Service Trade Liberalization in Oman: International Commitments and Trade Performance

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The service sector constitutes an important and a growing sector of the global economy as well as in the Arab region. In Oman, the service sector accounts for the highest share in the sectoral composition of the GDP and constitutes a crucial component of the overall policy of economic diversification away from oil and gaz. The objective of this paper is to investigate the extent of service trade liberalization in Oman as reflected in its international trade commitments, and analyze its trade performance using an adapted version of the gravity model within the context of the wider Arab region. The analysis shows that Oman has the third most extensive GATS commitments in the Arab region, which have been consolidated and improved upon under USA-Oman FTA. Results from the gravity analysis indicate that WTO membership and US-FTA have a significant effect in enhancing both exports and imports of services in the Arab region. Trade potential calculation shows that comparatively Oman has the highest export potential among the Arab countries, followed by Egypt, Qatar and UAE. A trade liberalization scenario, in which each country reduces its trade restrictiveness index to the most liberal country in the region indicates that the GCC countries like Qatar, Kuwait and Oman would benefit the most from service liberalization with an increase in export values of respectively 74%, 54% and 45% compared to the base year.

I. Introduction

The service sector constitutes an important and a growing sector of the global economy, contributing more than 70% to the global GDP and as much as 60% to the global employment

(ITC, 2017). The importance of the sector in the Arab region has also grown over time and accounted for an increasing share of many countries in the region. However, despite the importance of the services in the overall economy, trade in services accounts only for 20% globally and an average of 23% in the Arab region[1]. The discrepancy is commonly explained by the nature of trade in service which is not well captured in official statistics but also by the relatively high levels of restrictions imposed by most countries on trade in services compared to trade in goods.

In Oman, a high income Arab developing country, services constitute a crucial component of the overall policy of economic diversification, away from oil and gaz. The diversification policy however has been in the past slow to develop as oil still accounts for more than 80 % of government revenue and constitutes a substantial share of the GDP (Cherif and Hasanov, 2014) With oil prices declining and 17% budget deficit in 2015 (IMF, 2017), the primary goal of the country is to reinvigorate the economic diversification strategy and accelerate the development of non-oil sectors such as services and manufacturing. As acknowledged in the new strategic plan of Oman, the growth and development of the non-oil sectors rest on the development of a vibrant, efficient and highly competitive service sector. Efficiency and competitiveness in the service sector are mostly driven by private domestic and foreign investment, trade openness and the extent of integration in the global economy.

The objective of this paper is to analyze the status of service trade liberalization in Oman and the probable effects of further liberalization on service trade. The status of service trade liberalization is addressed by analyzing and comparing Oman's liberalization commitments under GATS and under the preferential trade agreement with the USA. Trade barriers in services are estimated using a Service Trade Restrictiveness Index (STRI) developed by the World bank, which quantifies trade policies/measures affecting trade in services in most developing and developed countries. The trade potential in services is assessed through the estimation of an adapted version of the gravity model (Karami and Zaki, 2013, Van Lynden 2011) in which the standard determinants of trade are augmented with a WTO membership variable and the STRI variable for overall trade within the context of the Arab region.

The paper is organized as follows. The next section will provide a literature review on the economic effects of trade liberalization of services in a general context, followed by an overview of the importance of the service sector in Oman. The fourth section will analyze the extent of service trade liberalization in Oman within the context of WTO General Agreement on Trade in Services (GATS) and the US-Oman Free trade Area. Section five will present the methodology used to analyze the determinants of trade in services and trade performance in a regional context. Section 6 will discuss the results and draw the implications on trade of further trade liberalization in Oman and in the Arab region. Section 7 concludes.

