# Assessing the Impact of WTO Trade Facilitation Agreement on Oman's Economy

Ahmed Al Shamakhi, Abdallah Akintola, and Houcine Boughanmi

***Abstract*—The WTO Trade Facilitation Agreement recently went into force following its ratification by two third of WTO members on 22 February 2017. The world trade report 2015 estimates showed that the full implementation of the TFA could reduce trade costs by an average of 14.3% and boost global trade by up to $1 trillion per year, with the biggest gains in the poorest countries. Oman is aiming to diversify its economy away from oil while boosting the trade and logistics sector. The objective of this paper is to study the possible effects of WTO trade facilitation agreement on Oman's economy. The paper used the standard GTAP Computable General Equilibrium (CGE) model using the latest GTAP database v9 and additional data. The GTAP database was modified to include Ad-valorem equivalents of non-tariff barriers (AVE) calculated for the GCC countries considering Oman as part of the GCC common market. The simulation considered two main scenarios: I) Oman increase in trade facilitation by 10% because of the important investment in logistics and II) the GCC increase trade facilitation by 7% due to enforcement of WTO Trade Facilitation Agreement in 2017. The overall results showed significant positive increase in trade and welfare. The first scenario yielded 4.3 per cent gain in Oman's GDP and boosted export sales of many food commodities, transport equipment and other manufacturing. The second scenario showed relatively moderate results. UAE and Bahrain gained significantly in terms of welfare and GDP as they are trade driven economies with good logistic sectors. The welfare gains among all the GCC countries varied from 2 to 4.9%. Overall all the sectors showed significant positive increase in exports, most especially the food commodities. However, the same food commodities showed a significant decrease in imports while gas products showed dramatic increase in importation.**

***Index Terms*—CGE, GCC, non-tariff barriers, TFA.**

## I. Introduction

The process of liberalizing global trade has been improved over time since its initiation during the GATT era. This process started by reducing tariffs and other trade protection measures through multilateral negotiations under WTO auspices and through the creation of several forms of Regional Trade Agreements (RTAs) which contributed in eliminating vast amount of tariffs and improved the trade flow among nations [1]. As a result, applied tariffs have declined from above 15% since the creation of WTO in 1995 to about 8% in 2014 (Fig. 1).

However, as tariffs declined, non-tariff barriers on the other hand have been increasing and have added to trade cost preventing the global economy from reaping the full benefits of the trade liberalization process. Trade economists as well as trade organizations have realized the significance of trade costs and the need to streamline non-tariff barriers and facilitate trade. Anderson & van Wincoop [2] estimated that the ad valorem equivalent of trade costs could be as high as 170% while Arvis *et al.* [3], estimated that the average trade cost for developing countries is higher and equal to 219%. Their research suggested that unnecessary delays or complexities caused by customs formalities and trade procedures are important non-tariff barriers (NTBs) and a major component of trade costs.

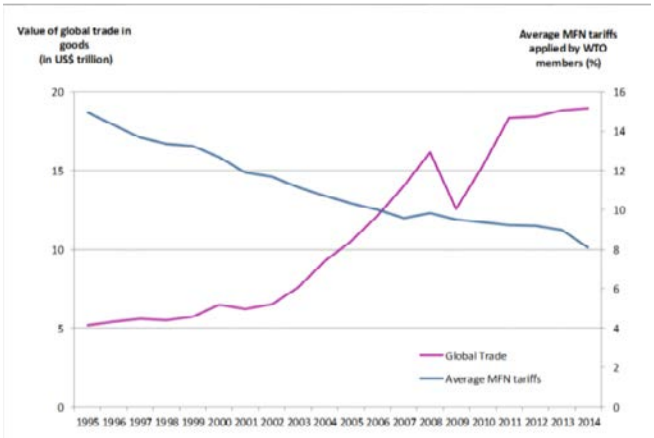


Fig. 1. Global trade and applied tariff rates (1995-2014).
Source: Adelina Mendoza based on the WTO Integrated Database and UNCOMTRADE

NTBs is regarded as a subset of Non-Tariff Measures (NTMs) and can be defined as any type of measure that have the effect of inhibiting international flow of goods, services and resources and limiting its effect of achieving the optimal real world income [4]. In 2008, eight international organization [1] classified NTMs in two broad categories: technical and non-technical measures. The technical measure is product-specific aimed at safeguarding food and environmental quality, protecting animal and plant health and ensuring national security. The Non-technical measures are related to trade requirements conformity such as custom formalities, shipping requirement, taxation and subsidies. In recent years, there has been an increase in the number of NTMs notifications to World Trade Organization mostly coming from developed economies [5].

In this paper, we limit ourselves to the second category of the NTMs which is related to trade facilitation at the border and the efficiency of custom procedures. The World Trade Organization identified a number of NTMs that pose

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The authors are with Department of Natural Resource Economics, College of Agricultural and Marine Science, Sultan Qaboos University, 123 Al-Khoud, Oman (e-mail: p020150@studnet.squ.edu.om, s117765@student.squ.edu.om, boughanh@squ.edu.om).

