive effect on Article12 member states than it does on the NonArticle26 member states, and even more so than Article26 member states. Finally, the MSTP may exert a larger positive effect on countries whose trade policies are more frequently reviewed than on those whose trade policies are less frequently reviewed.

4. Model specification

To estimate empirically the effect of the MSTP on economic institutions, participation in GVCs and export upgrading, we consider a baseline model specification where the dependent variable is the measure of economic institutions, namely regulatory quality (“REGQ”) and government effectiveness (“GEFF”), or indicators of GVC participation and export product upgrading.

The baseline model specification takes the following form:

$$DEP_{it} = \gamma_0 + \gamma_1 CUMTPR_{it} + \beta X_{it} + \gamma_t + \mu_i + \varepsilon_{it} \quad (1)$$

i and t represent respectively a country, and a year in the panel dataset. The latter was built on the basis of data availability. The panel dataset is unbalanced, and covers 135 developing countries over the annual period from 1996 to 2022. The set of 135 countries includes 18 countries²⁹ that are not members of the WTO, and de facto did not undergo the process of TPR. These 18 countries constitute a sort of control group (even though, as explained latter in the analysis, this group cannot not serve as a genuine control group for an econometric analysis using matching methods). The trade policies of the remaining 117 WTO Members (among the 135 countries of the full sample) are de facto subject to the MSTP under the TPRM. It is important to note that the full sample used in the analysis does not include advanced economies (i.e., founding Members of the GATT), but it does include NonWTO Members (i.e., the above-mentioned 18 developing countries) that are de facto not subject to the MSTP. The exclusion of advanced countries from the full sample aims to ensure a certain comparability between non-advanced countries in the full sample, even though the 117 non-advanced countries (which are, in the WTO jargon, essentially composed of developing countries) is not fully homogenous in terms of development level.

The main regressor of interest is the indicator “CUMTPR”, which represents the ‘cumulative’ years of TPR meetings over the entire period under analysis. Specifically, for a given country and over the annual period from 1996 to 2022, the variable “CUMTPR” takes the value of 1 for the first year of the TPR meeting³⁰, and 1 for the subsequent years until the last year prior to the second meeting of the TPR. It subsequently takes the value of 2 for the second year of the TPR meeting until the last year prior to the third TPR meeting, if any at all...etc. The values of “CUMTPR” range from 0 to 10 in the full sample (see Appendix 2). The data used to compute the indicator “CUMTPR”, i.e., the data on the years during which a TPR meeting took place for a country, were collected from a dedicated WTO website: https://www.wto.org/english/tratop_e/tp_r_e/tp_rep_e.htm#bycountry

The set of control variables introduced in the different specifications depends on the dependent variable used. These control variables are described below. γ_0 is a constant term, and γ_1 is a parameter to be estimated. β is a set of parameters associated with each variable contained in the vector of variables X_{it} . μ_i represents countries' unobservable time invariant specific effects (e.g., colonial history, culture). γ_t are time dummies that act for global shocks affecting simultaneously the dependent variable across all countries. ε_{it} is a well-behaved error-term.

➤ *The dependent variable*

The variable “DEP” is the dependent variable, which is measured by an indicator of economic institutions or by an indicator of participation on GVCs/export upgrading. As indicated above, two different indicators of economic institutions are used. These are the regulatory quality (“REGQ”) and

²⁹ These countries are either in the process of acceding to the WTO (these are referred to as “WTO Observers”) and countries that are neither WTO Members nor initiated the process of joining the WTO.

³⁰ Data on the years during which a country's TPR meeting took place were collected on the dedicated WTO website: https://www.wto.org/english/tratop_e/tp_r_e/tp_rep_e.htm#bycountry

the government effectiveness (“GEFF”). The indicator “REGQ” captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. The indicator of government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The values of “REGQ” and “GEFF” range from -2.5 to 2.5, with higher values indicating respectively a better regulatory quality and a better government effectiveness, while lower values reflect respectively a worse regulatory quality and a worse performance in terms of government effectiveness. Data on these two institutional quality indicators are extracted from the World Bank Governance Indicators (WGI) accessible online at: <https://info.worldbank.org/governance/wgi/> (see Kaufmann and Kraay, 2023).

The second set of indicators used as dependent variables are the indicators of participation in GVCs measured by the backward participation in GVCs (denoted “BGVC”), the forward participation in GVCs (denoted “FGVC”) and the position in the GVCs (denoted “GVCPOS”). The backward participation in GVCs is measured as follows: $BGVC = \frac{FVA}{GE}$, where “FVA” is the foreign value-added that is embodied in gross exports, and “GE” is the indicator of gross exports. An increase in the values of this index reflects a higher backward participation in GVCs. The forward participation in GVCs is computed using the following formula: $FGVC = \frac{DVX}{GE}$, where “DVX” is the domestic value added used in the export of third countries. “GE” is as defined above. An increase in the values of this index reflects greater backward participation in GVCs. Data on the variables “DVX”, “FVA” and “GE” are collected from the UNCTAD-Eora Global Value Chain Database³¹, and cover the period from 1996 to 2018, while as indicated above, data on the other dependent variables are available over the period from 1996 to 2022 (yet the panel datasets are unbalanced).

Countries with different degrees of GVC participation may have the same position in GVCs. Thus, we use countries' position within the GVCs as a third indicator of their participation in GVCs. Following Koopman et al. (2014), a country's position in GVCs in a given year is calculated as the share of forward GVC participation relative to the share of backward GVC participation: $GVCPOS = \ln\left(1 + \frac{DVX}{GE}\right) - \ln\left(1 + \frac{FVA}{GE}\right)$, where “DVX”, “DVA” and “GE” are as defined above. The symbol “ln” is the natural logarithm. The index “GVCPOS” reflects a country's supply of intermediate goods used in foreign countries' exports relatively to this country's use of imported intermediate goods in its own production. Higher values of the index “GVCPOS” for a given country indicates that its forward participation is higher than its backward participation. This signifies that the country is engaged in upstream activities in the production network, that is, it is located in the first stages of production where it exports a lot of intermediate products abroad. Conversely, lower values of the indicator “GVCPOS” for a given country show that the country's forward participation in GVCs is lower than its backward participation in GVCs. This signifies that the country is situated more downstream in the value chain, that is, it is specialized in the last stages of production where it imports many intermediate products from foreign countries.

As “BGVC” and “FGVC” are proportion variables (i.e., variables whose values range between 0 and 1 - as they are not expressed in percentage), the estimation of the specifications of model (1) where these two indicators are dependent variables could generate predictions of these variables whose values lie outside the unit interval, including nonsensical predictions for extreme values of regressors (Baum, 2008). Baum (2008) proposes to handle the bounded nature of the dependent variable by transforming the indicator using the ‘logit’ function, and then use the linear regression (including the

³¹ It is available online at: <https://worldmrio.com/unctadgvc/>

appropriate estimator) to estimate the model with the transformed dependent variable. We apply the method proposed by Baum (2008) to transform each of these two variables as follows: "BGVC" and "FGVC" as follows: $BGVC1 = \text{Logit}(BGVC)$ and $FGVC1 = \text{Logit}(FGVC)$.

The third set of indicators used as dependent variables are export upgrading indices. We use five export upgrading indicators. These are export diversification indices³², the indicator of the closeness of a country's export product structure with that of the world ("EXPSTR"), and the indicator of economic complexity ("ECONC"). The export diversification indicators are the Theil index of overall export diversification ("EDI"), the Theil index of export product diversification ("EDIPR") and the Theil index of export market (per product) diversification ("EDIMA"). The indicator "EDI" is the sum of the Theil index of export product diversification ("EDIPR") and the Theil index of export market (per product) diversification ("EDIMA"). The Theil index of export product diversification is computed as the opposite of the Theil index of export product concentration ("ECIPR"), the latter being calculated using products at the 3-digit level (based on the SITC Revision 3) and derived from bilateral export flows of all individual products. $EDIPR_{it} = -ECIPR_{it}$, where the subscripts i and t represent respectively a country and a year. Likewise, the Theil index of export market (per product³³) diversification ("EDIMA") is computed as the opposite of the Theil index of export market (per product) concentration ("ECIMA"). The latter is calculated using products based on the SITC Rev.3 (3-digit level), and derived from all bilateral export flows of all individual products. $EDIMA_{it} = -ECIMA_{it}$, where the subscripts i and t represent respectively a country and a time. Higher values of the index "EDI" indicate a higher degree of the overall export diversification, while lower values of this index reflect a tendency for a greater overall export concentration. Higher values of the index "EDIPR" indicate a higher degree of export product diversification, while lower values of the index reflect a tendency for a greater export product concentration. Similarly, higher values of the index "EDIMA" indicate a higher degree of export market (for individual products) diversification, while lower values of this index reflect a tendency for a greater export market concentration for individual products³⁴. The indicator "EXPSTR" measures the extent to which the structure of export products of a given country is closed to the world pattern. It is computed as the opposite of the UNCTAD's indicator that described to the extent to which a given country's structure of export products by a given country differs from the world pattern³⁵. Data on this indicator are extracted from the UNCTAD database (<https://unctadstat.unctad.org/datacentre/>). The index of economic complexity "ECONC" reflects the diversity and sophistication of a country's export structure and hence indicates the diversity and ubiquity of the country's export structure. It was estimated using data connecting countries to the products they export, and applying the methodology described in Hausmann and Hidalgo (2009). Higher values of this index reflect a greater economic complexity. Data on the indicator "ECONC" are collected from the Massachusetts Institute of Technology (MIT)'s Observatory of Economic Complexity³⁶.

³² All three export diversification indicators are calculated using indicators of export concentration extracted from the UNCTAD database (<https://unctadstat.unctad.org/datacentre/>)

³³ This is a measure of the market export diversification for every export product but not a measure of the market concentration of total exports products.