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[1] These shares however have increased over time as internet and e-commerce enhanced cross-border service trade

II. The economic effect of Service trade liberalization: A brief literature review

Conceptually the effect of trade liberalization (or trade restrictions in) of services is similar to that of goods but with some qualifications (Mattoo et al 2006). By dismantling trade barriers, trade liberalization in services, as in goods, eliminates price wedges and increases efficiency resulting in overall welfare gain.. The literature on trade barriers in services (mainly through regulations) identifies two types of measures (barriers) according to the way they affect prices: rent-creating effect and cost rising effect ((Dee 2005, Corbett,2008). The rent creating restrictions (particularly quantitative restrictions) create an artificial scarcity leading, similar to tax, to an increase in the price of services as the incumbent earn economic rent (price-cost margin) without increase in the real cost of the service. Protecting the incumbent from any competition (domestic or foreign) is often a key feature of service trade barriers. The second type of restrictions increases the real cost of doing business for all existing and potential service providers. Both types of measure create inefficiencies but the rent creating barriers as they redistribute resource are deemed to involve smaller welfare losses than the cost rising ones (Corbett, 2008). These theoretical considerations provide the basis for the argument that removing cost rising service barriers is more welfare enhancing than the rent-creating barriers (McGuire 2003). Removing cost rising barriers is equivalent to a productivity improvement[2].

Trade liberalization in services is however not synonymous of deregulation as government regulations remain an important tool to enhance efficiency and equity. Regulation is important to redress market failure due particularly to natural monopoly and information asymmetry. Natural monopoly is a characteristic of some network industries such as telecommunications and air passenger transport where it may be inefficient to have these services provided by more than one supplier. Information asymmetry is a feature of professional services where the customer is in no position to judge the quality of service provision unless government provides some regulations through licensing or accreditation to bridge the information gap. Similar arguments are valid with the banking sector where government prudential regulations are essential to maintain stability in the system.

The empirical literature on the effect of service liberalization focused however on the dynamic effects, focusing on specific service sectors. Trade liberalization in services will induce greater competition from both domestic and foreign providers exerting pressure on the inefficient incumbents to improve performance or exit the market. The more efficient incumbent firms will expand their market while new firms enter the market. This will improve welfare and impact

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[2] Some authors, in line with GATS, classify market access measures (discriminating against all providers) as cost rising type measures and national treatment measures (discriminating against foreign suppliers) as rent-creating barriers.

positively on economic growth as a result mainly of technology and knowledge transfers accompanying trade liberalization.

Mattoo et al. (2006) argue that in sectors like telecommunications, financial services, software development and transport there is a considerable scope for learning by doing, generating knowledge, expanding product variety and improving product quality. They estimate that countries with fully open telecom and financial services sectors grow up to 1.5 percentage points faster than other countries[3].

 Arnold et al. (2011) provided evidence from a firm-level data that service liberalization will benefit manufacturing firms that are intensive user of input services. They showed in the case of Czech Republic the existence of a positive relationship between service sector reform and the performance of downstream manufacturing sectors. The authors argue that allowing entry of Foreign Service is the key channel thorough which service liberalization benefits manufacturing (much more than privatization and competition).

On a similar note but in relation to the banking sector, Claessens et al (2000) analyzed the effect of foreign entry on the domestic market. They found that foreign entry improves the functioning of national banking markets, with positive welfare implications on customers. They argue however that relaxation on foreign bank entries may entail some risks the financial system if domestic prudential regulations and supervision are not strong[4]. Although a number of studies has shown a positive relationship between foreign entry and banking stability (Barth et al., 2004), others have shown that countries which have experienced financial crisis tend to have a higher level of foreign bank participation (Cull and Peria, 2007).

Regulations in the services sector is highlighted in a number of studies as a prerequisite for the success of service trade liberalization. For example Mattoo and Sauve (2003) in a World Bank study concluded that the success of trade liberalization is strongly related to market structure and domestic regulations. In analyzing trade liberalization in the Tunisian telecommunication sectors, Konan and Assche (2006) found that if regulations environment guarantees competition , Tunisia's welfare can increase up to 0,63% while if cartel is formed between the foreign company and the domestic company welfare is negatively affects.