[1]FAO, IMF, ITC, OECD, UNCTAD, UNIDO, the World Bank and the WTO in 2008 with subsequent revisions in 2009 and 2012.

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challenges to frictionless movement of goods across borders and trade facilitation. Major aspects of these NTMs are related to documentation requirements, lack of transparency, standards requirements, lack of cooperation among official boarder agencies and bureaucratic delays [6].

Because of the importance of trade facilitation to global and regional trade, WTO members reached an agreement on trade facilitation at the 2013 Bali Ministerial conference. In February 2017, the WTO Trade Facilitation Agreement (TFA) went into force after being ratified by two-third of WTO members. The TFA contained provisions for expediting the movement of goods through borders and sets out measures for effective cooperation between customs authorities and provides for technical assistance and capacity building in this area. This agreement is expected to significantly lower trade costs and enhance global trade and economic growth.

Oman joined WTO in 2001 and was one of the members ratifying the TFA. Oman submitted its table of the TFA provisions with 32 provisions in category A and 9 in category B[2].

This paper aims to assess the economy wide as well as the sectoral effect of WTO TFA in Oman. The results will focus on the impacts on agricultural and non-agricultural sectors taking into consideration the regional context of Oman as a member of GCC common market. The study employs a computable general equilibrium model by using the latest version (Version 9) of the Global Trade Analysis Program (GTAP) and simulates two scenarios of trade facilitation. The non-tariff barriers are considered by including ad valorem equivalent of NTBs to the original tariff structure in the GTAP database.

The paper is organized in five sections. The second section provides an overview of Oman's economy, trade patterns, logistics and trade facilitation. The third section presents the modeling and simulation approach. The fourth section presents and discusses the results while the last section concludes and provides some policy recommendations.

## II. Oman Economy

### A. Overall

Oman is considered as upper-middle income country by the World Bank with a relatively small oil exporting sector compared to its GCC neighbors. Oman heavily rely on oil revenues which accounts for around 87 percent of its budget revenues, 51 percent of GDP and 60 percent of total exports [7]. The recent erratic oil prices stressed the government budget and increased the budget deficit to $11.5 billion, or approximately 19% of GDP in 2016 [8]. This situation led Oman government to resort to its reserves and external borrowing. In addition, the government has invested in enhanced oil recovery techniques to boost oil production and simultaneously pursuing diversification strategy through trade and logistics as a core part.

### B. Oman Trade Patterns

Over the years Oman has opened to international trade to boost its economy. In 2015, the value of exports and imports taken together equals 108.5 percent of GDP [9]. The average applied tariff rate is 5.5 percent while its bound tariff stood at 14.01 percent [10]. Oman main exports are Crude Petroleum, Gas, Refined Petroleum, Nitrogenous Fertilizers and Acyclic Alcohols. Its top imports are food and agricultural products (12.9%), fuel and mining products (13.4%), manufactures (73%) [11].

The top export destinations of Oman are China (43.6%), the United Arab Emirates (7.5%), India (3.8%), Chinese Taipei (3.6%) and USA (3.3%). The main import originates from the United Arab Emirates (45.1%), European Union-28(7.8%), China (4.8%) and India (4.8%) [9]. Within the GCC the United Arab Emirates is the biggest Oman trading partner supplying around 45% of Oman's imports. Europe and Central Asia supply around 11% of Oman's total imports [9].

### C. Oman Logistics and Trade Facilitation

The logistics sector is playing a vital role in Oman's modern and ambitious economy and is viewed not only as a core sector but as a critical enabler for various businesses to thrive. With revenues earning amounting to US$7.87bn in 2013 and forecasted to reach US$12.02bn in 2017 [12], the sector is becoming competitive and had contributed 4.9% to the sultanate's GDP in 2015 [12]. The government is currently investing heavily in the key drivers for economic growth such as the infrastructure investments in ports (Duqm and Sohar), free zones (Sohar, Duqm, Salalah and Al Mazunah), industrial estates, roads, airports (Sohar, Muscat, Salalah, Adam and Dhoqum) and rail network[3]. These investment efforts is expected to make Oman's logistics industry to grow at a compound annual growth rate (CAGR)[4] of 7% between 2015 and 2020 while targeting GCC states, Asia and Sub-Saharan Africa as destinations [12].