³⁴ Further details on the method for computing "ECIPR" and "ECIMA" are available online at: <https://unctadstat.unctad.org/datacentre/reportInfo/US.MerchTheilIndices>

³⁵ For further details, see the information online at: <https://unctadstat.unctad.org/datacentre/reportInfo/US.ConcentDiversIndices>

³⁶ The dataset is available online at <https://oec.world/en/rankings/eci/hs6/hs96>

➤ *Control variables*

As noted above, different sets of regressors (i.e., in the vector X_{it}) are used depending on the dependent variable considered in the baseline model (1). Let us start with the specification of model (1) where the dependent variable is measured by economic institutions. Control variables are drawn from the literature on the macroeconomic determinants of institutional quality (e.g., Alonso et al., 2020; Alonso and Garcimartin, 2013; Ahlerup and Hansson, 2011; Bhattacharyya, 2012; Chong and Gradstein, 2007; Evans and Rauch, 2000). They include the level of economic development, proxied by the real per capita income (defined as “GDPC”); the economic growth rate (defined as “GROWTH”); the education level (defined as “EDU”); and the level of market-based income inequality (defined as “GINIM”). All these control variables are introduced with a one-year lag in the specification of model (1) in order to reduce the possible reverse causality from the economic institution indicators to each of the control variables.

The same control variables (with the exception of the population size) are introduced with the one-year lag in the baseline specification of model (1) where the dependent variable is the indicator of export upgrading. The population size indicator is introduced in the current year in those regressions. Specifically, for the baseline model (1) with the export upgrading indicators (except for the indicator of economic complexity) as dependent variables, we add to the set of regressors, the square term of the one-year lag of the real per capita income (in Log) with a view to capturing the existence of a non-linear relationship between the development level and export diversification. It is important to note that for the model specification where the dependent variable is the indicator of economic complexity, we use the population density (a proxy for size of the labour force) as control variable in replacement with the population size indicator (e.g., Lapatinas, 2019). All these controls are drawn from the voluminous literature on the macroeconomic determinants of macroeconomic determinants of export product upgrading (e.g., export product diversification and economic complexity) (e.g., Aditya and Acharyya, 2015; Amighini and Sanfilipo, 2014; Hausmann et al. 2007; Harding and Javorcik, 2012; Imbs and Wacziarg, 2003; Lapatinas and Litina, 2019; Parteka, 2020; Vogel, 2024; Vu, 2022; Zhu and Fu, 2013).

Finally, the control variables utilized in the specifications of model (1) where the dependent variable is the participation in GVCs are drawn from the literature on the macroeconomic determinants of GVCs (e.g., Fernandes et al., 2022; Kowalski et al. 2015; World Bank, 2020). These controls are the real per capita income (“GDPC”) (in Logs) (a proxy for the development level); the education level (“EDU”); an indicator of the depth of financial development (“FINDEV”); the share of net foreign direct investment inflows in GDP (“FDI”); the investment rare proxied by the share of gross fixed capital formation (“GFCF”); the share of total natural resource rents in GDP (“RENT”) (a proxy for the endowment in natural resources); and an indicator of political stability (“PSTAB”). All control variables are introduced with a one-year lag for the same reason as the one described. Appendix 1 describes all variables used in the analysis, and provides their sources. Appendices 2b and 2c display the standard descriptive statistics on all variables utilized in the analysis, respectively over the sub-sample of countries that are subject to the TPR transparency exercise, and over the sub-sample of NonWTO Members in the full sample.

5. Econometric approach

The nature of the event under analysis (that is, the MSTP) (which does not take place every year, but rather at a given frequency depending on the reviewed country’s share of trade in world trade) prevents us from using an event study, which usually requires that the event applies to all treated units over a given period. Likewise, we could not apply the “matching econometric methods”, given the difficulties of finding a control group that includes countries whose characteristics are similar to those

of the sample under analysis here (i.e., non-advanced Members of the WTO that constitute a highly heterogeneous group in terms of development level). In fact, if we were to perform the empirical analysis by means of matching econometric approaches, the only possible control group would be NonWTO Members that include both countries in the process of acceding to the WTO and countries that are neither WTO Members nor in the process of acceding to the WTO. Unfortunately, a few countries for which data are available (only 18 developing countries) fall in that category. Thus, this group does not contain a sufficient number of countries to serve as appropriate control group for the highly heterogeneous group of 117 countries that underwent the MSTP. For all these reasons, we investigate empirically the effect of the MSTP on economic institutions, participation in GVCs and export upgrading by using as our main regressor in equation (1) the indicator “CUMTPR”, which allows assessing the effect of an additional year of the TPR transparency exercise on economic institutions, participation in GVCs and export upgrading. To do so, we utilize standard econometric approaches to estimate the different variants of the baseline model (1), that is, model (1) with different dependent variables and regressors.

At the outset, we note that almost all variables used in the analysis (especially the dependent variables and the main variable of interest “CUMTPR”) display larger between-country variations than the within-country variations (see Appendix 2b). It, therefore, follows that estimating the baseline specification of model (1) by means of the fixed effects estimator amounts to disregarding the between-country variations of variables and considering only their within-country variations. This would lead to efficiency loss of the coefficients estimated. To overcome this problem, we primarily utilize the feasible generalized least squares (“FGLS”) estimator of Zellner (1962) to estimate the different specifications of model (1) where the dependent variable is measured by economic institutions, export upgrading and participation in GVCs. The FGLS estimator has the advantage of handling cases where the variance-covariance matrix of errors is unknown (and is in such a case, estimated from the sample - see Verbeek, 2012). It helps address heteroskedasticity, serial and cross-sectional correlations in the residuals (e.g., Bai et al., 2021; Zellner, 1962).

The estimations are performed over the full sample and several sub-samples. The sub-samples include the group of African countries; the group of NonAfrican countries (i.e., all countries in the full sample that are not African countries); and the group of LDCs³⁷. We also present estimations’ outcomes over different sub-groups with different frequencies of TPR meetings. These are the groups of countries that underwent respectively a 2-year TPR cycle (or a 3-year review cycle since 2019); a 4-year TPR cycle (or a 5-year review cycle since 2019); and a 6-year review cycle (or a 7-year review cycle since 2019). Each of these samples includes both the relevant sub-group of countries that underwent the TPR exercise and the 18 developing countries that never underwent this transparency exercise. The choice to perform the regressions over African countries and NonAfrican countries is dictated by the fact that Africa represents the least integrated continent in global trade (African countries are subject to a 6-year TPR cycle or to 7-year review cycle since 2019). Likewise, the focus on the sub-sample of LDCs in the empirical exercise rests on the fact that LDCs (the group of the poorest countries in the world) are subject to the lowest frequency of the WTO’s TPR exercise. It is important to emphasize that many African countries are LDCs, and that all African member states of the WTO and all LDC WTO Members are subject to a 7-year review cycle of their national trade policies.

Appendix 3a reports the list of the 117 countries that are subject to the MSTP (including 38 African countries and 30 LDCs), and of the 18 NonWTO Members. Appendix 3b provides the list of countries (among WTO Member states subject to the TPR transparency exercise) per frequency of TPR meetings. Among the 117 countries, there are 93 countries subject to a 6-year review cycle, 10 countries subject to a 4-year review cycle, and 14 countries subject to a 2-year review cycle. Finally,

³⁷ It is worth noting that many African are part of the category of LDCs.

Appendix 3c shows the list of countries per degree of trade liberalization commitments. Among the 117 WTO Members that underwent the TPR transparency exercise in the full sample, there are 50 Article26 Members, 37 NonArticle26 Members, and 30 Article12 Members.

The outcomes stemming from the estimations of the specifications of model (1) that allow examining the effect of the MSTP on economic institutions are reported in Table 1. The estimates obtained from the regressions that allow examining the effect of the MSTP on the participation in GVCs and export upgrading are presented respectively in Tables 2 and 3. Note that for the sake of space and brevity, we report only outcomes concerning our main variable of interest, i.e., the variable “CUMTPR”. The estimates associated with control variables can be obtained upon request.

6. Interpretation of empirical outcomes

Results in Table 1 suggest that the MSTP exerts, on average, a positive and significant effect (at the 1% level) on regulatory quality and government effectiveness over the full sample, as well as in African countries and NonAfrican countries (see the upper and lower parts of columns [1] to [3] in Table 1). In addition, the magnitude of the positive effect of MSTP on regulatory quality is almost the same in African and NonAfrican countries, while the MSTP exerts a larger effect on government effectiveness in NonAfrican countries than in African ones. In economic terms, we obtain from columns [1] and [2] of Table 1 that an additional year of the TPR transparency exercise is associated with an improvement in the indicator of regulatory quality by 0.03 point for African countries, and by 0.04-point for NonAfrican countries. Likewise, an additional year of the TPR transparency exercise leads to an improvement in the indicator of government effectiveness by 0.024-point for African countries, and by 0.042-point for NonAfrican countries. While the MSTP is instrumental in improving regulatory quality in LDCs, it exerts no significant effect on government effectiveness in these countries (see column [4] of Table 1). These findings suggest that even though the review of their trade policies (and the technical assistance they receive in the post-review period) helps reviewed countries to improve their regulatory framework, it does not lead to an improvement, *inter alia*, of the quality of policy formulation and implementation, and an enhancement of the credibility of the government's commitment to such policies (as least as perceived by citizens). These findings may be explained by the very limited human and financial resources, as well as the weak institutional capacity of these countries, which to recall, are the poorest ones in the world. The MSTP exerts no significant effect on both types of economic institutions in WTO developing member states whose trade policies are subject to a 2-year review cycle (or a 3-year review cycle) (see column [5] of Table 1). This group of countries includes essentially China and transition economies that are members of the European Union, those economies being subject to institutional reforms before and after joining the European Union (e.g., Bauer, 1998; IMF, 2000; Weder, 2001). In contrast with countries in the group “FREQ2”, those subject to a 4-year and 6-year trade policy reviews experience a positive effect of the MSTP on both regulatory quality and government effectiveness, with the effect being larger on the group “FREQ4” than on the “FREQ6” group. These outcomes confirm that being subject to a higher frequency of trade policy reviews is associated with a better improvement of economic institutions. Finally, we note from columns [8] to [9] that regardless of their trade liberalization commitments, the MSTP affects positively regulatory quality and government effectiveness in Article12 Members, NonArticle26 Members and Article26 Members. It appears, however, that NonArticle26 Members enjoy the largest positive effect of the MSTP on regulatory quality, followed by Article26 Members, and then by Article12 Members. NonArticle26 Members also enjoy the largest positive effect of the MSTP on government effectiveness, followed by Article12 Members, and then by Article26 Members. These outcomes, therefore, suggest that the degree of trade liberalization commitments may not necessarily matter for the effect of the MSTP on economic institutions. Overall, the MSTP influences

positively economic institutions, although with differentiated effects across groups of countries. At least, African countries and NonAfrican countries enjoy a positive effect of the MSTP on both regulatory quality and government effectiveness, with the effect being larger in African countries than in NonAfrican countries. Moreover, except for China and transition economies for which there is no significant effect of the MSTP on economic institutions, countries that subject to a higher frequency of the trade policy review experience a larger positive effect of the MSTP on economic institutions. Finally, the MSTP affects positively economic institutions, regardless of member states' degree of trade liberalization commitments.