The telecommunication sector and its competitiveness structure in Oman has been analyzed in a recent study by Rajasekar and Raee (2013). They argue that the competitive behavior of the incumbent firm in the sector is driven mostly by the threat of entry to the market. Their

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[3] The authors argue that two key elements contribute to the dynamics benefits from the service liberalization: the degree of competition and the extent of foreign ownership. Their econometric analysis indicate that that competition is the most important element of policy in the telecommunication sector of Oman, followed by foreign ownership and then by regulations.

[4] This said, an analysis conducted by CBO staff regressing a number of performance measures against foreign bank asset share and other variables found mixed results depending on the way profitability is measured (CBO, financial stability report, May, 2014, P. 35).

conclusion indicates that the strongest competitive forces in the Omani Telecom industry are rivalry among competitors and threat of substitutes.
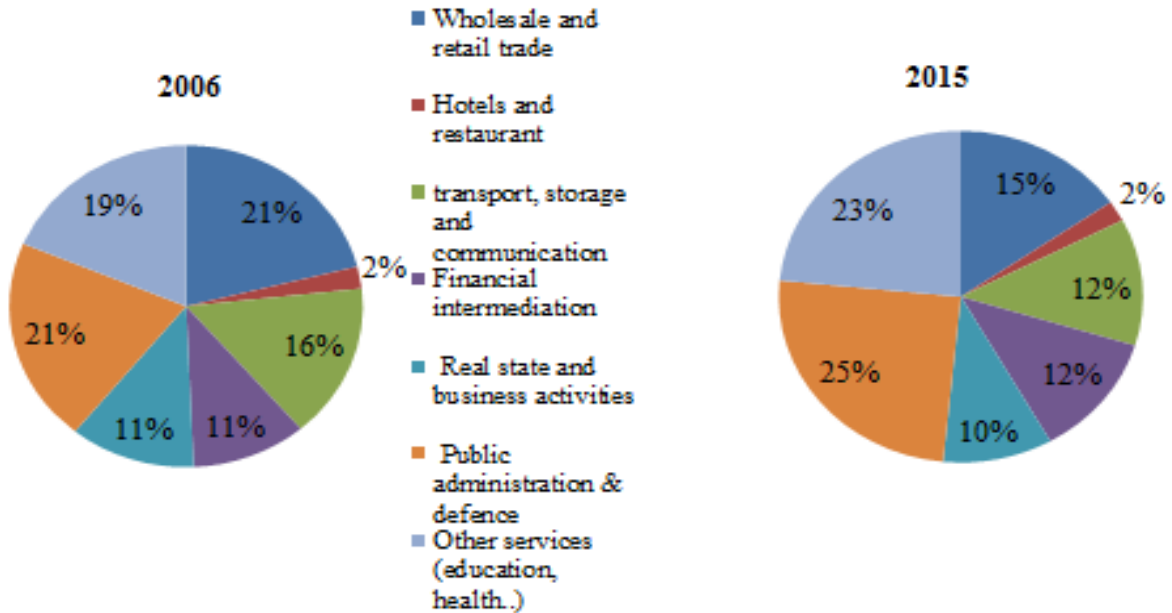
III. The importance of the service sector in Oman

The service sector in Oman contributes quite significantly to the GDP and that contribution has varied from 32% to 46% over the last decade (Fig 1). The value added of services witnessed a sustained annual growth (10%) over the period 2005-2015 and stands favorably compared to the industrial and agricultural sectors, which grew at an annual rate of 5% and 8% respectively. The main drivers of this growth are public administration & defence (12%), financial intermediation (11%), and hotels and restaurants (9%). Three subsectors, "Public administration", "wholesale and retail trade", "transport, storage, communication" constitute in 2015 more than half of the total service value added, with a relative share of 25%, 15% and 12% respectively. Over the decade, this sub-sectoral composition has changed little over time, with a slight tilt toward an increasing share of the public administration and communication services at the expense of the distribution and transport services (Fig 2).