According to the World Bank Oman is ranked 48th out of 160 in Logistics Performance Index (LPI)[5] and ranked 4th in MENA region after UAE, Qatar, and Bahrain in 2016. However, Oman performed significantly better at regional level in terms of quality of trade infrastructural development and efficiency of custom procedure [13]. The efficiency in Oman's customs procedures can be attributed to the adoption of "single port of entry" principle by GCC in 2003 which subject import to customs duty at the first point of entry while documentation is standardized across the GCC states. On aspects of Timeliness, Oman has over the years constantly improved it efficiency by reducing the days required to export and import [14]. Exporting one standard container of goods takes 10 days while importation takes 9 days. Also, it cost USD745 and USD680 to export and import one container of goods respectively (Table II). Oman performance is much better compared to the regional average

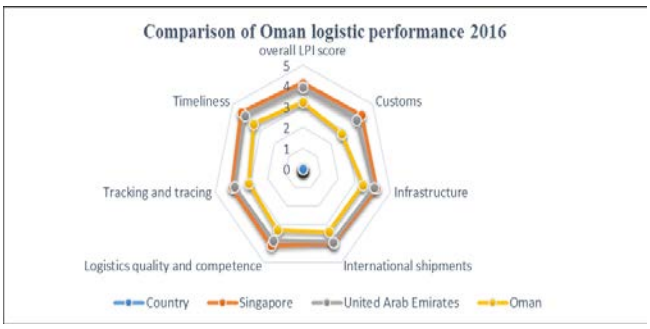
[2] Category A means that countries are in a position to apply these provisions from the date of the TF agreement enters into force. Whereas category B indicates that the provision will be applied after a transitional period following the entry into force of not more than 5 years. Category C indicates that the country member needs further technical assistance and capacity building in that specific provision.

[3] It was postponed due to shortfall in budgetary allocation.

[4] Compound Annual Growth Rate (CAGR) is a constructive measure of growth of an investment spanning over long periods time.

[5] A measure used by World Bank to assess the efficiency of countries' trade logistics.

of 20 days and USD 1127 for export and 24 days and USD 1360 for importation of one container [13]-[14]. However, Oman still has a lot to do in terms of international shipment and quality of logistics services in order to be more competitive regionally and globally (Fig. 2 & Table I).




Source: Authors calculations using World Bank LPI Global Ranking 2016
Fig. 2. Comparison of Oman logistic performance.

TABLE I: OMAN LPI INDICATOR RANKING 2010 TO 2016

| | overall LPI | | Customs | | Infrastructure | | International Shipments | | Quality Logistics Services | | Tracking and Tracing | | Timeliness | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | score | rank | score | rank | score | rank | score | rank | score | rank | score | rank | score | rank |
| 2010 | 2.84 | 60 | 3.38 | 24 | 3.06 | 40 | 2.31 | 137 | 2.37 | 108 | 2.04 | 145 | 3.94 | 32 |
| 2012 | 2.89 | 62 | 3.10 | 36 | 2.96 | 49 | 2.78 | 77 | 2.73 | 77 | 2.59 | 94 | 3.17 | 80 |
| 2014 | 3.00 | 59 | 2.63 | 74 | 2.88 | 57 | 3.41 | 31 | 2.84 | 73 | 2.84 | 80 | 3.29 | 67 |
| 2016 | 3.23 | 48 | 2.76 | 61 | 3.44 | 34 | 3.35 | 40 | 3.26 | 38 | 3.09 | 57 | 3.50 | 57 |

Source: World Bank (2014)

Logistics and trade facilitation are closely tied. Liberalizing and improving the performance of Logistics aimed at trade facilitation can produce a vicious cycle which could be mutually reinforcing depending on the extent of implementation of policies adopted by the government [15].

Trade facilitation simply means simplification of trade procedures involved in movement of goods and services across borders with the aim of reducing the cost, time, and uncertainty associated with engaging in international trade [16].

TABLE II: OMAN'S COST AND TIME TO EXPORT AND IMPORTS

| *Indicator Name* | *2005* | *2006* | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* |
|---|---|---|---|---|---|---|---|---|---|---|
| *Cost to export* (US$ per container) | 624 | 624 | 624 | 780 | 780 | 725 | 745 | 745 | 745 | 765 |
| *Average time to export (days)* | 14 | 14 | 14 | 14 | 14 | 10 | 10 | 10 | 10 | 10 |
| Cost to import(US$ per container) | 417 | 417 | 417 | 630 | 630 | 660 | 680 | 680 | 680 | 700 |
| Average time to import | 15 | 15 | 15 | 15 | 15 | 9 | 9 | 9 | 9 | 9 |

Source: World Bank (2014)

As explained above, Oman has realized the importance of trade facilitation long before the ratification of the TFA. The huge investment in logistics made during the last decade should serve as a boost to Oman trade performance and economic growth particularly when great efforts are exerted on reducing cost associated with other forms of NTBs. Evidences from several studies had showed that NTBs costs accounted for almost around 219% more than the production cost, that means almost 2 dollars added to each dollar spent on production[3]. The Trade Freedom Index[6] report (2017) ranked Oman 82nd stating that it is relatively a free market. However, according to Oman Trade Facilitation Committee[7] report prior to ratification of WTO TFA, Oman still requires reformation of procedures and some technical development to lower time to export and import which means lowering trade cost[8] [6]. In addition, the Oman reports shows that all articles in the B category needs time to reform and adjust according to the TF agreement (see Appendix 1). To confirm these conclusions, we looked at the World Bank Doing Business Report [17], Oman stands at 67 in the ranking of 190 economies on the ease of trading across borders[9] [6]. Recently, the government introduced some reforms as part of its efforts to make trading across boarders easier and to reduce trade cost. (See Table III).

