Gnangnon, Sèna Kimm; Priyadarshi, Shishir

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HAS THE MULTILATERAL HONG KONG MINISTERIAL DECISION ON DUTY FREE QUOTA FREE MARKET ACCESS PROVIDED A BREAKTHROUGH IN THE LEAST DEVELOPED COUNTRIES' EXPORT PERFORMANCE?

Sèna Kimm Gnangnon and Shishir Priyadarshi [1]

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[1] Development Division, WTO, Rue de Lausanne 154, CH - 1211 Geneva 21. Email: Sèna Kimm Gnangnon (sennakimm.gnangon@wto.org); Shishir Priyadarshi (shishir.priyadarshi@wto.org).

HAS THE MULTILATERAL HONG KONG MINISTERIAL DECISION ON DUTY FREE QUOTA FREE MARKET ACCESS PROVIDED A BREAKTHROUGH IN THE LEAST DEVELOPED COUNTRIES' EXPORT PERFORMANCE?

Abstract

This paper assesses the impact of the 2005 multilateral Hong Kong Ministerial decision on duty free quota free (DFQF) market access for products originating in Least developed countries (LDCs) on the latter's export performance. The analysis is conducted over a sample of 41 LDCs, with data spanning the period 1998-2013. The empirical analysis examines both the average effect and the short term/medium term effect. Results indicate that on average, this multilateral decision has exerted a positive effect on LDCs' performance on merchandise exports, with this average positive effect being solely driven by a positive effect on LDCs' export performance on primary products; the average effect on manufacturing exports has been statistically nil.

In the short and medium term, this decision has exerted a positive effect on LDCs' merchandise export performance, as well as on the components of the latter, namely both primary product exports and manufacturing exports. However, the positive effect on primary product exports appears to be far higher than that on manufacturing exports. These findings have important policy implications regarding reflections on the way LDCs could utilize their policy flexibilities in the WTO Agreements to diversify their exports away from the primary sector and toward manufacturing and/or services sector.

Keywords: Multilateral Hong Kong Ministerial Decision on DFQF; Export Performance; Least Developed Countries

JEL Classification: F13, F14, F15, F40.

1. Introduction

The category of Least developed countries (LDCs) created by the United Nations in 1971 and recognized as such by the World Trade Organization (WTO) is considered as the group of poorest and most vulnerable countries in the world. As of today[2], this special category comprises 48 countries, of which 34 in Africa, 13 in Asia and the Pacific and 1 (Haiti) in Latin America. Because of these particular weaknesses, these countries receive a special attention from the international community, including through support measures[3] in favour of their economic and social development.

As far as the WTO is concerned and given the very low degree of LDCs' integration into the global trading system, WTO Members have developed special flexibilities for them, which are tailored to their development, financial and trade needs, as well as their administrative and institutional capabilities needs so as to help them better integrate into the global trading system. These flexibilities are contained in various provisions of WTO Agreements in terms of special and differential treatment and can take different forms, including special preferential treatment for the access to their trading partners' markets (both developed and developing countries). The most important preferential scheme adopted by Trade Ministers at the multilateral level during the first decade of the 21st century was the 2005 Hong Kong[4] Ministerial decision on Duty Free Quota Free (hereafter, DFQF) market access in favour of all products originating in LDCs (see Decision 36 of Annex F of the Hong Kong Ministerial Declaration - WT/MIN(05)/DEC). The DFQF initiative represented a landmark decision for LDC economies. This multilateral decision stipulates that "*developed-country Members shall, and developing-country Members declaring themselves in a position to do so should provide duty-free and quota-free market access on a lasting basis, for all products originating from all LDCs by 2008 or no later than the start of the implementation period in a manner that ensures stability, security and predictability*." It further argues that "*Members facing difficulties at this time to provide market access as set out above shall provide duty-free and quota-free market access for at least 97 per cent of products originating from LDCs, defined at the tariff line level, by 2008 or no later than the start of the implementation period. In addition, these Members shall take steps to progressively achieve compliance with the obligations set out above, taking into account the impact on other developing countries at similar levels of development, and, as appropriate, by incrementally building on the initial list of covered products*". To ensure the effectiveness of this DFQF decision, Trade Ministers also agreed that "*developed-country Members shall, and developing-country Members declaring themselves in a position to do so should ensure that preferential rules of origin applicable to imports from LDCs are transparent and simple, and contribute to facilitating market access*." The languages of this decision were reaffirmed at the 2013 Bali Ministerial Conference of Trade Ministers (see WTO Document WT/MIN(13)/44).

The Committee on Trade and Development (CTD) of the WTO, in particular the sub-Committee on LDCs, a subsidiary body of the CTD, monitors the implementation of this decision. As of October 2015, most of developed countries granted either full or near full DFQF market access to LDCs. Moreover, an increasing number of developing countries have followed suit by taking concrete steps to provide duty free access to LDC products. The (non-exhaustive) list of major multilateral non-reciprocal market access schemes undertaken by Members in favour of LDCs is extracted from the WTO Secretariat Note (2015) (WT/COMTD/LDC/W/60) and displayed in **Table 1 (see Annex)**.

As it could be noted from this Table, prior to the adoption of this multilateral scheme in favour of LDCs, some LDC trading partners (for e.g., Australia, Canada, the European Union, Iceland,

[2] See the list of countries online: http://www.un.org/en/development/desa/policy/cdp/ldc/ldc_list.pdf

[3] For more details on the support measures, see the Handbook on LDCs online: http://www.un.org/en/development/desa/policy/cdp/cdp_ldcs_handbook.shtml

[4] Details on the rational, history and legal basis of the Hong Kong Decision on DFQF for LDCs could for example be found in Laird (2012).

Republic of Korea, New Zealand, Norway and the United States) were already granting unilateral special preference schemes to LDCs. In parallel to the implementation of the Hong Kong Decision on DFQF, some Members, including European Union and Canada have undertaken to provide unilaterally more flexible preferential rules of origin to LDCs, and it was only in 2013 at the Bali Ministerial Conference that WTO Trade Ministers agreed on multilateral guidelines (see the decision in WTO document (WT/L/917) on which WTO preference-granting countries could draw when designing their preferential rules applicable to imports from LDCs. A further step was taken by WTO Trade Ministers in December 2015 at the Nairobi Ministerial Conference to make rules of origin more transparent, simple and facilitating market access for products originating in LDCs. The implementation of these two decisions would certainly boost LDCs exports in the short to medium term.

The rationale for granting this special treatment to LDCs was to incentivize these countries to invest in export production and expand exports of products in which they already have comparative advantage, as well as to promote export product diversification, including through industrialization. The ultimate objective of this multilateral decision has been to promote export-driven economic growth and development in less developed countries.

A few number of studies (see for e.g., Hoekman, Ng and Olarreaga, 2002; Brenton, 2003; Collier and Venables, 2007; Laird, 2012; Vanzetti and Peters, 2009; Ito, 2013) have undertaken an empirical assessment of the impact of the DFQF scheme on LDCs' export performance, relying usually on an ex-ante analysis (but also sometimes on an ex-post analysis) and making use of disaggregated export data. Our study contributes to this literature by using aggregate export data at the national level in LDCs and by investigating the impact of the multilateral Hong Kong Ministerial decision on DFQF market access for products originating in LDCs on the latter's export performance (including total export performance as well as performance in primary merchandise exports and performance in manufacturing exports). In other words, we examine whether LDCs' export performance has improved after the adoption by WTO Members of the multilateral decision on DFQF, as compared to the period preceding the adoption of this decision. In so doing, this study carries out an ex-post analysis by shedding light on the effect of multilateral preferences rather than unilateral preferences on LDC export performance. The analysis is carried out over the period 1998-2013 and covers 41 LDCs (33 African LDCs + Haiti, and 8 LDCs in Asia and Pacific Islands).

The empirical results suggest evidence that on average, the multilateral decision on DFQF in favour of LDCs has exerted a positive impact on LDC total export performance and that, this improvement in export performance was mainly driven by higher export of primary products, as the export of manufacturing products did not really increased on average. At the same time, an analysis of short term and medium term effect of this decision reveals that in both the short term and medium term, the multilateral decision had led to higher total export-to GDP ratio in LDCs as well as both higher export of primary products to GDP ratio and higher exports of manufacturing products to GDP ratio.

These results have important policy implications that we discuss in the conclusion. More specifically, the findings call for a role of both LDC governments and the international community in helping LDCs move out of the commodity-dependence trap in favour of export of high value added manufactured products and/or services. There is a need to rethink the way LDCs could better utilize and align their policy space in WTO flexibilities with other development policies to move out of the trap of the primary commodities dependence, while maximizing the benefits they can derive from the multilateral DFQF scheme. This issue is all the more relevant that the global trading environment is changing rapidly, while LDCs have still been confronted with the main problems, i.e., high exposure of their economies to the vagaries of the international markets and risk of erosion of trade preferential margins thanks both to the MFN tariff liberalization and the proliferation of Free Trade Agreements (FTAs), including mega-regional trade deals such as the

EU-Japan Free Trade Agreement, Trans-Pacific Partnership (TTP), and Transatlantic Trade and Investment Partnership (TTIP) in which they do not participate.

The rest of the paper is organized around nine sections. Section 2 provides a snapshot of the LDC stature in the world trade. Section 3 briefly reviews the literature on the effect of DFQF on LDC exports. Section 4 presents some statistical data analysis, while Section 5 describes the model specification. Section 6 discusses the econometric methodology used to carry out the empirical analysis. Section 7 interprets estimations' results; Section 8 concludes, while Section 9 discusses the policy implications of the results.

2. LDCs' Stature in the World Trade Landscape

The description provided below on the LDCs' position in global trade is mainly drawn from the recent WTO Secretariat Note (2015) (WTO document WT/COMTD/LDC/W/60) on "the market access for products and services of export interest to Least developed countries". It should be noted here that a very good insight into the position of LDCs in the global trading system, including in the context of the great global transition could be found for example in Escaith and Tamenu (2014)

In 2013, LDCs represented 12.7% of the world's population, but only 0.9% of the world's output[5]. They accounted in the same year only for 1.1% of the world exports of goods and services (moving from 0.5% in 1995). Nonetheless, this minuscule export share hides a good performance of LDCs, epitomized by an annual average 12.5% rise in their total trade in goods and services between 1995 and 2013. This performance even outweighs world trade performance, which grew by 7.5%.

The slight increase of LDCs' integration into the global trade reflects a high export product concentration of these countries: due to a low degree of development of their productive sectors, these countries are heavily dependent on a few exportable products where they enjoy some degree of comparative advantage (primary commodities -as far as trade in goods is concerned-, and tourism -mainly travel- for services exports). Even when some of them were able to diversify into manufacturing, the range of exported products was usually limited to a few labour-intensive industries, mostly clothing. On average, in 2014, almost 70% of total merchandise exports in LDCs depended only on three main products, although the composition varies from LDC to LDC. For example, in the same year, the top three products accounted for more than 95% of nine LDCs' receipts, whereas in 1995, the situation was quite different, as only around 40% of LDCs' exports were attributable to the top three products. Hence, while LDCs have slightly increased the share of their exports in the global trade, their export concentration particularly on primary commodities (as far as goods are concerned) has clearly increased. This has certainly increased their vulnerability to the vagaries of the international trade markets.

However, it needs to be noted that not all LDCs have a high export concentration on primary products: the structure of African LDCs' exports had been dominated by fuels and mining products (which represented 73% of total African LDCs' merchandise exports). This reflects a rising trend (from 1995) in the exports of these products, which even outweigh exports of agricultural products. In the meantime, the export structure of Asian LDCs' exports had been dominating by manufactures (mainly clothing), reflecting a rising trend in the export of these products, with a ratio of these exports to the total merchandise exports reaching 77% in 2014.