Fig 1. Sectoral GDP and share of services, Oman-2006-2015
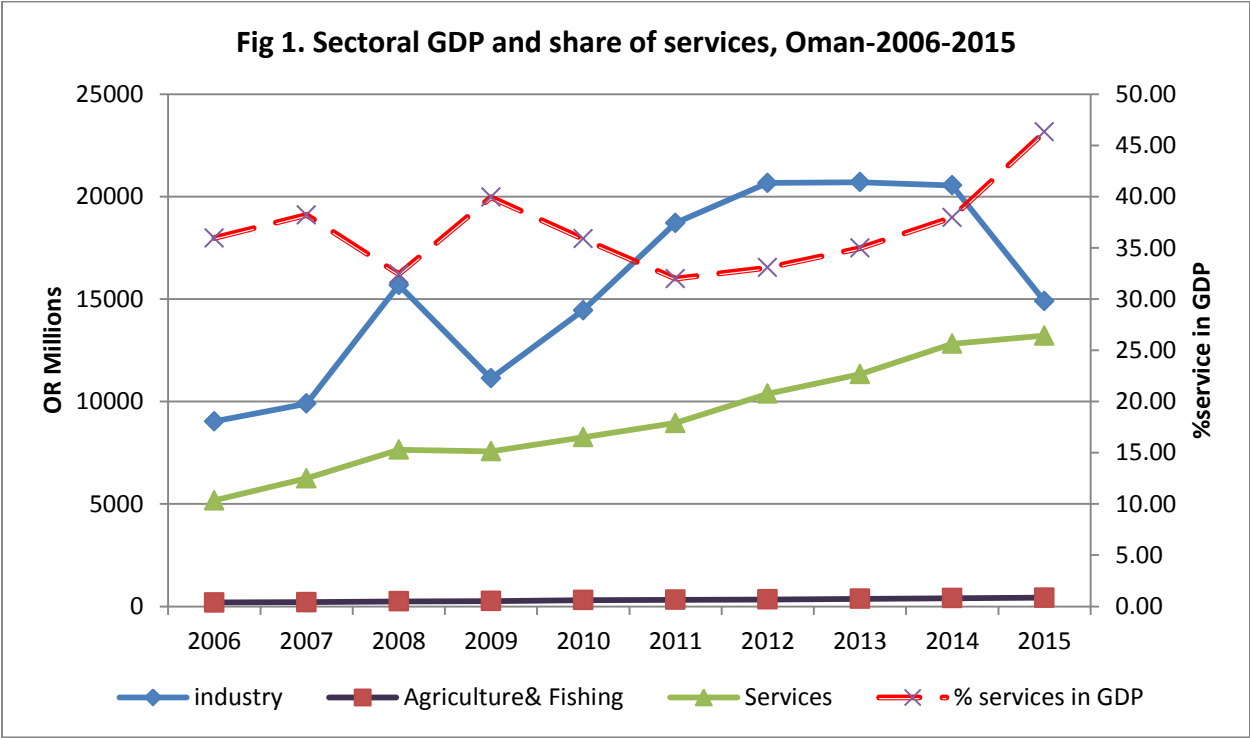
Source: CBO –Annual report-various series-Figures for 2015 are preliminary

Fig 2: Composition of the service sector (%), Oman 2006-2015

Legend:
- Wholesale and retail trade
- Hotels and restaurant
- transport, storage and communication
- Financial intermediation
- Real state and business activities
- Public administration & defence
- Other services (education, health..)

