Effect of the Utilization of Unilateral Trade Preferences on Foreign Direct Investment flows to Beneficiary Countries

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Research Article

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Abstract

This article has explored the effect of non-reciprocal trade preferences (NRTPs) offered by the QUAD countries to developing countries on the foreign direct investment (FDI) flows to these developing countries. The analysis has used an unbalanced panel dataset of 108 beneficiary countries of NRTPs over the period 2002-2019. By means of the two-step system GMM, it has established that low utilization rates of GSP programs are associated with greater FDI flows to less advanced beneficiary countries, including, least developed countries (LDCs). However, high utilization rates of GSP programs induces greater FDI flows to advanced beneficiary countries, including NonLDCs. In addition, low (high) utilization rates of other trade preferences generate higher FDI flows to less advanced beneficiary countries (relatively advanced countries). The analysis has also shown that GSP programs and other trade preferences are strongly complementary in enhancing FDI inflows, especially for high utilization rates of other trade preferences programs. The utilization of each of these two blocks of NRTPs induces greater FDI flows to countries that endeavour to export increasingly complex products, or those with lower dependence on natural resources. Finally, the utilization of NRTPs generates higher FDI inflows to countries that substantially liberalize their trade regimes.

JEL Classification: F13; F14; F20.

1. Introduction

The importance of foreign direct investment (FDI) inflows (as foreign capital to help fill the gap between savings and investments) for economic development in developing countries, is now well established in the literature (e.g., Alfaro and Chauvin, 2020; Gestrin, 2014). FDI flows are known to generate potential benefits[2] to host countries, including the facilitation of technology transfer, the upgrade of skills (human capital), the positive spillovers to local firms and domestic investment, improvements in institutional and governance quality, jobs creation, and the enhancement of overall productivity, competitiveness and entrepreneurship, and its contribution to eradicate poverty through economic growth and development (e.g., UNCTAD, 2002).

A voluminous literature has looked at the macroeconomic determinants of FDI inflows, and among those studies, some works[23] have considered the effect of regional trade agreements (i.e., reciprocal trade agreements) on FDI inflows, notably considering the dramatic increase in regional trade agreements in the world in the last couple of decades (e.g., Acharya, 2016; Hofmann et al., 2019). However, scarce attention has been devoted to the effect of non-reciprocal trade preferences (henceforth, NRTPs) offered by wealthier nations to developing countries on the FDI flows to developing countries.

In fact, in parallel to the tremendous development of regional trade agreements (that involve countries of the same development level as well as of different development levels) around the world, wealthier nations also offer NRTPs to developing countries. The rationale for providing these NRTPs is enshrined in

the UNCTAD[4] Resolution 21 (II) adopted by member states of the UNCTAD at the second UNCTAD conference held in 1968. This Resolution called for the establishment of a “generalized, non-reciprocal, non-discriminatory system of preferences[5] in favour of the developing countries, including special measures in favour of the least advanced among the developing countries” (see Grossman and Sykes 2005). The Resolution also provided that these preferences should “increase export earnings for developing countries, promote industrialization and accelerate developing countries’ rates of economic growth” (e.g., Bartels, 2003, Grossman and Sykes, 2005; Persson[6], 2015a). The Enabling Clause, also referred to as “Differential and More Favourable Treatment, Reciprocity and Fuller Participation of Developing Countries” provides the legal basis for the supply of GSP schemes by wealthier countries to developing countries.

However, NRTPs are not limited to GSP schemes. They also include other non-reciprocal trade concessions provided by wealthier countries to specific developing countries, authorized by a special Waiver under the WTO Agreement[7] (see WTO, 2010). For example, while the QUAD[8] countries provide GSP schemes (each country has its own GSP scheme) to developing countries, with specific concessions to least developed countries[9] (LDCs), Canada, the EU and the US also provide specific trade concessions to selected developing countries. For example, Canada offers a tariff treatment to products from Commonwealth Caribbean countries. The EU provides special preferential treatment to products originating from the Western Balkans. The US offers a special treatment to product originating from Nepal; a special treatment to eligible countries in Sub-Saharan African (SSA) under the African Growth and Opportunity Act (AGOA), and special trade concessions to the Caribbean Basin Economic Recovery Act for Caribbean countries, and particularly the Hemispheric Opportunity through Partnership Encouragement initiative for Haiti. All NRTPs offered by the QUAD countries to developing countries could be found in the WTO's database on preferential trade arrangements.

The current article investigates the effect of the utilization of NRTPs offered by the QUAD countries on FDI flows to beneficiary countries. As far as we are aware, Yannopoulos (1986, 1987) are among the scarce studies that have discussed the effect of NRTPs[10] on FDI flows to beneficiary countries. Yannopoulos (1986) and Yannopoulos (1987) have provided a theoretical discussion on the effect of NRTPs on FDI inflows, Yannopoulos (1986) has considered the cases of Tunisia, Morocco, Malta, Portugal as beneficiaries of the European Community's tariff preferences. Based on a simple factual analysis (and not causal/evidence-based analysis), the author has concluded mixed evidence of the effect of EC tariff preferences on FDI flows to these countries. Yannopoulos (1987) has considered several beneficiaries of the European Community's tariff preferences (e.g., Malta, Mauritius, Tunisia, Morocco) and concluded, inter alia, that NRTPs can lead to investment creation/diversion effects, particularly when indigenous firms do not have the required informational assets to exploit the export opportunities generated by the NRTPs.

The present analysis focuses on two main blocks of NRTPs offered by the QUAD countries to developing countries, namely the GSP programs, and other trade preferences (i.e., other NRTPs than the GSPs offered by the QUAD countries to selected developing countries). The reliance on QUAD countries (rather than a

larger number of wealthier preference-granting countries) is dictated by the availability of data. In fact, the article uses a unique set of data recently developed by the UNCTAD on the utilization of NRTPs by QUAD countries to perform the empirical analysis. To the best of our knowledge, this is the most comprehensive dataset available on the utilization of NRTPs by beneficiary countries. While the WTO database on preferential trade arrangements also contains information that could allow us to compute data on the utilization rate of NRTPs provided by developed countries (in the sense of the WTO), the time coverage of this dataset is smaller compared to that of the UNCTAD.

The analysis is performed using an unbalanced panel dataset covering 108 beneficiary countries of NRTPs offered by the QUAD countries, over the period 2002-2019. It has used the two-step generalized methods of moments estimator to undertake the empirical work, and revealed interesting outcomes. First, the effect of the utilization of NRTPs on FDI flows to beneficiary countries varies across countries, and depends on the type of NRT (whether GSP programs or other trade preferences regimes). Second, GSP programs and other trade preferences are complementary in attracting FDI flows to beneficiary countries, notably when the utilization of other trade preferences reaches high rates. Third, the utilization of each of these two blocks of NRTPs induces greater FDI inflows as countries export increasingly complex/sophisticated products, or as their share of natural resources rents in GDP becomes lower. Fourth and finally, the usage of these two types of NRTPs promotes FDI flows to countries that substantially liberalize their trade regimes.

The rest of the paper is structured as follows. Section 2 presents a theoretical discussion on the effect of the utilization of NRTPs on FDI flows to beneficiary countries. Section 3 presents the baseline model specification used in the analysis. Section 4 provides some data analysis, and Section 5 discusses the appropriate empirical method to perform the empirical analysis. Section 6 interprets estimations' results, and Section 7 concludes.

[2] These benefits accrue to host countries when certain conditions prevail in the host countries. These conditions include for example, the existence of a strong backward and forward linkages of the sector targeted by FDI, the initial levels of human capita and institutional quality, and trade policies (e.g., Wako, 2021).

[3] These works include for example, Baccini et al. (2017); Baltagi et al. (2008); Bütthe and Milner (2008); Cardamone and Scoppola (2012); Kox and Rojas-Romagosa (2020); MacDermott (2007); Medvedev (2012); Tekin-Koru and Waldkirch (2010) and Zahid (2020).

[4] The acronym UNCTAD refers to the United Nations Conference on Trade and Development.

[5] These types of preferences are also referred to as "Generalized System of Preferences (GSP)".

[6] The history of GSPs could be found in Cunha et al. (2005), and an overview on the legal and historical background of trade preferences could be found in Persson (2015a).

[7] The WTO maintains a database that contains a wealth of information on NRTPs (referred to as "preferential trade arrangements" in the WTO jargon). This database is accessible online at:

<http://ptadb.wto.org/default.aspx>

[8] QUAD countries are also referred to as the “Quadrilaterals”, and include Canada, European Union (EU), Japan and the United States of America (US).

[9] LDCs represent the poorest and most vulnerable countries (to external and environmental shocks) in the world. This group of countries has been constructed, and updated regularly by the United Nations. Further information on this category of countries could be obtained online at: <http://unohrrls.org/about-ldcs/criteria-for-ldcs/>

[10] The discussion by Yannopoulos (1986, 1987) have focused on how benefiting from NRTPs can affect FDI flows to the beneficiary countries. It is worth emphasizing that an eligibility to (or enjoying) a NRTP offered by a wealthier country does not necessarily mean that the beneficiary country utilizes these preferential concessions.