However, in contrast with a high concentration of goods and services exports, the destination of these exports, notably goods exports have experienced significant changes, including diversification over time, since 1995 (i.e., LDCs diversified their export destinations): in 1995, the

[5]Calculations are based on World Bank data (World Development Indicators, WDI – 2015).

majority of LDC exports were directed to developed economies (Europe and North America), and only 30% to developing economies, whereas in 2014, developing countries constituted the main destinations of LDCs' exports (57% for developing economies versus 35% for European developed countries and North America, excluding Mexico). The main reason for this change was the growing demand of China, which accounted for 23% of LDC exports in 2014 as compared to only 3% in 1995. It is interesting to note that the increase in intra-LDC trade, took place mostly within Africa, moving from 1% in 1995 to 5% in 2014.

3. Brief literature review on the impact of DFQF scheme on LDC export performance

The empirical assessment of the impact of the DFQF scheme has not been the subject of many studies. Hoekman, Ng and Olarreaga (2002) undertook an ex-ante analysis of the potential benefits from preferential tariffs given to LDCs by the European Union under the Everything But Arms (EBA) initiative. They showed that EBA would induce larger exports from LDCs to the EU market at the expense of other developing countries.

Brenton (2003) analysed the effects of EU preferences on LDCs and obtained evidence that the impact varied considerably across countries due to their different export structures. For some LDCs, he found that EU trade preferences on existing exports were not significant since these exports consisted mainly of products that already had duty-free access. As a result, he suggested that export diversification would be appropriate for these countries. For other LDCs, he obtained that EU preferences provided a more substantial positive impact on trade. He further showed that for EBA-eligible non-ACP LDCs, there was a low level of utilization of preferences and that, this situation could potentially be attributed to rules of origin, including the restrictiveness of the requirements on sufficient processing and the costs and difficulties of providing the necessary documentation. He concluded that more simple rules of origin would enhance the impact of EU trade preferences in terms of improving market access and in stimulating diversification toward a broader range of exports.

Collier and Venables (2007) analysed the impact of the US African Growth and Opportunity Act (AGOA) on apparel exports to the US relative to the EU. They obtained that the impact of AGOA is far more significant than the EU's EBA programme for LDCs, and concluded that this result could be attributed to AGOA's far more generous rules of origin for apparel. It is important to mention that Di Rubbio and Canali (2008) found less clear results about the effect of AGOA.

Laird (2012) investigated the impact of preferential trade schemes, including DFQF granted by a mix of both developed and developing countries (including Canada, China, European Union, India, Korea, Japan and the United States) to all LDCs. The study intended to examine the impact of full treatment for LDCs and used the SMART model of WITS, along with the Swiss formula, taking the coefficient of 8 for developed countries and a coefficient of 25 for developing countries. The author obtained the following (predicted) results: there is a possibility of potential gains of around 21.7 percent, 12.9 percent and 11.8 percent respectively from full duty-free treatment for LDCs provided by India, Korea and US. The LDCs which were seen to benefit in the US market were Bangladesh and Cambodia with gains of about 22.2 percent and 27.8 percent respectively, and the dominant sector is the textiles and clothing sector. The author also noted that there could be significant gains for LDCs if the rules of origin were relaxed or if aid for trade was used to help LDCs meet the standards in major export markets.

Vanzetti and Peters (2009) used the standard GTAP model to assess the consequences of (a) removal of developed country tariffs on exports from LDCs; and (b) removal of tariffs by developed countries plus China, India and Brazil on exports from LDCs. They found evidence that: the additional exports for LDCs from developed countries' duty free quota liberalisation would be $7.5 billion. Exports of the remaining countries of Eastern Africa (Burundi, Comoros, Mayotte, Ethiopia, Eritrea, Djibouti, Kenya, Reunion, Rwanda, Seychelles, Somalia, Sudan) would likely

increase significantly. The impact of preference scheme provided by China, India and Brazil appeared relatively small with an increase of LDCs' exports by $70 million. However, for Mozambique, Senegal, Tanzania, Zambia, Rest of West Africa, Central Africa and South Central Africa, the effect appeared to be quite important. Other major beneficiaries included Rest of South East Asia and Bangladesh.

Ito (2013) provided an ex-post analysis on whether LDCs benefit from the DFQF market access to Japanese market, over the period 1996-2011. He obtained evidence that in general, LDCs did not benefit from DFQF access to Japanese market. In fact, while the total value of imports from LDCs had been increasing, the imports granted both zeros and substantial preference margins over non-LDC countries were not successful. He concluded that for LDCs, the tariff barrier in acceding Japanese market was a relatively small obstacle, and that their trade was rather (strongly) affected by other factors such as lack of adequate infrastructure, non-tariff barriers, geographic distance, and cultural differences.

4. Data analysis

In this section, we provide in the first instance an insight into the evolution of the average tariffs applied by developed countries on imports of key products from LDCs and developing countries, over the period 1996-2014. We also briefly compare the preferential margins enjoyed by LDCs versus developing countries groupings in 2011, and 2014. In the second instance, we compare the evolution of the proportion (in %) of the total developed market economies imports (by value) from developing countries and Least Developed Countries, admitted free of duty for all product categories (excluding arms and oil). We further explore, from a statistical perspective, whether export performance of LDCs was the same before and after the adoption of the mutliateral decision on DFQF by WTO Members.

Figure 1 (see Annex) displays the evolution of the average tariffs applied by developed-country Members of the WTO on key products imported from LDCs as well as developing countries. More specifically, Figure 1a displays the evolution of the average tariffs for agricultural products, while Figures 1b and 1c show this evolution respectively for clothing and textile. It could be clearly observed from Figure 1a that the average tariffs paid by traders in both developing countries and LDCs declined over the period considered, from 3.8% in 1996 to 0.9% in 2014 for LDCs, and from 8.5% in 1996 to 4.4% in 2014 for developing countries. Hence, in 2014, the average tariff incurred by LDCs on their exports of agricultural products to developed countries' markets tends to zero, while that of developing is still relatively high. It is worth noting that LDCs experienced an acceleration of the decline of the average tariff they have incurred on agricultural products since 2006, the year following the adoption of the multilateral DFQF scheme. This was not the case for developing countries, as since 2006, the average tariff declined very slightly (from 5.8% in 2006 to 4.4% in 2014).

Regarding "Clothing", and "Textile", the patterns are different. For "Clothing", there appears to be a convergence between the average tariff incurred by LDCs with the one borne by developing countries, over the period 1996-2014: the average tariff incurred by LDCs moved from 8.2% in 1996 to 6.5% in 2014, while for developing countries, it declined from 11.1% in 1996 to 7.1% in 2014. Thus, in 2014 as compared with 1996, the rate of decline in the average tariff for LDCs was 26.2%, whereas for developing countries, it amounted to 56.3%.

Incidentally, from 2006 to 2014, the average tariff applied by developed countries on imports of clothing from LDCs remained stable, around 6.5%, thereby indicating that since the adoption of the multilateral decision on DFQF, LDCs, as a whole, did not really enjoy a lowering of the average tariffs on their clothing exports to developed countries' markets. As we have observed above, this was not the case for agricultural products originating from LDCs.

For "Textile", the evolutionary pattern appears to be similar to that of "Clothing". Overall, Figure 1 suggests that LDCs on a whole, as compared to developing countries on a whole, benefited from higher preferential advantages in exporting their agricultural products to developed countries' markets, with their average tariff on these products moving towards zero. This fall in the average tariff particularly accelerated since the adoption by WTO Members of the Multilateral Decision on DFQF in 2005. However, for "Textile" and "Clothing", developing countries (as a whole) experienced a higher decline in the average tariff they incurred when acceding to developed countries' markets, as compared to LDCs. Nevertheless, in 2014, LDCs enjoyed lower average tariffs on these products as compared to developing countries (though the difference remained small, i.e., 0.6% for "Clothing" and 1% for "Textile"). In particular, since the adoption of the multilateral decision of DFQF, in 2005, the average tariffs on these two products exported by LDCs have remained stable.

That said, it needs to be noted that the average tariffs presented above hide differences among countries pertaining to the LDC category as well as among countries pertaining to the developing countries' category. These differents patterns are well exemplified by the comparison of the preferential margins (in %) enjoyed by LDCs and the ones of developing countries' groupings on these three types of products (namely agricultural products, clothing and textile), in 2011 and 2014. Data on preferential margins are reported in **Table 2 (see Annex)**. Several conclusions could be drawn from this table: first, LDCs enjoyed a rise in their perferential margins on agricultural products in 2014, as compared to 2011. Nevertheless, among all other groupings, it is Oceania that experienced the highest increase in the preferential margins on agricultural products, followed by Sub-saharan Africa. All the other groupings with the exception of "Caucasus and Central Asia", "Southern Asia", and "Western Asia", - which experienced a slight decline on their preferential margins on agricultural products-, enjoyed either stable or higher preferential margins on agricultural products. Second, on "Clothing" and "Textile", the picture of the evolution of preferential margins in 2014 as compared to 2011 is clearly mixed among developing countries' groupings, as some registered a decline in these margins, wheras other experienced a stable or a slight rise in these margins. For LDCs, it clearly appears that the preferential margins on "Textile" remained stable, while for "Clothing", it increased in absolute value by 0.2 point. It is worth highlighting that for "Clothing", Sub-Saharan Africa appears to be the grouping that showed the highest rise (1.2 point) in preferential margins in 2014, as compared to 2011.

With the statistical results so far obtained, we would not be surprised that our econometric-based analysis suggests evidence of higher effect of the multilateral decision on DFQF on LDCs' export of primary goods than on these countries' exports of manufacturing goods.

Let us now turn to the examination of the comparative evolution of the proportion (in %) of the total developed market economies imports (by value) from developing countries and Least Developed Countries, admitted free of duty for all product categories (excluding arms and oil). This evolutionary pattern is displayed in **Figure 2 (see Annex)**. The latter shows that the proportions for LDCs on the one hand and for developing countries, on the other hand have been increasing since 1996, and have tended to converge in 2014. Specifically, while for LDCs, this ratio slightly increased from 77.6% in 1996 to 84.2% in 2014, its rise for developing countries was more important over the period, moving from 53.8% in 1996 to 79.3% in 2014. These statistics may reflect the erosion of LDCs' trade preferential margins in the markets of developed countries, in favour of the preferential margins of developing countries.

With respect to the evolution of LDCs' export performance, we first undertake a statistical analysis of LDCs' average[6] export performance through a graphical representation of the evolution of this

[6] We compute this indicator (in percentage) by averaging over all LDCs (and per year) the share of each LDC exports to its GDP. The calculation is made for the total merchandise export (in % of GDP) as well as its components, namely the exports of primary products, in % GDP and the ratio of manufacturing exports to GDP.

performance over the period considered (**see Figure 3 in the Annex**). It can be gleaned from this Figure that the average LDCs' performance in total merchandise exports had been on a steady rise from 1998 to 2013, including through 2006 (after the adoption of the multilateral decision on DFQF) (although a fall is observed in 2009 probably due to the 2008 financial crisis), moving from 19.30% in 1998 to 23% in 2013. The pattern of the evolution of the average LDCs' performance in exports of primary products is similar to that of the total merchandise exports, and moved from 14% in 1998 to 17.35% in 2013. However, the average of LDCs' performance in exports of manufacturing products remains stagnant over the entire period, around 5.35%. Hence, it appears that the evolution pattern of LDC average total merchandise export performance had been driven over the considered period by that of primary export products.

Second, we undertake a test of comparison of means, with unequal variance for each of our variables measuring the export performance (namely, total exports, in % GDP, primary export products, in % GDP; and manufacturing exports, in % GDP) before and after the adoption of the multilateral decision. This test is performed over the entire sample of LDCs (namely the 41 countries considered in this study) as well as over two sub-groups of LDCs, namely, LDCs in Africa and Haiti (33 countries) and Asian and Pacific Islands LDCs (8). The results of the test are reported in **Table 3 (see Annex)**.