TABLE III: TRADE REFORMS DONE BY THE GOVERNMENT TO MAKE TRADING ACROSS BOARDERS EASIER

| *Year* | *Reform* |
|---|---|
| 2016 | Oman reduced the time for border compliance for both exporting and importing by transferring cargo operations from Sultan Qaboos Port to Sohar Port. |
| 2017 | Oman reduced the time for border and documentary compliance by introducing a new online single window/one stop service that allows for fast electronic clearance of goods. |

Source: World Bank Doing business report, 2017

Similarly, OECD have developed trade facilitation indicators (TFI) which aids government to identify policy areas which requires reformation. For developing countries, Oman Included, [16] explains that policy areas such as availability of trade-related information, the simplification and harmonization of documents, the streamlining of procedures and the use of automated processes have huge impact on trade volumes and trade costs. Furthermore, it shows that exerting combined effect in those areas have a better results of reducing trade cost by 13.2% for upper middle income countries rather than focusing on individual measures [16]. According to OECD [18], Oman showed the best performance in border performance while other indicators still requires lot more to be done (Fig. 2 and Fig. 3). Oman needs to significantly improve in the areas of information availability, involvement of trade community,

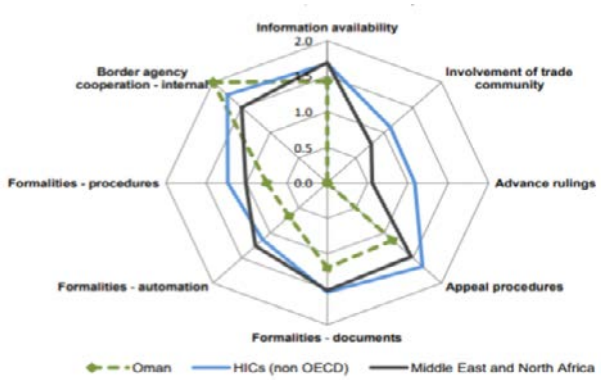
[6]The Trade freedom index is a composite measure of the absence of tariff and non-tariff barriers that affect imports and exports of goods and services

[7]A committee contains government officials from all trade concerned organizations formed by Omani Government as a requirement to sign WTO Trade Facilitation Agreement.

[8]Trade cost mostly related to time. Reducing time to import and export will significantly reduce trade costs.

[9]In economies around the world, trading across borders as measured by Doing Business has become faster and easier over the years. Governments have introduced tools to facilitate trade—including single windows, risk based inspections and electronic data interchange systems. These changes help improve the trading environment and boost firms' international competitiveness [6].

advance rulings, simplification and harmonization of documents, automation and streamlining of procedure to increase the volume of bilateral trade flow and reduce cost [18].




Source: OECD (2013)

Fig. 3. Oman trade facilitation performance by OECD indicators.

TABLE IV: GTAP DATABASE AGGREGATION

| ***Commodities and Activities*** | ***Factors*** |
|---|---|
| Rice | Land |
| Wheat | Labor *Skilled* |
| Oilseeds | *Unskilled* |
| Sugar | Capital |
| Vegetables and fruit | Natural Resources |
| Dairy | **Regions** |
| Livestock | Oman |
| Meat | Bahrain |
| Beverages & tobacco | Saudi Arabia |
| Other food | United Arab Emirates |
| Other crops | Kuwait |
| Vegetable oil | Qatar |
| Forestry | Rest of Mena countries |
| Fishing | North Africa |
| Wood products | EU28 |
| Oil | EFTA |
| Coal | USA |
| Gas | Canada |
| Other mineral | Russian |
| Electricity | Japan |
| Oil products | China |
| Chemicals | Korea |
| Metal products | Philippines |
| Textile | Singapore |
| Transport Equipment | Turkey |
| Electronic Equipment | Iran |
| Other manufacture (1) | Brazil |
| Other manufacture (2) | India |
| Land Transport | Indonesia |
| Water Transport | Australia and New Zeland |
| Air Transport | Mexico |
| Services | Africa |
| | Rest of Asia |
| | Rest of America |
| | Rest of World |

## III. MODELING APPROACH

This paper employs a computable general equilibrium (CGE) model because of its vast application to varying area of developmental issues such as trade liberalization and infrastructural development [19]. The CGE model is more significant in its ability to consistently capture wide-economic interaction of bilateral trade flows and policy change effects in a multi-country and multi-sectoral context [20].