2006
- 21%
- 2%
- 16%
- 11%
- 11%
- 21%
- 19%

2015
- 15%
- 2%
- 12%
- 12%
- 10%
- 25%
- 23%

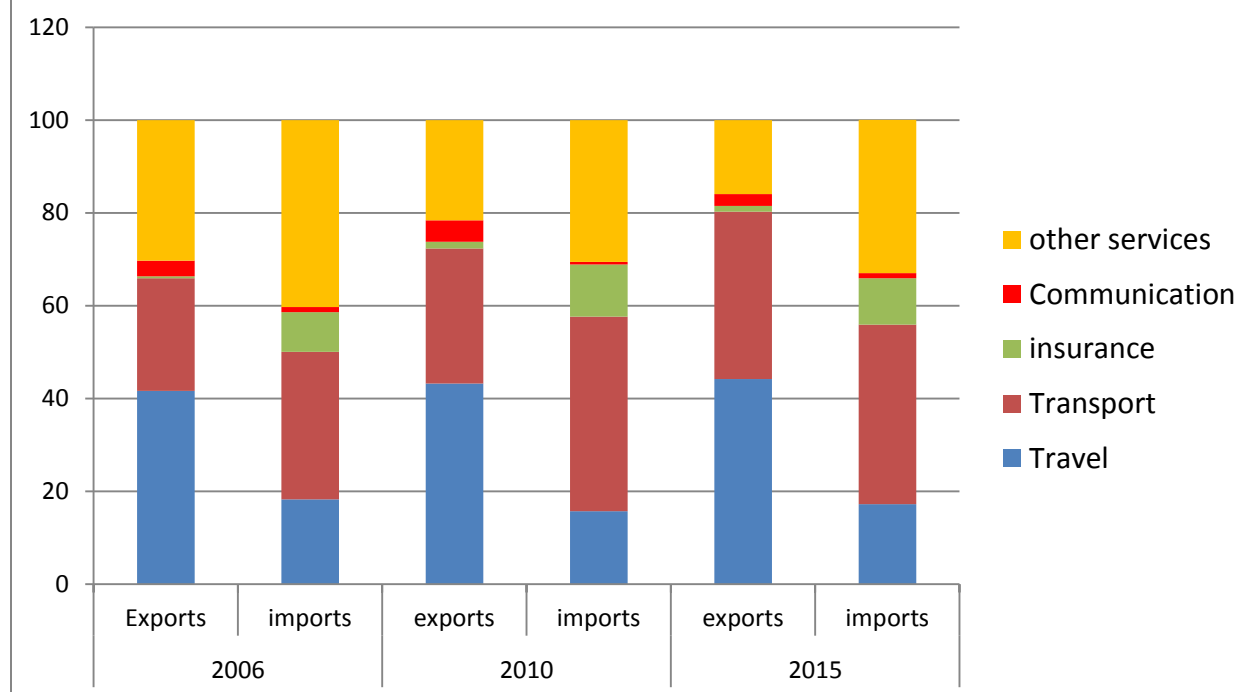Source: CBO –Annual reports-various series

Trade in service as reflected in the balance of payment showed an increasing negative balance over the years, with an annual deficit growth of 10% . In 2015, service exports and imports amounted respectively to R.O 1339 Million and O.R 3844 Million leading to a deficit of R.O 2545 Million (fig 3). Transport service (linked to hydrocarbon exports) is the main item that Oman imports, covering in 2015 around 39% of total service imports followed by travel (17%), while from the export side "travel" constituted 44% of total service exports, followed by transport (36%). Export of service contributes around 19% of total non-oil exports of goods and services in 2015 compared to 14% in 2010 (CBO, 2015)..

