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THE EVOLUTION AND INTENSITY OF NON-TARIFF MEASURES ON IMPORTS IN GCC

BUSHRA FAIZI AND NASIM SHAH SHIRAZI*

Abstract. The paper investigates the evolution of core non-tariff measures (NTMs) on imports in GCC at the HS 6-digit product level. The paper calculates the frequency indices (FI) and coverage ratios (CR) for 2003 and 2015 using data from UNCTAD and COMTRADE. Although the GCC tariffs declined, it experienced an increase in core NTMs. However, compared to GCC, non-GCC high-income countries have higher FI (number of imports subject to NTMs) and CR (import value subject to NTMs) in 2015 than in 2003. Saudi Arabia has the highest FI and CR among GCC. Oman and Kuwait have relatively lower FI and CR. The increase in FI and CR from 2003 to 2015 is highest for Bahrain. GCC imports are equally subject to technical measures and quantity restrictions. Looking at the NTMs applied across the GCC sectors, we find that more than 90 percent of the agriculture sector is subject to quantity control and technical measures, compared to less than half percent in the manufacturing industry. We recommend GCC to review, monitor, and simplify the NTMs, particularly in the agriculture sector, to ensure food security in the long run. Harmonization of cross-border trade and investment-related issues such as a custom corporation, removing administrative barriers, and eliminating restrictive and discriminatory trade policies may lead to welfare gains in GCC and trading partners.

Keywords: Non-tariff measures, Tariffs, GCC

JEL Classification: F1,F13,F14

*The authors are respectively PhD student/researcher and Professor at Hamad Bin Khalifa University, Doha – Qatar.
Corresponding author's e-mail: nshirazi@hbku.edu.qa

I. INTRODUCTION

UNCTAD defines NTM as: "policy measures other than ordinary customs tariffs that can potentially have an economic effect on international trade in goods, change in quantities traded, or prices or both"(UNCTAD 2019). The definition shields trade and non-trade policy instruments, like quotas or price controls; human rights and environmental protection; and other measures related to Sanitary and Phytosanitary (SPS). However, tariff rates have been significantly reduced from the last few decades due to the regional and multilateral trade dialogues and unilateral liberalization. With the decline in tariff, economies have witnessed an increase in non-tariff measures.

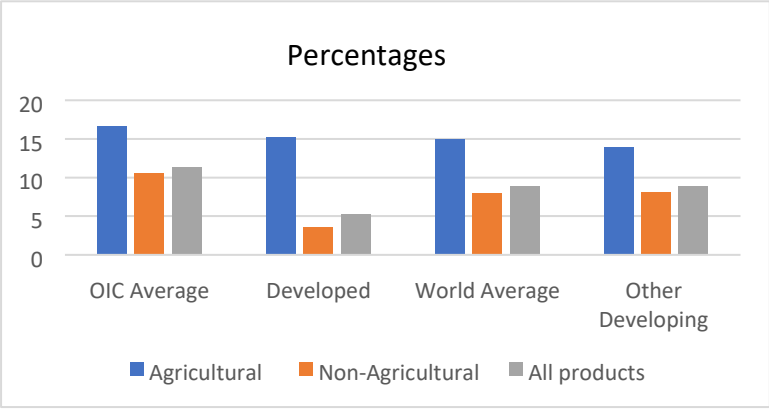
Most NTMs are regulatory measures, while traditional measures, i.e., quotas and non-automatic licensing, are less common. Unlike NTMs, tariffs are transparent in content and easier to monitor. The policy objectives of NTMs include the protection of human, animal, and plant health. Environmental protection is also one of the core objectives. Although NTMs are meant to serve legitimate non-trade public policy objectives, compared to customs tariffs, the trade-related costs of NTMs are projected to be double. According to UNCTAD (2019), the economic cost of sanitary and phytosanitary measures (SPS) and technical barrier to trade (TBT) is 1.6 percent of worldwide gross domestic product ($1.4 trillion).

Trade costs in Organization of Islamic Council (OIC) countries are higher than in developed and other developing countries, as shown in figure a. With declining tariffs and trade liberalization, there has been a reduction in trade costs globally. However, on average, OIC countries' trade costs decreased by 9 percent only compared to 20 percent cost reduction in the developed world, from 1995-2010 (OIC outlook report 2014).

There is a dearth of studies on NTM, and existing literature mainly focuses on western economies and developing countries (Kee et al. 2009; Niu et al. 2018; Felbermayr and Jung 2011; Eibl and Malik 2016). The NTMs of GCC have not been investigated so far.

Figure 1

Comparison of Average Level of Trade Protectionism in OIC Countries and Other Economies



Source: World Tariff Profile 2012/UNCTAD

The GCC countries, including Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates, are vital in international trade. They are among the most affluent economies in OIC. GCC was formed in 1981 to foster regional integration and economic growth among the member countries. GCC countries have distinct characteristics. GCC has a relatively younger population with a significant size of the potential consumer market and has the highest purchasing power of the average consumer among OIC. The GCC members are vulnerable to volatile oil and gas prices in the global market and rapidly moving towards economic diversification.

Researchers argue that trade protection tends to be lower in high-income countries than in less developed countries, and this study is the first step to exploring the trade protection in GCC. Although tariffs are low in GCC than non-GCC, NTMs have been rising during the last decade. For example, WITS data shows that 75 percent of the imported

products in Saudi Arabia were subject to NTMs as reported for 2016. Moreover, many studies found that with a decline in tariff, the NTMs enforcement is surging (Niu et al. 2018; Eibl and Malik 2016; Tudelamarco et al., 2014).