[Insert Table 1, here]

[Insert Table 2, here]

We now consider the estimates reported in Table 2. We obtain that over the full sample, the WTO's scrutiny of member states' surveillance of trade policies fosters member states' backward participation in GVCs, reduces their forward GVC participation, and ultimately improves their position in GVCs (see column [1] of Table 2). Results are, however, quite different in African countries and NonAfrican countries (see columns [2] and [3] of Table 2). The outcomes obtained over the full sample apply as well to NonAfrican countries, though with different estimates. However, the MSTP does not affect significantly African countries' backward participation in GVCs, but reduces their forward participation in GVCs, thereby leading to an improvement in their position in GVCs. The outcomes obtained over African countries apply also to LDCs (see column [4] of Table 2). Summing-up, the findings over African and NonAfrican countries mirror those obtained in Table 2, given the positive effect of backward participation on export upgrading (e.g., Ndubuisi and Owusu, 2021; Tian et al., 2022). Estimates in columns [5] to [7] of Table 2 indicate that the MSTP enhances the backward participation in GVCs by countries subject to a 2-year cycle review, and those subject to a 4-year cycle, but reduces the backward participation in GVCs by countries subject to a 6-year review cycle. Interestingly, the magnitude of the effect is larger, the higher the frequency of the TPR cycle (see columns [5] to [7]). These suggest that countries whose trade policies are more frequently reviewed, enjoy a greater participation in GVCs than those whose trade policies are subject to a relatively lower frequency of review. These conclusions apply as well to the forward GVC participation effect of the MSTP in these three groups of countries. In line with the previous findings concerning the forward and backward effect of the MSTP in these three groups of countries, we obtain that the MSTP ultimately improves countries' position in GVCs. Finally, we find from columns [8] to [10] of Table 2 that the MSTP induces a higher forward GVC participation by Article12 Members, NonArticle26 Members and Article26 Members. However, we cannot infer that the greater trade liberalization commitments do not necessarily foster the backward GVC participation effect of the MSTP. This is because the MSTP yet exerts almost a similar effect on the backward GVC participation by Article12 member states and NonArticle26 member states, but its effect on Article26 Members is even larger. Concurrently, the Article12 Members experience no significant effect of the trade policy review on their forward GVC participation, but reduces the forward GVC participation by both NonArticle26 member states and Article26 member states (with the effect being slightly larger for NonArticle26 Members than for Article26 Members. Ultimately, the MSTP does not affect the GVC position of Article12 Members, but does help improve the GVC position of Article26 Members and NonArticle26 Members.

[Insert Table 3, here]

Outcomes in Table 3 are quite interesting and mirror those in Tables 1 and 2. We observe from column [1] of the Table (across all lines of the Tables) that the MSTP is associated with a greater overall export diversification - including both export product diversification and export market

diversification (the magnitude of the MSTP effect is almost identical on the two types of export diversification). Over the full sample, the MSTP also leads to a convergence of member states' export structure to world patterns, and promotes the export of complex export products, i.e., the level of economic complexity. However, these outcomes hide differentiated effects across sub-samples. In particular, we note from column [3] of the Table that the findings over the full sample apply to NonAfrican countries, although with different magnitudes of the MSTP effects on export upgrading. However, the effects of the MSTP on export upgrading in African countries are totally different from those on NonAfrican countries. Specially, for African countries, the MSTP exerts no significant effect on export diversification, including both export product and export market diversification, nor does it affect significantly economic complexity in these countries (see columns [1] to [3] of Table 3). On another note, the MSTP is associated with a divergence of the African countries' export structure from the world export structure pattern. These findings align well with those in Table 2, which show that the review of African countries' trade policies by their peers at the WTO has not helped them enhance their backward participation in GVCs, even though it has reduced these countries' forward GVC participation. The findings obtained for African countries apply as well to LDCs (although with different estimates) with the difference being that for LDCs as a whole (including both African and NonAfrican LDCs), the MSTP is associated with the diversification of export markets. When it comes to groups of countries per frequency of TPR meetings, we observe for the group of countries subject to a 6-year review cycle that the outcomes are quite similar to those of African countries (see column [7] of Table 3). Conversely, the MSTP exerts a positive and significant effect on all indicators of export upgrading in the groups "FREQ2" and "FREQ4". The set of countries that underwent a 2-year review cycle of their trade policies experiences larger positive effects of the MSTP on export diversification - including on both export product diversification and export market diversification - than does the group of countries whose trade policies are subject to a 4-year review cycle in the WTO. In addition, the MSTP promotes the convergence of the export structure of each of these two groups of countries to the world export structure pattern, although with a slightly larger positive effect on the group "FREQ4" than on the group "FREQ2". Finally, the MSTP fosters economic complexity in both the groups "FREQ4" and "FREQ2", but with a slightly higher positive effect on the former than on the latter.

As for the effect of the MSTP on countries depending on the level of trade liberalization commitments, we note that for both Article12 Members and Article 26 Members states that the MSTP promotes export diversification - including both export product and market diversification - economic complexity, and enhances the convergence of these countries' export structure towards the world goods export structure patterns. Interestingly, these positive effects are larger for Article12 Members than for Article26 Members, thereby reflecting the fact that the trade liberalization commitments undertaken by Article12 Members might have helped them promote export upgrading relatively to Article26 Members that undertook no significant trade liberalization commitments when joining the WTO. Surprisingly, despite the high heterogeneity of the group of NonArticle26 Members, it appears that the MSTP does not affect significantly export product upgrading in these countries, except for a positive effect observed on export market diversification. This outcome may, however, hide differentiated effects of the TPR transparency exercise on export upgrading across NonArticle26 Members. Despite this surprising outcome, one may at least infer trade liberalization commitments might have been instrumental in enhancing the MSTP effect on export upgrading, especially when one compares Article12 member states and Article26 member states.

7. Further analysis: MSTP and African countries' manufactured exports

The previous analysis has shown that even though the MSTP has been instrumental in promoting economic institutions in African countries, this has not translated into export upgrading in these countries. One possible explanation for this outcome is that African countries are typically characterized by the highest trade restrictions compared to other countries (Estefania-Flores, 2024), and this high prevalence of trade restrictions in African countries hinders upgrading of export products, despite the improvement economic institutions (thanks *inter alia*, to the MSTP). The present section digs into the analysis with a view to better understanding this outcome for African countries. To that effect, it investigates the effect of the MSTP on manufactured exports, including relatively to primary commodity exports.

The literature has well established that trade liberalization reforms can promote manufactured exports (e.g., Aditya and Acharyya, 2015; Gaglio, 2017; Iwanow and Kirkpatrick, 2008; Osakwe et al., 2018; Stojčić et al., 2018). Likewise, the institutional quality improvement, especially the betterment of economic institutions helps foster the manufactured export performance (e.g., Alexeev and Chernyavskiy, 2021; Bah et al. 2021; Chakraborty, 2016; Feenstra et al. 2013; Iwanow and Kirkpatrick, 2008; Meon and Sekkat, 2008; Nunn, 2007). For example, Meon and Sekkat (2008) have uncovered that the improvement in the institutional quality promotes manufactured exports but exerts no significant effect on non-manufactured exports. Iwanow and Kirkpatrick (2008) have found that improving the regulatory environment is instrumental in fostering manufactured export performance in African countries. Bah et al. (2021) have reported evidence of a positive effect of government effectiveness on aggregate exports, including manufactured exports in Africa. Based on these findings, one should expect that by encouraging trade liberalization reforms, and helping improve economic institutions, the MSTP could spur manufactured exports, although the effect may vary depending on the manufacture degree (e.g., low-skill and technology-intensive manufactures, medium-skill and technology-intensive manufactures, and high-skill and technology-intensive manufactures) (*hypothesis 4*).

We use several manufactured export indicators that capture both intra-African and external African manufactured exports³⁸. These indicators are expressed in terms of ratios relatively to the total export of primary commodities (denoted “PRIM”). The data used to compute these indicators were collected from the UNCTAD database (<https://unctadstat.unctad.org/datacentre/>). The indicator “PRIM”, the total primary export products (SITC³⁹ 0 + 1 + 2 + 3 + 4 + 68), is expressed in current prices, US dollars. It includes intra-African primary export products, and external African countries' primary export products (i.e., African countries' exports of primary products to the world excluding intra-African countries' exports of those products). The manufactured export ratios are computed by degree of manufactures (SITC 5 to 8 less 667 and 68). Four types of manufactures are considered. These include the labour-intensive and resource-intensive manufactures; the low-skill and technology-intensive manufactures; the medium-skill and technology-intensive manufactures; and the high-skill and technology-intensive manufactures. The first two main manufactured export indicators are the ratio (denoted “MANINT”) of total intra-African countries' manufactured exports to total primary

³⁸ We consider here intra and external African manufactured exports because we intend to examine the effect of the MSTP on intra and external African manufactured exports, given the strong importance that the African Union attaches to the objective of boosting intra-African manufactured exports. The African Union aims to achieve its objective of boosting intra-African manufactured exports through the implementation of the African Continental Free Trade Area (AfCFTA) . The Agreement Establishing the AfCFTA is available online at: <https://au.int/en/treaties/agreement-establishing-african-continental-free-trade-area>

³⁹ The acronym “SITC” means “Standard International Trade Classification”.

commodity exports⁴⁰; and the ratio of total external African countries' manufactured exports⁴¹ to total primary commodity exports ("MANEXT"). The second set of indicators of manufactured exports are the components of "MANINT" and "MANEXT". These include the indicator "LABINT", which is the ratio of the intra-African labour-intensive and resource-intensive manufactured exports (current prices, US dollars) to the values of total primary export products; the indicator "LABEXT", which is the ratio of extra-African labour-intensive and resource-intensive manufactured exports (current prices, US dollars) to total primary export products; the indicator "LOWINT", which is the ratio of intra-African low-skill and technology-intensive manufactured exports (current prices, US dollars) to total primary export product; and the indicator "LOWEXT", which is the ratio of the external African low-skill and technology-intensive manufactured export products (current prices, US dollars) to total primary export products; the indicator "MEDINT", which is the ratio of intra-African medium-skill and technology-intensive manufactured exports (current prices, US dollars) to total primary export products; the indicator "MEDEXT", which is the ratio of the extra-African medium-skill and technology-intensive manufactured exports (current prices, US dollars) to total primary export products; the indicator "HIGHINT", which is the ratio of intra-African high-skill and technology-intensive manufactured exports (current prices, US dollars) to total primary export products; the indicator "MEDEXT", which is the ratio of the external African high-skill and technology-intensive manufactured exports (current prices, US dollars) to total primary export products. For the sake of analysis, all manufactured indicators (computed in terms of ratios) are not expressed in percentage.