Columns [1] to [3] of this Table suggest that over the entire sample of LDCs, both total export performance and performance in the exports of primary products are higher after the adoption of the multuilateral decision on DFQF, as compared to the period preceding the adoption of this decision. In the meantime, we observe no statistical difference between the average share of manufacturing exports in GDP before and after the multilateral decision on DFQF. The same outcomes of the test are observed in columns [4] to [6] over the sub-groups of African LDCs (+ Haiti) and Asian and Pacific Islands LDCs.

Taken together, the data analysis suggests that over the period 2006-2013 (i.e., the period following the adoption of the multilateral decision on DFQF in favour of LDCs), as compared to the period 1998-2005, LDCs' overall export performance in merchandise had improved. Such improvement arose solely from an improvement in exports of primary products, as the exports of manufacturing products remained, on average, stagnant.

Against this backgrop, one could question whether this pattern of the evolution in LDC export performance could be attributed solely to the consequence of the multilateral decision on DFQF or whether other factots matter as well. These factors could include domestic policies in LDCs (for example, "traditional trade policy" liberalization[7], real effective exchange rate, regulatory quality policies, …etc); international public financial inflows notably development aid flows (it is noteworthy that the year (2005) of the adoption of the Paris declaration[8] on aid effectiveness coincided with the year of the adoption of the multilateral decision on DFQF; moreover, since 2005 and as a consequence of the implementation of Paris Declaration on aid effectiveness, development aid, including Aid for Trade to LDCs had scaled up and its effectiveness has since then be monitored); international private capital flows such as foreign direct investment (in the

[7] The expression of "Traditional trade policy" is borrowed from Smith (2014) who makes a distinction between "traditional trade policies" and "trade-related policies". She considers traditional trade policies as trade policies that have a well-established history both in real-world practice and in theoretical and empirical research in international trade. These policies include tariff, export subsidies, export quotas, (or voluntary export restraints), and bans. Trade-related policies measures include all measures designed for non-trade purposes, but affect trade as a side effect. Prominent trade-related policies include intellectual property rights, environmental policies, labour policies, and growth and development policies, among others.

[8] The Paris Declaration (2005) is a practical, action-oriented roadmap to improve the quality of aid and its impact on development. It gives a series of specific implementation measures and establishes a monitoring system to assess progress and ensure that donors and recipients hold each other accountable for their commitments (see detailed information online: http://www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm

aftermaths of 2005, LDCs enjoy an increase of foreign direct investment inflows, which may have contributed to higher exports); and the economic growth of the rest of the world, which could reflect a higher or lower demand for LDC exportable products (during the period after 2005, the demand by emerging countries, notably China and India of primary products, notably raw material- exported by LDCs had increased).

Hence, by taking account of all important factors that could affect LDCs' export performance, alongside with the multilateral decision on DFQF, we will be able to single out the genuine effect of this decision on LDC export performance.

5. Empirical Model

In this section, we draw on a number of studies that have analysed the determinants of export performance in LDCs (such as Santos-Paulino, 2007; and Shafaedin, 1994) as well as other studies (see for e.g., Santos-Paulino, 2002; Santos-Paulino and Thirlwall, 2004; Ju, Yi, and Li, 2010) that have examined more generally the determinants of export performance in developing countries and postulate the following model:

$$\begin{aligned} EXPPERF_{it} &= \alpha_0 + \alpha_1 MULTIDFQF_{it} + \alpha_2 Log(TP)_{it-1} + \alpha_3 Log(GDPC)_{it-1} \\ &+ \alpha_4 Log(NATGDP)_{it-1} + \alpha_5 Log(REER)_{it-1} + \alpha_6 Log(TERMS)_{it} + \alpha_7 Log(WGRTH)_{it} \\ &+ \alpha_8 Log(INFDIGDP)_{it-1} + \alpha_9 Log(REGQUAL)_{it-1} + \mu_i + \varepsilon_{it} \end{aligned} \quad (1)$$

where i represents the country's index (i = 1,…, 41); t denotes the annual time-period (t = 1998, …., 2013).

"EXPPERF" represents the export performance of a given LDC and could either be the total merchandise exports as a share of GDP (denoted "TOTEXP"), or one of the components of the latter, namely the share of exports of primary products in GDP (denoted "PRIMEXP"), and the share of manufacturing exports in percentage of GDP (denoted "MANUFEXP").

"MULTIDFQF" is a dummy variable aiming to capture the effect of the multilateral Hong Kong Decision on DFQF market access in favour of LDCs on the latter's export performance. It takes a value of zero for the years from 1998 to 2005, before the multilateral DFQF decision in favour of LDCs entered into force (the decision was adopted in December 2005), and a value of one for the remainder of the period, up to 2013.

As noted above, trade preferences alone could not enhance exports in beneficiary countries and reach the intended effects in these countries, without being accompanied by other economic policies that would spur export supply response. To ensure that the effect of this dummy variable really reflects the one of the multilateral DFQF decision, we include in our model all important covariates (identified in the literature cited above) that could explain both LDC export performance, and the effect of this multilateral DFQF decision on LDC export performance, along with fixed LDC effects to (capture unobservable specific characteristics of each LDC). These variables that we describe below include the trade policy, the per capita income, development aid flows, the real effective exchange rate, terms of trade, the economic growth of the rest of the world, foreign direct investment inflows and the institutional quality measured by regulatory quality policies (see also discussion in section 4).

Incidentally, it could be argued that this dummy variable may also capture the effect of less stringent/more flexible preferential rules of origin implemented unilaterally by some LDC trading partners (see above) on imports originating in LDCs during the considered period. This is not surprising given that a DFQF preference scheme could not really be effective without associated rules of origin that are simple, transparent and that facilitate market access for the products

eligible to such preferences. Nevertheless, many LDC preference-granting countries still apply relatively complex unilateral preferential rules of origin to LDC exports. Moreover, as noted in the introduction, the first multilateral decision on preferential rules of origin was adopted only in 2013 at the Bali Trade Ministers' Conference, and was strengthened in 2015 through another decision on preferential rules of origin at the Nairobi Ministerial Conference. Therefore, we assume that the effect of our dummy variable on LDC export performance reflects the consequences of the multilateral DFQF decision along with the effect of some more or less flexible preferential rules of origin (applied to LDC exports) that have been implemented unilaterally (rather than multilaterally) by preference-granting countries.

It is also important to underline here that the current study does not take into account some important developments related the LDC market access issue that have taken place since 2014.These developments had certainly affected LDC export performance in 2014 and 2015, and will certainly contribute to enhancing their export performance in the future. They include the granting of duty free market access to LDCs by an increasing number of developing countries as well the two aforementioned decisions on preferential rules of origin in favour of LDCs, which since 2014 had certainly prompted a number of countries to start reforming their rules of origin applicable to their imports from LDCs.

The control variables used in model (1) include:

"TP", which is represents the trade policy stance of an LDC: we expect trade policy liberalization to be associated with higher LDCs' export performance.

"GDPC" stands for the real GDP per capita; a rise in the per capita income should, in principle, be associated with higher export performance.

"NATGDP" is the Net Aid Transfers, in % of GDP: rising aid flows may yet improve overall export performance in LDCs, including exports of primary products, but they may also be associated with the Dutch disease phenomenon, thereby reducing LDC performance in exports of manufacturing products (see for e.g., Rajan and Subramanian, 2005). This negative effect on manufacturing exports may particularly be acute in LDCs, given the absorptive capacity[9] constraints in these countries. A related issue is the management of development aid to ensure its effectiveness in recipient countries.

"REER" stands for the real effective exchange rate: we expect an appreciation in the real exchange rate to be associated with lower export performance in LDCs.

"TERMS" represents the terms of Trade Index; an improvement in the terms of trade could enhance LDC total merchandise exports, including exports of primary products, but discourages the exports on manufacturing products.

"WGRTH" represents the economic growth of the rest of the world. It is calculated as the growth rate of the difference between the real world GDP and the real GDP of concerned given LDC. It intends to capture the world's demand of LDC exportable products: we expect a higher economic growth in the rest of the world to be associated with higher LDC exports.

"INFDIGDP" measures the share of inward investment flows, in % GDP: the multilateral DFQF preference scheme could provide incentives to multinationals to invest - through foreign direct investment- in beneficiary countries in order to take advantage of the possibility to grow and

[9] The concept of "Absorptive capacity constraints" refers to the different capacity constraints which help explain the finding of diminishing returns to foreign aid. They could include: capital constraints; policy and institutional constraints; macroeconomic constraints; donor practices; and social and cultural constraints (see for e.g., Feeny and de Silva, 2012).

export products that enjoy preferences. As a result, we expect higher inward foreign direct investment to be associated with higher exports in LDCs, thanks to the multilateral DFQF preference scheme.

"REGQUAL" stands for the regulatory quality policies in LDCs. The 'Regulatory Quality' reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development (see Kaufmann, Kraay and Mastruzzi, 2010). We expect the implementation of these policies to be associated with higher export performance in LDCs.

α_0 to α_9 are parameters to be estimated. μ_i represent specific-country effects; ε_{it} is a well-behaving error-term.

As it could be observed in model (1), we use all variables, except our dummy variable, with the natural "Logarithm" to facilitate interpretation in terms of elasticity. As some covariates, including "INFDIGDP", "WGRTH" and "REGQUAL" contains negative values and therefore, could not enter into the natural logarithm, we utilize the transformation method used in Dabla-Norris, Minoiu and Zanna (2015), which goes as follows: $y = sign(x) * \log(1 + |x|)$, where the variable x denotes either the variable "INFIDGDP", "WGRTH" or "REGQUAL". Hence, the "Log" transformation of these variables allows us to retain information related to both zero entries as well as negative observations.

Incidentally, it is noteworthy that in order to mitigate the endogeneity that could stem from the reverse causality from the dependent variable to some of the explanatory variables in model (1), we consider these variables with one-year lag values.

We report in **Table 4 (see Annex)** the definition of each of the variables used in model (1) as well as their sources. In **Tables 5 and 6 (see Annex)**, we provide respectively descriptive statistics on these variables and pairwise correlation between them. **Table 7 (see Annex)** displays the list of countries used in the analysis.

6. Econometric methodology

A robust Hausman test of fixed versus random effects applied to model (1) suggests an F-statistic equals to 2.88 with an associated P-value amounting to 0.0059. This clearly indicates that this model (1) should be estimated by means of the fixed effects estimator. Therefore, we estimate this model by means of within fixed effects, while taking account of the possible cross-sectional dependence along with the eventual heteroscedasticity and serial correlation in residuals. This amounts to correcting the standard errors by means of Driscoll Kraay (1998) technique. We denote this technique "FE-DK".

One could question the exogeneity nature of our main variable of interest, "MULTIDFQF". Indeed, we consider this variable as exogenous for two main reasons: first, the LDC status is exogenously decided given that the decision to include a country in the LDC category or to graduate a country from this category is an institutional multilateral decision and lies in the responsibility of the United Nations, in particular the Committee for Development Policy where Members, including LDCs (and not only preference-granting countries) decide collectively on which countries could be included or graduate from the list. Second, the multilateral decision on DFQF applies in principle to all LDCs, and not to some of them, although the preference-grating country has the right to withdraw its preferences without complex WTO procedures (see for e.g., Laird, 2012 for more details). As a result, we can safely estimate model (1) by means of within fixed effects.

From now, our empirical investigation proceeds in two steps:

- *Use of the within fixed effects estimator*: the first step entails the use of FE-DK technique to obtain the average effect of the variables included in model (1), in particular of our variable of interest, "MULTIDFQF".