2. Theoretical Discussion

Yannopoulos (1986) has argued that beneficiary countries' ownership-specific advantages (in particular low labour costs and other locational advantages) matter significantly for attracting multinational firms, either from the preference-granting countries or from third countries that have export interests in the markets of preference granting countries. The type of FDI in which the multinational enterprise (MNE) will engage (i.e., either joint ventures, outwards processing, or branch plant development) in a beneficiary country of NRTPs would, in addition to the locational advantages of that country, depend on a variety of factors. The latter include the preference margin, policies implemented by the government of the beneficiary country, the production capabilities of local firms (in the beneficiary country), the local availability of complementary inputs, the technology of production (i.e., the extent to which unskilled labour-intensive processes can be relocated elsewhere) and the market structure within which any multinational firm operates.

Yannopoulos (1987) has pointed out that two major factors determine the attraction of FDI inflows in a developing country when it becomes eligible and beneficiary of a NRTP. These factors are the type of skills and resources required to produce the additional or new exports induced by the availability of tariff preferences, and the extent to which the export expansion induced by the NRTPs requires a large proportion of inputs sourced from outside the beneficiary country.

As for the first factor, if the NRTP covers products concentrated in sectors that require a high level of marketing, management, or technological intensity of production, then the production for export under preferential tariffs would involve the use of specialized informational assets that are transferable through intra-firm mechanisms. In this case, a beneficiary country of this NRTP could attract MNEs, including in the sectors covered by the NRTP. Moreover, a country's comparative advantage can play a role in attracting FDI flows further to this country's eligibility to a NRTP. For example, Qiu (2003) has built on a trade-cum-FDI model that involves two countries (the FDI host country and the FDI source country) and two sectors (i.e., auto and textile) in each country, to examine how comparative advantage in the FDI host country influences FDI flows to the host country. The author has obtained that the sector of comparative advantage of the host country attracts more FDI inflows than its sector of comparative disadvantage.

Specifically, auto firms in the home country are less incentivized to engage in FDI than textile firms, in that country. As a result, textile firms in the host country are more attractive to inward FDI. Similarly, Alfaro and Charlton (2009) have used data on subsidiaries identified as vertical suppliers to their parents (at the two-digit level) and obtained, *inter alia*, that comparative advantage is a strong driver of vertical FDI, that is, low-skill activities tend to locate in low-skill countries. These findings suggest that as developing countries are often abundant in producing and exporting unskilled/or low-skilled, labour-intensive, or even less technological intensive products such as textile and clothing, they would likely attract more FDI in these sectors insofar as the latter are authorized for export under NRTPs. Thus, a low-income beneficiary country of a NRTP may attract more of FDI inflows if it produces and exports products that are low-skilled, labour-intensive, or even less intensive in technology, and if those products enjoy a strong preference margin under the NRTP.

At the same time, even though such products use standardized technology, they usually require superior market knowledge and marketing skills when sold in markets (here preference granting -wealthier- countries' markets) where promotional levels, complexity of distribution channels, and other factors create marketing entry barriers, and hence, trade costs for the beneficiary countries. In these circumstances, there would be a small proportion of domestic specific information required to produce efficient local production. Compared to indigenous firms, foreign firms would then be in a competitive advantage position in producing and exporting under the NRTP. Yannopoulos (1987) has postulated that "the proportion of FDI flows originating from the preference-granting countries or from the third countries to the beneficiary country would be higher (compared to the situation prevailing before the introduction of the NRTP), the greater is the marking intensity of production in the sectors whose export activities have become profitable due to the NRTP.

On the other hand (concerning the second factor), the costs of scanning international markets with a view to sourcing inputs are likely to be lower for MNEs than for indigenous firms in the beneficiary countries. It, therefore, follows that beneficiary countries of NRTPs would attract higher FDI inflows when the share of inputs to be purchased from outside the beneficiary country for producing exportable goods under the NRTPs tends to be larger (Yannopoulos, 1987).

While the above discussion has provided an insight into the effect of eligibility to a NRTP on FDI flows to the beneficiary country, it does not provide a clear guidance on the genuine effect of the effective utilization of the NRTPs on FDI flows to the beneficiary countries. Nevertheless, building on this discussion, we can postulate that beneficiary countries of NRTPs (for example, low-income countries) that produce low-skilled/or labour-intensive products would attract higher FDI inflows because such countries do not often have the requisite market knowledge and marketing skills to export their products in the preference granting countries. In this scenario, it could be expected that even a low utilization rate of NRTPs in less advanced developing countries (e.g., low-income countries) that are abundant in low-skilled workers would experience higher FDI inflows **Hypothesis 1**). On the other hand, it is also possible that when the necessary conditions for international production are met in the beneficiary countries of NRTPs, then foreign firms, either from the preference granting country or from third countries that have

export interests in the market of preference granting countries, would be incentivized to harness the export opportunities offered by the NRTPs. This signifies that beneficiary countries (e.g., relatively advanced countries) that improve their utilization of NRTPs would likely attract FDI flows (**Hypothesis 2**). It could be particularly expected that foreign firms aiming at engaging in FDI may choose to locate their plants in beneficiary countries of NRTPs that have a certain level of productive structure sophistication, i.e., a certain level of productive knowledge and exclusive capabilities to produce increasing complex products. In the sense of Hausman and Hidalgo (2009), such beneficiary countries have the advantage of producing high value-added, notably increasingly complex/sophisticated products, which could represent strong locational advantages for attracting FDI flows. In fact, an economy's level of social capital and its institutions' health can reflect the degree of sophistication of its productive structure (and hence, export structure) (Hartmann et al., 2017). This is because the ability of people to form social and professional networks plays a critical role in the capacity of a country to produce sophisticated products (e.g., Fukuyama, 1996; Hausmann, 2016; Hidalgo, 2015). Sadeghi et al. (2020) and Gómez-Zaldívar et al. (2021) have demonstrated empirically[11] that increasingly complex (or sophisticated) economies attract higher FDI inflows. Mayer et al. (2010) have established that there exists a significant 'home bias' in firms' decisions to engage in manufacturing investment in the host country: firms tend to set up new affiliates closed to existing affiliates within the same industrial group. In this scenario, we expect that countries that produce increasingly complex products would experience a greater utilization of NRTPs (if those high value-added complex products are covered by the NRTPs[12] that they enjoy). In turn, a higher utilization rate of NRTPs could help attract greater FDI inflows that aim to exploit the relatively sophisticated productive structure of the beneficiary country so as to export sophisticated goods under the NRTPs[13] concerned (**Hypothesis 3**).

Besides, many factors can hinder the utilization of NRTPs, and deter FDI flows to beneficiary countries. In fact, as noted above, being eligible to a NRTP does not necessarily mean utilizing it. For example, developing countries may benefit from several NRTPs that can overlap, including in terms of products, which could lead them to make use of some NRTPs at the expense of others (e.g., Ngangnon and Iyer, 2021; Hakobyan, 2015; Keck and Lendle, 2012). Additionally, many factors can hinder the utilization of NRTPs once beneficiary countries become entitled to benefit from these NRTPs. These factors include the preference erosion[14] that stems from both the greater liberalization[15] of most favoured nations (MFN) tariffs (in particular since the creation of the WTO) and the end of multi-fibre agreement (e.g., Inama, 2003; Klasen et al., 2021; Low et al., 2009; Persson, 2015b); domestic economic policies, including trade policies[16] and the real exchange rate policies[17]; the limited supply response capacity of beneficiary countries (e.g., Gradeva and Martínez-Zarzoso 2016; Low et al., 2009; Prowse, 2010; Yannopoulos, 1986, 1987); the inadequate product coverage (e.g., Low et al., 2009; Persson, 2015b); the existence of restrictive rules of origin as well as other compliance costs by the beneficiary countries when claiming a NRTP (e.g., Brenton and Özden 2009; Gitli, 1995; Persson, 2015b; WTO, 2019); and the lack of certainty or stability of the improved market access brought about by the NRTP (e.g., Hakobyan, 2020; Persson, 2015b). For example, concerning the rules of origin, the literature has shown that restrictive 'preferential' rules of origin can constrain the benefits of tariff preference margins (e.g., Cadot et al., 2014)

by leading to a misallocation of resources (e.g., Falvey and Reed, 1998; Mattoo et al., 2003) and ultimately undermining the utilization of NRTPs (Hakobyan, 2015; Herz and Wagner, 2011; Inama, 2003; Sytsma, 2021; WTO, 2019). WTO (2019) has explored the rationale for the low rates of preference utilization for several agricultural exports under many NRTPs, despite the simple feature of agricultural products, and the fact that these products are subject to simple rules of origin. Many factors appear to have a bearing on the NRTPs granted to agricultural products exported by beneficiary countries. These are the choice and design of origin criteria; the difficulties in complying with other origin requirements; and the deliberate choice by trading firms to refrain from claiming duty-free treatment under an NRTP notably if other NRTPs are available; the existence of a low preferential tariff margin under the NRTP; or the insufficient knowledge or lack of knowledge about the existence of trade preferences.