Import restrictions in GCC may affect economies in two ways. First, import restrictions can be viewed as an export duty since it increases the input cost and creates hurdles for exporters to compete internationally. Another way is, import restrictions affect the exporting countries, and GCC imports mainly from developing countries that are already vulnerable to invisible trade restrictions. Free flow of goods and services is crucial for fast-growing GCC members for deeper integration.

Multi-Agency Support Team (MAST) classifies NTMs on imports into technical measures and non-technical measures.[1] There are 16 chapters of NTMs on imports. This paper focuses on technical measures include; chapter A. Sanitary and phytosanitary measures (SPS), chapter B. Technical Barriers to Trade (TBT), chapter C. Pre-shipment inspection and other formalities, chapter D. Price control, and chapter E. licenses, Quotas, and other quantity control measures. Each chapter is further divided into sub-chapters which will be discussed in the data section in detail.

The paper looks at the evolution and intensity of non-tariff measures in GCC compared to non-GCC high-income countries. In addition, the study aims to see the tariff structure and investigate the use of NTMs in GCC, which has not been explored so far.

SIGNIFICANCE OF STUDY

NTMs are not evident in contents hence challenging to control and monitor. Compliance with NTMs is a trade cost. Such costs include welfare costs, administrative costs, and resource costs. Also, it has been reported that the trade protection given by NTMs dominates the tariff protection (Niu et al., 2018). Therefore, simplifying the custom process and opening trade borders is necessary, especially during pandemics when the growth is becoming more inequitable. According to World

[1] United Nation Conference for Trade and Development (UNCTAD) established the Multi-Agency Support Team (MAST) to work on the taxonomy of NTMs in 2006

Trade Organization, open trade is the possibility of inclusive growth and equitable economic revival.

LIMITATION

The study presents descriptive statistics to see how NTMs evolve in GCC with the reduction in tariff and does not calculate the tariff equivalent of NTMs to know the price raising effect of NTMs compared to the tariff.

II. REVIEW OF LITERATURE

International trade protectionism has a broad domain, and researchers discussed protectionism from multiple socio-economic perspectives literature on NTM is scant relative to the tariff. The main reason is the lack of robust trade theories about NTMs and difficulty in measuring NTMs as they are not tractable. In addition, the highly fragmentary data on NTM does not allow comparative analysis across countries which is another reason for scant literature on NTMs despite its emergence as a vital trade protection tool.

Kee et al. (2009) estimate trade-restrictive indices TRI, OTRI, and MA-OTRI, by using tariff data only and later combining tariff and non-tariff barriers (NTBs)[2]. They conclude that in all the three indices NTBs are a significant source of protection. In the OTRI estimate, on average, NTBs caused the addition of 87 percent to the level of restrictiveness caused by the tariff. They estimate tariff equivalent (AVEs) of NTBs and conclude that low-income African countries have the highest AVEs of core NTMs and middle-income countries relatively higher. Also, agricultural products have a higher level of AVEs than manufacturing goods. Kee et al.'s (2009) study was a pioneering work and the first study to calculate AVEs of NTMs. However, they use data for 2002 to study 87 countries that do not include all the GCC members. Since the study uses

[2] Trade restrictive index (TRI) captures the uniform tariff if applied to imports instead of the current structure of protection, that would leave home welfare at its current level. Overall Trade Restrictive Index (OTRI) captures the trade policy distortion that each country imposes on its import bundle. Market access Restrictive Index (MA-RI) captures the trade policy distortion imposed by the trading partners of each country on its export bundle.

data for a single year, it does not explain the evolution of protection from NTMs.

Niu et al. (2018) estimate the AVES of NTMs following the methodology developed by Kee et al. (2009). They use discrete data at three-year intervals from 1997 to 2015, which allows studying the evolution and incidence of NTMs over time. Niu et al. (2018) use data from UNCTAD-TRAINS[3] and estimates the NTMs overtime for 97 countries, excluding GCC members. The study focuses on high-income OECD countries instead. They conclude that the overall protection is dominated by NTM protection, and technical measures are widely applied NTMs. Their significant findings are consistent with Kee et al. (2009) and show a significant increase in overall protection given by NTMs with the declining average tariff over time. Furthermore, they conclude that overall protection increased despite the trade liberalization policies connected with reducing tariffs. They report that in 1997 tariff was greater than NTM for 43 percent of the product, and the percentage dropped to 27 in 2015.

Researchers debate the relationship between tariff and NTMs and largely agree that they are substitutes, based on the evidence that incidents of NTM rise with a declining tariff (Kee et al. 2009; Tudelamarco et al. 2014; Eibl and Malik 2016; Kee and Nicita 2016).4 However, the effect of NTM on overall trade is vague. For instance, the cost of compliance restricts the exporters from accessing the market; such measures may protect their domestic producers of the same good. On the contrary, the high regulatory requirement also may increase consumers' confidence expanding the demand for the same imported goods.

The papers mentioned above do not consider streamlining the regulatory environment. Cadot et al. (2018) estimate the trade effects of NTMs on trade volume and trade value, viewing the regulatory distance. They separately evaluate the price effect and volume effect and comment that price-based effect can facilitate trade, but at the same point, they

[3] Kee et al. (2009) use UNCTAD's old system of classification of NTM, called TCMS while Niu et al. (2018) use a new system of classification, i.e. UNCTAD-MAST

[4] Also see World Bank Report, 2012; Trade and public policies; A closer look at non-tariff measures in the 21st century pp:71.

recognize that the trade cost of NTMs often reduces trade volume. The price-based estimation result shows that NTMs reduce information asymmetries and increase consumers' confidence in imported products. The volume-based results show that trade costs from NTMs often reduce trade volume, except in sanitary and phytosanitary areas that need a close regulatory environment.