- *Use of the two-step System GMM estimator:* in the second step, we consider a dynamic specification of model (1), i.e., with the one-year lag of the dependent variable as a right-hand side variable: it is well known in the empirical literature that export performance exhibits a state dependence (see for e.g., Santos-Paulino, 2007 for the case of LDCs), i.e., the export performance of the current year is likely related to the export performance of the previous year. The introduction of a one-year lag of the dependent variable as a right-hand side variable in model (1) would help us take account of other LDCs' characteristics not captured either through fixed effects or through covariates included in the model. However, the presence of the one-year lag of the dependent variable as an explanatory variable could induce the so-called Nickell bias (Nickell, 1981) and consequently bias the estimates of the exogenous regressors if T is small, which is our case (T = 16, and N = 41). We address this problem by using the Generalized Methods of Moments (GMM)[10] estimator, which allows us to obtain short term and medium term effects of our explanatory variables. Baltagi, Demetriades and Law (2012) argue that when using GMM estimator, it is better to make maximum use of both the time and cross-country dimensions of available data sets similar to ours. This is because, the practice in the empirical literature (for e.g., the growth literature) that consists of averaging out data over five or ten year horizons, with a view to capturing the steady state relationship between the variables on hand, needs not always capture the steady state equilibrium. Moreover, the smoothing out of time series data removes useful variation from the data, which could help to identify the parameters of interest with more precision.

In particular, we use the two-step system GMM estimator proposed by Blundell and Bond (1998), which combines the equation in differences with the equation in levels where lagged first differences are used as instruments for the levels equation and lagged levels are used as instruments for the first-difference equation. This estimator performs better, compared with the first-difference GMM estimator suggested by Arellano and Bond (1991), notably when cross-sectional variability dominates time variability and when there is strong persistence in the time series under investigation (Blundell and Bond, 1998). Incidentally, Roodman (2009) suggests avoiding using the difference GMM estimator when the panel dataset is unbalanced (which is the case of the current study), as this estimator has a weakness of magnifying gaps.

We ascertain the validity of this estimator by means of the standard Sargan test of over-identifying restrictions, which determines the validity of the instruments used in the estimations. We also perform the Arellano–Bond (AB) test of first-order serial correlation in the error term and no second-order autocorrelation in the residuals. Results over third-order serial correlation in the error term are also reported, for comparison purposes.

7. Interpretation of Estimations' results

We first interpret the estimations' results of different specifications of model (1) by means of within fixed effects (see **Tables 8 to 10 of the Annex**) and then move on to the interpretation of results of model (1) estimated by means of the two-step system GMM estimator (see **Tables 11 to 13 of the Annex**).

[10] In the equation $Y_{it} = \beta_0 + \lambda Y_{i,t-1} + \beta_1 X_{it} + \nu_i + \omega_{it}$, the estimated beta coefficients represent short-run effects, while the long-term or medium term effects could be obtained by dividing each of the betas by 1-λ, where λ represents the coefficient of the lagged dependent variable.

Interpretation of results of model (1) specifications based on the use of within fixed effects estimator

Table 8 reports the estimates associated with the estimation of different specifications of model (1) where the dependent variable is the ratio of the total merchandise exports to GDP: in column [1], we display the results of model (1) where the last two variables are excluded; column [2] presents the results of the same model where we exclude only the last variable (i.e., "INFDIGDP") and column [3] reports the results of the same model where we exclude the variable "REGQUAL". Finally column [4] presents the estimates associated with the estimation of the entire model (1), i.e. model (1) with all variables. It is important to note that **Tables 9 and 10** present the same structure as **Table 8**.

Across the four columns of **Table 8**, we can observe that the coefficients of both our variable of interest as well as our control variables (with the exception of the last two variables of model (1), namely, "INFDIGDP", "REGQUAL") are of similar magnitude, sign and significance. ***We particularly note a positive and significant impact of the multilateral decision on DFQF market access for products originating in LDCs on the latter's total export performance. Moreover, the magnitudes of this average effect are broadly similar across the four columns. Focusing on the results reported in column [4], we can note that the total merchandise exports to GDP ratio increases significantly in the period after the adoption of the multilateral decision on DFQF as compared to the period before the adoption of this decision: total export-to-GDP ratio increases on average by almost 9% in the period after the adoption of the multilateral decision, as compared to the period before the adoption of the decision. It could therefore be inferred that the decision has, on average, exerted a significant positive effect on LDCs' performance in the export of merchandise***.

In column [2], inward foreign direct investment flows do not appear to affect significantly total merchandise exports-to-GDP ratio, whereas in column [3] such effect appears to be negative, but loosely significant (i.e., at only the 10% level). These results of column [3] tend to suggest that on average, foreign direct investment inflows serve domestic market demand in LDCs rather than facilitating their exports. At the same time, regulatory quality measures do not exert on average a significant effect on LDC total merchandise export-to-GDP ratio. Trade policy liberalization generates higher total merchandise export-to-GDP ratio in LDCs. Other positive drivers of this ratio include higher per capita income, a real effective exchange rate depreciation and higher economic growth in the rest of the world. Terms of trade and net aid transfers do not influence the ratio of merchandise exports to GDP.

Table 9 reports the results of the estimations of model (1) specifications where the dependent variable is the total primary product exports, expressed as a share of GDP. Across the four columns of this Table, we observe evidence that the multilateral decision on DFQF has significantly driven the performance of LDCs in exports of primary products, with similar magnitude of this effect and of statistical significance (at 1% level) across these columns. Considering the result reported in column [4], ***we note that after the adoption of the multilateral ministerial decision on DFQF, LDCs' export performance in primary products improves on average by 17.5%, as compared with the period before the adoption of this decision. This effect is almost the double of the one obtained over LDCs' total merchandise export performance*****. This result clearly indicates that the multilateral decision on DFQF has significantly boosted LDCs' export of primary products.**

Inflows of foreign direct investment and regulatory quality do not, on average, affect the export of primary products to GDP ratio in LDCs. The other control variables (except the real exchange rate) exhibit similar effect across the four columns: trade policy liberalization provides a disincentive to export primary products in LDCs; this could indicate a priori that trade policy liberalization in LDCs

tends to facilitate the exports of non-primary products, i.e., it positively affects manufacturing export performance, at the expense of primary export products in LDCs. The real effective exchange appears to be negatively associated with the primary export-to-GDP ratio only in the first two columns. Incidentally, per capita income and the economic growth of the rest of world (all countries, except the concerned LDC) drive positively and significantly LDC exports of primary products. Aid flows and the terms of trade do not appear to exert an influence on LDC exports of primary products.

Let us now turn to **Table 10**, which displays the outcome of the estimation of different specifications of model (1) where the dependent variable is the ratio of manufacturing export to GDP. Across the four columns, ***we obtain that, on average, the multilateral decision on DFQF did not exert any significant influence on LDCs' performance in manufacturing exports***. Nonetheless, the latter appears to be positively and significantly driven by trade policy liberalization, higher per capita income, higher aid flows (this aid effect indicates that the suspected Dutch disease phenomenon did not materialize in LDCs during the period considered), and a depreciation of the real effective exchange rate. In the meantime, the economic growth in the rest of world as well as regulatory quality policies influence positively, but loosely (at only 10% level) on LDCs' manufacturing export performance. Finally, terms of trade do not influence manufacturing exports in LDCs.

Interpretation of results of model (1) specifications based on the use of the two-step system GMM estimator

Column [3] of each of the **Tables 11 to 13**, reports the results of the estimation of the dynamic specification of model (1) (with all included variables) using the two-step GMM estimator where the dependent variable is respectively the LDCs' performance in total merchandise export, primary export products and manufacturing exports. Moreover, for comparison purposes, in columns [2] and [3] of each table, we display the outcome associated with the estimation of the dynamic specification of model (1) using respectively pooled ordinary least squares (POLS) and within fixed effects. Note that we use Driscoll Kraay (1998) procedure to correct standard errors for both POLS and fixed effects estimates. The rationale for doing so is that when the coefficient of AR(1) term (i.e., the one-year lag of the dependent variable) lies between the OLS estimate which is biased upwards, and the fixed-effect estimate, which is biased downwards, this provides a good indication of whether the GMM system properly controls for endogeneity (Bond, 2002). In **Table 11**, the coefficient of the AR(1) term obtained with the two-step GMM estimator is 0.751, which is between 0.602 (AR(1) term for FE-DK) and 0.913 (AR(1) term for the POLS). In **Table 12**, the coefficient of the AR(1) term obtained with the two-step GMM estimator is 0.767, which is between 0.542 (AR(1) term for FE-DK) and 0.913 (AR(1) term for the POLS). Likewise, in **Table 13**, the coefficient of the AR(1) term obtained with the two-step GMM estimator is 0.439, which is between 0.434 (AR(1) term for FE-DK) and 0.916 (AR(1) term for the POLS). Therefore, there is a strong reason to believe that our system GMM estimator controls properly for the endogeneity issue. It needs to be noted that the significance of the AR(1) term across all columns of **Tables 11 to 13** clearly confirm the state dependence in export performance found in previous studies.

By the way, the results associated with the diagnostic tests reported at the bottom of the column [3] of each of the **Tables 11 to 13** clearly suggest the validity of our two-step GMM estimator in performing our estimations: the p-value related to the autocorrelation tests at the first, second and third order are respectively lower than 10% (for the first order) and higher than 10% for the second and third orders; in addition, the p-value associated with the Sargan test is always far higher than 0.10. All these results prompt us to definitely consider our two-step GMM estimator as a valid estimator for our analysis. We can therefore safely interpret the outcome of the estimates displayed in column [3] of each of the **Tables 11 to 13**.

Let us start now with the interpretation of the outcome reported in column [3] of **Table 11**. We obtain that the multilateral decision on DFQF has exerted a positive and significant short term and medium term impact on LDCs' performance in total merchandise exports. Interestingly, the magnitude of this effect is similar to the one obtained in column [4] of **Table 8*: LDCs' total merchandise export performance has increased in the short term by 9% and in the medium term by 36.22% (= [0.0902/(1-0.751)]*100), further to the adoption of the multilateral decision on DFQF in favour of LDCs. This clearly sheds light on the significant (in terms of magnitude) - huge - impact of this multilateral decision on LDC total export performance***.

Regarding controls, we obtain evidence that trade policy liberalization, real effective exchange rate and inward foreign direct investment do not exert a significant short term and medium term effect on LDCs' performance in merchandise export. Surprisingly, a rise in per capita income reduces significantly the total merchandise exports-to-GDP ratio of LDCs in the short term and medium term. As we will see later, this could be interpreted by the fact that as LDCs enjoy higher per capita income, they tend to shift their export structure from dependence on primary products towards manufacturing products: the negative effect obtained on the total merchandise export-to-GDP ratio could particularly be attributed to the dominance of the export of primary products in the total merchandise exports of LDCs. In the short to medium term, development aid flows are associated with lower merchandise export in LDCs. This probably indicates the materialization of the Dutch disease phenomenon in the short-to-medium term in LDCs, further to the surge in aid flows in these countries. This could also explain why we did not obtain a significant short term and medium term effect of the real effective exchange rate variable on the merchandise export performance in LDCs (as the effect of the "REER" variable may have been absorbed by the effect of the aid variable). Inflows of foreign direct investment appear to exert a negative and significant impact on LDCs' merchandise export performance (similar to the effect observed in Table 3). Besides, terms of trade improvement and the economic growth in the rest of the world drive positively and significantly LDCs' export of merchandise in both the short and medium terms.

Estimates presented in column [3] of **Table 12** are quite interesting. ***The multilateral decision on DFQF has exerted a significant and positive impact on the performance of LDCs' export of primary products: in the short term, the export of primary products (in % GDP) has increased by 14.2% further to the adoption of this decision, whilst in the medium term, it has increased by 60.94% (= [0.142/(1-0.767)]*100), further to the adoption of the same decision. These effects in terms of magnitude are huge, and are far higher than the ones obtained above for total merchandise exports. It clearly appears that the multilateral Hong Kong Ministerial Decision on DFQF has significantly boosted LDCs' exports of primary products***.