The standard GTAP is a multi-region multi-sector CGE model with perfect competition and constant returns to scale. The details of the model are fully discussed in Hertel (2007). We used the Global Trade Policy Analysis (GTAPv9)[10] with 2011 database. The GTAP version 9 Database includes 140 regions and 57 commodities. In this paper, we aggregated the regions and sectors into 29 and 32 respectively, taking into consideration the regional context of Oman and the relevant commodities/sectors of Oman trade (Table IV). We upgrade the 2011 GTAP database to the year 2016using the RunGTAP to shock the initial 2011 database with data on population, labor, and GDP drawn from World Bank.

Since factoring NTBs into models is quite complex, we followed Boughanmi *et al.* [21] approach by obtaining ad-valorem equivalents estimates from Kee *et al.* [22] in a way to ensure consistent NTBs values.

We must also note [22], the estimated AVE considered what authors call core NTBs. Since the trade logistics and custom procedures (trade facilitation measures) are not included in the AVE estimation, we used technological shock in trade to simulate a stronger effect due to trade facilitation improvements. This technological improvement shock is performed in GTAP model using the "AMS" variable (import-augmented technological change) which would change the import prices from a particular trade partner as result of efficiency change[11]. This variable has been introduced to handle bilateral services liberalization as well as other efficiency-enhancing measures such as customs automation or e-commerce that serve to reduce the effective price of goods and services imported [23]. Furthermore, the AMS can be used to measure border delay costs, welfare implications and reduction in deadweight losses as they relate to trade facilitation [24], [25]. Similarly, investing in trade related activities and infrastructure (ports, transportation, and custom procedures) should stimulate efficiency gains in bilateral trade flow [21].

Having considered all of this, two scenarios was simulated

[10] GTAP (Global Trade Analysis Project) is a global network of researchers (mostly from universities, international organizations, or the economic ministries of governments) who conduct quantitative analysis of international economic policy issues, especially trade policy.

[11]The effect of changing AMS on prices is illustrated by the following equation

$$PMS^{1}_{i,r,s} = PMS_{i,r,s} - AMS_{i,r,s}$$

PMS1 is a percentage change of effective import price of i supplied from region r to regions;

PMS is a percentage change of domestic price for i supplied from r to region s;

AMS is import i from region r augmenting technical change in region s.

An increase of the AMS indicates that the effective domestic price of good i exported from region r to s falls and thereby mirrors a reduction of real resource costs.

The "AMS" stands for an additional "effective" import price.

representing Oman effort in developing its trade and logistic sector and the GCC integration scheme.

### A. Scenario 1: Oman Increase Trade Facilitation by 10 %

The ultimate goal of WTO TFA trade is to reduce trade cost "red tape", which can be simulated in the GTAP model using two ways: increase in technology "AMS" or cut in the transport cost. This scenario used the AMS because it covers the improvement in key areas of trade facilitation such as the efficiency in custom, tracking and tracing, timeliness and automation, and also considers Oman improvement of logistics sector by investing around 6 Billion Omani Rials in building and expanding trade related infrastructure (airports and sea ports in three main hubs: Salalah, Sohar and Al-Dhouqm city). Hence, we assume trade is facilitated by 10%.

### B. Scenario 2: The GCC Increase Trade Facilitation by 7%

The second scenario considers the regional improvements in trade due to the application of WTO TF Agreement by the GCC countries. In this scenario, we assume the GCC countries would facilitate trade on average of at least 7% considering existence of disproportionate development in trade related infrastructures.

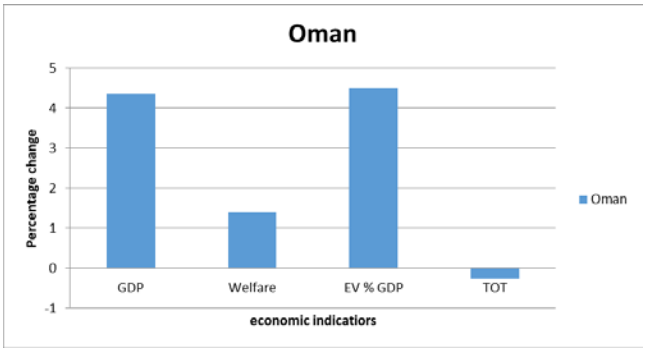
## IV. Results and Discussion

Oman potential trade facilitation schemes were assessed using an updated version of GTAP v9. The two earlier scenarios discussed were analyzed: Oman increase trade facilitation by 10 % and the GCC increase trade facilitation by 7%. Economy wide assessment was conducted by evaluating the impact on welfare (Equivalent Variation), GDP, trade and sectorial effect.

### A. Scenario 1

#### 1) GDP, Welfare, and Terms of Trade effects

The results show very significant positive impact on Oman's economy. The welfare is increased by almost 1.3 percent (see Appendix 2 for decomposition of welfare) and the GDP increased by 4.3 per cent (see Fig. 4). A negative terms of trade of -0.27 was obtained and which could be due to high value of imported commodities knowing that cars and transport equipment have the highest share in Oman's import.




Source: Author's calculations

Fig. 4. Oman economic indicators: Scenario (1).