Regarding the uncertainty or instability that could be associated with a NRTPs, Persson (2015b) has argued that the improved access to foreign markets for beneficiary countries of NRTPs may be uncertain or unstable depending on whether the NRTPs offered on a contractual basis or a unilateral basis by the preference granting country. NRTPs offered on a unilateral basis can be altered or withdrawn at short notice. This signifies that investors would be less incentivized to efficiently allocate resources based on the preferential market access. In contrast, a NRTP that arises out of a negotiated agreement between two parties, generally offers stable market access for at least a few years. This would reduce the risks for investors to invest in potential export sectors. In a similar spirit, Hakobyan (2020) has uncovered that the 2011 expiration of the GSP offered by the US on the exports from developing countries has had a detrimental impact on developing countries' exports to the US. On average, further to this expiration, beneficiary countries' exports dropped, on average, by 3% in 2011, and the magnitude of the decline in these exports increases in the tariff rates and in the utilization rates of the GSP. Especially, developing countries' exports of agricultural products, as well as of textiles and clothing fell respectively by 5% and 9%. Additionally, the adverse export effect of the 2011 expiration of the US GSP has been persistent over time, as exports did not fully recover by 2012.

Summing-up, these limiting factors of the utilization of NRTPs could discourage foreign firms from engaging in FDI in the beneficiary countries of those NRTPs. For example, rules of origin discourage efficiency-seeking FDI when they prevent firms from sourcing inputs from the most efficient countries (UNCTAD, 2002), and may limit FDI flows from third countries (that is non-preference granting countries that have export interests in the market of preference granting countries) if there is a strong requirement for inputs to be sourced from preference granting countries (e.g., Brenton and Özden 2009; Cadot and de Melo, 2008; UNCTAD, 2004). In this scenario, a low utilization rate of NRTPs would result in lower FDI inflows (this confirms theoretically the **Hypothesis 3** set out above).

Overall, the direction of the effect of the utilization rate of NRTPs on FDI inflows is a priori unknown, and would be determined in the empirical analysis. We will test **Hypotheses 1 to 3** in the empirical analysis.

[11] Antonietti and Franco (2021) have, however, obtained that economic complexity does not (Granger) cause FDI inflows.

[12] As the "industrialization" of the beneficiary countries of NRTPs is one main goal of these preferential regimes (see the Resolution 21(ii) of the UNCTAD described above), we can expect that the products authorized for exports under the NRTPs would, at least, not cover raw materials or very low value-added products if preference granting countries aim genuinely to help beneficiary expand their manufacturing base.

[13] It is important to note that FDI inflows could in turn contribute to enhancing the economic complexity (i.e., sophistication) of the host country, which is here the beneficiary country of NRTPs (e.g., Eck and Huber, 2016; Hausmann, 2016; Javorcik et al., 2018).

[14] Preference erosion refers to the erosion of the preference margin, i.e., the difference between the preferential tariff rate and the MFN rate, enjoyed by beneficiaries of NRTPs (e.g., Persson, 2019b).

[15] The most-favoured-nation (MFN) tariff rates have been substantially reduced since the creation of the WTO in 1995. These MFN tariff reductions have resulted in a higher reduction of the preference margins for many products under NRTPs.

[16] According for example to Collier and Venables (2007), the elimination of trade barriers to all complementary upstream tasks is necessary to promote the export of manufacturing 'tasks' in African countries beneficiaries of NRTPs.

[17] It is well established in the literature that a competitive and a stable real exchange rate should be part of the policy package needed to ensure production and export diversification, macroeconomic stability, and development (e.g., Freund and Pierola, 2012; Goya, 2020; Guzman et al., 2018; Nourira et al., 2011; Rodrik, 2009; Eichengreen and Gupta, 2013).

3. Model Specification

The voluminous empirical literature on the macroeconomic determinants of FDI inflows has established that an increase in the market size (proxied for example, by the real per capita income) reflects a higher demand for goods and services in the host country, a higher return on the foreign investment and can therefore, drive in FDI flows (e.g., Asiedu, 2002, 2011; Cheng and Kwan 2000; Moosa and Cardak, 2006). Another indicator of the market size is the population size, whose increase is also expected to generate higher FDI inflows (e.g., Chakrabarti, 2001). A high endowment in natural resources can also exert a significant positive impact on FDI inflows, including resources seeking FDI inflows (e.g., Anyanwu, 2012; Asiedu, 2006), but deters FDI flows in the non-extractive industries (including manufacturing sector) (e.g., Asiedu, 2013). On another note, improvements in the institutional and governance quality such as reducing the levels of corruption and enhancing political stability, exert a positive effect on FDI inflows (e.g., Ali et al. 2010; Anyanwu, 2012; Asiedu, 2006; Buchanan et al., 2012; Busse and Hefeker, 2007; Globerman and Shapiro, 2002; Jiang and Martek, 2021; Moosa and Cardak, 2006; Wei, 1997). Kuvvet (2021) has found that FDI can move to countries with yet high corruption, but that have established both First Instance Court and Hybrid Court.

The literature on the effect of human capital accumulation on FDI inflows has reached inconclusive outcomes (see for example, Gnanngnon, 2020). For example, according to Markusen (2001), knowledge capital plays a critical role in attracting FDI flows. Reiter et al. (2010) have obtained that an improvement

in human capital results in greater FDI inflows when the level of corruption is low. Moreover, an accumulation of human capital can attract FDI flows when FDI policy restricts the entry of foreign investors in some economic sectors, and discriminates against foreign investors relative to domestic investors. Many other studies have reported a positive effect of the education level, which is one aspect of human capital, on FDI inflows (e.g., Asiedu, 2002; Cleeve et al., 2015; Kim and Park, 2007; Noorbaksh and Paloni, 2001). Other studies have considered the second aspect of human capital, i.e., the health aspect, and reported that a workforce in a good health is likely to be highly productive, and hence attract higher FDI inflows, as multinational firms involved in FDI would enjoy lower production costs and higher profitability (e.g., Alsan et al., 2006; Azémar and Desbordes, 2009; Asiedu et al. 2015; Ghosh and Francesco, 2015).

Economic complexity has been found as an important determinant of FDI inflows (e.g., Sadeghi et al. 2020; Gómez-Zaldívar et al. 2021) (see discussion in section 2).

The literature has also underlined that a country's real exchange rate movements can influence the flows of FDI to that country. According to Trevino et al. (2008), the absence of a stable, well accepted currency could act as a barrier to FDI inflows, and exchange rate depreciation in the host-country creates both problems and opportunities for MNEs. On the positive side, an overvalued foreign exchange provides MNEs with the opportunity of acquiring host countries' production facilities. On the negative side, exchange rate depreciation requires multinationals to bear the costs associated with the management of risks inherent in a depreciating (devaluing) currency. According to Tolentino (2010), exchange rates can affect FDI through two basic channels: the wealth effect channel and the relative production cost channel. Regarding the wealth effect channel, currency depreciation leads to an improvement in the relative wealth of foreign investors compared to domestic investors. As foreign investors measure capital in foreign currency, an exchange rate depreciation in the host country makes all production inputs, such as labour, land, machines, and assets in the host country cheaper. This encourages foreign investors to acquire more domestic assets. As for the relative production cost channel, a depreciation of the host country's currency reduces the local production, which increases the costs in terms of foreign currency, and consequently raises the profit of export oriented FDI. Hence, higher returns naturally attract further FDI inflows. According to Kish and Vasconcellos (1993), the relationship between the host-country's exchange rate and FDI inflows may not be as straightforward as described above. In fact, as a country's currency strengthens, the future profits to be repatriated from the acquiring firms' subsidiary will have a lower discounted value. This argument is consistent with the one that the nominal return that an asset generates in foreign currency matters more than the price of asset (McCulloch, 1989). From the empirical perspective, Caves (1989), Froot and Stein (1991), Klein and Rosengren (1994), and Gross and Trevino (1996) have provided empirical evidence that the host-country's exchange rate depreciation is positively associated with FDI flows in this country. Trevino (2008) has, however, found no significant effect of currency valuation on FDI flowing to Latin America, while Boateng et al. (2015) have obtained empirical evidence of a positive effect of an appreciation in the Norwegian currency on FDI flows in Norway. Against this background, we can expect that a depreciation of the real exchange rate in the beneficiary

country of a NRTP (i.e., the host country of FDI inflows) to exert a positive effect on FDI flows to that country.