Regarding control variables, results indicate that trade policy liberalization results in the short-to-medium term in lower exports of primary products in LDCs (the same sign was obtained in **Table 9** for the analysis of the average effect). The rise in per capita income is associated in the short-to medium term with lower share of primary product exports. While terms of trade improvement and the increase in the economic growth of the rest of the world are significantly and positively associated with higher share of primary product exports in LDCs, development aid flows, real effective exchange rate, inward foreign direct investment and regulatory quality policies do not affect at all this LDC export performance.

Finally, let us consider the estimates reported in column [3] of **Table 13** (where the dependent variable is the manufacturing export share of GDP). ***Interestingly and in contrast with the average effect obtained in Table 10, we obtain here a positive and significant short term/medium term impact of the adoption of the multilateral decision on DFQF on LDCs' manufacturing exports. More specifically, we note that in the short term, this decision has generated a rise in LDCs' manufacturing exports share by 9.42%, whereas in the***

medium term, the effect has amounted to 16.79% (= [0.0942/(1-0.439)]*100). While the magnitudes of these impacts are not negligible, they remain far lower than those associated with the exports of primary products.

Among controls, the positive drivers of manufacturing export share include trade policy liberalization, higher per capita income, depreciation of real effective exchange rate, higher inward foreign direct investment and better regulatory quality policies. The negative drivers of the manufacturing export share in LDCs include higher aid flows (thereby indicating probably the presence of Dutch disease effect or possibly the absorptive capacity problem), terms of trade improvement (which indicates that such an improvement tends to favour the export of products in which LDCs have a comparative advantage), and higher economic growth in the rest of the world (which suggests that as the rise in the economic growth has been translated into a higher demand for LDCs' primary products exported during the period of study, it tends to favour exports of primary products at the expense of manufacturing exports).

Overall, the short and medium term results obtained by means of the two step-GMM estimator suggest the following: while the adoption of the multilateral decision on DFQF has exerted a positive short term and medium term impact on LDCs' merchandise export performance, this positive effect has been well dominated by a far higher positive effect on primary product export share, as compared to manufacturing export share. Put differently, the multilateral decision on DFQF has tended to enhance exports of products in which LDCs enjoy a comparative advantage. Trade policy liberalization has exerted no significant effect on total merchandise exports share, but induced a negative and significant effect on primary export share and a positive and significant effect on manufacturing export share, with the positive short term effect dominating in absolute value the negative short term effect.

Per capita income reduces total merchandise export share, with this negative effect being explained in the short term by a negative effect on the exports of primary products and a positive effect on manufacturing exports (the negative short effect on primary export share largely dominates in absolute value the positive short effect on manufacturing export share). Development aid flows have exerted a negative and significant effect on total merchandise export performance of LDCs, with this negative effect being driven only by the negative effect on manufacturing export share. Real effective exchange rate has not influenced total merchandise export share and primary product export share, but its appreciations appeared to exert a negative effect on manufacturing export share. Terms of trade improvement has positively (but loosely) influenced total merchandise export share in LDCs; in the meantime, this improvement has been associated with significant positive effect on primary exports and significant negative effect on manufacturing exports. A higher economic growth in the rest of the world (taken as a whole) has positively and significantly driven LDCs' performance in total merchandise exports. This positive effect hides a negative effect on manufacturing export share and a positive effect on the share of primary products exports. Foreign direct investment inflows seem to have negatively affected total merchandise export performance of LDCs. Nonetheless, a positive effect of these inflows has been obtained for manufacturing export share, and an insignificant effect of these inflows has been observed for the share of primary export products. Finally, regulatory quality policies have exerted no significant influence on total merchandise export share, as well as on primary product export share. However, they have exerted a significant and positive effect on manufacturing export share.

8. Conclusion

There have been many factual-based statements that LDCs' exports have experienced an important increase since 1995, including in the aftermaths of the adoption in 2005 of the Decision on DFQF market access for products originating in LDCs, by Trade Ministers at the Hong Kong Ministerial Conference. There have been some attempts, in the empirical literature, to examine the effect of the DFQF (including unilateral DFQF) preference schemes on LDCs' export performance.

These studies have usually relied on disaggregate export data (usually on tariff-line basis) and mainly conducted ex-ante analysis, though few have performed ex-post analyses. However, to the best of our knowledge, none study has provided an empirical back up to the factual-based recurrent statement that LDCs' export performance had improved in the aftermaths of the adoption of the Hong Kong Decision on DFQF market access, as compared to the period preceding the adoption of the decision.

The current study tries to fill this gap in the literature by exploring empirically whether the LDCs have really enjoyed higher export performance since the adoption of the multilateral decision of DFQF in favour of them, and if so, what type of export product (primary exports versus manufacturing exports) has been most affected by this decision.

The analysis is carried out over 41 LDCs of which 33 African LDCs + Haiti, and 8 Asian and Pacific Islands LDCs, with data spanning the period 1998-2013 (based on their availability).

To capture the effect of the Hong Kong Decision on LDC export performance, we construct a dummy variable that assumes a value of zero for the years from 1998 to 2005, before the Decision entered into force (the Decision was taken in December 2005), and a value of one for the remainder of the period, up to 2013. In so doing, we intend to capture the effect of the multilateral DFQF decision in favour of LDCs. To ensure that this dummy variable really reflects the multilateral DFQF decision and would therefore allow us to single out the effect of this decision, we include in our model all important variables along with effects specific to each LDC (fixed effects) that could both explain LDC export performance, but also influence the effect of this multilateral decision on LDC export performance.

The empirical analysis suggests the following:

- first, the multilateral decision on DFQF has, on average, exerted a positive and significant impact on LDCs' total merchandise export performance. This positive average effect appears to be mainly driven by a higher performance in exports of primary products, as manufacturing exports have not been significantly affected. Put differently, the multilateral decision on DFQF market access has a positive average impact on primary export products, but not on manufacturing exports.

- second, in both the short and medium term, the multilateral decision on DFQF has improved LDCs' merchandise export performance, and this improvement has been driven by both higher exports of primary products (% GDP) and higher manufacturing exports (% GDP). Interestingly, the magnitudes of the positive short term and medium term effects on primary product export products' share are far higher than the positive short term and medium term effect on manufacturing exports share.

The two set of results (average effect versus short term and medium term effect), in particular with respect to manufacturing exports, are not contradictory: on the one hand, the average effect captures the mean effect over all LDCs (the 41 countries considered here) and over the entire period; on the other hand, the short term versus long term effect reflects for the former the effect of the decision just few years after the start of the implementation of the multilateral DFQF decision and for the latter, the effect of the decision over a relatively longer period, after the start of the implementation of the multilateral DFQF decision.

Hence, these findings provide an empirical support to the factual reality described in sections 2 and 4, that the multilateral decision on DFQF has exerted a positive impact on LDCs' export performance. Nevertheless, there is a strong propensity of this decision to favour the exportation of products in which LDCs have a comparative advantage, i.e., primary products. This is well exemplified by the fact that the manufacturing sector in LDC economies is still under-

developed, which has translated into lower manufacturing exports. These outcomes have definitely some policy implications that we discuss below.

9. Policy Implications of the findings

To facilitate the discussion of the policy implications of these results, we first outline the (current) trading environment in which LDCs are operating. We subsequently discuss the policy implications of the aforementioned results in the form of questions for future research on LDC trade-related issues, -rather than policy recommendations-.

The current global trading environment is characterized by a fierce competition of countries to reap the benefits of their integration into the global trade market, particularly of their insertion into global and regional value chains. This "cut-throat" competition is particularly challenging for LDCs given their structural impediments to export competitiveness (including the huge supply-side constraints) compounded sometimes by the disguised trade barriers (such as sanitary and phytosanitary and technical barriers to trade, rules of origin, safeguard, private standards,..etc) that adversely affect their exports in the global market. LDCs are not among the main players of the international trade market, and undergo the vagaries of this market, which are exemplified by the high volatility of the price of products that they mainly export. Furthermore, the preferences that they currently enjoy, including the DFQF scheme are experiencing strong pressures: LDCs are prone to the risk of the erosion of their trade preferential margins, due not only to the "natural" Most Favoured Nation (MFN) tariff liberalization at the multilateral level, but also to the proliferation (outside of the ambit of the WTO) of bilateral, regional and plurilateral Agreements , for example, mega trade deals such as the EU-Japan Free Trade Agreement, the TTP, and the TTIP, in which they do not participate.

Certainly, the multilateral trade preference schemes granted by developed countries and developing countries trading partners to LDCs have proven to enhance their exports, and therefore remain very important to these countries, at least in the short term. However, putting aside the limits[11] related to the design of DFQF preference schemes, preferences schemes in general could also prove somewhat disadvantageous or more costly than anticipated for beneficiary countries: they may encourage an inefficient allocation of resources by fostering specialization in sectors where the preference receiving country does not have a comparative advantage (see Low, Piermartini and Richtering, 2005). In so doing, they could create incentives for beneficiary countries to specialize in products with low value addition where rents are high but with limited dynamic learning effect (see Milner, Morrissey and Zgovu, 2010). Analysts who have questioned the usefulness of preferences in helping beneficiaries to develop economically in an efficient way also noted that the perverse incentives that could be created by preferences could be extended to trade negotiations, as they could incentivize recipients to lobby preference-granting countries not to lower their MFN tariffs, and be supported in this by domestic industries that benefit from protection. Incidentally, preferences could entail administrative burdens associated with rules of origin requirements, in particular if these rules of origin require beneficiaries to source their inputs from higher cost suppliers (Krueger, 1993; Krishna and Krueger, 1995). Preferences can sometimes be linked to the adoption of labour and intellectual property standards that can be costly (Bagwati, 2002) and may be associated in the long term with a disincentive for trade liberalization (Ozden and Reihnardt, 2005). Other concerns of preferences raised by analysts include the political friction between the beneficiaries and excluded developing countries.

In exploring how LDCs could reduce their primary commodity-dependence, the economic literature suggests that the optimal (best) solution would be to move to different types of exports, namely

[11] These limits could include the lack of predictability regarding the duration of the DFQF scheme, the exclusion sometimes of products of highest interest to LDCs, right of preference-granting countries to withdraw the preferences without complex WTO procedures (see for example Laird (2012) for a discussion on how these schemes could be improved in favour of LDCs).

manufacturing and/or services. Given the high volatility of individual commodity prices, some researchers (see for e.g., Palage and Hewitt, 2001) have proposed a middle ground solution**,** which consists of diversifying into more commodities, or shifting toward processing activities related to the (single) commodity, as this could reduce the risk of fluctuations in total income. However, such solution is not necessarily feasible for all LDCs, as their main problem is the specialization in one or a few commodities in which they have comparative advantage. Moreover, heavy reliance on commodity sector for exports could be source of the Dutch disease phenomenon and ultimately create and exacerbate conflicts in the concerned countries. Overall, the optimal solution for LDCs would definitely be to shift away from the primary sector to manufacturing and /or services sector. This could be a long journey for these countries, given the supply-side constraints they face, in spite of the current effort of the international community to help them address these challenges.

The example of Mauritius shows how within slightly more than a decade, this country sets up an appropriate institutional framework and a mix of economic policies (for e.g., trade facilitation as far as trade measures are concerned) to make the best use of the preferential access to the market of its trading partners, particularly the European Union. It has moved its export basket away from an absolute dependence on a single commodity (sugar) to textile, and clothing sectors as well as services.

Hence, trade preferences alone could not drive export diversification and, are conducive to production and export diversification if accompanied by policies that promote long term economic transformation and that develop supply-side capacity. However, as noted by Palage and Hewitt (2001: 19), trade preferences have helped diversification where policy favoured structural change and investment, but they are neither necessary nor sufficient to promote diversification, as long as supply side constraints hold.

This clearly poses the debate as to how LDCs, in the current global trading environment and given their trade-related structural challenges, could successfully diversify their production and exports away from the primary sector.