Other studies discuss the effect of NTM on trade without measuring the AVEs. Liu et al. (2019) investigate the impact of NTMs on agriculture exports in African countries. They compare the real export value in the presence of NTMs and predicted export value in the absence of NTMs to see the effect of NTMs on exports. They conclude that the actual exports were far less than predicted values. Hu and He (2020) discuss that the export deflation effect of exporter market expansion occurs given the low incidence of NTM in the new export market. It means that deflation tends to be less costly if the incidence of NTM in the new potential market is low. This implies that NTM may impede exporters from entering a new market.

Most of the studies ignore the evolution of NTMs. Chadee et al. (2014) highlight that the non-tariff barriers are a structural impediment in limiting the economic benefit of free trade agreements for Australian businesses in trade and investment in GCC. They discuss that Institutional barriers are a significant hindrance and include bureaucratic regulation for business documentation, financial barriers, labeling standards, lack of transparency in the administrative process, and preferential trade agreements of GCC with other countries.

Another limitation of the literature related to NTMs is that they have not looked at the restriction of NTMs on services. Fontagne et al. (2016) provided a major improvement in this respect. They concluded that protection by NTMs has a significant impact on the service sector because they introduce immediate costs on the exporter of goods and services.

Countries use NTMs as an alternative policy tool because trade liberalization limits the use of tariffs. In most countries, including GCC, tariffs and quotas declined significantly during the last decade. However, non-tariff measures, including health standards, customs procedures, and

administrative procedures, hindered the free flow of goods and services. As a result, NTMs are proliferating as trade regulatory tools, and their contribution to trade protection and restrictiveness is significantly higher than that of tariff.[5] Unfortunately, there is a shortage of studies discussing the NTMs in GCC members. This paper fills the gap by providing the evolution and intensity of NTMs and their application on imports in GCC members.

III. METHODOLOGY

There are two main approaches to measure the effect of NTMs in terms of tariff equivalent (AVEs) of NTMs. The first approach is the price differential between the c.i.f price of imported goods and domestic price. The second approach is the price differential between the domestic price for a specific good and the overseas reference price for the same good.

The purpose of this paper is to explore the evolution of NTMs in GCC. The descriptive analysis is based on two inventory measures: frequency index and coverage ratio to see the pervasiveness of NTMs in GCC. Note that the frequency index and coverage ratio do not provide any information on the degree of trade protection, trade restrictiveness, and welfare effect.

Following Nicita and Gourdon (2013), we use the following formula to calculate the frequency index of NTMs imposed by country j:

$$F_{ijk} = \left[\frac{\sum D_{ijk} M_{ij}}{\sum M_{ij}} \right] * 100 \qquad (1)$$

where F_{ijk} is the frequency index in a particular category of the core NTMs k for a group of products, i in country j; M_{ij} is a dummy variable that indicates if those products, *i,* are imported into country j, and the dummy variable D_{ijk} shows the presence of at least one of the core NTMs in the NTMs category, k, for the product group, i in country j. The frequency index (FI) summarizes the percentage of the number of imported products affected by at least one category of core NTMs. It lies

[5] Non-tariff measures are different than non-tariff barriers

between 0 and 1. The greater the value, the higher is the frequency of core NTMs. This paper reports the frequency index lying between 0 and 100 percent.

The importance of NTMs on import values is estimated using the coverage ratio. The coverage ratio (CR) measures the value of imports subject to at least one core NTMs category. Thus, the higher the value, the greater is the coverage by core NTMs.

Adopted from Nicita and Gourdon (2013), the coverage ratio is calculated using the following equation:

$$C_{ijk} = \left[\frac{\sum D_{ijk} V_{ij}}{\sum V_{ij}} \right] * 100 \qquad (2)$$

where C_{ijk} is the coverage ratio in a category of the core NTMs, *k*, for a group of products, *i*, in country j, V_{ij} is the import value of products *i* in country *j*. The dummy variable D_{ijk} represent the presence or absence of at least one core NTMs , *k*, for the product group, *i*. in country *j*.

If the coverage ratio is greater than the frequency index it means the impact of NTMs is high.

DATA

The latest available data for the year 2015 on NTM at 6-digit harmonized system is taken from UNCTAD-TRAINS.[6] The import data is taken from UN Comtrade.[7] The frequency index and coverage ratio are calculated for the years 2003 and 2015. The NTMs introduced since inception to 2003 are considered in 2003 calculations, while NTMs introduced since inception to 2015 are used in 2015 calculations. Tariff data is taken from WITS.[8] This paper focuses on core NTMs which include technical measures (TRAINS M3 code A, B, C), quantity control (TRAINS M3 code A1, B1, E1-E3, G33), price control measures

[6] https://trains.unctad.org

[7] https://comtrade.un.org

[8] https://wits.worldbank.org

(TRAINS M3 code F1-F3), and monopolistic measures (TRAINS M3 code H). The top five mostly applied NTMs in GCC are given in annex A, listed according to the coverage in terms of partners and products. Annex A shows that the NTMs introduced in GCC primarily include certification requirements, testing requirements, additional custom formalities, prohibition for non-economic reasons, inspection requirements, and licensing requirements. These measures fall in quantity control and technical measures.

The Price control measures were less frequently applied in all GCC, and monopolistic measures were only used for Saudi Arabia and the United Arab Emirates, hence not considered in the calculation. Therefore, the analysis is based on two categories of core NTMs, i.e., technical measure and quantity control.

IV. RESULTS AND DISCUSSION

EVOLUTION AND INTENSITY OF CORE NTMS IN GCC

The frequency indices and coverage ratios calculated using equation 1 and equation 2 in the methodology section are reported in Table 1 and figure 1. Results show that the number of imports subject to NTMs increased significantly from 2003 to 2015 in all the GCC members.