Finally, the effect of trade policy on FDI inflows has been the subject of an immense literature. Görg and Labonte (2012) have argued that restrictive trade policies lead to higher costs of import and export of intermediate and final goods for multinational firms' affiliates that are involved in global value chains. These costs, in turn, create uncertainty about trade openness and the institutional environment to potential investors. At the same time, it has been established that restrictive trade policies on output goods tend to attract horizontal FDI flows that seek to access the market of the host country without having to face trade barriers, including tariffs, and bear other trade costs such as transport costs, when exporting overseas. In contrast, trade policy liberalization is positively associated with vertical FDI inflows (e.g., Asiedu, 2006; Fugazza and Trentini, 2014; Greenaway et al. 2007; Markusen, 1984; Markusen and Venables 1999; Helpman, 1984, Park and Park, 2015). Trade policy is a particularly important variable in the present study because trade policy liberalization allows firms (domestic and foreign firms) in beneficiary countries of NRTPs to have access to a variety of intermediate inputs (e.g., Cadot et al. 2013; Collier and Venables, 2007). This permits access to external knowledge flows (e.g., Frenken, et al. 2007) and promotes innovation (e.g., Colantone and Crino, 2014; Chen et al 2017; Liu and Qiu, 2016). In turn, the access to external knowledge flows and the improvement in innovation performance facilitate the entry into the export market for firms producing in industries (e.g., Bas, 2012; Mukherjee and Chanda, 2021), and are conducive to the upgrade of export product quality (e.g., Bas and Strauss-Kahn, 2015; Castellani and Fassio, 2019; Feng et al. 2016). Hence, the reduction/elimination of trade barriers (including the liberalization of tariffs) on intermediate inputs would not only increase the utilization rates of NRTPs, but also induce greater inflows, and ultimately enhance the positive effect of the utilization of NRTPs on FDI inflows. Summing-up, we do not only expect that greater trade policy liberalization can generate higher FDI inflows, but we also expect the positive effect of the utilization of NRTPs to be further enhanced as beneficiary countries further liberalize their trade regimes (**Hypothesis 4**). We test this hypothesis as well in the empirical analysis.

Building on the previous discussion, including on many of the studies on the macroeconomic determinants of FDI inflows that have relied on dynamic model specifications to perform their empirical analysis (e.g., Anyanwu, 2012; Asiedu, 2013; Asiedu and Lien, 2011; Asiedu et al., 2015; Busse and Hefeker, 2007; Canh et al., 2020; Gnanngnon, 2020; Sadeghi et al., 2020), we postulate the following baseline model:

$$FDI_{it} = \alpha_0 + \alpha_1 FDI_{it-1} + \alpha_2 URGSP_{it} + \alpha_3 UROTP_{it} + \alpha_4 Log(GDPC)_{it} + \alpha_5 ECI_{it} + \alpha_6 HUM_{it} + \alpha_7 TP_{it} + \alpha_8 Log(REER)_{it} + \alpha_9 INST_{it} + \alpha_{10} RENT_{it} + \alpha_{11} Log(POP)_{it} + \vartheta_i + \gamma_t + \tau_{it} \quad (1)$$

i and t represent respectively a given beneficiary country of NRTPs, and the time-period. The analysis has used an unbalanced panel dataset that contains 108 beneficiary countries of NRTPs over the period 2002-2019, and which has been built based on data available. Following previous studies, we average

data on variables over non-overlapping sub-periods. This helps to avoid modelling cyclical effects of regressors on the dependent variable, but also to mitigate the problem of missing data, and reduce the measurement errors related to variables introduced in model (1). Especially, we have used six non-overlapping sub-periods of 3-year, which are 2002-2004, 2005-2007, 2008-2010, 2011-2013, 2014-2016 and 2017-2019. α_i are parameters to be estimated. γ_t represent time invariant effects specific to each country; δ_t are time dummies that capture global shocks that had affected FDI inflows to countries, taken together. ε_{it} is an idiosyncratic error-term.

The dependent variable "FDI" is the transformed indicator of the share (in percentage) of net FDI inflows to GDP. in fact, given the skewed distribution of the indicator of the share (in percentage) of net FDI inflows to GDP (denoted "FDI1"), it has been transformed as follows (see Yeyati et al. 2007): $FDI = \ln(|FDI1| + 1)$ (2), where $| \cdot |$ refers to the absolute value of the variable " ". The one-period lag of "FDI" has been introduced in model (1) to capture the state dependence nature of FDI inflows.

The variable "URGSP" is our first regressor of interest in the analysis. It represents the "transformed" indicator of the utilization rate of unilateral trade preferences under the Generalized System of Preferences (GSP) schemes provided by the QUAD countries (see Appendix 1 for more details on the indicator of the utilization rates of GSP programs). The original indicator of the utilization rates of the GSP programs, denoted "URGSP1" range between 0 and 100, with higher values indicating a greater utilization rate of GSP programs. Given its skewed distribution, it has been transformed using the same formula as above: $URGSP = \ln(|URGSP1| + 1)$ (2), where $| \cdot |$ refers to the absolute value of the variable " ".

The variable "UROTP" is our second variable of interest in the analysis. It is the "transformed" indicator of the utilization rate of other trade preferences (than the GSP programs) provided by the QUAD countries to developing countries (see Appendix 1 for detailed information on the indicator of the utilization rates of the other trade preferences than the GSP programs offered by the QUAD countries). The original indicator of the utilization rates of the other trade preferences, denoted "UROTP1" range between 0 and 100, with higher values indicating a greater utilization rate of the other trade preferences. Given its skewed distribution, it has also been transformed in the following way: $UROTP = \ln(|UROTP1| + 1)$ (2), where $| \cdot |$ refers to the absolute value of the variable " ".

The variables "URGSP" and "UROTP" have been simultaneously introduced in model (1) to account for the fact that many beneficiary countries can enjoy several NRTPs, which in addition overlap, in terms of product coverage (e.g., Gnanon and Iyer, 2021; Hakobyan, 2015; Keck and Lendle, 2012).

The market size of the beneficiary countries are measured by the real per capita income ("GDPC") and the population size ("POP"). They have been logged (using the natural logarithm) to reduce their skewness. The regressors "ECI", "HUM" and "TP" are respectively the indicators of economic complexity, human capital, and trade policy. The variable "REER" is the real effective exchange rate computed using 66 trading partners. Higher values of this variable indicate an appreciation of the real effective exchange rate, i.e., an appreciation of the home currency against the basket of currencies of trading partners. We have also applied the natural logarithm to this variable to limit its skewed distribution. Finally, the

variables "INST" and "RENT" are respectively the indicator of the institutional and governance quality, and the share of natural resource rents in GDP, which is a proxy for countries' dependence on natural resources. It is worth noting that to ease interpretation of empirical results, the variables "TP" and "RENT" whose values range between 0 and 100, have been re-scaled (i.e., divided by 100), so that their values range now between 0 and 1.

The definition and source of all variables included in model (1) are presented in Appendix 1. Appendix 2 reports the descriptive statistics on all these variables, and Appendix 3 shows the list of countries used in the full sample, as well as the sub-sample of LDCs that we will also use later in the analysis.

4. Data Analysis

This section uses the panel dataset over non-overlapping sub-periods to present the development of the share (%) FDI inflows in GDP (i.e., the variable "FDI1") and the developments of the two indicators of the utilization of NRTPs, namely "URGSP1" and "UROTP1". Figure 1 shows the development of these variables over the full sample, while Fig. 2 depicts these developments over the sub-samples of LDCs and other countries in the full sample, i.e., NonLDCs. The choice of the sub-samples of LDCs and NonLDCs is dictated by the fact that LDCs enjoy not only special concessions in the framework of GSP regimes offered by the QUAD countries, but they can also enjoy other trade preferences from the same preference granting countries. For example, in their GSP programs, all QUAD countries provide yet preferential treatment to products (lower tariffs than the MFN tariffs or zero tariffs on many products) originating from developing countries, but they provide duty-free quota-free (DFQF) market access to products originating from LDCs. In addition, many African countries that are LDCs enjoy special treatment through the AGOA scheme. Nepal (which is an LDC) also benefits from some special trade concessions from the US.

Figure 1 shows that over the full sample, the share of FDI in GDP first experienced a rise from 3.43% in 2002–2004 to 6.91% in 2011–2013, and then steadily declined to 4.05% in 2017–2019. At the same time, the utilization rate of GSP schemes was higher than the utilization rate of other trade preferences, and both utilization rates of both types of NRTPs tended to move synchronously over the full period. The utilization rate of GSP programs steadily increased from 35% in 2002–2004 to 51.35% in 2017–2019. The utilization rate of other trade preferences rose first, from 28.4% in 2002–2004 to 31.6% in 2005–2007, and then declined to 26.84% in 2008–2010. It then steadily moved upward to reach 37.12% in 2017–2019.