Against this backdrop and in light of the findings of the current study, a number of interesting issues related to both LDC governments and the international community could be raised:

(i) What policies/measures could help LDCs take best advantage of their DFQF multilateral preference scheme, including by entering global value chains, without continuing to remain in the trap of primary-commodity dependence?

(ii) What is the role of LDC governments in this undertaking? More specifically, by relying on their comparative advantages, how could these governments articulate their trade policies (including the policy space available to them in WTO Agreements) with other development policies (for example, macroeconomic policies, industrial policies and social policies) within an appropriate institutional framework, to develop their manufacturing sector and/ the services sector.

(iii) To what extent could LDC governments be better assisted in this undertaking by the international community, including both developed and developing country Members of the WTO, as well as regional and international financial organizations?

Answering these questions is of course a daunting task, but such an exercise could be very useful for policymakers in LDCs. The challenge is all the more important that the past diversification experience in countries had shown that diversification occurs faster (a couple of decades) and more radically in relatively labour-abundant rather than commodity-abundant countries: the higher the initial endowment in natural resources/commodities, the more difficult it is to move away from them. Moreover, despite the existence of commonalities among LDC economies, the

LDC category remains at the end of the day heterogeneous and a one-size-fits-all approach to address these questions would not be appropriate.

An example of framework within which this exercise could be conducted may be the one proposed by Lin and Monga (2010) in their "Growth Identification and Facilitation Framework". It entails for a country "the identification of the list of tradable goods and services that have been produced for about 20 years in dynamically growing countries with similar endowment structures and a per capita income that is about 100 percent higher than their own". This proposed framework rests on the assumption that the competitiveness of comparator countries may deteriorate due to increasing wage costs, which would then open up opportunities to attract relocating industries. Other authors such as Altenburg and Melia (2014) have noted that while this framework is a good starting point, the exploration of promising avenues for competitive specialization rests also on other determinants such as economies of scale, transportation costs and proximity to important markets that need to be incorporated into the analysis, and be benchmarked against relevant competitors. Fine and Van Waeyenberge (2013) have discussed the limits of the new structural economics, whose foundation has served as a basis for devising the "Growth identification and facilitation framework" by Lin and Monga (2010).

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ANNEX

Table 1: Major multilateral non-reciprocal LDC preference schemes undertaken by Members[a]

Preference granting country	Description	Duty-free tariff line coverage[b] (and major exclusions)
Australia	Duty- and quota-free entry for LDCs Entry into force: 1 July 2003	100%
Canada	GSP – Least-developed Countries' Tariff Programme (LDCT) Entry into force: 1 January 2000. Extended until 31 December 2024.	98.6% (dairy, eggs and poultry)
China	Duty-free treatment for LDCs Entry into force: 1 July 2010	97% as of 1 January 2015
Chile	DFQF scheme for the LDCs Entry into force: 28 February 2014	99.5% (wheat, wheat flour and sugar)
EU	GSP - Everything But Arms (EBA) initiative Entry into force: 5 March 2001	99.0% (arms and ammunitions)
India	Duty-Free Tariff Preference Scheme (DFTP) Entry into force: 13 August 2008	96.4% as of 1 April 2014 (dairy products, vegetables, tobacco, copper products, beverages and spirits)
Iceland	GSP – Tariff preferences for the world's poorest countries Entry into force: 29 January 2002	91.8% (meat and dairy products, eggs, vegetables and plants, cereals and starch, other food preparations)
Japan	GSP – Enhanced duty- and quota-free market access Entry into force: 1 April 2007 Extended until 31 March 2021	98% (rice, sugar, fishery products, articles of leather)
Korea, Rep. of	Presidential Decree on Preferential Tariff for LDCs Entry into force: 1 January 2000	95% (meat, fish, vegetables, food products)
New Zealand	GSP- Tariff Treatment for LDCs Entry into force: 1 July 2001	100%
Norway	GSP – Duty - and quota-free market access Entry into force: 1 July 2002	100%
Russian Federation	The GSP scheme, in the context of the Customs Union between Belarus, Kazakhstan and the Russian Federation. Entry into force: 1 January 2010	38.4% (exclusions cover a wide range of products, including petroleum products, copper, iron ores, textiles, clothing, leather, footwear)
Switzerland	GSP – Revised Preferential Tariffs Ordinance Entry into force: 1 April 2007	100%
Chinese Taipei	Duty-free treatment for LDCs Entry into force: 17 December 2003	31.7% Some 131 products enjoy exclusive duty-free access, including selected plastic items, raw hides and skins, textile and clothing articles, parts of vehicles, precious stones, etc. Exclusions cover a wide range of products.
Thailand	DFQF scheme for the LDCs Entry into force: 9 April 2015	73.2%
Turkey	GSP	79% (meat, fish, food, steel products,

Preference granting country	Description	Duty-free tariff line coverage[b] (and major exclusions)
	Entry into force: 31 December 2005	etc.)
United States	GSP for least-developed beneficiary developing countries (LDBDC). The Trade Preferences Extension Act of 2015 (Title II) authorizes GSP until December 31, 2017 and makes GSP retroactive to July 31, 2013.	82.6% (dairy products, sugar, cocoa, articles of leather, cotton, articles of apparel and clothing, other textiles and textile articles, footwear, watches, etc.)
	(AGOA) Entry into force: 18 May 2000 Extended until 30 September 2025 (Title I)	97.5%
	Caribbean Basin Trade Partnership Act (CBTPA) Entry into force: 1 October 2000, extended until 30 September 2025 (Title III)	Duty free for most products, including textiles and apparels. The Haitian Hemispheric Opportunity through Partnership Encouragement (HOPE) Act of 2006 provided new trade benefits, especially of apparel imports from Haiti. The HOPE II Act of 2008 enhanced duty-free treatment for qualifying apparel imports from Haiti. The Haiti Economic Lift Program (HELP) Act of 2010 provided duty-free treatment for additional textile and apparel products from Haiti.

Notes

a: This table represents a non-exhaustive list of non-reciprocal multilateral market access initiatives undertaken in favour of LDCs.

b: The DFQF coverage is derived from the most recent notifications or statements made by Members in formal meetings of the WTO when available. If DFQF coverage is not explicitly stated, information on DFQF coverage is taken from the most recent WTO Integrated Data Base (IDB) submissions. For certain Members, information on major exclusions could not be derived from the notification or statement.

Source: Extracted from WTO Secretariat Note (WT/COMTD/LDC/W/60, page 67).

Table 2: Preferential Margins (in percentage) enjoyed by LDCs and Groupings of Developing Countries on key products, in 2011 and 2014

		2011	2014
Least Developed Countries	Agriculture	4.9%	5.5%
	Clothing	5.6%	5.8%
	Textile	3.0%	3.0%
Caucasus and Central Asia	Agriculture	0.5%	0.4%
	Clothing	1.5%	1.2%
	Textile	0.7%	0.6%
Northern Africa	Agriculture	3.6%	4.5%
	Clothing	6.2%	6.2%
	Textile	3.7%	3.7%
Sub Saharan Africa	Agriculture	5.0%	6.1%
	Clothing	9.2%	10.4%
	Textile	2.6%	2.5%
Latin America & Caribbean	Agriculture	3.5%	3.5%
	Clothing	10.6%	10.4%
	Textile	4.9%	4.8%
Eastern Asia	Agriculture	1.5%	1.7%
	Clothing	0.9%	1.4%
	Textile	1.6%	2.0%
Southern Asia	Agriculture	1.1%	1.2%
	Clothing	3.1%	3.4%
	Textile	1.8%	2.6%
South-Eastern Asia	Agriculture	2.4%	2.2%
	Clothing	2.7%	2.7%
	Textile	2.0%	2.1%
Western Asia	Agriculture	3.6%	3.5%
	Clothing	3.6%	3.5%
	Textile	3.4%	3.4%
Oceania	Agriculture	7.3%	12.0%
	Clothing	3.3%	3.3%
	Textile	3.7%	3.6%

Source: Data are extracted from the WTO Database.
Note: The Preferential margins have been calculated as the difference between the preferential tariffs that developing country Members enjoyed when acceding to the markets of developed country-Members and the MFN Tariffs.

Table 3: Two-sample t test with unequal variances

	Over All 41 LDCs (Entire Sample)			Over LDCs Africa and Haiti			Over LDCs Asia and Pacific Islands		
	Ha: diff < 0	**Ha: diff # 0**	**Ha: diff > 0**	**Ha: diff < 0**	**Ha: diff # 0**	**Ha: diff > 0**	**Ha: diff < 0**	**Ha: diff # 0**	**Ha: diff > 0**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
On Total Exports (% GDP)	0.0318	0.0636	0.9682	0.0946	0.1891	0.9054	0.0254	0.0509	0.9746
On Primary Exports (% GDP)	0.0195	0.0390	0.9805	0.0544	0.1089	0.9456	0.0290	0.0579	0.9710
On Manufacturing Exports (% GDP)	0.5528	0.8944	0.4472	0.7184	0.5633	0.2816	0.3310	0.6620	0.6690

Note: P-Values associated with the test are reported in the Table.
Ho is the null Hypothesis and Ha is the alternative hypothesis.
Ho: diff = 0; diff = mean (Period 0) – mean (Period 1), with Period 0 = 1998-2005 and Period 1 = 2006-2013

Table 4: Definition and Source of variables

Variables	Definition	Sources
TOTEXP	Ratio of the total merchandise exports, of a given LDC to its GDP	UNCTAD Database and Author's Calculation
PRIMEXP	Ratio of the primary products exports of a given LDC to its GDP	UNCTAD Database and Author's Calculation
MANUFEXP	Ratio of the exports of manufacturing products of a given LDC to its GDP	UNCTAD Database and Author's Calculation
MULTIDFQF	This is a dummy variable taking a value of zero for the years from 1998 to 2005, before the Multilateral Decision on DFQF in favour of LDCs entered into force (the Decision was adopted in December 2005), and a value of one for the remainder of the period, i.e., 2006-2013.	Author's Computation
TP	Trade Policy of the domestic economy = Trade Freedom Score; This is a component of the Economic Freedom Index. It is a composite measure of the absence of tariff and non-tariff barriers that affect imports and exports of goods and services. Its computation is based on two components: trade-weighted average tariff rate and non-tariff barriers (NTBs), the extent of latter having been determined on the basis of quantitative and qualitative available information. NTBs include quantity restrictions, price restrictions, regulatory restrictions, investment restrictions, customs restrictions, and direct government interventions. A rise in this index (score) indicates lower trade barriers, i.e., higher trade liberalization, while a decrease in the index reflects rising trade protectionism.	Heritage Foundation http://www.heritage.org/issues/economic-freedom
GDPC	Real GDP per capita (constant 2005 prices)	World Development Indicators (WDI) of the World Bank
NATGDP	Net Aid Transfers (NAT), in % of GDP. This is the net Official Development Assistance	NAT data (in current prices) stem from the

	(ODA), from which are subtracted principal payments are received on ODA loans, interest received on such loans and debt relief.	Center for Global Development and have been calculated by Roodman (2011), who updated them in 2014. GDP data (in current prices) are extracted from the World Development Indicators of the World Bank (WDI).
REER	Real effective exchange rate (CPI based), Index Base 2005. A rise in this index indicates a real effective exchange rate appreciation, whereas a decrease means the REER depreciation.	UNCTAD Database
TERMS	Net barter terms of trade index	WDI
WGRWTH	This is the growth rate of the difference between Real World GDP and the Real GDP of a given LDC	WDI
INFDIGDP	Inward FDI flows, in % of GDP	UNCTAD Database
REGQUAL	This is the variable capturing institutional quality in recipient countries. It represents the regulatory quality in the recipient country. The 'Regulatory Quality' reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	World Bank Governance Indicators developed by Kaufmann, Kraay and Mastruzzi (2010) and updated in 2013. Data on this variable range from -2.5 to 2.5, with the lower values being associated with 'worse' governance and institutional quality, and the higher values being associated with 'better' governance and institutional quality