TABLE 1

Frequency Index and Coverage Ratio of Core NTMs in GCC (2003 and 2015)

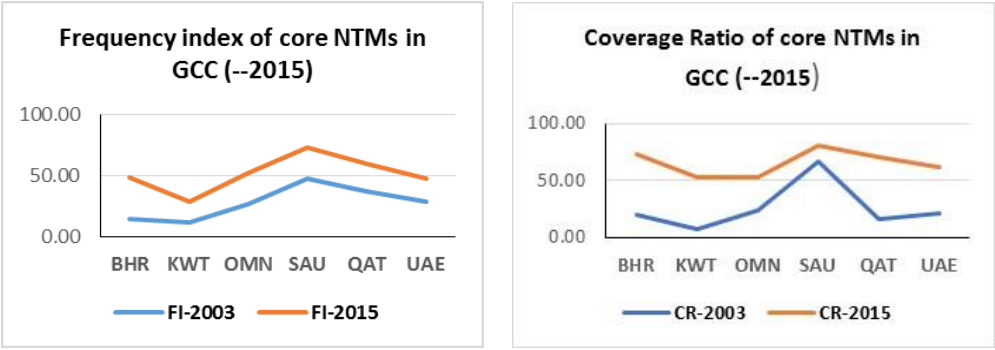
	Frequency index		Coverage Ratio	
Countries	2003	2015	2003	2015
BHR	15.11	48.62	19.62	72.77
KWT	12.13	29.24	7.36	52.29
OMN	27.38	52.33	23.04	53.12
SAU	47.39	73.36	67.01	80.24
QAT	37.31	59.78	16.05	70.58
UAE	28.41	48.17	20.53	61.22

Note: The calculations for 2015 slightly vary from the figures reported on the WITS website because only core NTMs are considered here. Also, WITS reports the frequency index and coverage ratio for a single year, a different year for each country. For UAE, as the import

data in 2003 was not available in the 6-digit HS level, 2005 import data is used with 2005 NTM data.
The NTMs included in the analysis are introduced from the start date until 2003 and 2015 respectively (see annex-B).
Source: Authors' calculation based on UNCTAD and COMTRADE data

Figure 1

Frequency Index and Coverage Ratio of Core NTMs for GCC (2003 and 2015)



Source: Based on Table 1

Figure 1 provides three significant results. The number of imports and import values subject to the core NTMs considered in this paper are highest for Saudi Arabia in 2003 and 2015, followed by Qatar and UAE in 2003 and Bahrain and Qatar in 2015, respectively. Among the GCC members, frequency index and coverage ratio are relatively lower in Oman and Kuwait in both years. In 2003, although the frequency index in Bahrain was almost as low as in Kuwait, it increased significantly. As a result, it became equal to the frequency index of Qatar and the United Arab Emirates in 2015. The increase from 2003 to 2015 is the largest for Bahrain, both in terms of frequency index (33 percent) and coverage ratio (75 percent). This can be seen from annex B that the coverage of existing and new NTMs started increasing after 2004 in Bahrain. Although the frequency index was highest for Saudi Arabia in 2015, the percentage increase from 2003 to 2015 in Saudi Arabia is the lowest, i.e., 26 percent (frequency index) and 13 percent (coverage ratio). From table1 we can see that in 2015 the coverage ratio is higher than the frequency index for all countries in 2015. There are two possible reasons. The first is the products subject to NTMs are imported in large volumes. The second

reason could be the use of NTMs on mostly traded products for consumer protection. Note that in 2003, the frequency index is higher than the coverage ratio for most GCC. The result shows a high impact of NTMs in 2015 compared to 2003. For Saudi Arabia, the impact was also high for 2003.

The details of core NTMs for each year are provided in Annex B[9] for all GCC members which include;

- Sanitary and phytosanitary measures
- Technical barriers to trade
- Pre-shipment inspection and other formalities
- Non-automatic import licensing, quotas, prohibitions, quantity-control measures, and other restrictions other than SPS or TBT measures

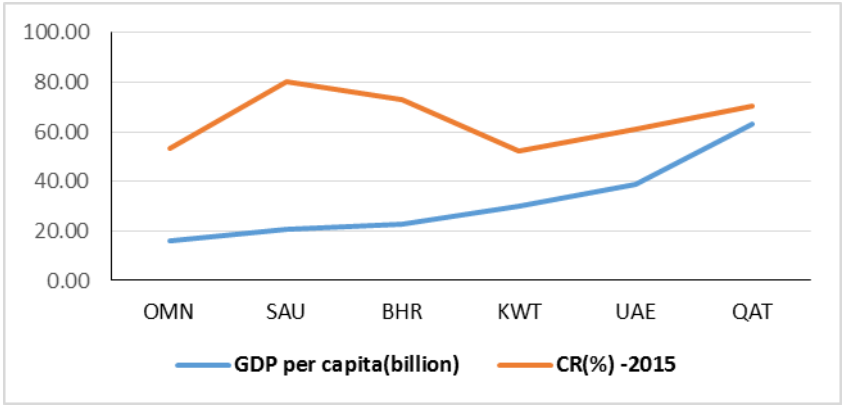
Each of the above import measures has sub-categories, constituting 60 measures in all GCC members and the top five mostly applied NTMs are given in Annex A.

Annex B shows that the coverage (in terms of products and partners) of core NTMs significantly increased over the years in all GCC members. Researchers argue that the countries with high per capita income tend to have lower protection than the less developed world. Therefore, we compare the GCC according to income per capita by comparing the GDP per capita and trade subject to NTMs. The per capita income of Saudi Arabi and Bahrain is less than Qatar and the United Arab Emirates, but the import value subject to core NTMs is higher, as shown in fig. 2. Also, Kuwait is the GCC member with the third-highest per capita income, but the frequency index and coverage ratio are the lowest in Kuwait. To conclude that openness increases with increased per capita income, further research is needed to calculate tariff equivalents of NTMs and overall protection, as this paper does not comment on the degree of trade protection in GCC.