The control variables introduced in the baseline specification of model (1) where the dependent variable is each of these manufactured export indicators, are drawn essentially from the voluminous literature⁴² on the macroeconomic determinants of manufactured export performance. These control variables include the real per capita income ("GDPC") (in Logs) (a proxy for the development level); the education level ("EDU"); the depth of financial development ("FINDEV"); the real effective exchange rate ("REER") (in Log); the share of net foreign direct investment inflows in GDP ("FDI"); the investment rate proxied by the share of gross fixed capital formation ("GFCF"); the terms of trade ("TERMS"); the share of total natural resource rents in GDP ("RENT") (a proxy for the endowment in natural resources); an indicator of political stability (PSTAB) and the population size ("POP"). These controls (with the exception of the population size) are introduced with a one-year lag in order to reduce the endogeneity concerns relating to reverse causality between each of them and the dependent variable.

Given that within a country, sectoral export indicators are highly correlated, the estimation of the specifications of model (1) separately with each indicator of manufactured exports as the dependent variable, would generate biased coefficients. We account for the potential contemporaneous correlations in these specifications of model (1) by using the Seemingly Unrelated Regression (SURE) estimator of Zellner (1962) to estimate a system of specifications of model (1) with each indicator of manufactured export as dependent variable. The SURE estimator generates greater efficiency of parameters (e.g., Judge et al. 1988). We compute small-sample statistics, and address the presence of heteroscedasticity in the residuals by reporting robust standard errors. The outcomes obtained from the SURE-based regressions that allow examining the effect of the MSTP on manufactured exports in African countries are presented in Table 4. The estimations are performed over the entire set of African countries as well as over the sub-sample of LDCs among African countries. In addition, we take out North African countries (Morocco and Tunisia) of the entire sample, and re-estimate the system of equations over the new sub-sample obtained (which is Sub-Saharan Africa – SSA) as well

⁴⁰ The total primary commodity exports is nothing else than the variable "PRIM".

⁴¹ This is the total manufactured exports to the world minus the intra-African manufactured exports.

⁴² See for example, the recent study by Gnanon (2024b).

as over SSA LDCs and SSA NonLDCs. We do this in order to check the robustness of the outcomes obtained over the entire sample of African countries (SSA countries are known to have a less diversified export structure than North African countries), and over LDCs and NonLDCs among SSA countries.

At the outset, we would like to note that to interpret the outcomes, we use the expression “manufactured exports” (in reference to any of the manufactured export indicators described above) to mean “manufactured export as a ratio of total primary commodity exports”.

[Insert Table 4, here]

Outcomes in Table 4 show that over the entire sample of African countries, the MSTP affects positively and significantly intra-manufactured exports (see column [1]), but it exerts no significant effect on external manufactured exports (see column [2]). Estimates from columns [3] to [10] show that the previous findings from columns [1] and [2] reflect the fact that the MSTP promotes intra-African and external African export of labour-intensive and resource-intensive manufactures, as well as the intra-African export of both medium-skill and high-skill (and technology-intensive) manufactures. In the meantime, it exerts no significant effect on the other types of manufactured exports (LOWINT, LOWEXT, MEDEXT and HIGHEXT). It is worth noting, however, that the effect of the MSTP is larger on LABEXT than on other components of MANINT. These findings suggest that the MSTP has helped African countries promote intra-African manufactured exports (including across different types of manufactures in the African market), but it has allowed these countries to export essentially labour-intensive and resource-intensive manufactures to the rest of the world. This is not surprising as African countries tend to exchange more manufactured goods within the continent⁴³, but export relatively higher primary commodities to their partners outside the continent.

Outcomes obtained over SSA countries are different from the ones obtained over the entire sample of African countries, thereby indicating that Morocco and Tunisia were driving some outcomes. In particular, we note for SSA countries that at the 5% level, the MSTP fosters total intra-African manufactured exports (see column [1]), but exerts no significant effect on external African countries manufactured exports (see column [2]). These findings reflect, however, the fact that the MSTP affects only medium-skill and high-skill (and technology-intensive) manufactured exports. In contrast with the previous findings, we note for LDCs among African countries that the MSTP enhances external African manufactured exports (only medium-skill and technology-intensive manufactured exports), but it does not influence the total intra-African manufactured exports, nor does it influence the latter’s components. In contrast, we observe for SSA NonLDCs that the MSTP has enhanced total intra-African manufactured exports, but has not affected external African manufactured exports (see columns [1] and [2]). These results reflect only a positive effect of the MSTP on high-skill and technology-intensive manufactured exports in SSA NonLDCs, but a negative effect of the MSTP on medium-skill and technology-intensive manufactured exports in these countries (there is no significant effect of the MSTP on the export of other types of manufactures). Against this backdrop, we conclude that the MSTP has resulted in a very limited diversification of the manufactured export structure, including in both SSA LDCs and NonLDC SSA countries. This outcome occurs despite the improved economic institutions effect of the MSTP, and may be explained by the still high prevalence of trade barriers in African countries.

⁴³ The intra-African share of manufacturing exports amounts approximately to 15%.

8. Conclusion

An important function of the WTO is to monitor its member states' trade policies and practices. The present study has investigated the effect of the WTO's surveillance of trade policies on economic institutions, participation in GVCs and export upgrading in member states. Several outcomes have emerged from the empirical analysis. The MSTP has been instrumental in fostering regulatory quality in African countries and NonAfrican developing countries alike, and has exerted a larger positive effect on government effectiveness in NonAfrican countries than in African countries. However, this has not translated into an enhancement of African countries' backward GVC participation, while it has reduced these countries' forward GVC participation (yet improving their position in the GVCs). The reverse outcomes are obtained for NonAfrican countries. For the latter, the MSTP has fostered the backward GVC participation, but exerted no significant effect on their forward GVC participation (ultimately improving their position in GVCs). Finally, the MSTP has not influenced African countries' export upgrading, but it has fostered NonAfrican countries' export upgrading. Many findings obtained for African countries apply to LDCs as well. The lack of a significant effect of the MSTP on export upgrading in African countries (despite the regulatory quality improvement in these countries thanks, *inter alia*, to the MSTP) can be explained by the high prevalence of trade barriers that hinder the diversification of export products across different types of manufactures in African countries, especially in SSA countries, and notably in SSA LDCs and SSA NonLDCs. The analysis has also found that the MSTP exerts differentiated effects on economic institutions, the participation in GVCs and export upgrading across different other sub-samples, including groups of countries formed depending on the frequency of trade policy review, and on the degree of the trade liberalization commitments. For example, the MSTP exerts a larger positive effect on countries' backward participation in GVCs, the higher is the frequency at which these countries' trade policies are reviewed at the WTO. However, there is no clear evidence that the effect of the MSTP on economic institutions, GVC participation and export upgrading is consistently larger, the higher the degree of the trade liberalization commitments. For example, yet the positive effect of the TPR exercise encourages on the regulatory policy is greater, the higher the trade liberalization commitments, but this finding does not apply to government effectiveness: while the MSTP helps improve government effectiveness in Article12 member states, NonArticle26 member states and Article26 member states, its effect appears to be the largest for NonArticle26 member states, followed by Article12 member states, and finally by Article26 member states. In the meantime, countries that undertook stronger trade liberalization commitments tend to experience a greater export product upgrading effect of the MSTP than those that undertook relatively lower trade liberalization commitments.

Overall, the analysis has shed light on the potential for the WTO's MSTP to improve its member states' economic institutions, enhance their participation in GVCs and promote export upgrading. In a context of a deepening of geoeconomic tensions, the MSTP could provide with WTO Members the opportunity to pursue multilateral cooperation on trade matters, which could in turn, influence positively domestic policy and institutional reforms, especially in developing countries, and mitigate the adverse economic effects of these tensions.

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TABLES and APPENDICES

Table 1: Effect of MSTP on regulatory quality and government effectiveness over the full sample and sub-samples
Estimator. FGLS (with panel-specific first order autocorrelation)

Variables	Full	Africa	NonAfrica	LDCs	FREQ2	FREQ4	FREQ6	ART12	NonART26	ART26
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Effect of MSTP on Regulatory Quality</i>										
CUMTPR	0.0456*** (0.00493)	0.0312*** (0.00996)	0.0391*** (0.00573)	0.0286*** (0.0108)	0.0167 (0.0109)	0.0832*** (0.0127)	0.0372*** (0.00652)	0.0382*** (0.0111)	0.0702*** (0.00881)	0.0479*** (0.00813)
Observations-Countries	2,513 - 131	966 - 54	1,786 - 93	779 - 46	554 - 30	469 - 26	1,968 - 107	834 - 46	1,124 - 64	1,033 - 53
Pseudo-R ²	0.7866	0.5821	0.8047	0.3448	0.8389	0.8503	0.6729	0.7208	0.7738	0.8018
Wald Chi2-Statistic (P-value)	4097.79 (0.0000)	894.73 (0.0000)	3365.24 (0.0000)	133.53 (0.0000)	1042.47 (0.0000)	1367.78 (0.0000)	1366.66 (0.0000)	612.90 (0.0000)	2281.85 (0.0000)	1976.90 (0.0000)
<i>Effect of MSTP on Government Effectiveness</i>										
	Full	Africa	NonAfrica	LDCs	FREQ2	FREQ4	FREQ6	ART12	NonART26	ART26
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CUMTPR	0.0383*** (0.00502)	0.0239** (0.0100)	0.0417*** (0.00554)	0.0173 (0.0117)	0.0148 (0.0106)	0.0912*** (0.0148)	0.0244*** (0.00693)	0.0375*** (0.0117)	0.0446*** (0.00932)	0.0251*** (0.00835)
Observations-Countries	2,513 - 131	966 - 54	1,786 - 93	779 - 46	554 - 30	469 - 26	1,968 - 107	834 - 46	1,124 - 64	1,033 - 53
Pseudo-R ²	0.8172	0.6556	0.8206	0.4958	0.8325	0.8236	0.7312	0.7575	0.8203	0.7740
Wald Chi2-Statistic (P-value)	3561.85 (0.0000)	457.43 (0.0000)	3900.86 (0.0000)	212.97 (0.0000)	650.83 (0.0000)	488.50 (0.0000)	1717.54 (0.0000)	1123.82 (0.0000)	2691.20 (0.0000)	1181.93 (0.0000)

*Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust standard errors are in parenthesis. Time dummies have been included in the regressions. The Pseudo R² is reported for the outcomes arising from the FGLS-based regressions, and was calculated as the correlation coefficient between the dependent variable and its predicted values. The acronym “Full” refers to the full sample. “Africa” and “NonAfrica” represent respectively the groups of African countries and Non-African countries in the full sample. “LDCs” is the group of least developed countries. “FREQ2”, “FREQ4” and “FREQ6” are respectively the groups of WTO member states whose trade policies are subject respectively to a 2-year review cycle (or 3-year review cycle since 2019); a 4-year review cycle (or 5-year review cycle since 2019); and 6-year review cycle (or 7-year review cycle since 2019). “ART12”, “ART26” and “NonART26” are the acronyms respectively for the groups of Article12 Members, Article26 Members, and Non-Article26 Members.*

Table 2: Effect of MSTP on export upgrading over the full sample and sub-samples
Estimator: FGLS (with panel-specific first order autocorrelation)

<i>Effect of MSTP on the overall export diversification (“EDI”)</i>										
Variables	Full (1)	Africa (2)	NonAfrica (3)	LDCs (4)	FREQ2 (5)	FREQ4 (6)	FREQ6 (7)	ART12 (8)	NonART26 (9)	ART26 (10)
CUMTPR	0.0369*** (0.00710)	0.0135 (0.0178)	0.0470*** (0.00781)	-0.00763 (0.0173)	0.0963*** (0.0162)	0.0646*** (0.0174)	0.000960 (0.0102)	0.117*** (0.0175)	0.0130 (0.0143)	0.0515*** (0.0101)
Observations-Countries	2,619 - 135	1,064 - 56	1,840 - 97	872 - 48	567 - 32	502 - 28	2,120 - 111	875 - 48	1,251 - 68	1,063 - 55
Pseudo-R ²	0.8043	0.6938	0.8005	0.5465	0.8302	0.7874	0.7368	0.7930	0.7170	0.7839
Wald Chi2-Statistic (P-value)	2819.25 (0.0000)	454.07 (0.0000)	2143.89 (0.0000)	262.61 (0.0000)	1522.32 (0.0000)	1023.59 (0.0000)	1227.70 (0.0000)	631.51 (0.0000)	1038.71 (0.0000)	1217.58 (0.0000)
<i>Effect of MSTP on the export product diversification (“EDIPR”)</i>										
	Full (1)	Africa (2)	NonAfrica (3)	LDCs (4)	FREQ2 (5)	FREQ4 (6)	FREQ6 (7)	ART12 (8)	NonART26 (9)	ART26 (10)
CUMTPR	0.0290*** (0.00612)	0.0117 (0.0141)	0.0278*** (0.00646)	-0.0245 (0.0162)	0.0697*** (0.0136)	0.0288** (0.0144)	0.00519 (0.00933)	0.0800*** (0.0149)	-0.00807 (0.0118)	0.0377*** (0.00793)
Observations-Countries	2,619 - 135	1,064 - 56	1,840 - 97	872 - 48	567 - 32	502 - 29	2,120 - 111	875 - 48	1,251 - 68	1,063 - 55
Pseudo-R ²	0.7540	0.6499	0.7414	0.5031	0.7978	0.7556	0.6741	0.7623	0.6797	0.7413
Wald Chi2-Statistic (P-value)	1904.75 (0.0000)	955.57 (0.0000)	1337.78 (0.0000)	585.65 (0.0000)	1175.39 (0.0000)	983.91 (0.0000)	1169.46 (0.0000)	657.66 (0.0000)	891.74 (0.0000)	907.26 (0.0000)
<i>Effect of MSTP on the export market diversification (“EDIMA”)</i>										
	Full (1)	Africa (2)	NonAfrica (3)	LDCs (4)	FREQ2 (5)	FREQ4 (6)	FREQ6 (7)	ART12 (8)	NonART26 (9)	ART26 (10)
CUMTPR	0.0218*** (0.00357)	0.00544 (0.0102)	0.0231*** (0.00380)	0.0342** (0.0134)	0.0488*** (0.00769)	0.0169* (0.00921)	-0.00106 (0.00579)	0.0414*** (0.00616)	0.0194** (0.00804)	0.0249*** (0.00526)
Observations-Countries	2,619 - 135	1,064 - 56	1,840 - 97	872 - 48	567 - 32	502 - 28	2,120 - 111	875 - 48	1,251 - 68	1,063 - 55
Pseudo-R ²	0.7501	0.6653	0.7381	0.5954	0.7972	0.6062	0.7172	0.7549	0.7046	0.6841
Wald Chi2-Statistic (P-value)	4057.94 (0.0000)	394.89 (0.0000)	3318.92 (0.0000)	242.94 (0.0000)	520.10 (0.0000)	320.22 (0.0000)	2582.16 (0.0000)	3159.37 (0.0000)	669.93 (0.0000)	849.27 (0.0000)
<i>Effect of MSTP on the convergence of countries’ export structure to the world’s patterns (“EXPSTR”)</i>										
	Full (1)	Africa (2)	NonAfrica (3)	LDCs (4)	FREQ2 (5)	FREQ4 (6)	FREQ6 (7)	ART12 (8)	NonART26 (9)	ART26 (10)
CUMTPR	0.00699***	-0.00728***	0.00837***	-0.0111***	0.0178***	0.0190***	-0.00401***	0.0186***	-0.00422***	0.0115***

	(0.000967)	(0.00172)	(0.00111)	(0.00185)	(0.00174)	(0.00240)	(0.00119)	(0.00208)	(0.00146)	(0.00149)
Observations-Countries	2,619 - 135	1,064 - 56	1,840 - 97	872 - 48	567 - 32	502 - 28	2,120 - 111	875 - 48	1,251 - 68	1,063 - 55
Pseudo-R ²	0.7396	0.5755	0.7561	0.4795	0.8730	0.8658	0.5725	0.7593	0.6742	0.7361
Wald Chi2-Statistic (P-value)	2339.32 (0.0000)	319.81 (0.0000)	2249.01 (0.0000)	227.62 (0.0000)	1832.84 (0.0000)	1910.43 (0.0000)	736.34 (0.0000)	975.52 (0.0000)	683.07 (0.0000)	1521.09 (0.0000)

<i>Effect of MSTP on economic complexity (“ECONC”)</i>										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CUMTPR	0.0294*** (0.00448)	-0.00717 (0.0132)	0.0281*** (0.00440)	0.00624 (0.0166)	0.0439*** (0.00752)	0.0579*** (0.0113)	-0.0109 (0.00675)	0.0282*** (0.00628)	-0.0129 (0.0106)	0.0233*** (0.00561)
Observations-Countries	1,784 - 101	647 - 41	1,345 - 73	466 - 33	409 - 23	416 - 23	1,375 - 81	616 - 36	669 - 43	915 - 48
Pseudo-R ²	0.8525	0.8123	0.8193	0.7619	0.9210	0.8370	0.7972	0.7923	0.8401	0.8625
Wald Chi2-Statistic (P-value)	3635.44 (0.0000)	684.02 (0.0000)	3687.71 (0.0000)	665.00 (0.0000)	3829.17 (0.0000)	787.59 (0.0000)	23809.61 (0.0000)	1439.60 (0.0000)	10619.40 (0.0000)	2347.60 (0.0000)

*Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust standard errors are in parenthesis. Time dummies have been included in the regressions. The Pseudo R² is reported for the outcomes arising from the FGLS-based regressions, and was calculated as the correlation coefficient between the dependent variable and its predicted values. The acronym “Full” refers to the full sample. “Africa” and “NonAfrica” represent respectively the groups of African countries and Non-African countries in the full sample. “LDCs” is the group of least developed countries. “FREQ2”, “FREQ4” and “FREQ6” are respectively the groups of WTO member states whose trade policies are subject respectively to a 2-year review cycle (or 3-year review cycle since 2019); a 4-year review cycle (or 5-year review cycle since 2019); and 6-year review cycle (or 7-year review cycle since 2019). “ART12”, “ART26” and “NonART26” are the acronyms respectively for the groups of Article12 Members, Article26 Members, and NonArticle26 Members.*

Table 3: Effect of MSTP on participation GVCs over the full sample and sub-samples
Estimator: FGLS (with panel-specific first order autocorrelation)