Figure 2 indicates for LDCs that after an increase from 3.30% in 2002–2004 to 8.14% in 2011–2013, the share of FDI in GDP consistently fell to reach 3.19% in 2017–2019. For LDCs, the pattern is quite similar, but the share of FDI inflows in GDP remained always higher than for LDCs. For NonLDCs, the share of FDI in GDP rose from 3.47% in 2002–2004 to 6.46% in 2011–2013, and then steadily declined to 4.37% in 2017–2019.

As for the usage rate of NRTPs, we first note from Fig. 2 that concerning LDCs, in both 2002–2004 and 2005–2007, the utilization rate of GSP programs (i.e., 19.07% in 2002–2004 and 27.02% in 2005–2007) was lower than the utilization rate of other trade preferences (which amounted to 45.07% in 2002–2004 and 42.06% in 2005–2007). However, from 2008–2010 to 2017–2019, the pattern of usage of NRTPs reversed, as LDCs used much more GSP programs than other trade preferences. The utilization rate of GSP programs moved from 50.45% (against 24.08% for the usage rate of other trade preferences) in 2008–2010 to 67% (against 16.3% for other trade preferences) in 2017–2019.

For NonLDCs, the patterns of the utilization of both GSP programs and other trade preferences were different from those of LDCs. From 2002–2004 to 2011–2013, the utilization rate of GSP programs was consistently higher than that of other trade preferences. It reached 49.03% (against 33% for other trade preferences) in 2011–2013, while it was 40.83% (against 22.28% for other trade preferences) in 2002–2004.

In 2014–2016, NonLDCs made equally use of both GSP programs and other trade preferences (the utilization rate was 42.55% for GSP programs and 42.3% for other trade preferences). However, in 2017–2019, NonLDCs made much use of other trade preferences than of GSP programs, as the utilization rate of the other trade preferences reached 48.25%, while that of GSP programs was 43.7%.

Finally, it is worth noting that when comparing the utilization rates of NRTPs in LDCs and NonLDCs, we notice that between 2002–2004 and 2005–2007, the utilization rate of GSP programs was higher in NonLDCs than in LDCs, whereas from 2008–2007 to 2017–2019, the situation reversed, since LDCs made much more use of GSP programs than NonLDCs. Conversely, the utilization rate of the other trade preferences programs was higher in LDCs than in NonLDCs during the first two sub-periods (i.e., 2002–2004 and 2005–2007). But, from 2008–2010 to 2017–2019, LDCs used much less other trade preferences than NonLDCs.

5. Empirical Method

In line with many previous studies cited above on the macroeconomic determinants of FDI inflows (e.g., Asiedu, 2013; Asiedu and Lien, 2011; Asiedu et al., 2015; Busse and Hefeker, 2007; Canh et al., 2020; Gnanngnon, 2020; Sadeghi et al., 2020), we use the two-step system GMM estimator of Arellano and Bover (1995) and Blundell and Bond (1998). This estimator is particularly suitable for dynamic panel datasets with small time dimension and a large cross-section dimension, which is the case in the present study. It has the advantage of allowing to correct for the unobserved country heterogeneity, measurement errors, potential endogeneity issues, including the ones arising from the bi-directional causality between some regressors and the dependent variable, and the one induced by the correlation between the one-period lag of the dependent variable and the specific effects in the error term (i.e., the Nickell bias - see Nickell, 1981). This bias is severe when the dynamic model (1) is estimated using the pooled ordinary least squares (POLS) estimator, but its size decreases as the time dimension of the panel dataset increases, and becomes almost null for panel datasets with very long time series. The POLS estimator generates

upward biased coefficient of the lagged dependent variable, and the within fixed effects estimator yields a downward bias of the coefficient of this variable. Finally, the two-step system GMM estimator helps to address the omitted variable bias. Concerning the latter, the use of the one-period lag of the dependent variable helps to overcome the omission in the baseline model of the utilization rates of NRTPs offered by other wealthier countries than the QUAD countries. In fact, indicators on the utilization rates of NRTPs by other countries than the QUAD are not readily available. With respect to the issue of bi-directional causality, we have considered all control variables (except for the population variable) as endogenous (see previous studies cited above). The population size variable has been treated as exogenous. In addition, the indicators of the utilization rates of GSP programs and other trade preferences have been treated as endogenous. This is because even though in the present analysis, we are interested in uncovering the effect of the utilization rates of GSP programs and other trade preferences on FDI inflows, Ngangnon and Iyer (2021) have obtained empirically that FDI inflows influence the utilization rates of these two blocks of NRTPs. Hence, the bi-directional causality between the dependent variable and the indicators of utilization rate of NRTPs. Overall, in using the two-step system GMM estimator to estimate the baseline model (1) and all its variants described below, we have treated all regressors (apart from the population size) as endogenous, and considered the population size as exogenous. The utilization of the two-step system GMM estimator involves estimating a system of equations, which comprises an equation in differences and an equation in levels. In this system of equations, the lagged first differences variables are used as instruments for the levels equation, and the lagged levels of variables are used as instruments for the first-difference equation.

The two-step system GMM estimator generates consistent and more efficient estimates than the difference-GMM estimator (of Arellano and Bond, 1991) (e.g., Arellano and Bover, 1995; Blundell and Bond, 1998; Blundell et al., 2001). In fact, in the case when variables exhibit a strong persistence over time (which is the case in the present analysis), and when the time dimension is small, the difference-GMM estimator generates biased estimates as the internal instruments are weak due to the weak correlation between lagged variables in level and variables in first difference (e.g., Alonso-Borrego and Arellano, 1999; Bond et al., 2001; Bond, 2002; Roodman, 2009). In addition, when the required stationary condition is doubtful, the system GMM estimator generates estimates with small biases (in terms of size) than the difference-GMM estimator or the fixed effects estimator (e.g., Hauk and Wacziarg, 2009).

The correctness of the different specifications of model (1) estimated is assessed using several diagnostic tests. These are the Arellano-Bond test of the presence of first-order serial correlation in the first-differenced error term (denoted AR(1)); the Arellano-Bond test of absence of second-order autocorrelation in the first-differenced error term (denoted AR(2)); and the Sargan/Hansen test of over-identifying restrictions (OID). The specifications of model (1) are correctly estimated using the two-step system GMM approach if we do not reject the null hypothesis for the AR(1) test[18]; if we do not reject the null hypotheses associated with the AR(2) test[19], as well as the null hypothesis of the OID test[20] of over-identifying restrictions. Lastly, we ensure that the number of instruments is less than the number of countries, given that otherwise, the diagnostic tests described above may become powerless (e.g., Roodman, 2009). In this regard, the estimations of the different specifications of model (1) use a

maximum of 3 lags of the dependent variable as instruments, and 2 lags of endogenous variables as instruments.

Finally, it is worth emphasizing that the econometric literature (e.g., Bond et al., 2001) has shown that if the specification of model (1) is correctly specified, the two-step system GMM estimator should yield a coefficient of the lagged dependent that lies between the estimate (associated with the lagged dependent variable) obtained from the fixed effects estimator, and the estimate (associated with the lagged dependent variable) obtained from the POLS estimator. For these reasons, we also report the outcomes of the estimation of model (1) using both the POLS and within fixed effects estimators[21]. These outcomes, which would be compared to those of the two-step system GMM estimator, are presented in columns [1] and [2] of Table 1. Column [3] of the same Table contains the outcomes arising from the estimation of model (1) using the two-step system GMM estimator.

The rest of the results' Tables contains estimates obtained by estimating different specifications of model (1) using the two-step system GMM approach. Specifically, we report in column [1] of Table 2 the outcomes that help to examine the effect of the utilization of each of the two blocks of NRTPs (GSP programs and other trade preferences) on FDI inflows. These outcomes are uncovered by estimating a first specification of model (1) that includes the interaction between the "LDC" dummy and the variables capturing the utilization rate of GSP programs on the one hand, and the interaction between the same dummy variable and the variable representing the utilization rate of other trade preferences. The "LDC" dummy takes the value 1 for LDCs, and 0, otherwise.

Next, we estimate a second specification of model (1) that includes the interaction between the real GDP per capita variable and each of the indicator of the utilization rate of NRTPs (GSP programs and other trade preferences). The results of this estimation are presented in column [2] of Table 2. These outcomes allow examining how the effect of the utilization of NRTPs on FDI inflows varies across countries in the full sample. These outcomes could complement the ones obtained as 'averages' over the sub-sample of LDCs and NonLDCs (see results in column [1] of Table 2).