[9] Note that the tables given in annex B are reported NTMs that are applicable to products which may or may not be imported.

Figure 2

GDP per Capita and Coverage Ratio of Core NTMs in GCC 2015



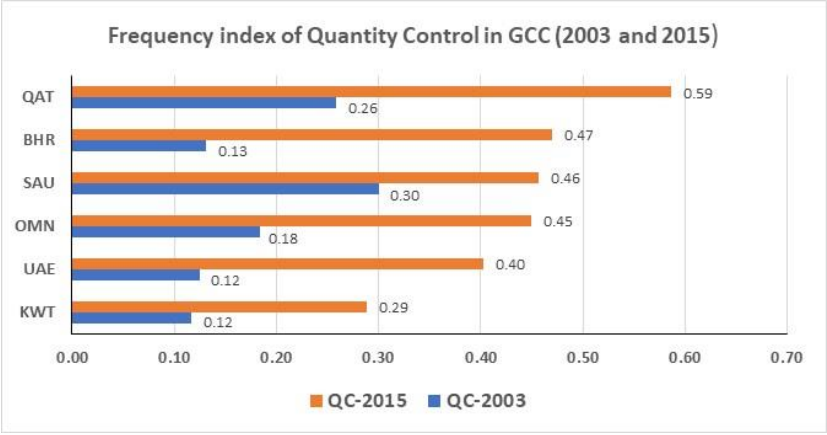
Source: Authors' calculation based on UNCTAD, COMTRADE, and WDI data

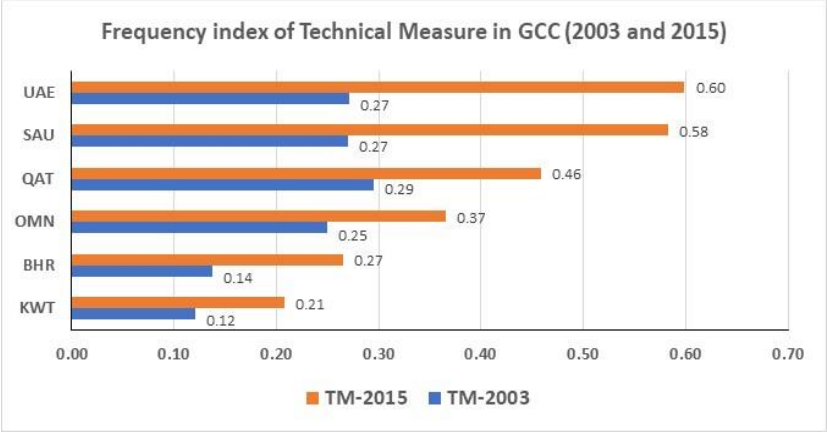
Figure 3 gives the breakdown of the core NTMs and their usage in each GCC member. The application of both technical measures and quantity control significantly increased from 2003 to 2015 in all countries. However, the distribution of core NTMs is different across the countries. In Oman, Bahrain, and Kuwait, more products are subject to quantity control measures than technical measures, which can also be seen in annex B. Technical measures are the most widely applied NTMs in Qatar, United Arab Emirates, and Saudi Arabia in 2015.

Note that the coverage ratio for the same measure and product can be higher than the frequency index if the value of those imported products subject to NTM is high and vice versa. This is because it measures the value of imports subject to NTMs. As we can see from fig.3, the number of imports subject to quantity control is highest in Qatar as of 2015 among all GCC countries.

Figure 3

Incidence of Different Types of Core NTMs Overtime for GCC using Frequency Index





Source: Authors' calculation based on UNCTAD and COMTRADE data

*QC refers to Quantity Control, and TM refers to Technical measures.

However, if we look at Table 2, the coverage ratio shows a different picture. For example, the frequency index of quantity control in Bahrain in 2015 is 47 percent. The coverage ratio is the same as in Qatar, 69 percent, followed by Saudi Arabia's 66 percent. The coverage ratio is higher for Saudi Arabia, but the difference between 2003 and 2015 is insignificant for quantity control and technical measures. This means that the NTMs were introduced earlier in Saudi Arabia and the change from 2003 to 2015 is not that significant compared to other GCC members. Looking at the coverage ratio, we conclude that the import value subject to QC and TM was highest in Saudi Arabia in 2003, almost consistent with the frequency index given in Figure.1 and Table.2 discussed earlier.

Suppose we break down the core NTMs and their application on imports in GCC. In that case, Quantity control is mostly applied in Qatar among GCC, and technical measures are mostly applied in the United Arab Emirates among GCC. The lowest frequency index of QC and TM is in Kuwait, 29 percent and 21 percent, respectively. As shown in Figure 1, the frequency index and coverage ratio of overall imports in 2015 are the lowest in Kuwait among GCC. Table 2 also shows that Qatar's increase in technical measures and quantity controls is highest from 2003 to 2015. This could be due to a rise in protective policies after the financial crisis; as we can see in annex B, Qatar's coverage increased in 2008.