<i>Effect of MSTP on the backward GVC participation (“BGVC1”)</i>										
Variables	Full (1)	Africa (2)	NonAfrica (3)	LDCs (4)	FREQ2 (5)	FREQ4 (6)	FREQ6 (7)	ART12 (8)	NonART26 (9)	ART26 (10)
CUMTPR	0.0256*** (0.00461)	0.0142 (0.00911)	0.0346*** (0.00532)	0.00852 (0.0121)	0.0501*** (0.00969)	0.0419*** (0.0144)	-0.0129** (0.00579)	0.0259** (0.0106)	0.0291*** (0.00885)	0.0385*** (0.00653)
Observations-Countries	2,074 - 117	742 - 43	1,493 - 84	568 - 34	427 - 24	350 - 20	1,619 - 93	667 - 38	902 - 53	827 - 46
Pseudo-R ²	0.6122	0.3715	0.6634	0.2307	0.7462	0.7953	0.4245	0.5507	0.6593	0.6553
Wald Chi2-Statistic (P-value)	1850.49 (0.0000)	835.98 (0.0000)	122.32 (0.0000)	378.22 (0.0000)	648.58 (0.0000)	2505.33 (0.0000)	1374.24 (0.0000)	353.14 (0.0000)	1155.70 (0.0000)	1692.32 (0.0000)
<i>Effect of MSTP on the forward GVC participation (“FGVC1”)</i>										
	Full (1)	Africa (2)	NonAfrica (3)	LDCs (4)	FREQ2 (5)	FREQ4 (6)	FREQ6 (7)	ART12 (8)	NonART26 (9)	ART26 (10)
CUMTPR	-0.00756** (0.00303)	-0.0313*** (0.00707)	-0.00163 (0.00332)	-0.0432*** (0.00912)	0.00619 (0.00513)	-0.0107 (0.00746)	-0.0248*** (0.00465)	0.00186 (0.00631)	-0.0181*** (0.00520)	-0.0109** (0.00462)
Observations-Countries	2,074 - 117	742 - 43	1,493 - 84	568 - 34	427 - 24	350 - 20	1,619 - 93	667 - 38	902 - 53	827 - 46
Pseudo-R ²	0.4207	0.4789	0.3750	0.3071	0.3391	0.6208	0.4442	0.3648	0.5278	0.4874
Wald Chi2-Statistic (P-value)	1309.12 (0.0000)	490.44 (0.0000)	949.42 (0.0000)	306.27 (0.0000)	410.39 (0.0000)	1112.04 (0.0000)	1281.12 (0.0000)	364.50 (0.0000)	1042.98 (0.0000)	675.65 (0.0000)
<i>Effect of MSTP on the GVC position (“GVCPOS”)</i>										
	Full (1)	Africa (2)	NonAfrica (3)	LDCs (4)	FREQ2 (5)	FREQ4 (6)	FREQ6 (7)	ART12 (8)	NonART26 (9)	ART26 (10)
CUMTPR	-0.00430*** (0.000863)	-0.00905*** (0.00176)	-0.00428*** (0.00102)	-0.0102*** (0.00220)	-0.00836*** (0.00167)	-0.00798** (0.00378)	-0.00492*** (0.00118)	0.000997 (0.00208)	-0.00695*** (0.00155)	-0.00831*** (0.00142)
Observations-Countries	2,075 - 117	742 - 43	1,494 - 84	568 - 34	427 - 24	351 - 20	1,619 - 93	667 - 38	902 - 53	828 - 46
Pseudo-R ²	0.6074	0.5517	0.6044	0.5491	0.6939	0.7265	0.5621	0.5330	0.6779	0.6054
Wald Chi2-Statistic (P-value)	845.80 (0.0000)	609.01 (0.0000)	318.81 (0.0000)	230.55 (0.0000)	422.81 (0.0000)	474.74 (0.0000)	880.55 (0.0000)	271.36 (0.0000)	670.41 (0.0000)	651.77 (0.0000)

Note: * p -value<0.1; ** p -value<0.05; *** p -value<0.01. Robust standard errors are in parenthesis. Time dummies have been included in the regressions. The Pseudo R² is reported for the outcomes arising from the FGLS-based regressions, and was calculated as the correlation coefficient between the dependent variable and its predicted values. The acronym “Full” refers to the full sample. “Africa” and “NonAfrica” represent respectively the groups of African countries and Non-African countries in the full sample. “LDCs” is the group of least developed countries. “FREQ2”, “FREQ4” and “FREQ6” are respectively the groups of WTO member states whose trade policies are subject respectively to a 2-year review cycle (or 3-year review cycle since 2019); a 4-year review cycle (or 5-year review cycle since 2019); and 6-year review cycle (or 7-year review cycle since 2019). “ART12”, “ART26” and “NonART26” are the acronyms respectively for the groups of Article12 Members, Article26 Members, and Non-Article26 Members.

Table 4: Effect of multilateral surveillance of trade policies on Intra and Extra African manufactured exports
Estimator: Seemingly Unrelated Regression (SURE)

<i>Effect of MSTP on manufactured exports_ Over the full sample of African countries</i>										
Variables	MANINT (1)	MANEXT (2)	LABINT (3)	LABEXT (4)	LOWINT (5)	LOWEXT (6)	MEDINT (7)	MEDEXT (8)	HIGHINT (9)	HIGHEXT (10)
CUMTPR	0.0629*** (0.0208)	0.0256 (0.0268)	0.0252** (0.0126)	0.0455** (0.0195)	-0.00315 (0.00383)	-0.00164 (0.00231)	0.0125** (0.00606)	-0.0160 (0.00986)	0.0284*** (0.00992)	-0.00231 (0.00920)
Observations	731	731	731	731	731	731	731	731	731	731
R-squared	0.803	0.922	0.779	0.915	0.479	0.702	0.654	0.835	0.764	0.852
F-statistic	32.80 (0.0000)	68.71 (0.0000)	22.83 (0.0000)	40.02 (0.0000)	20.90 (0.0000)	18.83 (0.0000)	21.75 (0.0000)	16.36 (0.0000)	18.27 (0.0000)	59.50 (0.0000)
BP test ^a	51.236 (0.0000)					648.266 (0.0000)				
<i>Effect of MSTP on manufactured exports_ Over the sub-sample of African LDCs</i>										
	MANINT (1)	MANEXT (2)	LABINT (3)	LABEXT (4)	LOWINT (5)	LOWEXT (6)	MEDINT (7)	MEDEXT (8)	HIGHINT (9)	HIGHEXT (10)
CUMTPR	0.0269 (0.0351)	0.0958** (0.0405)	0.0141 (0.0229)	0.0439 (0.0282)	0.000274 (0.00491)	0.00334 (0.00245)	0.00301 (0.00928)	0.0241*** (0.00881)	0.00957 (0.0107)	0.0244 (0.0148)
Observations	427	427	427	427	427	427	427	427	427	427
R-squared	0.811	0.903	0.793	0.931	0.569	0.339	0.771	0.550	0.400	0.652
F-statistic	19.93 (0.0000)	24.65 (0.0000)	14.48 (0.0000)	34.87 (0.0000)	14.29 (0.0000)	4.39 (0.0000)	12.89 (0.0000)	6.56 (0.0000)	10.33 (0.0000)	12.77 (0.0000)
BP test ^a	100.998 (0.0000)					616.578 (0.0000)				
<i>Effect of MSTP on manufactured exports_ Over the sub-sample of NonLDCs SSA</i>										
	MANINT (1)	MANEXT (2)	LABINT (3)	LABEXT (4)	LOWINT (5)	LOWEXT (6)	MEDINT (7)	MEDEXT (8)	HIGHINT (9)	HIGHEXT (10)
CUMTPR	0.0719*** (0.0276)	0.00843 (0.0284)	0.00663 (0.00610)	0.0346 (0.0241)	-0.00744 (0.00603)	-0.00325 (0.00423)	0.0131 (0.00987)	-0.00731** (0.00324)	0.0596*** (0.0185)	-0.0156* (0.00836)
Observations	262	262	262	262	262	262	262	262	262	262
R-squared	0.818	0.915	0.812	0.883	0.518	0.815	0.566	0.913	0.867	0.798
F-statistic	26.47 (0.0000)	52.46 (0.0000)	35.19 (0.0000)	18.79 (0.0000)	9.27 (0.0000)	20.44 (0.0000)	13.09 (0.0000)	65.96 (0.0000)	18.22 (0.0000)	34.40 (0.0000)
BP test ^a	6.765 (0.0093)					195.977 (0.0000)				

Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust standard errors are in parenthesis. Time dummies and countries' unobservable specific time invariant effects have been included in the regressions. (a): "BP test" refers to the Breusch-Pagan test of independence. We provide here the Chi-square statistic and the related p-value in brackets. Small-sample statistics have been computed and heteroscedasticity in the residuals have been accounted for in the regressions. The sub-sample of Sub-Saharan African countries is the full sample from which we exclude Morocco and Tunisia.

Appendix 1: Definition and source of control variables

Variables	Definition	Source
GDPC	Real per capita Gross Domestic Product (constant 2015 US\$)	WDI
GROWTH	Growth rate of the per capita Gross Domestic Product (constant 2015 US\$).	WDI
GINIM	This is the market Gini, i.e., the income inequality before taxes and transfers. Values of this index range from 0 to 100, with higher values reflecting a more unequal income distribution.	Data extracted from the Standardized World Income Inequality Database (SWIID) - SWIID Version 8.0, February 2019 (see Solt, 2019). Available online at: https://fsolt.org/swiid/
EDU	This is the index of the mean years of schooling. It is a component of the human development index developed by the UNDP.	Data is available online at: https://hdr.undp.org/data-center/documentation-and-downloads
GFCF	Gross fixed capital formation (% of GDP)	WDI
REER	This is the measure of the real effective exchange rate (based on the consumer price index), computed using a nominal effective exchange rate based on 65 trading partners. An increase in the values of this index indicates an appreciation of the real effective exchange rate, i.e., an appreciation of the home currency against the basket of currencies of trading partners.	Bruegel Datasets (see Darvas 2012a, 2012b). The dataset can be found online at: http://bruegel.org/publications/datasets/real-effective-exchange-rates-for-178-countries-a-new-database/
FINDEV	This is the financial development index, which summarizes how developed financial institutions and financial markets are in terms of their depth (size and liquidity), access (ability of individuals and companies to access financial services), and efficiency (ability of institutions to provide financial services at low costs and with sustainable revenues, and the level of activity of capital markets).	Data extracted from the International Monetary Fund (IMF) Financial Development Index Database (see online at: https://data.imf.org/?sk=F8032E80-B36C-43B1-AC26-493C5B1CD33B) - See also Sahay et al. (2015).
FDI	This is the share (in percentage) of net foreign direct investment inflows in GDP.	WDI
PSTAB	This is the indicator of political stability and absence of violence/terrorism. It measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism. Higher values of this index are associated with a greater political stability.	World Bank Governance Indicators (WGI) accessible online at: https://info.worldbank.org/governance/wgi/ (see World Bank, 2024)
RENT	This is the share (in percentage) of total natural resources rents in GDP	WDI

TERMS	This is the indicator of the terms of trade, measured by the net barter terms of trade index (2000 = 100).	WDI
POPD	This is the population density (people per sq. km of land area).	WDI
POP	Total population	WDI