Table 5: Descriptive Statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
TP	539	60.047	12.949	0.000	82.800
GDPC	654	817.252	1702.126	122.054	15095.640
MULTIDFQF	656	0.50	0.50	0	1
NATGDP	654	12.865	11.705	0.028	147.168
REER	603	111.731	57.465	58.158	1013.695
TERMS	634	108.007	36.597	21.218	260.741
WGRWTH	652	2.719	1.526	-2.083	4.265
INFDIGDP	656	5.491	9.186	-5.931	85.963
REGQUAL	574	-0.818	0.466	-2.675	0.306

Table 6: Pairwise Correlation between variables used in the analysis

	TP	GDPC	MULTIDFQF	NATGDP	REER
TP	1.0000				
GDPC	-0.0429	1.0000			
MULTIDFQF	0.3566*	0.0785*	1.0000		
NATGDP	0.0229	-0.1962*	-0.0263	1.0000	
REER	-0.0320	-0.0186	-0.0088	-0.0402	1.0000
TERMS	0.2037*	0.3242*	0.2380*	-0.0674*	0.0309
WGRWTH	-0.0961*	-0.0185	-0.2300*	0.0274	-0.0016
INFDIGDP	0.0154	0.1437*	0.1037*	0.2286*	-0.0470
REGQUAL	0.2436*	-0.1694*	0.0210	-0.0631	-0.1117*

*Notes: *p-value<0.1; **p-value<0.05; ***p-value<0.01.*

Table 6: Pairwise Correlation between variables used in the analysis (Continued)

	TERMS	WGRWTH	INFDIGDP	REGQUAL
TERMS	1.0000			
WGRWTH	-0.0134	1.0000		
INFDIGDP	0.0169	-0.0304	1.0000	
REGQUAL	0.0084	-0.0023	-0.0800*	1.0000

*Notes: *p-value<0.1; **p-value<0.05; ***p-value<0.01.*

Table 7: List of Countries used in the analysis: 41 Countries, of which 33 African (+ Haiti) LDCs and 8 Asian and Pacific Islands LDCs

Least Developed Countries (LDCs) used in the analysis	LDCs (Africa and Haiti)	LDCs (Asia and Pacific Islands)
Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Congo, Dem. Rep., Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Lao PDR, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Nepal, Niger, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Solomon Islands, Sudan, Tanzania, Togo, Uganda, Vanuatu, Yemen, Zambia	Angola, Benin, Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Congo, Dem. Rep., Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Sudan, Tanzania, Togo, Uganda, Zambia	Bangladesh, Bhutan, Cambodia, Lao PDR, Nepal, Solomon Islands, Vanuatu, Yemen.

Table 8: Effect of Hong Kong Decision on DFQF on Total LDC Exports (% GDP)
Estimators: Fixed Effects with Driscoll-Kraay (1998) standard Errors (FE-DK)

	Log(TOTEXP)	Log(TOTEXP)	Log(TOTEXP)	Log(TOTEXP)
	(1)	(2)	(3)	(4)
MULTIDFQF	0.0813**	0.0896**	0.0776*	0.0884**
	(0.0356)	(0.0360)	(0.0399)	(0.0402)
$Log(TP)_{t-1}$	0.0793**	0.0864**	0.0853***	0.0940***
	(0.0367)	(0.0395)	(0.0263)	(0.0309)
$Log(GDPC)_{t-1}$	0.733***	0.723***	0.654***	0.644***
	(0.115)	(0.119)	(0.134)	(0.134)
$Log(NATGDP)_{t-1}$	0.0360	0.0359	-0.0111	-0.0116
	(0.0381)	(0.0376)	(0.0156)	(0.0151)
$Log(REER)_{t-1}$	-0.221***	-0.232***	-0.252***	-0.265***
	(0.0395)	(0.0368)	(0.0556)	(0.0540)
Log(TERMS)	0.113	0.103	0.136	0.121
	(0.0942)	(0.0872)	(0.0893)	(0.0835)
Log(WGRWTH)	0.0445***	0.0434***	0.0435***	0.0423***
	(0.00499)	(0.00616)	(0.00502)	(0.00617)
$Log(INFDIGDP)_{t-1}$		-0.0190		-0.0248*
		(0.0178)		(0.0145)
$Log(REGQUAL)_{t-1}$			0.177	0.194
			(0.200)	(0.197)
Constant	-1.791***	-1.640**	-1.094	-0.898
	(0.553)	(0.607)	(0.792)	(0.745)
Observations	466	466	413	413
Number of Countries	41	41	41	41
R^2 Within	0.1948	0.1961	0.1800	0.1824

*Notes: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis.*

Table 9: Effect of Hong Kong Decision on DFQF on LDC Primary Products Exports (% GDP)
Estimators: Fixed Effects with Driscoll-Kraay (1998) standard Errors (FE-DK)

	Log(PRIMEXP)	**Log(PRIMEXP)**	**Log(PRIMEXP)**	**Log(PRIMEXP)**
	(1)	**(2)**	**(3)**	**(4)**
MULTIDFQF	0.180***	0.183***	0.170***	0.175***
	(0.0536)	(0.0551)	(0.0583)	(0.0599)
$Log(TP)_{t-1}$	-0.107**	-0.105**	-0.104***	-0.100***
	(0.0416)	(0.0397)	(0.0352)	(0.0358)
$Log(GDPC)_{t-1}$	1.062***	1.059***	0.892***	0.888***
	(0.137)	(0.141)	(0.123)	(0.123)
$Log(NATGDP)_{t-1}$	0.0640	0.0640	-0.000261	-0.000520
	(0.0464)	(0.0462)	(0.0359)	(0.0356)
$Log(REER)_{t-1}$	-0.174***	-0.177***	-0.177	-0.183
	(0.0513)	(0.0524)	(0.109)	(0.109)
Log(TERMS)	-0.174	-0.176	-0.0831	-0.0895
	(0.137)	(0.134)	(0.104)	(0.102)
Log(WGRWTH)	0.0468***	0.0465***	0.0496***	0.0490***
	(0.0128)	(0.0133)	(0.0123)	(0.0129)
$Log(INFDIGDP)_{t-1}$		-0.00509		-0.0112
		(0.0168)		(0.0128)
$Log(REGQUAL)_{t-1}$			0.234	0.242
			(0.196)	(0.195)
Constant	-2.553***	-2.512***	-1.650	-1.561
	(0.733)	(0.800)	(1.167)	(1.157)
Observations	466	466	413	413
Number of Countries	41	41	41	41
R^2 Within	0.2268	0.2269	0.1963	0.1967

*Notes: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis.*

Table 10: Effect of Hong Kong Decision on DFQF on LDC Manufacturing Exports (% GDP)
Estimators: Fixed Effects with Driscoll-Kraay (1998) standard Errors (FE-DK)

VARIABLES	**Log(MANUFEXP)**	**Log(MANUFEXP)**	**Log(MANUFEXP)**	**Log(MANUFEXP)**
	(1)	**(2)**	**(3)**	**(4)**
MULTIDFQF	-0.101	-0.102	0.00936	0.00675
	(0.104)	(0.0987)	(0.0808)	(0.0788)
$Log(TP)_{t-1}$	0.491***	0.490***	0.393***	0.391***
	(0.0849)	(0.0913)	(0.0765)	(0.0784)
$Log(GDPC)_{t-1}$	0.919***	0.919***	0.618*	0.621*
	(0.296)	(0.287)	(0.320)	(0.315)
$Log(NATGDP)_{t-1}$	0.259***	0.259***	0.209*	0.209*
	(0.0836)	(0.0835)	(0.117)	(0.117)
$Log(REER)_{t-1}$	-0.261**	-0.260**	-0.348***	-0.344***
	(0.119)	(0.116)	(0.120)	(0.126)
Log(TERMS)	0.0396	0.0401	-0.0343	-0.0309
	(0.0586)	(0.0537)	(0.0664)	(0.0743)
Log(WGRWTH)	0.0299*	0.0299*	0.0332*	0.0335*
	(0.0174)	(0.0174)	(0.0165)	(0.0171)
$Log(INFDIGDP)_{t-1}$		0.000863		0.00599
		(0.0274)		(0.0257)
$Log(REGQUAL)_{t-1}$			0.663*	0.658*
			(0.330)	(0.326)
Constant	-6.543***	-6.550***	-3.169	-3.217
	(2.384)	(2.228)	(2.333)	(2.273)
Number of Countries	466	466	413	413
Number of groups	41	41	41	41
R^2 Within	0.1206	0.1206	0.1286	0.1287

*Notes: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis.*

Table 11: Effect of Hong Kong Decision on DFQF on Total LDC Exports (% GDP)
Estimator: Two-Step GMM System

	Log(TOTEXP)	**Log(TOTEXP)**	**Log(TOTEXP)**
$Log(TOTEXP)_{t-1}$	0.913***	0.602***	0.751***
	(0.0361)	(0.0560)	(0.0198)
MULTIDFQF	0.0183	0.0667*	0.0902***
	(0.0252)	(0.0347)	(0.00796)
$Log(TP)_{t-1}$	0.0130	0.00707	-0.0432
	(0.0628)	(0.0310)	(0.0304)
$Log(GDPC)_{t-1}$	-0.00675	0.151*	-0.262***
	(0.0181)	(0.0850)	(0.0568)
$Log(NATGDP)_{t-1}$	-0.0128	0.0195	-0.0497**
	(0.0191)	(0.0209)	(0.0194)
$Log(REER)_{t-1}$	-0.0683	-0.152***	-0.0357
	(0.0760)	(0.0434)	(0.0264)
Log(TERMS)	0.0278	0.0849	0.0899*
	(0.0240)	(0.0630)	(0.0460)
Log(WGRWTH)	0.0355**	0.0360***	0.0299***
	(0.0138)	(0.0102)	(0.00219)
$Log(INFDIGDP)_{t-1}$	0.0360***	0.000774	-0.0282***
	(0.0108)	(0.0119)	(0.00570)
$Log(REGQUAL)_{t-1}$	-0.0622	0.121	0.0847
	(0.0667)	(0.0972)	(0.0721)
Constant	0.340	0.398	2.329***
	(0.528)	(0.546)	(0.420)
Observations	413	413	413
R-squared /Within R-	0.898	0.4994	
Number of Countries	41	41	41
Number of Instruments			42
AR1 (P-Value)			0.0614
AR2 (P-Value)			0.5978
AR3 (P-Value)			0.4825
Sargan (P-Value)			0.4407

*Notes: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis.*

Table 12: Effect of Hong Kong Decision on DFQF on LDC Primary Products Exports (% GDP)
Estimator: Two-Step GMM System

VARIABLES	**Log(PRIMEXP)**	**Log(PRIMEXP)**	**Log(PRIMEXP)**
	(1)	**(2)**	**(3)**
$Log(PRIMEXP)_{t-1}$	0.913***	0.542***	0.767***
	(0.0223)	(0.0366)	(0.0195)
MULTIDFQF	0.0244	0.122***	0.142***
	(0.0238)	(0.0400)	(0.0198)
$Log(TP)_{t-1}$	-0.0269	-0.101***	-0.0475**
	(0.0702)	(0.0276)	(0.0188)
$Log(GDPC)_{t-1}$	-0.0131	0.239**	-0.482***
	(0.0288)	(0.0966)	(0.0529)
$Log(NATGDP)_{t-1}$	0.00789	0.0284	0.0120
	(0.0234)	(0.0208)	(0.0246)
$Log(REER)_{t-1}$	-0.0514	-0.114*	0.0390
	(0.0975)	(0.0666)	(0.0671)
Log(TERMS)	0.0994***	0.0169	0.187***
	(0.0177)	(0.0617)	(0.0351)
Log(WGRWTH)	0.0468***	0.0476***	0.0479***
	(0.0122)	(0.0113)	(0.00551)
$Log(INFDIGDP)_{t-1}$	0.0495***	0.00964	0.00167
	(0.0128)	(0.0100)	(0.00728)
$Log(REGQUAL)_{t-1}$	-0.129	0.105	0.0751
	(0.0768)	(0.114)	(0.0814)
Constant	-0.00676	0.305	2.573***
	(0.563)	(0.544)	(0.773)
Observations	413	413	413
R-squared /Within R-	0.907	0.4935	
Number of Countries	41	41	41
AR1 (P-Value)			0.0202
AR2 (P-Value)			0.6370
AR3 (P-Value)			0.7520
Sargan (P-Value)			0.2814

Notes: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis.