Fig 3: Service exports and imports (M. OR) 2006-2015
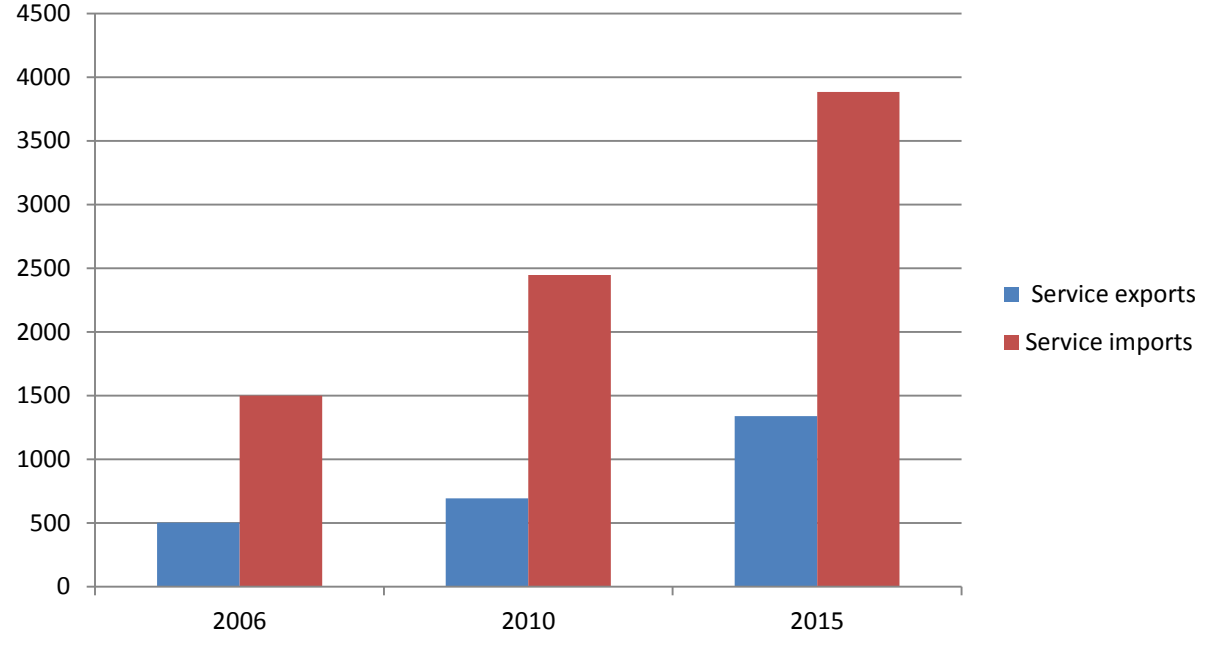
Source: CBO –Annual reports- various series

Fig 4: Composition of service exports and imports (M. OR)-Oman 2006-2015

Legend:
- other services
- Communication
- insurance
- Transport
- Travel

X-axis labels: Exports, imports (2006); exports, imports (2010); exports, imports (2015)

Source: CBO-Annual reports-various series

However, trade in service is not totally reflected in the balance of payments statistics as services are intangible and can be traded in a variety of ways, which make it difficult to measure and record. The balance of payment statistics capture more or less what WTO defines a "cross-border trade", mode 1, and "consumption abroad" trade, mode 2, and therefore it underestimates the overall trade in service[5]. A lot of trade in service takes place through foreign investment in the form of commercial presence (Mode 3). An indication of the Foreign Direct Investment (FDI) in Oman is given in table 1. However the actual FDI position of a country cannot be used in totality to measure mode 3 as FDI flows represent investment in plant and machinery and not the value of service (the trade) originating from the FDI. More precise estimates of Mode 3 service trade are obtained by taking the return to FDI stocks adjusted by the proportion of the FDI stock in the service sector (Center of International Economics, 2010).

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[5] WTO in the GATS agreement defines four modes of trade in services: 1) cross border trade which takes place with neither the consumer nor the produces move to deliver the service (business/financial service provided through telephone or over internet); 2)consumption abroad trade takes place when the consumer moves to the place of service (i.e. tourism); 3) commercial presence mode of service delivery occurs when business/producer sets up a business in the host country (i.e. branch or subsidiary); 4) movement of natural persons (suppliers) which occurs when the supplier moves for a short period to provide the service where it is needed (i.e. business consultant).