Furthermore, we noticed that it is not only Oman that is affected by the trade facilitation improvement, other GCC countries are also affected in terms of import and exports (Table V). Also, the results show that UAE, Bahrain and Qatar are positively affected which could be explained by the fact that Oman is regarded as the gate of the Arabian Gulf trade for it is a strategic and significant transit route.

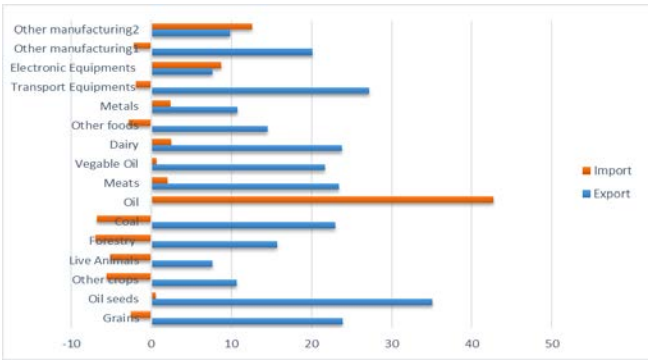
TABLE V: Percentage Change in Export/Import Value by Country; Scenario (1)

| *Region* | *Export* | *Import* |
|---|---|---|
| Oman | 0.92 | 1.03 |
| Saudi | 0 | 0 |
| Qatar | 0.02 | 0.02 |
| Bahrain | 0.06 | 0.06 |
| ARE | 0.02 | 0.02 |
| Kuwait | 0 | 0 |

Source: Author's calculations

#### 2) Trade and Sectorial Effect

The trade effects of Oman trade facilitation scenario are captured by the value of imports and exports shown in Fig.5 below. Both total exports and imports are increasing by almost one per cent. Some sectors show very significant effects like energy sectors (oil products, gas and gas products) where imports increased by 43 and 156% respectively. The increase in demand for energy is explained by the improved exports performance of other sectors like transport equipment and other manufacturing, which increased by 27 and 20% respectively. Also, other food sectors like grains, oil seeds, fish, meat and vegetable oil showed positive export increase ranging from 20 to 35%.




Sources: Author's calculations

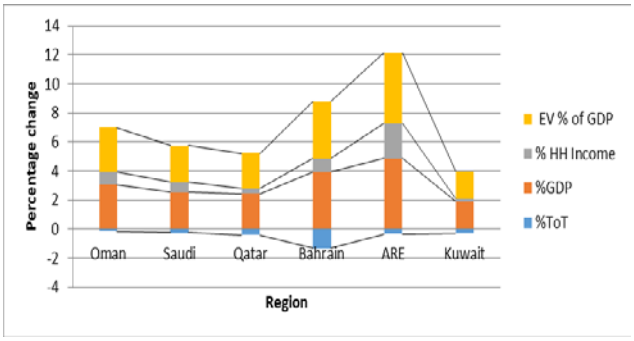
Fig. 5. Change in imports and exports by sectors (scenario 1)(% Change).

### B. Scenario 2

#### 1) GDP, Welfare, Household Income and Terms of Trade Effects

The second Scenario (GCC increased trade facilitation by 7%) yielded positive impact for all the GCC countries in terms of GDP and welfare (Fig. 6). GDP has increased significantly in UAE by almost 5% followed by Bahrain 4%, while the GDP increase in Oman and the rest of the countries ranged from 2 to 3 percent. in terms of welfare UAE and Bahrain had the highest welfare rates of 5 and 4% respectively (see Appendix 2 for decomposition of welfare). However, the terms of trade effect show a negative trend which could be explained by the high value of commodities

imported compared to those exported.

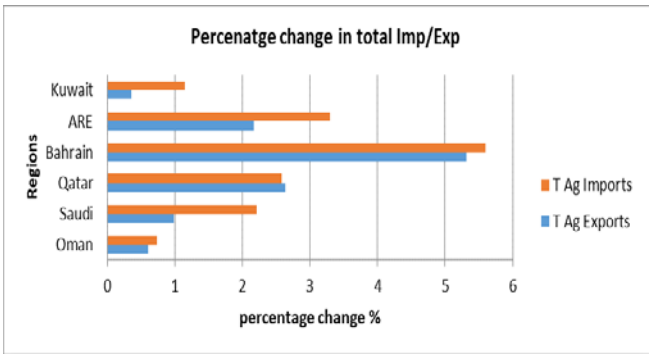



Source: Author's calculations

Fig. 6. Economic indicators (Scenario 2).

### 2) *Trade and sectorial effects*

The effect of trade facilitation on market performance is well captured by import and export data (Fig. 7). The figures show that Bahrain among all other GCC countries is benefiting the most from trade facilitation with more than 5% increase in both exports and imports. All GCC countries showed significant increase in energy sector imports (oil and Gas products) especially Bahrain reflecting its lack of crude oil/gas endowments compared to other GCC states (see Appendix 3 and 4). For Kuwait and Saudi Arabia, the increase in imports overcomes the exports which could reflect the removal of initial high level of NTBs imposed. The relatively small performance in export and import of Oman could be due to its small economy and developing industrial sector.