Appendix 2a: Descriptive statistics of variables used in the sample of WTO Members (i.e., those subject to the TPR transparency exercise)

Variable		Mean	Standard deviation	Minimum	Maximum	Observations
REGQ	Overall	-0.056	0.735	-1.585	2.255	N = 2274
	Between		0.711	-1.407	1.992	n = 115
	Within		0.190	-1.264	1.032	Tbar = 19.7739
GEFF	Overall	-0.150	0.764	-1.887	2.426	N = 2274
	Between		0.746	-1.665	2.160	n = 115
	Within		0.201	-1.145	0.937	Tbar = 19.7739
PRIM	Overall	15.148	12.857	0.400	77.509	N = 2274
	Between		13.083	0.497	56.719	n = 115
	Within		5.195	-11.577	64.641	Tbar = 19.7739
LAB	Overall	3.927	5.646	0	44.138	N = 2274
	Between		5.429	0	36.351	n = 115
	Within		2.066	-14.094	17.891	Tbar = 19.7739
LOW	Overall	1.627	2.600	0.000	31.670	N = 2274
	Between		2.183	0.023	12.429	n = 115
	Within		1.422	-7.446	24.519	Tbar = 19.7739
MED	Overall	3.962	7.182	0.000	48.799	N = 2274
	Between		6.578	0.044	32.204	n = 115
	Within		2.236	-15.755	21.643	Tbar = 19.7739
HIGH	Overall	5.710	13.079	0.000	127.016	N = 2274
	Between		11.812	0.032	88.828	n = 115
	Within		3.744	-47.044	43.898	Tbar = 19.7739
EDI	Overall	-6.301	1.443	-10.390	-3.042	N = 2274
	Between		1.407	-9.685	-3.541	n = 115
	Within		0.337	-8.000	-4.533	Tbar = 19.7739
EDIPR	Overall	-2.497	0.988	-5.300	-0.808	N = 2274
	Between		0.968	-5.072	-0.922	n = 115
	Within		0.257	-4.152	-0.415	Tbar = 19.7739
EDIMA	Overall	-3.804	0.664	-5.335	-2.159	N = 2274
	Between		0.642	-5.129	-2.464	n = 115
	Within		0.202	-4.645	-2.621	Tbar = 19.7739
EXPSTR	Overall	-0.674	0.140	-0.938	-0.354	N = 2274
	Between		0.133	-0.893	-0.386	n = 115
	Within		0.036	-0.858	-0.450	Tbar = 19.7739
ECONC	Overall	-0.131	0.856	-2.778	1.897	N = 1622
	Between		0.830	-1.840	1.485	n = 88
	Within		0.233	-1.378	1.435	Tbar = 18.4318
BGVC	Overall	0.234	0.128	0.043	0.674	N = 1826
	Between		0.123	0.055	0.641	n = 105
	Within		0.031	0.051	0.408	T = 17.3905
FGVC	Overall	0.273	0.098	0.085	0.812	N = 1826
	Between		0.102	0.097	0.780	n = 105
	Within		0.025	0.178	0.470	T = 17.3905
GVCPOS	Overall	0.033	0.145	-0.404	0.485	N = 1826
	Between		0.143	-0.369	0.459	n = 105
	Within		0.035	-0.143	0.279	T = 17.3905
CUMTPR	Overall	2.290	1.983	0	10.000	N = 2274
	Between		1.433	0	5.739	n = 115
	Within		1.376	-2.492	6.855	Tbar = 19.7739

GROWTH	Overall	2.536	4.224	-36.778	27.831	N = 2274
	Between		1.802	-1.745	8.700	n = 115
	Within		3.863	-33.570	28.880	Tbar = 19.7739
GDPC	Overall	7013.111	8880.743	263.361	67948.890	N = 2274
	Between		8686.015	294.618	49805.910	n = 115
	Within		1941.719	-11749.690	25156.100	Tbar = 19.7739
GINIM	Overall	45.847	6.393	32.200	72.300	N = 2206
	Between		6.405	32.940	70.939	n = 115
	Within		1.474	39.243	52.430	Tbar = 19.1826
EDU	Overall	7.761	3.275	0.977	13.656	N = 2274
	Between		3.182	1.383	13.197	n = 115
	Within		0.717	4.762	10.209	Tbar = 19.7739
FINDEV	Overall	0.269	0.177	0.026	0.853	N = 2209
	Between		0.170	0.035	0.809	n = 115
	Within		0.043	0.057	0.436	T = 19.2087
REER	Overall	104.878	18.561	48.462	238.625	N = 2209
	Between		10.749	84.658	141.704	n = 115
	Within		15.037	46.451	231.743	T = 19.2087
FDI	Overall	5.468	16.739	-103.157	449.083	N = 2270
	Between		9.283	-0.363	69.632	n = 115
	Within		13.931	-167.320	387.185	Tbar = 19.7391
GFCF	Overall	22.780	6.836	1.097	78.001	N = 2209
	Between		5.492	12.218	42.081	n = 115
	Within		4.415	2.516	59.435	Tbar = 19.2087
TERMS	Overall	101.535	17.914	48.551	273.076	N = 2168
	Between		10.787	82.711	148.917	n = 115
	Within		14.658	39.192	250.703	T = 18.8522
PSTAB	Overall	-0.221	0.841	-2.810	1.616	N = 2274
	Between		0.785	-2.175	1.283	n = 115
	Within		0.338	-1.939	1.139	Tbar = 19.7739
RENT	Overall	6.188	8.724	0	55.024	N = 2209
	Between		8.916	0.001	39.754	n = 115
	Within		3.506	-18.678	29.662	T = 19.2087
POP	Overall	51500000	185000000	82475.000	1420000000	N = 2274
	Between		172000000	88937.330	1350000000	n = 115
	Within		13300000	-177000000	219000000	Tbar = 19.7739
POPD	Overall	263.019	970.124	1.554	7965.878	N = 2209
	Between		911.827	1.799	7078.071	n = 115
	Within		82.646	-953.540	1150.827	T = 19.2087

Appendix 2b: Descriptive statistics of variables used in the sample of NonWTO Members (i.e., those that are not subject to the TPR transparency exercise)

Variable		Mean	Standard deviation	Minimum	Maximum	Observations
REGQ	Overall	-0.908	0.675	-2.088	1.298	N = 239
	Between		0.672	-1.807	0.803	n = 16
	Within		0.256	-1.551	-0.086	Tbar = 14.9375
GEFF	Overall	-0.641	0.673	-1.815	1.255	N = 239
	Between		0.696	-1.689	1.070	n = 16
	Within		0.254	-1.323	0.111	Tbar = 14.9375
PRIM	Overall	16.297	13.472	0.218	66.858	N = 238
	Between		15.765	1.051	52.461	n = 16
	Within		5.845	-18.088	35.846	Tbar = 14.875
LAB	Overall	2.208	2.385	0	9.016	N = 238
	Between		2.180	0	6.701	n = 16
	Within		1.007	-0.431	7.040	Tbar = 14.875
LOW	Overall	1.757	2.403	0	15.064	N = 238
	Between		2.461	0.015	9.612	n = 16
	Within		0.815	-1.747	7.209	Tbar = 14.875
MED	Overall	2.310	3.560	0	13.706	N = 238
	Between		2.877	0.035	9.712	n = 16
	Within		1.523	-3.111	8.940	Tbar = 14.875
HIGH	Overall	2.177	2.552	0.023	13.592	N = 238
	Between		2.096	0.083	8.628	n = 16
	Within		0.986	-0.190	7.141	Tbar = 14.875
EDI	Overall	-6.758	1.348	-9.527	-4.173	N = 239
	Between		1.352	-8.715	-4.456	n = 16
	Within		0.387	-7.812	-4.798	Tbar = 14.9375
EDIPR	Overall	-2.811	1.157	-5.027	-0.961	N = 239
	Between		1.154	-4.704	-1.096	n = 16
	Within		0.422	-4.203	-1.190	Tbar = 14.9375
EDIMA	Overall	-3.947	0.528	-5.365	-2.950	N = 239
	Between		0.514	-5.261	-3.360	n = 16
	Within		0.243	-4.914	-3.202	Tbar = 14.9375
EXPSTR	Overall	-0.710	0.101	-0.870	-0.495	N = 239
	Between		0.093	-0.821	-0.531	n = 16
	Within		0.033	-0.817	-0.623	Tbar = 14.9375
ECONC	Overall	-0.252	0.754	-2.206	0.923	N = 171
	Between		0.749	-1.511	0.794	n = 13
	Within		0.189	-0.947	0.421	Tbar = 13.1538
BGVC	Overall	0.166	0.102	0.057	0.396	N = 129
	Between		0.110	0.072	0.353	n = 10
	Within		0.022	0.101	0.217	T = 12.9
FGVC	Overall	0.339	0.124	0.120	0.632	N = 129
	Between		0.132	0.128	0.567	n = 10
	Within		0.028	0.260	0.404	T = 12.9
GVCPOS	Overall	0.138	0.162	-0.179	0.398	N = 129
	Between		0.178	-0.158	0.355	n = 10
	Within		0.029	0.075	0.218	T = 12.9
CUMTPR	Overall	0	0	0	0	N = 239
	Between		0	0	0	n = 16
	Within		0	0	0	Tbar = 14.9375