Table 13: Effect of Hong Kong Decision on DFQF on LDC Manufacturing Exports (% GDP)
Estimator: Two-Step GMM System

	Log(MANUFEXP)	**Log(MANUFEXP)**	**Log(MANUFEXP)**
	(1)	**(2)**	**(3)**
$Log(MANUFEXP)_{t-1}$	0.916***	0.434***	0.439***
	(0.0157)	(0.107)	(0.0381)
MULTIDFQF	0.0449	0.0387	0.0942**
	(0.0459)	(0.0549)	(0.0417)
$Log(TP)_{t-1}$	0.130	0.244**	0.506***
	(0.0999)	(0.116)	(0.0703)
$Log(GDPC)_{t-1}$	-0.0133	0.211	0.194**
	(0.0729)	(0.189)	(0.0829)
$Log(NATGDP)_{t-1}$	-0.0441	0.146	-0.236***
	(0.0558)	(0.0890)	(0.0493)
$Log(REER)_{t-1}$	-0.204**	-0.301***	-1.019***
	(0.0895)	(0.0886)	(0.109)
Log(TERMS)	-0.119***	0.00955	-0.316***
	(0.0313)	(0.0691)	(0.0785)
Log(WGRWTH)	-0.0118	0.00912	-0.0852***
	(0.0164)	(0.0125)	(0.0125)
$Log(INFDIGDP)_{t-1}$	0.0325	0.0215	0.0217**
	(0.0232)	(0.0183)	(0.00966)
$Log(REGQUAL)_{t-1}$	0.163***	0.328	0.509***
	(0.0583)	(0.234)	(0.115)
Constant	1.238**	-0.790	4.042***
	(0.517)	(1.219)	(0.836)
Observations	413	413	413
R-squared /Within R-	0.877	0.2984	
Number of Countries	41	41	41
AR1 (P-Value)			0.0016
AR2 (P-Value)			0.2047
AR3 (P-Value)			0.5471
Sargan (P-Value)			0.4609

*Notes: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis.*

Figure 1: Developed countries' Average tariffs on imports of key products from Developing Countries Least Developed countries

Figure 1.a: Average Tariffs on Agriculture products

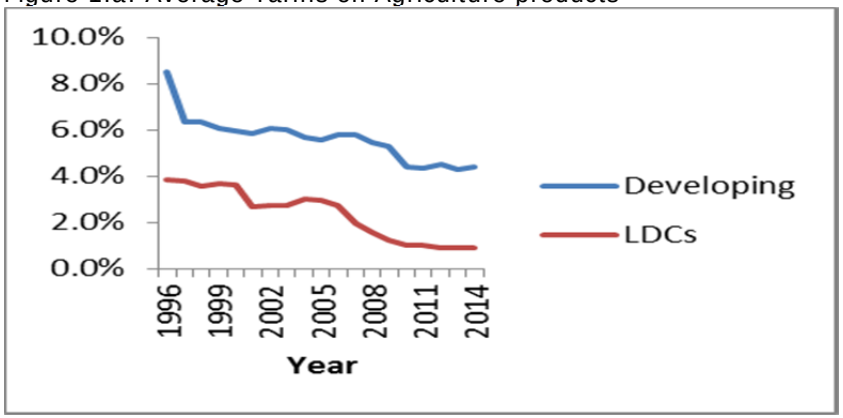


Figure 2.a: Average Tariffs on Clothing

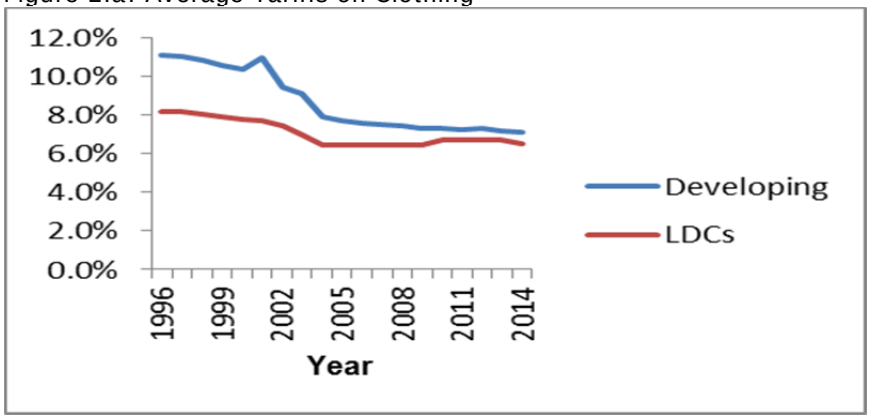
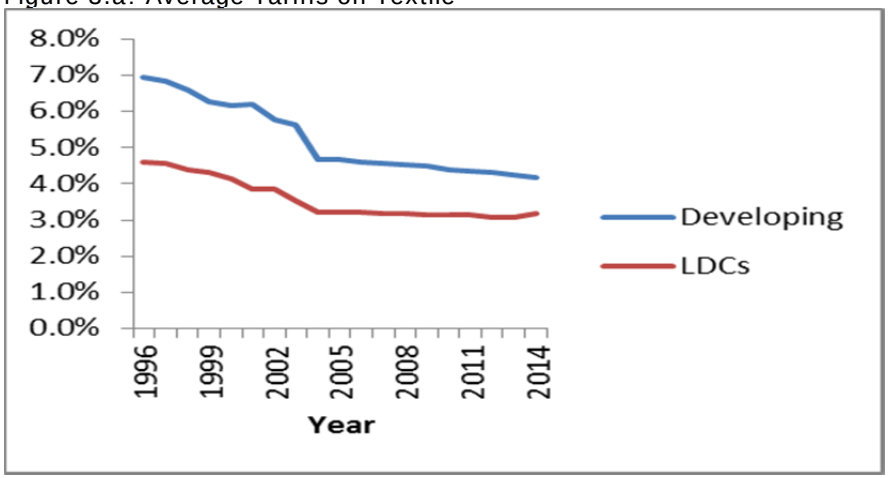
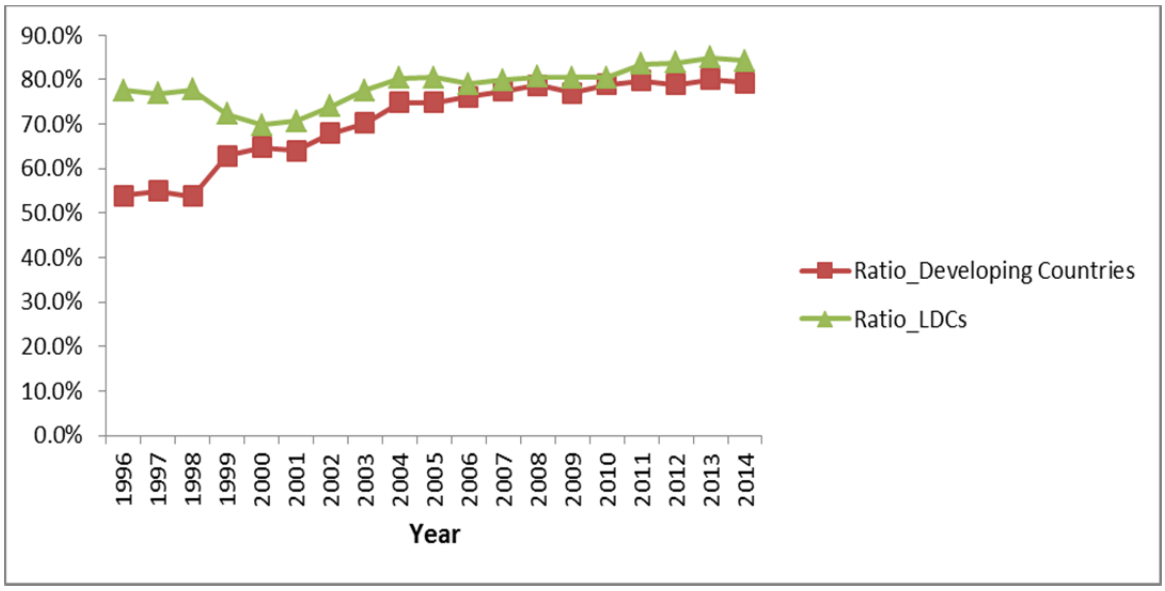


Figure 3.a: Average Tariffs on Textile



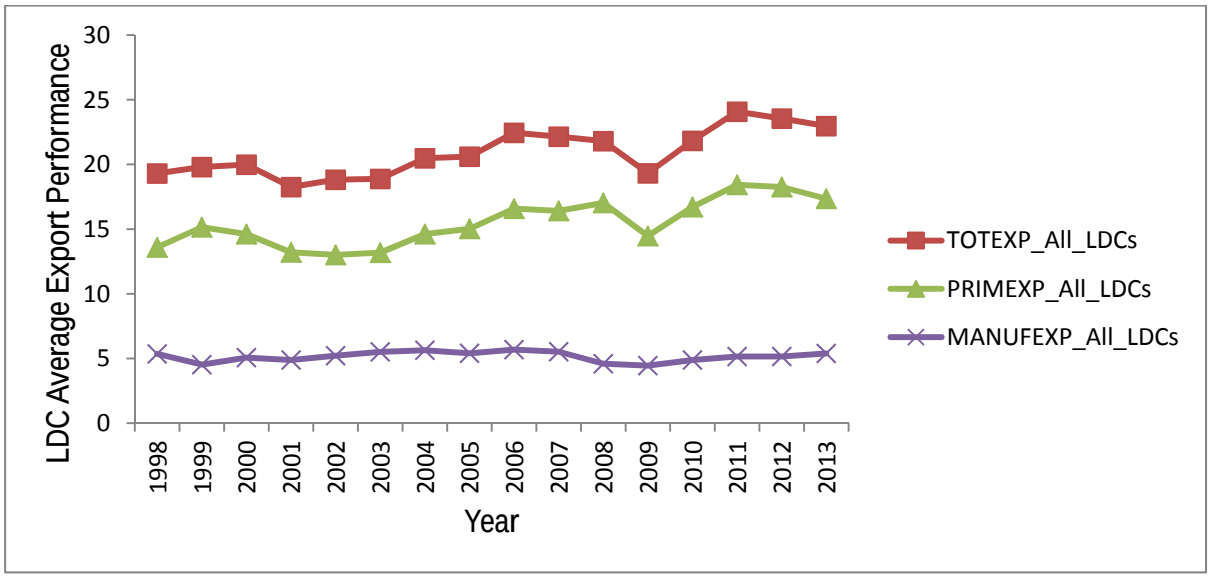
Note: Data have been calculated by the WTO Secretariat. Average tariffs are calculated by using the countries' export structure weight, base year = 2000..

Figure 2: Proportion (in %) of total Developed Market Economies imports (by value) from Developing and Least Developed Countries, admitted free of duty for All Product Categories (Excluding arms and oil)



Source: Joint Database ITC-UNCTAD-WTO

Figure 3: Average LDC Performance on Merchandise Exports, over the period 1998-2013



Source: Author's Calculation based on Data extracted from UNCTAD Database