We move on to examining how both blocks of NRTPs interact in affecting FDI inflows. In fact, we are seeking whether FDI flows to beneficiary countries of NRTPs increase when the countries make simultaneous use of both GSP programs and other trade preferences, in which case GSP programs and other trade preferences would be complementary in attracting higher FDI inflows. On the other side, it is possible that these two blocks of NRTPs be substitutable in enhancing FDI inflows. In this case, foreign firms will be incentivized to locate their activities in countries that make use of one block of NRTP at the expense of the other. This may be the case if for example, one block of NRTPs (let us say GSP programs) offers less generous preferential treatment than the other block of trade preferences (in this case, other trade preferences). For example, for a beneficiary country that enjoys both a GSP regime and other trade preference (e.g., AGOA scheme), rules of origin may be more stringent for utilizing GSP programs than for utilizing the other trade preference. In this case, trading firms in the beneficiary country will be inclined to make much use of the other trade preference than the GSP program, and foreign firms aiming to engage

in FDI in the beneficiary country of the NRTPs will also likely wish to harness the opportunities offered by the other trade preference than the ones from the GSP programs.

To assess whether GSP programs and other trade preferences are complementary or substitutable in positively influencing FDI inflows, we estimate a third specification of model (1) that contains the interaction between the variables "URGSP" and "UROTP". The results of the estimation of this specification of model (1) are displayed in column [1] of Table 3.

Column [2] of Table 3 contains outcomes that allow testing **Hypothesis 3**, i.e., whether (and if so to what extent) the effects of the utilization of GSP programs and the utilization of other trade preferences on FDI inflows depend respectively on the level of economic complexity (sophistication) of the beneficiary countries of NRTPs. These outcomes are obtained by estimating a fourth specification of model (1) that contains the interaction between each indicator of the utilization rate of NRTPs and the economic complexity indicator. To check the validity of these outcomes, we estimate a fifth specification of model (1) in which we include the interaction between the variable capturing the countries' dependence in natural resources (i.e., the variable representing the share of natural resource rents in GDP) and each of the indicators of the utilization of NRTPs. The outcomes of the estimation of this fifth specification of model (1) are reported in column [3] of Table 3. We expect that these outcomes run in the opposite direction to the ones reported in column [2] of the same Table. This is simply because countries with greater economic complexity exhibit lesser dependence on natural resource extraction (e.g., Nguyen et al., 2020). Thus, in contrast with what is stated in hypothesis 2, we should expect here that countries that are highly dependent in natural resources would likely experience lower levels of economic complexity, as less knowledge and capabilities would be embedded in their export products, that are likely to be of low value-added. As MNEs would aim to take advantage of NRTPs that have the purpose of expanding the manufacturing base of beneficiary countries, beneficiary countries with high dependence on natural resources would likely experience lower FDI inflows (e.g., Asiedu, 2013). Therefore, we expect that the utilization of NRTPs (either GSP programs or other trade preferences) would negatively affect FDI inflows as the share of natural resource rents in GDP increases.

Finally, we estimate a sixth specification of model (1) with a view to testing **Hypothesis 4**, whereby the greater trade policy liberalization, the higher is the magnitude of the positive effect of the utilization of NRTPs (GSP programs or other trade preferences) on FDI inflows. This specification of model (1) contains the interaction between the variable measuring trade policy (i.e., the variable "TP") and each of the indicators of the utilization of NRTPs. The outcomes of the estimation of this specification of model (1) are provided in column [4] of Table 3.

[18] The null hypothesis is that there is no first-order serial correlation in the differenced-error term. The p-value associated with the AR(1) test should be lower than 0.10 at the 10% level.

[19] The null hypothesis is the absence of second-order autocorrelation in the first-differenced error term. The p-value associated with the AR(2) test should be higher than 0.10 at the 10% level.

[20] the null hypothesis is the validity of instruments used in the regressions.

[21] For the estimations based on the two estimators, we use the Driscoll and Kraay (1998) to correct standard errors of the estimates from the heteroscedasticity, serial correlation and cross-sectional dependence in the error term.

6. Empirical Results

The estimation's outcomes reported in Table 1 suggest for the results based on the POLS estimator (see column [1]) and the two-step system GMM estimator (see column [3]), that the coefficient of the one-period lag of the dependent variable is positive and significant at the 1% level. As expected, this coefficient obtained by means of the POLS estimator (it amounts to 0.52) is far higher than the one obtained when using the two-step system GMM estimator ((it amounts to 0.08). Incidentally, the coefficient of the one-period lag of the dependent variable obtained when using the Within Fixed Effects estimator (see column [2]) is yet negative (it amounts to -0.11) but not statistically significant at the conventional significance levels. This means that it is zero.

Before turning to estimates in Tables 1 to 3, it is worth examining the outcomes of the diagnostic tests that help to assess the correctness of all specifications of model (1) estimated using the two-step system GMM estimator. The outcomes of these diagnostic tests are reported at the bottom of column [3] of Table 1 as well as at the bottom of all columns of Tables 2 and 3. We find that all these specifications of model (1) successfully pass the diagnostic tests. In addition, the coefficients of the one-period lag of the dependent variable in these columns of Tables 1 to 3 are all positive and significant at the 1% level, thereby suggesting that the variable capturing the FDI inflows (as a share of GDP) exhibits a state dependence path, whereby the inward FDI-to-GDP ratio in the period $t-1$ is positively and significantly associated with the inward FDI-to-GDP ratio in period t . Incidentally, we find, as expected that, the coefficients of the one-period lag of the dependent variable obtained by the use of the two-step system GMM estimator in column [3] of Table 1 as well as in all columns of Tables 2 and 3, lie between the coefficient (which amounts to 0) of this variable obtained by means of the Within fixed effects (see column [2] of Table 1), and the coefficient (it amounts to 0.52) of the same variable obtained by means of the POLS estimator (see column [1] of Table 1). All these outcomes show that all model (1) estimated by the two-step system GMM estimator, and whose results are reported in column [3] of Table 1, and in Tables 2 and 3, are correctly specified, and that the two-step system GMM estimator is well suitable to perform the empirical analysis.

Turning to the estimates of other variables in Table 1, including those of our variables of interest, we note from the results based on the POLS estimator (see column [1]) that there is no significant effect (at the conventional significance levels) of the utilization rate of NRTPs (both the GSP programs and other trade preferences) on FDI inflows. However, results in column [2] (the ones based on the Within Fixed Effects) indicate a positive and significant effect (at the 1% level) of the utilization rate of GSP programs on FDI inflows. At the same time (still based on results in column [2] of Table 1), we obtain that at the conventional significance levels, there is no significant effect of the utilization of other trade preferences on FDI inflows.

On the other side, results based on the two-step system GMM estimator (see column [3] of Table 1) indicate that the utilization of GSP programs is positively and significantly (at the 1% level) associated with FDI inflows, while the utilization of other trade preferences is negatively and significantly (at the 1% level) associated with FDI inflows. These outcomes suggest that foreign firms that engage in FDI in the beneficiary countries of NRTPs tend to locate in countries that make good use of the GSP programs (and this confirms **Hypothesis 2**), or in countries that make less use of other trade preferences, i.e., where the utilization rate of other trade preferences is low (**Hypothesis 1** is confirmed here). In other words, the higher the utilization rate of GSP programs, the greater are FDI flows to beneficiary countries, and the lower the utilization rate of other trade preferences, the higher are the FDI flows to the beneficiary countries. As also emphasized above, these outcomes may reflect differentiated effects of the utilization of NRTPs (GSP programs or other trade preferences) across sub-samples (for example, here in LDCs versus NonLDCs) as well as across countries in the full sample. Results in Table 2 would allow us to verify these hypotheses, but in the meantime, it could be useful to consider the magnitude of the effects. We note, based on results in column [3] of Table 1, that a 1 percentage increase in the utilization rate of GSP programs is associated with a 0.07 percentage increase in the ratio of FDI inflows to GDP. Likewise, a 1 percentage fall in the utilization rate of other trade preferences programs is associated with a 0.034 percentage increase in the ratio of FDI inflows to GDP. It additionally appears that the coefficient of the variable "URGSP" in column [3] of Table 1 is almost the double of the one in column [2] of the same Table (i.e., the one based on the Within Fixed Effects estimator).

With respect to estimates associated with control variables, we obtain from the results based on the POLS estimator (see column [1] of Table 1) that at least at the 5% level, the real per capita income and the population size exert a negative and significant effect on FDI inflows, the development of human capital and the real exchange rate depreciation influence positively and significantly FDI inflows. Finally, the institutional and governance quality and the dependence in natural resources are positively and significantly associated with higher FDI inflows. The other variables exert no significant effect on FDI inflows at the conventional significance levels. Estimates in column [2] of Table 1 indicate that, at least at the 5% level, FDI inflows are positively driven by an increase in the real GDP per capita, a lower human capital development, an improvement in the institutional and governance quality, and a rise in the share of natural resources in GDP. The coefficients of the other variables are not significant at the 5% level. As noted above, estimates in columns [1] and [2] are likely biased due the endogeneity concerns highlighted above. This leads us to consider estimates of control variables obtained by means of the two-step system GMM estimator.