TABLE 2

Incidence of Different Types of Core NTMs Overtime for GCC Using Coverage Ratio

Countries	Technical Measure		Quantitative Control	
	2003	2015	2003	2015
Bahrain	18.19	32.67	8.20	68.79
Kuwait	7.36	44.11	5.39	47.96
Oman	8.31	49.59	3.45	34.01
Saudi Arabia	41.33	60.94	50.81	66.98

Qatar	13.94	64.35	9.12	69.78
United Arab Emirates	20.33	47.97	5.09	29.93

Source: Authors' calculation based on UNCTAD and COMTRADE data

The core NTMs applied across the sectors in GCC from 2003 to 2015 are given in Table 3. More agriculture products are subject to at least one NTM as compared to manufacturing products[10]. For example, the group vegetable products, including all kinds of vegetables, flowers, spices, cereal grains, flours, groundnuts, oilseeds, etc., have a 100 percent frequency index. On average, less than 50 percent of the manufacturing sector is subject to at least one sub-categories of quantity control (33 percent) and technical measures (28 percent) than more than 90 percent of agricultural products. More than half of the motor vehicle group (including all types of vehicles, spare parts, and accessories, motorcycles, and bicycles) are subject to quantity control and technical measures within the manufacturing sector. The manufacturing sector's stone and cement product group is exposed to the lowest number of both measures (6 percent for quantity control and 7 percent for technical measures).

TABLE 3

Frequency Index of Core NTMs
Across Economic Sectors in GCC (2015)

Industry Name	Technical Measure	Quantity Control
Agricultural Products (HS0 1-24)		
Live Animals (1-5)	0.99	0.89
Vegetable Products (6-14)	1.00	1.00
Fats and Oils (15)	0.95	0.95
Prepared food stuffs (16-24)	0.99	0.84
Agricultural mean	0.98	0.92
Manufacturing products (HS0 25-97)		
Mineral products (25-27)	0.26	0.26
Chemical Products (28-38)	0.36	0.46
Rubber and Plastics (39-40)	0.28	0.15

[10] The sectors are separated based on the first 2-digit coding of the products in harmonized system (HS) classification. All products starting from first two-digits 01 to 24 falls in agriculture sectors and the product groups in manufacturing sectors have first 2-digits, starts from 25 and ends at 97

Industry Name	Technical Measure	Quantity Control
Raw hide and skins (41-43)	0.38	0.64
Wood (44-46)	0.21	0.13
Paper (47-49)	0.05	0.15
Textile (50-63)	0.36	0.27
Footwear (64-67)	0.23	0.36
Stone and cement (68-70)	0.07	0.06
Base metals (71-83)	0.13	0.12
Machinery and electrical equipment (84-85)	0.38	0.57
Motor vehicles (86-89)	0.51	0.62
Optical and medical instruments (90-92)	0.41	0.56
Miscellaneous goods (93-97)	0.31	0.29
Manufacturing mean	0.28	0.33

Source: Authors' calculation based on UNCTAD and COMTRADE data

Note: The calculation includes all the NTMs introduced from the start date until 2015 which is the latest available year (see annex-B).

The frequency index for both measures for a specific product group does not vary largely, with few exceptions (Rawhide and skins and machinery and electrical equipment). For example, the frequency index of both technical measures and quantity control is low in the paper sector (code 47-49) and high for motor vehicles (code 86-89). However, if we compare both sectors, technical measures are applied more than quantity control in the agriculture sector, and the reverse is true for the manufacturing sector.

TARIFF DECLINE IN GCC

TABLE 4

Simple Average Tariff in GCC

Simple Average tariff (in %)	2003	2015
Bahrain	5.41	3.59
Kuwait	4.82	3.86
Oman	6.64	3.53
Saudi Arabia	7.28	5.08
Qatar	5.12	3.68
United Arab Emirates	4.44	4.03

Source: WITS

During the last decade, tariff has substantially declined globally. The average tariff rate in GCC states was less than 5 percent in 2015. This advocates that tariffs do not establish a trade barrier. They are more transparent than non-tariff measures and easier to monitor. Non-tariff measures, except import quota, are less transparent, and their use is challenging to monitor. It is evident from the previous discussion that the use of NTMs has increased over time in GCC. If we see the GCC tariff changes given in Table 4, the decline is highest in Oman; however, the frequency index and coverage ratio, as discussed earlier, are also lowest in Oman. The decline in tariff from 2003 to 2015 is almost the same in all GCC members, except the United Arab Emirates, where the decline is almost negligible. We conclude that despite the reduction in tariff, the NTMs continued to increase in GCC, consistent with other countries. We may conclude that NTMs, to some extent, are used as a substitute to the tariffs in GCC to protect critical economic sectors. However, establishing that tariffs and NTMs are substitutes needs further investigation and calculation of AVEs of NTMs to compare with tariffs.

NTMS IN GCC COMPARED TO HIGH-INCOME NON-GCC COUNTRIES

Table.5 shows that the number of imports subject to core NTMs increased in high-income countries from 2003 to 2015. The purpose of the comparison is to see the evolution of NTMs in non-GCC countries, which lie within the income range of GCC (with few exceptions), according to the World Bank classification.

The frequency index for technical measure and quantity control is higher in GCC in 2003 than in high-income non-GCC countries. However, the percentage change from 2003 to 2015 is more significant in non-GCC members. For example, in high-income non GCC countries, the increase in frequency index of technical measure and quantity control is 66 percent and 51 percent, compared to 19 percent and 26 percent in GCC members respectively. We conclude that in 2003, the products subject to NTMs were more in GCC than non GCC, but the opposite is true for 2015. Technical measures are the most widely applied NTMs in non GCC. In contrast, both measures are almost equally used in GCC, discussed in Table 2. The quantity control and technical measure do not

vary largely for a given product group. As discussed earlier, the frequency indices of price control and monopolistic measure were negligible, hence not considered in the calculation.