Source: Authors' calculations

Fig. 7. Percentage change in regional aggregated total export and import (scenario II).

## V. Conclusion

This paper analyses the effect of WTO trade facilitation agreement impact on Oman's economy through two scenarios. The first scenario considered Oman's government intensive investment in ports infrastructure in order to develop its trade and logistics sectors while the second scenario considers the regional context of Oman as a member of the Gulf Cooperation Council (GCC) and the common market. The standard GTAP model was used to assess the two trade facilitation scenarios. To bring the GTAP database up to date we updated the base year from 2011 to 2016 by using the World Bank data for country population, labor force and GDP. Trade facilitation is introduced in the GTAP model as an efficiency enhancing measure in the form of a shift in the import-augmenting technical change variable (AMS) reducing the effective import price. The Results indicate that Oman improvement in trade facilitation though investment in trade logistics, ports services and automation could push Oman's GDP up by more than 4 per cent while the welfare gain could reach more than 4% as percentage of GDP. The second scenario in which all GCC countries improve trade facilitation measures at once yields relatively lower gains for Oman compared to neighboring GCC countries like Bahrain, UAE and Qatar.

## Appendixes

Appendix 1: Oman B Category of Measures to be Implemented According to WTO Trade Facilitation Agreement

| *Measures to be implemented according to WTO TF* | *Status* | *Category* | *Application* |
|---|---|---|---|
| 1.2 (Publication and availability of Information) Information available through internet | Partially | B | 1 Year |
| 2.1 opportunity to comment and information before entry into force | Substantially | B | 3 Years |
| 3.1 Provision of Advance Ruling | Partially | B | 1 Year |
| 7.1 (release and clearance of goods) Pre-arrival processing | Partially | B | 1 Year |
| 7.5 (release and clearance of goods) post clearance audit | Partially | B | 3 Years |
| 7.6 (release and clearance of goods) establishment and publication of average release time | Partially | B | 1 Year |
| 7.7 (release and clearance of goods) trade facilitation measure for authorizer operators | Substantially | B | 1 Year |
| 8. Boarder Agency cooperation | Partially | B | 3 Years |
| 11. (freedom of transit) Transit Cooperation and Coordination | Substantially | B | 1 Year |

Appendix 2: Decomposition of Welfare Effect

Decomposition of Welfare: Scenario 1

| *WELFARE* | *Allocation Efficiency Contribution* | *Technical Change contribution* | *Terms of Trade contribution* | *I-S contribution* | *Total* |
|---|---|---|---|---|---|
| Oman | 21.04 | 1803.02 | -68.29 | 216.25 | 1972 |
| Saudi | -1.02 | 0 | 18.69 | -6.067 | 11.59 |
| Qatar | -0.86 | 0 | 7.53 | -0.94 | 5.72 |
| Bahrain | -0.08 | 0 | 3.32 | -0.36 | 2.87 |
| UAE | -2.27 | 0 | 22.41 | 2.45 | 22.60 |
| Kuwait | -0.36 | 0 | 5.33 | -1.67 | 3.30 |

Decomposition of Welfare: Scenario 2

| *WELFARE* | *Allocation Efficiency Contribution* | *Technical Change contribution* | *Terms of Trade contribution* | *I-S contribution* | *Total* |
|---|---|---|---|---|---|
| 1 Oman | 9.82 | 1271.65 | -49.99 | 149.16 | 1380.63 |
| 2 Saudi | 68.78 | 9666.84 | -659.03 | 2921.23 | 11997.82 |
| 3 Qatar | 34.35 | 1922.73 | -166.34 | 254.15 | 2044.89 |
| 4 Bahrain | -3.10 | 727.34 | -179.87 | 51.63 | 596.00 |
| 5 ARE | 118.55 | 9974.93 | -382.98 | -693.72 | 9016.77 |
| 6 Kuwait | -0.02 | 2182.19 | -251.90 | 1040.42 | 2970.69 |