We find from column [3] of Table 1 that, at the 1% level, the real per capita income is negatively and significantly associated with FDI inflows. This negative effect may suggest the existence of an interaction effect between each of the indicators of the utilization rates of NRTPs and the real per capita income on FDI inflows. Among other controls, the human capital development, trade policy liberalization, a depreciation of the real exchange rate, an improvement in the institutional and governance quality, and a higher share of natural resource rents in GDP are all positively and significantly (at least at the 5% level) associated with FDI inflows. The population size and the level of economic complexity exert no

significant effect on FDI inflows at the conventional significance levels. Similar results are found in Tables 2 and 3.

Outcomes in column [1] of Table 2 show that the coefficients of the interaction variables are negative and significant at the 1% level, thereby suggesting that the utilization of GSP programs on the one hand, and the utilization of other trade preferences on the other hand, exert a higher negative effect on FDI flows to LDCs than on FDI flows to NonLDCs. The net effects of the utilization of GSP programs on FDI flows to LDCs and NonLDCs amount respectively to -0.008 ($= 0.0444 - 0.0528$) and 0.044. Hence, lower utilization rates of GSP programs increase FDI flows to LDCs (which confirms **Hypothesis 1**), while improvements in the utilization rate of GSP programs induce greater FDI flows to NonLDCs (this confirms **Hypothesis 2**).

Likewise, the net effects of the utilization of other trade preference programs on FDI flows to LDCs and NonLDCs amount respectively to -0.126 ($= -0.0244 - 0.102$) and -0.0244. It, therefore, follows that beneficiary countries of other trade preferences attract higher FDI flows when they make less use of these programs, and LDCs (among them) experience higher FDI inflows than NonLDCs.

Turning to column [2] of Table 2, we obtain that the coefficients of the interaction variables ("URGSP*Log(GDPC)") and ("UROTP*Log(GDPC)") are positive and significant at the 1% level, while the coefficients of the variables "URGSP" and "UROTP" are negative and significant at the 1% level. We conclude that the utilization of NRTPs (GSP programs and other trade preferences) exerts a positive effect on FDI inflows as countries' real per capita income rises, and in particular when the real per capita income exceeds a certain level. Specifically, the utilization of GSP programs exerts a positive effect on FDI inflows in countries whose real per capita income is higher than 1177.6 US\$ [= exponential ($0.268/0.0379$)] (i.e., relatively low-income countries), and for these countries, the higher the real per capita income, the higher is the magnitude of the positive effect of the utilization rate of GSP programs on FDI inflows. These findings support **Hypothesis 2**, and additionally align with the ones obtained above, whereby FDI flows increase in NonLDCs when their utilization rate of GSP programs rises. In contrast, for countries whose real per capita income is lower than 1177.6 US\$, it is rather a lower utilization rate of GSP programs that induces greater FDI inflows. This finding supports **Hypothesis 1**, and is consistent with the one obtained above, whereby a low usage rate of GSP programs induces greater FDI flows to LDCs.

We also obtain from column [2] of Table 2 that the utilization of other trade preferences exerts a positive effect on FDI inflows in countries whose real per capita income exceeds 6310.7 US\$ [= exponential ($0.602/0.0688$)]. Thus, for countries whose real per capita income is lower than 6310.7 US\$, the fall in the utilization rate of other trade preferences exerts a positive effect on FDI inflows, and the lower the utilization rate of these trade preferences, the greater are FDI inflows. Conversely, countries whose real per capita income exceeds 6310.7 US\$, experience a positive effect of the utilization rate of other trade preferences on FDI inflows, and the higher this rate, the greater are the FDI inflows.

We now consider the outcomes in Table 3. The results in column [1] of this Table indicate that the interaction term of the variable "URGSP*UROTP" is positive and significant at the 1% level. At the same

time, the coefficient of "URGSP" is positive and significant at the 5% level, and the coefficient of "UROTP" is negative and significant at the 1% level. Based on these outcomes, we infer that for a given rate of the utilization of other trade preferences, GSP programs and other trade preferences regimes are consistently complementary in positively affecting FDI inflows when the utilization rate of GSP programs becomes higher. The degree of this complementarity increases as the utilization rate of GSP programs increases. Likewise, holding the utilization rate of GSP programs constant, the usage of other trade preferences and GSP programs are complementary in positively affecting FDI inflows when the utilization rate of other trade preferences exceeds approximately 69.8% [= exponential (0.0743/0.0175)], and the greater this rate, the higher is the level of complementarity between these two blocks of NRTPs in driving in FDI flows. Overall, these outcomes suggest that GSP programs and other trade preferences are strongly complementary in attracting FDI flows to beneficiary countries, notably when the rate of usage of other trade preferences exceeds 69.8%. The degree of this complementarity increases as the utilization rate of other trade preferences (at least from 69.8%) rises, or/and as the utilization rate of GSP programs increases.

We find in column [2] of Table 3 that the coefficient of "URGSP" is positive and significant at the 1% level, and the coefficient of "UROTP" is not significant at the conventional levels. In the meantime, the interaction terms of the variables "URGSP*ECI" and "UROTP*ECI" are all positive and significant at the 1% level. The combination of these outcomes indicates that the effect of the utilization of NRTPs (either GSP programs or other trade preferences) on FDI inflows depends on beneficiary countries' level of economic complexity. This effect is positive, and its magnitude rises as the level of economic complexity improves, i.e., as countries export products that are progressively complex/sophisticated. These outcomes support the **Hypothesis 3** set out in Sect. 2. In the same spirit, results in column [3] of Table 3 show, as expected, reverse patterns. Especially, while both "URGSP" and "UROTP" variables hold coefficients that are positive and significant at the 1% level, the interaction terms of the variables "URGSP*RENT" and "UROTP*RENT" are all negative and significant at the 1% level. It, therefore, ensues that the utilization of GSP programs exerts a positive effect on FDI inflows only when the share of natural resource rents in GDP is lower than 0.5516 (i.e., 55.16%) (= 0.0855/0.155); as otherwise, the effect is negative. The lower this share (as far as it is less than 55.16%), the higher is the magnitude of the positive effect of the utilization of GSP programs on FDI inflows. The utilization of other trade preferences influences positively FDI inflows only when the share of natural resource rents in GDP falls below 0.1253 (i.e., 12.53%) (= 0.118/0.942). This effect is negative when this share exceeds 12.53%. The lower this share (as far as it is less than 12.53%), the higher is the magnitude of the positive effect of the utilization of other trade preferences programs on FDI inflows.

Turning finally to the estimates in column [4] of Table 3, we observe that the variables "URGSP*TP" and "UROTP*TP" hold coefficients that are positive and significant at the 1% level, whereas the coefficients of the variables "URGSP" and "UROTP" are negative and significant at the 1% level. Taken together, these results suggest that the utilization of GSP programs promotes FDI inflows for levels of trade policy liberalization higher than 0.71 (= 0.329/0.469). To recall, values of the trade policy indicator "TP" range between 0.27 and 0.93. We, therefore, deduce that beneficiary countries of GSP programs that

significantly liberalize their trade regimes (i.e., when the value of the indicator of trade policy exceeds 0.71) experience a positive and significant effect of the utilization of GSP programs on FDI inflows, and the greater the level of trade policy liberalization, the higher is the volume of FDI inflows. In contrast, for lower levels of trade policy liberalization (values of the trade policy indicator comprised between 0.27 and 0.71), the utilization of GSP programs discourages FDI inflows, and the lower the degree of trade policy liberalization, the lower are FDI inflows. The same conclusion applies when considering the extent to which the effect of the utilization of other trade preferences on FDI inflows depends on the level of trade policy liberalization. The only exception here is that the level of the indicator of trade policy above which the effect of the utilization of other trade preferences on FDI inflows becomes positive is 0.75 (= 0.781/1.044). All these findings support **Hypothesis 4**.

7. Conclusion

Unilateral trade preferences represent a major tool used by wealthier countries to assist developing countries in their efforts to better integrate into the global trading system, and ultimately promote development. The present article has examined the effect of the utilization of these preferences (namely GSP programs and other trade preferences) offered by the QUAD countries on FDI flows to beneficiary countries. Using an unbalanced panel dataset of 108 beneficiary countries of NRTPs over the period 2002–2019, and the two-step system GMM approach, the analysis has generated several outcomes.

First, a low utilization rate of GSP programs is associated with higher FDI inflows in less advanced beneficiary countries, including LDCs, while an improvement in the utilization rate of GSP programs induces higher FDI flows to relatively advanced beneficiary countries, such as NonLDCs. Low utilization rates of other trade preferences exert a higher positive effect on FDI inflows in LDCs than in NonLDCs. At the same time, when considering how the utilization rate of other trade preferences affect FDI inflows varies across countries in the full sample, the analysis has shown that, a higher rate of the utilization of other trade preferences induces greater FDI inflows for well advanced beneficiary countries, while for relatively less developed beneficiary countries, it is rather a lower utilization rate of other trade preferences that drives in FDI flows.

Second, GSP programs and other trade preferences are complementary in enhancing FDI inflows, especially when the utilization of other trade preferences reaches high rates. The degree of this complementarity increases as the utilization rate of GSP programs rises, and/or as the utilization rate of other trade preferences increases (at least from the rate of 69.8%).