TABLE 5

Frequency Index of Core NTMs of the High-Income Groups (2003 and 2015)

Groups	ISO3**	Technical measure		Quantity Control	
		2003	2015	2003	2015
High-income non-GCC	AUS, AUT, BEL, CAN, CHL, CZE, DEU, DNK, ESP, EST, FIN, FRA, GBR, GRC, IRL, ISR, ITA, JPN, KOR, LUX, NLD, NZL, POL, PRT, SVK, SVN, SWE, USA	3.00	69.00	1.00	52.00
GCC	BHR, KWT, OMN, SAU, QAT, UAE	22.51	41.44	18.17	44.16

*Out of 28 high-income OECD (non-GCC countries), two countries, POL and CHL, fall below the income range, and LUX falls above the range of GCC as of 2015

**For simplicity, code UAE is used for the United Arab Emirates instead of ARE. Country codes used here are available at:
https://unctadstat.unctad.org/en/Classifications/DimCountries_Transcode_Iso3166-1_UnctadStat.pdf

Source: Author's calculation based on UNCTAD data and the data for OECD is taken from Niu et al. (2018)

V. CONCLUSION

With a decline in tariff in GCC, the intensity and incidence of NTMs increased over time tremendously. The impact of NTMs on imports in GCC was higher in 2015 compared to 2003. Saudi Arabia has the highest frequency index and coverage ratio, considering the technical measures and quantity control as core NTMs. However, the increase in frequency index between 2003 and 2015 is highest in Bahrain. The results show that the NTMs were introduced earlier in Saudi Arabia than Bahrain, where most NTMs evolve after 2004. Kuwait has the lowest frequency index and coverage ratio from 2003-2015, followed by Oman. In Qatar and UAE, more than 50 percent of the imports are subject to core NTMs as of 2015. GCC's industrial breakdown shows that more than 90 percent of the imported agricultural products are subject to core NTMs on average, compared to less than half of the manufacturing products. The average of

each sector shows that the quantity control and technical measures equally apply within the sectors. Availability of food at affordable prices is a crucial priority policy area for GCC. For successful investment in the agriculture sector, GCC needs to review the NTMs imposed on the agriculture sector to ensure food security in the long run. Such policy could be simplifying the custom procedures and removing administrative barriers to reduce import regulations.

If we compare the NTMs in GCC and high-income non-GCC countries, the frequency index was higher in GCC than high-income non-GCC in 2003, while in 2015, the result is the opposite. One of the reasons could be that the high-income non-GCC tends to have more protective trade policies after the 2008 financial crisis. Also, in high-income non-GCC, the technical measures are mostly applied NTMs, while in high-income GCC, quantity control is slightly higher than technical measures.

If we compare core NTMs on imports and GDP per capita, we see mixed results. Some countries have a higher number of imports subject to core NTMs with lesser GDP per capita than other GCC members. The same applies to Kuwait, the third-highest GDP per capita country as of 2015 but has the lowest frequency index and coverage ratio as of 2015.

The paper presents the preliminary statistics to see the evolution of NTMs in GCC. Simplifying the custom procedures is necessary for the current crisis, and open trade can greatly help the economic revival of GCC and trading partners.

However, our paper relies on the preliminary statistics to show the prevalence of NTMs in GCC and does not comment on protection and welfare. The analysis can be extended to calculate the tariff equivalent of the NTMs to see the effect of NTMs on prices. Moreover, the analysis could also be extended to test the substitution between tariff and NTMs. Nevertheless, future research can deal with these limitations.

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APPENDIX

Annex-A Top Five Mostly Applied Non-Tariff Measures in GCC 2015*

Countries	Code	NTM description
BHR	E32	Prohibition for non-economic reasons
	A11	Prohibitions for sanitary and phytosanitary reasons
	A83	Certification requirements
	B83	Certification requirements
	C9	Other formalities not elsewhere specified
KWT	A14	Authorization requirement for sanitary and phytosanitary reasons for importing certain products
	A84	Inspection requirements
	A83	Certification requirements
	A82	Testing requirements
	C4	Import monitoring, surveillance and automatic licensing measures
OMN	A82	Testing requirements
	A83	Certification requirements
	A14	-
	A84	Inspection requirements
	C3	Requirement to pass through specified port of customs
QAT	A82	Testing requirements
	A14	-
	A84	Inspection requirements
	A83	Certification requirements
	C3	Requirement to pass through specified port of customs
SAU	B84	Inspection requirements
	C9	Other formalities not elsewhere specified
	E1	Non-automatic import-licensing procedures other than authorizations covered under the chapters on sanitary and phytosanitary measures and technical barriers to trade
	E122	Requirement to pass through specified port of customs
	C4	Import monitoring, surveillance and automatic licensing measures
UAE	C4	Import monitoring, surveillance and automatic licensing measures
	E32	Prohibition for non-economic reasons
	E1	-
	A83	Certification requirements
	E112	Licensing for specified use

Source: Author's calculation based on UNCTAD data

*NTMs are listed (1 to 5) for each GCC member based on coverage in terms of products and partners and irrespective of imports. The starting year of NTMs is different for each country and the latest data is of 2015.

Annex-B Quantity Control (code A1, B1, E1-E3) and Technical Measures (Code A, B, C) Introduced over the Years in GCC

1. Bahrain

(min) StartDate	CoreNTMcategory A	B	C	E	Total
1956	0	0	1	1	2
1974	0	0	0	1	1
1975	0	1	11	0	12
1976	0	10	0	34	44
1979	2	0	0	0	2
1985	4,662	1	778	0	5,441
1986	777	0	0	3	780
1987	340	0	0	0	340
1988	10	0	0	0	10
1989	0	300	149	225	674
1990	0	113	0	2	115
1995	0	6	0	3	9
1997	0	0	0	22	22
1999	124	0	0	0	124
2000	460	0	0	0	460
2001	0	0	0	2	2
2002	207	59	31	62	359
2003	655	2	1	0	658
2004	3,124	0	117	0	3,241
2005	571	1,363	0	0	1,934
2006	771	1,603	96	211,495	213,965
2007	0	24	0	24	48
2008	0	148	0	0	148
2009	1,586	0	0	7	1,593
2010	5	0	0	7	12
2011	1,558	0	0	0	1,558
2012	642	0	328	0	970
2013	422	59	0	0	481
2014	6	3	1	2	12
2015	1,296	576	772	83	2,727
Total	17,218	4,268	2,285	211,973	235,744