GROWTH	Overall	3.133	5.422	-25.931	33.030	N = 238
	Between		3.654	-1.917	14.424	n = 16
	Within		4.333	-20.881	21.739	Tbar = 14.875
GDPC	Overall	5100.016	6815.831	255.100	33162.160	N = 238
	Between		7534.521	430.554	31439.540	n = 16
	Within		786.595	2390.642	7341.541	Tbar = 14.875
GINIM	Overall	41.754	6.168	32.900	57.100	N = 229
	Between		6.456	33.252	56.580	n = 16
	Within		0.858	39.119	45.919	Tbar = 14.3125
EDU	Overall	7.955	3.227	1.633	12.241	N = 239
	Between		3.199	2.070	11.700	n = 16
	Within		0.744	5.163	10.284	Tbar = 14.9375
FINDEV	Overall	0.192	0.104	0.037	0.522	N = 233
	Between		0.103	0.042	0.419	n = 16
	Within		0.035	0.079	0.365	T = 14.5625
REER	Overall	106.320	32.658	47.608	352.595	N = 230
	Between		16.022	86.684	157.191	n = 16
	Within		26.928	35.314	301.724	T = 14.375
FDI	Overall	4.064	6.566	-0.639	55.073	N = 221
	Between		6.026	0.521	25.116	n = 16
	Within		4.104	-18.588	34.020	Tbar = 13.8125
GFCF	Overall	25.966	10.343	6.875	70.546	N = 229
	Between		9.590	15.544	55.555	n = 16
	Within		5.470	9.054	50.363	Tbar = 14.3125
TERMS	Overall	98.307	21.483	27.044	167.114	N = 208
	Between		14.527	63.034	124.346	n = 16
	Within		17.722	34.495	164.230	T = 13
PSTAB	Overall	-0.704	1.010	-2.974	1.184	N = 239
	Between		0.958	-2.228	0.976	n = 16
	Within		0.507	-2.447	1.103	Tbar = 14.9375
RENT	Overall	12.681	14.840	0.001	66.060	N = 232
	Between		17.835	0.002	59.939	n = 16
	Within		5.254	-24.352	29.783	T = 14.5
POP	Overall	24100000	27400000	334002	105000000	N = 239
	Between		26600000	362510.1	87300000	n = 16
	Within		3897777	7856130	42100000	Tbar = 14.9375
POPD	Overall	85.642	105.700	3.232	555.117	N = 227
	Between		133.831	3.427	492.012	n = 16
	Within		8.807	50.394	148.748	T = 14.1875

Appendix 3a: List of the **117** countries (and sub-samples of African countries/LDCs) that are subject to the MSTP, and of the **18** NonWTO Members

117 countries subject to the TPR transparency exercise			38 African countries	30 LDCs	18 NonWTO Members
Albania	Gambia, The	Oman	Angola	Angola	Algeria
Angola	Georgia	Pakistan	Benin	Bangladesh	Azerbaijan
Argentina	Ghana	Panama	Botswana	Benin	Bahamas, The
Armenia	Guatemala	Papua New Guinea	Burkina Faso	Burkina Faso	Belarus
Bahrain	Guinea	Paraguay	Burundi	Burundi	Bhutan
Bangladesh	Guinea-Bissau	Peru	Cameroon	Cambodia	Bosnia and Herzegovina
Barbados	Guyana	Philippines	Central African Republic	Central African Republic	Comoros
Belize	Haiti	Poland	Chad	Chad	Equatorial Guinea
Benin	Honduras	Romania	Congo, Dem. Rep.	Congo, Dem. Rep.	Eritrea
Bolivia	Hong Kong SAR, China	Russian Federation	Congo, Rep.	Djibouti	Ethiopia
Botswana	Hungary	Rwanda	Cote d'Ivoire	Gambia, The	Iran, Islamic Rep.
Brazil	India	Samoa	Djibouti	Guinea	Lebanon
Brunei Darussalam	Indonesia	Saudi Arabia	Egypt, Arab Rep.	Guinea-Bissau	Libya
Bulgaria	Israel	Senegal	Eswatini	Haiti	Serbia
Burkina Faso	Jamaica	Seychelles	Gabon	Lao PDR	Sudan
Burundi	Jordan	Sierra Leone	Gambia, The	Lesotho	Syrian Arab Republic
Cambodia	Kazakhstan	Singapore	Ghana	Madagascar	Turkmenistan
Cameroon	Kenya	Slovak Republic	Guinea	Mali	Uzbekistan
Central African Republic	Korea, Rep.	Slovenia	Guinea-Bissau	Mauritania	
Chad	Kyrgyz Republic	Solomon Islands	Kenya	Nepal	
Chile	Lao PDR	South Africa	Lesotho	Niger	
China	Latvia	Sri Lanka	Madagascar	Rwanda	
Colombia	Lesotho	Suriname	Mali	Senegal	
Congo, Dem. Rep.	Lithuania	Tajikistan	Mauritania	Sierra Leone	
Congo, Rep.	Madagascar	Tanzania	Mauritius	Solomon Islands	
Costa Rica	Malaysia	Thailand	Morocco	Tanzania	
Cote d'Ivoire	Mali	Togo	Namibia	Togo	
Croatia	Malta	Tonga	Niger	Uganda	
Cyprus	Mauritania	Trinidad and Tobago	Rwanda	Yemen, Rep.	
Czechia	Mauritius	Tunisia	Senegal	Zambia	
Djibouti	Mexico	Turkiye	Seychelles		
Dominican Republic	Moldova	Uganda	Sierra Leone		
Ecuador	Mongolia	Ukraine	South Africa		

Egypt, Arab Rep.	Morocco	United Arab Emirates	Tanzania		
El Salvador	Namibia	Uruguay	Togo		
Estonia	Nepal	Vanuatu	Tunisia		
Eswatini	Nicaragua	Viet Nam	Uganda		
Fiji	Niger	Yemen, Rep.	Zambia		
Gabon	North Macedonia	Zambia			

Appendix 3b: List of countries per frequency of TPR meetings (among WTO Member states subject to the TPR transparency exercise)

93 Countries with a 6-year cycle of TPR meetings			10 Countries with a 4-year cycle of TPR meetings	14 Countries with a 2-year cycle of TPR meetings
Albania	Gabon	Pakistan	Brazil	Bulgaria
Angola	Gambia, The	Panama	Hong Kong SAR, China	China
Argentina	Georgia	Papua New Guinea	India	Croatia
Armenia	Ghana	Paraguay	Indonesia	Cyprus
Bahrain	Guatemala	Peru	Korea, Rep.	Czechia
Bangladesh	Guinea	Philippines	Malaysia	Estonia
Barbados	Guinea-Bissau	Russian Federation	Mexico	Hungary
Belize	Guyana	Rwanda	Singapore	Latvia
Benin	Haiti	Samoa	Thailand	Lithuania
Bolivia	Honduras	Saudi Arabia	Turkiye	Malta
Botswana	Israel	Senegal		Poland
Brunei Darussalam	Jamaica	Seychelles		Romania
Burkina Faso	Jordan	Sierra Leone		Slovak Republic
Burundi	Kazakhstan	Solomon Islands		Slovenia
Cambodia	Kenya	South Africa		
Cameroon	Kyrgyz Republic	Sri Lanka		
Central African Republic	Lao PDR	Suriname		
Chad	Lesotho	Tajikistan		
Chile	Madagascar	Tanzania		
Colombia	Mali	Togo		
Congo, Dem. Rep.	Mauritania	Tonga		
Congo, Rep.	Mauritius	Trinidad and Tobago		
Costa Rica	Moldova	Tunisia		
Cote d'Ivoire	Mongolia	Uganda		
Djibouti	Morocco	Ukraine		
Dominican Republic	Namibia	United Arab Emirates		
Ecuador	Nepal	Uruguay		
Egypt, Arab Rep.	Nicaragua	Vanuatu		
El Salvador	Niger	Viet Nam		
Eswatini	North Macedonia	Yemen, Rep.		
Fiji	Oman	Zambia		

Appendix 3c: Group of countries per degree of trade liberalization commitments (among WTO Member states subject to the TPR transparency exercise)

50 Article26 Members		37 NonArticle26 Members		30 Article12 Members
Angola	Malaysia	Argentina	South Africa	Albania
Bahrain	Mali	Bangladesh	Sri Lanka	Armenia
Barbados	Malta	Bolivia	Thailand	Bulgaria
Belize	Mauritania	Brazil	Tonga	Cambodia
Benin	Mauritius	Chile	Tunisia	China
Botswana	Namibia	Colombia	Turkiye	Croatia
Brunei Darussalam	Niger	Congo, Dem. Rep.	Uruguay	Ecuador
Burkina Faso	Papua New Guinea	Costa Rica		Estonia
Burundi	Rwanda	Czechia		Georgia
Cameroon	Senegal	Dominican Republic		Jordan
Central African Republic	Sierra Leone	Egypt, Arab Rep.		Kazakhstan
Chad	Singapore	El Salvador		Kyrgyz Republic
Congo, Rep.	Solomon Islands	Guatemala		Lao PDR
Cote d'Ivoire	Suriname	Haiti		Latvia
Cyprus	Tanzania	Honduras		Lithuania
Djibouti	Togo	Hungary		Moldova
Eswatini	Trinidad and Tobago	India		Mongolia
Fiji	Uganda	Israel		Nepal
Gabon	United Arab Emirates	Korea, Rep.		North Macedonia
Gambia, The	Zambia	Mexico		Oman
Ghana		Morocco		Panama
Guinea		Nicaragua		Russian Federation
Guinea-Bissau		Pakistan		Samoa
Guyana		Paraguay		Saudi Arabia
Hong Kong SAR, China		Peru		Seychelles
Indonesia		Philippines		Tajikistan
Jamaica		Poland		Ukraine
Kenya		Romania		Vanuatu
Lesotho		Slovak Republic		Viet Nam
Madagascar		Slovenia		Yemen, Rep.

Appendix 4: Descriptive statistics on the variables used in the analysis of the effect of the MSTP on African countries' manufactured exports

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
MANINT	731	0.239	0.434	0.00048	4.213
MANEXT	731	0.387	0.773	0.00026	4.468
LABINT	731	0.079	0.247	0.000002	3.191
LABEXT	731	0.198	0.557	0.000006	4.290
LOWINT	731	0.029	0.047	0.0000024	0.458
LOWEXT	731	0.022	0.044	0.000017	0.360
MEDINT	731	0.055	0.115	0.000024	1.128
MEDEXT	731	0.073	0.197	0.000183	1.637
HIGHINT	731	0.076	0.183	0.00003	1.638
HIGHEXT	731	0.095	0.165	0.00006	0.911
GFCF	728	21.807	8.271	2.5	81.021
GDPC	731	2087.811	2339.476	263.361	14259.810
FDI	731	3.460	5.145	-18.918	57.877
EDU	731	4.866	2.359	0.559	11.373
REER	731	105.492	18.397	59.003	263.609
FINDEV	731	0.155	0.123	0.00334	0.643
TERMS	731	120.626	35.377	21.397	235.019
PSTAB	641	-0.504	0.808	-2.699	1.201
RENT	731	10.124	10.312	0.00117	58.688
POP	731	18100000	20400000	81202	107000000