Fourth, a higher utilization rate of NRTPs (either GSP programs or other trade preferences) generates greater FDI flows to beneficiary countries that endeavour to produce increasingly complex/sophisticated products. In the same spirit, a higher utilization rate of NRTPs results in higher FDI flows to beneficiary countries that experience a fall in the dependence on natural resources.

Fifth, the utilization of NRTPs (either GSP programs or other trade preferences) is associated with higher FDI flows to beneficiary countries that significantly liberalize their trade regimes.

The present analysis highlights the importance of NRTPs, and notably their utilization for FDI flows to beneficiary countries. It complements the works of Yannopoulos (1986, 1987) who have investigated the effect of NRTPs (and not their utilization) on FDI inflows.

An avenue for future research could be to investigate the effect of the utilization of NRTPs provided by all preference-granting countries (including QUAD countries and non-QUAD countries) on FDI inflows when the requisite data would be available.

Declarations

DISCLAIMER

This is a working paper, which represents the personal opinions of individual staff members and is not meant to represent the position or opinions of the WTO or its Members, nor the official position of any staff members. Any errors or omissions are the fault of the author. The author declares no competing interests.

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Tables

Table 1: Effect of the Utilization of NRTPs on FDI inflows

Estimators: POLS, Within Fixed Effects, and Two-Step System GMM

	POLS	Within Fixed Effects	Two-Step System GMM
Variables	FDI	FDI	FDI
	(1)	(2)	(3)
FDI _{t-1}	0.523***	-0.114	0.0800***
	(0.0584)	(0.110)	(0.0196)
URGSP	0.0252	0.0476***	0.0700***
	(0.0168)	(0.0169)	(0.0125)
UROTP	-0.0118	-0.00334	-0.0337***
	(0.0204)	(0.0136)	(0.0121)
Log(GDPC)	-0.140***	0.294***	-0.494***
	(0.0161)	(0.100)	(0.0383)
ECI	-0.0154	0.105	-0.00237
	(0.0236)	(0.171)	(0.0801)
HUM	0.102**	-0.467***	0.412***
	(0.0419)	(0.146)	(0.0649)
TP	-0.373	0.169	2.647***
	(0.319)	(0.467)	(0.409)
Log(REER)	-0.417***	-0.174*	-0.197**
	(0.121)	(0.0959)	(0.0926)
INST	0.161***	0.0861**	0.295***
	(0.00866)	(0.0391)	(0.0335)
RENT	0.428**	2.532***	2.204***
	(0.201)	(0.349)	(0.279)
Log(POP)	-0.0392**	-0.205	0.00323
	(0.0152)	(0.243)	(0.0237)
Constant	4.468***	4.093	3.179***
	(1.051)	(4.050)	(0.743)
Observations - Countries	493 - 108	493 - 108	493 - 108
R-squared	0.407		

Within R-squared	0.096
AR1 (P-Value)	0.0357
AR2 (P-Value)	0.3509
AR3 (P-Value)	0.7939
Sargan (P-Value)	0.4208

*Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust standard errors are in parenthesis. Robust Standard Errors are in parenthesis. Time dummies have been included in the regressions. For the regression based on the two-step system GMM estimator, the variables "URGSP", "UROTP", "GDPC", "ECI", "HUM", "REER", "TP", "RENT", "INST" and the interaction variables have been treated as endogenous. The variable "POP" has been treated as exogenous. The regression based on the two-step system GMM estimator has used a maximum of 3 lags of the dependent variable as instruments, and 2 lags of endogenous variables as instruments.*

Table 2: Effect of the Utilization of NRTPs on FDI inflows

Estimator. Two-Step System GMM

Variables	FDI	FDI
	(1)	(2)
FDI _{t-1}	0.143***	0.0991***
	(0.0132)	(0.0154)
URGSP	0.0444***	-0.268***
	(0.00828)	(0.0470)
UROTP	-0.0244***	-0.602***
	(0.00913)	(0.0551)
URGSP*LDC	-0.0528***	
	(0.0109)	
UROTP*LDC	-0.102***	
	(0.0128)	
URGSP*[Log(GDPC)]		0.0379***
		(0.00526)
UROTP*[Log(GDPC)]		0.0688***
		(0.00642)
Log(GDPC)	-0.543***	-0.777***
	(0.0245)	(0.0294)
ECI	-0.0447	0.0243
	(0.0427)	(0.0505)
HUM	0.458***	0.422***
	(0.0501)	(0.0582)
TP	0.664***	2.009***
	(0.237)	(0.240)
Log(REER)	-0.554***	-0.231***
	(0.0436)	(0.0719)
INST	0.299***	0.358***
	(0.0210)	(0.0183)
RENT	1.797***	2.334***

	(0.150)	(0.178)
Log(POP)	-0.0157	-0.0172
	(0.0163)	(0.0201)
Constant	7.084***	6.576***
	(0.397)	(0.589)
Observations - Countries	493 - 108	493 - 108
AR1 (P-Value)	0.0363	0.0319
AR2 (P-Value)	0.2911	0.2998
AR3 (P-Value)	0.6455	0.6877
Sargan (P-Value)	0.3597	0.3675

*Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust standard errors are in parenthesis. The variables "URGSP", "UROTP", "GDPC", "ECI", "HUM", "REER", "TP", "RENT", "INST" and the interaction variables have been treated as endogenous. The variable "POP" has been treated as exogenous. Time dummies have been included in the regressions. The latter have used a maximum of 3 lags of the dependent variable as instruments, and 2 lags of endogenous variables as instruments.*

Table 3: Effect of the Utilization of NRTPs on FDI inflows

Estimator. Two-Step System GMM

Variables	FDI	FDI	FDI	FDI
	(1)	(2)	(3)	(4)
FDI _{t-1}	0.115***	0.112***	0.120***	0.168***
	(0.0177)	(0.0151)	(0.0135)	(0.0148)
URGSP	0.0382**	0.0433***	0.0855***	-0.329***
	(0.0151)	(0.00621)	(0.00909)	(0.0582)
UROTP	-0.0743***	-0.0151	0.118***	-0.781***
	(0.0195)	(0.00916)	(0.00886)	(0.0614)
URGSP*UROTP	0.0175***			
	(0.00565)			
URGSP*ECI		0.0455***		
		(0.00797)		
UROTP*ECI		0.0387***		
		(0.00900)		
URGSP*RENT			-0.155***	
			(0.0432)	
UROTP*RENT			-0.942***	
			(0.0603)	
URGSP*TP				0.469***
				(0.0783)
UROTP*TP				1.044***
				(0.0822)
Log(GDPC)	-0.575***	-0.411***	-0.552***	-0.430***
	(0.0284)	(0.0223)	(0.0241)	(0.0250)
ECI	0.0706	-0.474***	-0.247***	-0.0803*
	(0.0592)	(0.0571)	(0.0301)	(0.0482)
HUM	0.481***	0.487***	0.731***	0.492***
	(0.0444)	(0.0441)	(0.0436)	(0.0572)
TP	1.841***	1.606***	1.714***	-2.542***

	(0.380)	(0.269)	(0.270)	(0.322)
Log(REER)	-0.232***	-0.233***	-0.216***	-0.342***
	(0.0739)	(0.0871)	(0.0689)	(0.0682)
INST	0.295***	0.346***	0.354***	0.270***
	(0.0208)	(0.0197)	(0.0317)	(0.0179)
RENT	2.189***	1.433***	4.347***	1.530***
	(0.185)	(0.155)	(0.264)	(0.170)
Log(POP)	-0.0325	-0.00864	-0.0532***	-0.0963***
	(0.0211)	(0.0231)	(0.0180)	(0.0124)
Constant	5.075***	3.671***	4.208***	8.677***
	(0.649)	(0.731)	(0.477)	(0.413)
Observations - Countries	493 - 108	493 - 108	493 - 108	493 - 108
AR1 (P-Value)	0.0386	0.0397	0.0376	0.0314
AR2 (P-Value)	0.3139	0.3422	0.2777	0.2278
AR3 (P-Value)	0.7054	0.8778	0.7749	0.7364
Sargan (P-Value)	0.2179	0.4645	0.5838	0.5241

*Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust standard errors are in parenthesis. The variables "URGSP", "UROTP", "GDPC", "ECI", "HUM", "REER", "TP", "RENT", "INST" and the interaction variables have been treated as endogenous. The variable "POP" has been treated as exogenous. Time dummies have been included in the regressions. The latter have used a maximum of 3 lags of the dependent variable as instruments, and 2 lags of endogenous variables as instruments.*

Figures

Figure 1

Utilization Rate of GSP programs and Other Trade Preferences_Over the full sample. Source: Author

Figure 2

Utilization Rate of GSP programs and Other Trade Preferences_Over the sub-samples of LDCs and NonLDCs. Source: Author

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