2. Kuwait

(min) StartDate	CoreNTMcategory A	B	C	E	Total
1960	0	7	0	7	14
1964	26	0	0	0	26
1976	0	10	0	0	10
1977	1,216	0	0	0	1,216
1978	0	19	0	19	38
1980	0	115	23	0	138
1981	0	14	0	7	21
1983	0	75	0	75	150
1988	0	75	0	0	75
1989	0	21	0	21	42
1992	0	19	0	38	57
1993	0	40	0	0	40
1995	10	10	0	0	20
1996	0	284	75	59	418
1997	0	0	0	8	8
1999	64	0	0	0	64
2000	0	0	0	8	8
2001	28	0	0	0	28
2002	43	0	0	0	43
2003	116	0	0	1	117
2004	3	0	0	207	210
2005	4	0	0	0	4
2006	57	20	1	10	88
2007	15	0	0	0	15
2009	48	0	0	6	54
2010	1	29	0	29	59
2011	143	0	0	0	143
2012	7,541	777	0	779	9,097
2013	12	0	0	0	12
2014	3	0	0	0	3
2015	14,616	0	4,070	1,765	20,451
Total	23,946	1,515	4,169	3,039	32,669

3. Oman

(min) StartDate	CoreNTMcategory A	B	C	E	Total
1977	0	0	0	5	5
1983	0	0	0	1	1
1984	0	1	0	1	2
1985	0	1	0	1	2
1986	0	23	0	17	40
1987	0	2	0	0	2
1988	0	1	0	1	2
1989	0	0	0	19	19
1990	0	3	0	38	41
1995	1	214	0	0	215
1996	68	68	0	0	136
1997	0	1,194	0	19	1,213
1998	286	4	0	0	290
1999	0	0	0	643	643
2000	12,888	174	2,442	73	15,577
2001	0	2	0	0	2
2004	2,128	145	0	34	2,307
2005	1,935	0	0	0	1,935
2006	240	93	25	26	384
2007	120	0	0	408	528
2008	1,950	0	0	9	1,959
2009	0	48	0	44	92
2010	40	10	0	822	872
2011	40	31	0	18	89
2012	80	20	0	0	100
2013	0	396	0	253	649
2014	80	0	0	0	80
2015	201	2	0	35	238
Total	20,057	2,432	2,467	2,467	27,423

4. Qatar

(min) StartDate	CoreNTMcategory A	B	C	E	Total
1978	0	30	0	0	30
1979	0	0	0	19	19
1980	0	0	0	7	7
1983	0	0	0	3	3
1986	51	936	0	0	987
1987	0	144	0	78	222
1990	777	0	0	0	777
1991	682	708	0	667	2,057
1992	432	134	0	84	650
1993	427	430	0	0	857
1995	0	4	0	0	4
1996	0	579	0	0	579
1997	0	8	0	0	8
1998	7	50	0	0	57
1999	5	4	0	0	9
2000	1	101	0	0	102
2001	2	82	0	278	362
2002	0	2	0	49	51
2003	2,035	10	0	0	2,045
2005	25	874	0	2,256	3,155
2006	4	23	0	22	49
2007	0	30	0	1	31
2008	13,895	2	2,442	0	16,339
2011	0	44	0	41	85
2013	0	207	75	0	282
2015	0	7	0	0	7
Total	18,343	4,409	2,517	3,505	28,774

5. Saudi Arabia

(min) StartDate	CoreNTMcategory A	B	C	E	Total
1948	0	0	1,784	2	1,786
1952	0	0	0	15	15
1954	0	0	0	1	1
1955	0	0	0	18	18
1956	0	0	60	0	60
1970	777	3	0	0	780
1972	0	69	0	0	69
1976	90	0	0	0	90
1981	0	23	0	0	23
1985	0	94	46	23	163
2000	711	708	359	2	1,780
2001	0	92	16	51	159
2002	803	0	0	1,187	1,990
2003	2,076	0	418	0	2,494
2004	0	278	0	75	353
2005	2,105	250	71	134	2,560
2006	0	4,974	4,960	10,063	19,997
2007	0	330	36	36	402
2009	106	0	39	0	145
2010	234	12,813	24	0	13,071
2011	136	166	118	29	449
2012	2,621	0	130	49	2,800
2013	0	0	134	0	134
2014	3	221	112	0	336
2015	4,861	242	49	66	5,218
Total	14,523	20,263	8,356	11,751	54,893

6. United Arab Emirates

(min) StartDate	CoreNTMcategory A	B	C	E	Total
1975	82	0	0	0	82
1979	4,445	0	1,094	54	5,593
1983	0	0	75	0	75
1984	0	0	0	3	3
1991	1	7	0	1	9
1992	41	25	0	24	90
1994	30	45	15	0	90
1995	0	0	0	75	75
1999	0	0	22,288	0	22,288
2001	594	0	0	0	594
2002	1,270	0	444	0	1,714
2003	21	0	0	0	21
2004	8	730	489	9	1,236
2005	1,407	0	356	0	1,763
2006	71	4,941	0	9,909	14,921
2007	4	6	0	0	10
2008	389	184	90	30	693
2009	639	0	31	0	670
2010	116	0	0	0	116
2011	24,388	8	980	2	25,378
2012	1,863	26	189	195	2,273
2013	50	407	210,403	212,740	423,600
2014	284	332	2,663	6,085	9,364
2015	789	0	0	0	789
Total	36,492	6,711	239,117	229,127	511,447