APPENDIX 3: PERCENTAGE CHANGE IN SECTORIAL EXPORT

| *Region* | *Oman* | *Saudi* | *Qatar* | *Bahrain* | *ARE* | *Kuwait* |
|---|---|---|---|---|---|---|
| Grains | 15.2 | 9.12 | 15.71 | 15.08 | 8.83 | 9.86 |
| Veg&Fruits | 1.31 | 1.85 | 5.58 | 3.89 | 0.14 | 3.66 |
| Oil seeds | 20.01 | 17.13 | 17.07 | 26.15 | 18.57 | 26.59 |
| Sugar | -3.03 | 4.73 | 5.28 | 4.01 | 3.91 | 11.28 |
| Other crops | 3.6 | 26.47 | 13.61 | 3.46 | 0.63 | 3.8 |
| Animals | 4.23 | 1.54 | 3.2 | 2.36 | 0.24 | 1.41 |
| Forestry | 8.66 | 1.54 | 8.58 | 2 | 4.19 | 4.56 |
| Fish | -1.1 | 2.26 | 0.42 | 1.73 | -0.13 | 5.05 |
| Coal | 19.38 | 0.66 | 2.9 | 32.35 | 22.9 | 0.9 |
| Oil | -0.22 | 0.2 | 0.86 | 11.22 | 0.37 | -0.2 |
| Gas products | -2.03 | 5.41 | 3.68 | -29.79 | 31.06 | 6.21 |
| Mineral | 2.16 | 2.83 | 5.49 | 3.82 | -0.31 | 3.03 |
| Meat | 17.7 | 17.73 | 25 | 21.99 | 14.99 | 31.72 |
| Veg oil | 12.18 | 8.12 | 13.14 | 20.79 | 15.61 | 13.09 |
| dairy | 17.15 | 7.56 | 16.75 | 16.68 | 17.3 | 16.74 |
| Other Food | 10.86 | 3.08 | 7.27 | 10.09 | 3.4 | 8.26 |
| Bev& Tobacco | 3.19 | 1.07 | 3.62 | 2.27 | 3.59 | 2.71 |
| Textile | 2.46 | 8.47 | 8.89 | 0.61 | 2.03 | 8.03 |
| Wood& Paper | 5.19 | 8.97 | 9.64 | 5.92 | 4.59 | 8.91 |
| Petro& Coal | -0.06 | 0.19 | 0.4 | 8.47 | -0.03 | -0.13 |
| Crops | 5.22 | 3.89 | 5.55 | 1.38 | 1.63 | 4.91 |
| Metals | 9.05 | 8.67 | 14.65 | 5.47 | 7.53 | 13.21 |
| Trans.Equip | 19.25 | 8.17 | 14.03 | 12.01 | 6.81 | 13.44 |
| Elect. Equip | 6.46 | 14.46 | 12.21 | 2.79 | 6.48 | 11.13 |
| OtherManuf1 | 15.11 | 11.56 | 9.32 | 6.91 | 3.11 | 13.98 |
| OtherManuf2 | 8.26 | 11.4 | 15.12 | 9.86 | 10.97 | 14.63 |
| Land Transport | 3.92 | 1.39 | 2.61 | 5 | 1.29 | 0.55 |
| Air Transport | 5.72 | 2.81 | 3.86 | 6.22 | 4.2 | 2.45 |
| WaterTransport | 0.63 | 3.64 | 1.69 | 3.22 | 2.3 | 0.42 |
| Electricity | 4.16 | 3.96 | 2.68 | -2.25 | 12.51 | 0.94 |
| Water | -2.23 | 5.37 | 4.35 | 0.26 | -3.99 | 2.48 |
| Other Services | -1.79 | 1.56 | 2.71 | -0.75 | -2.74 | 1.81 |
| Financial.Ser | -1.17 | 2.13 | 2.74 | -2.23 | -2.64 | 1.15 |
| Trade | 2.36 | 4.37 | 4.24 | 2.48 | 0.73 | 4.6 |
| Construction | 8.02 | 6.59 | 7.41 | 6.68 | 6.59 | 8.21 |

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**Ahmed Salim Al-Shamakhi** was born at Bahla in Oman in year of 1980. He obtained is Bachelor degree in Business and Master degree in Natural resource economics both from Sultan Qaboos University. He got his PhD in Natural resources economics from department of natural resource economics, Sultan Qaboos University. He works as a systems analyst at Ministry of Commerce and Industry in Oman. He gives Business and entrepreneurship training as well. His research focuses on food security, international trade, trade facilitation and regional trade.

**Abdallah Niran Akintola** was born at Lagos, Nigeria in the year of 1989. He obtained his Bachelor in Agricultural Economics and Extension from Ladoke Akintola University, Ogbomoso Nigeria. Asides that, he is also an Associate Accounting Technician of the Accounting Bodies of West Africa. He is currently a master student at Sultan Qaboos University in Oman. His area of research focuses on agricultural international trade, regional trade agreements, and bioenergy.

**Dr. Houcine Boughanmi** is an associate professor and WTO Chair at the Department of Natural Resource Economics at Sultan Qaboos University (SQU), Oman. He got his bachelor degree from the University of Tunis, then his MSc from the University of Kentucky, USA and His PhD from Oregon State University, USA. He has More than 30 years of experience in teaching, research and community services and has published extensively in reputable academic journals. Research interest includes international trade using partial and general equilibrium modeling, food demand, food policy and food security. He published on the effect of WTO on Oman's trade and the GCC regional trade arrangements and is currently working on MENA Regional Trade Arrangement. Under the WTO chair program, he is coordinating a number of research activities dealing with food security and WTO related issues. He also served as a co-investigator in a number of SQU funded research projects in the areas of agricultural production and marketing. He served for the third consecutive year as the Academic coordinator of the Regional Trade Policy Course held at Sultan Qaboos University in collaboration with WTO.