Table 1: Foreign Direct Investment (R.O Million)

	2010	2011	2012	2013	2014
Outflows (FDI abroad)	576	470	340	359	522
inflows (FDI in Oman)	478	626	525	620	579
FDI Stock in Oman	5200	5400	6400	6688	7636

Source: CBO-Annual report 2015

Most FDIs in Oman in 2013 went to the oil and gas sector (49%), financial intermediation (17%) and manufacturing (15%) (CBO, 2015).

IV. Service trade liberalization in Oman

The extent of Oman trade liberalization and openness in Oman can be assessed by analyzing its commitments under both the WTO General Agreement on Trade in services (GATS) and the Free Trade Agreement with the United States(Oman-US FTA)[6]. Under GATS, Oman made a wide ranging commitments on specific services, which resulted in further liberalization of its already a relatively open service sector. Oman scheduled liberalization commitments in 97 subsectors out of the 160 sub-sectors. With this level of commitments figure 5 shows that, Oman has the third most extensive GATS commitments in the Arab region, following Saudi Arabia (127 sub-sectors) and Jordan (128 subsectors). A worldwide comparison shows that the number of Oman's sub-sectoral commitments is higher than the average of all WTO members (52) but lower than the average in developed economies (106).
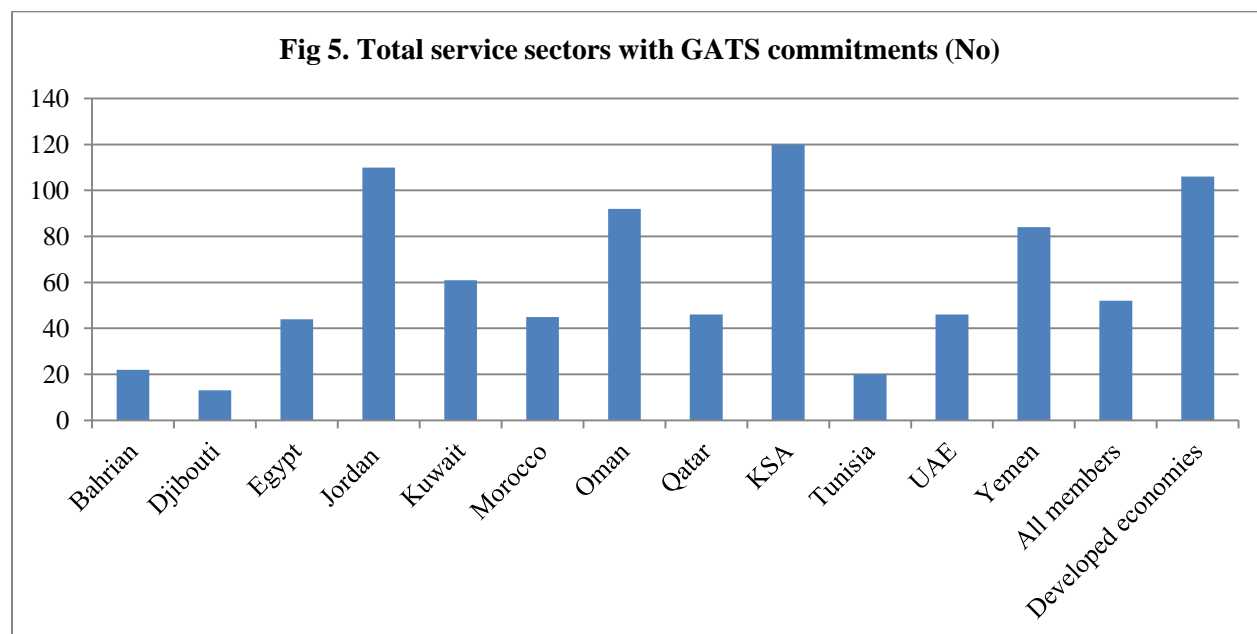
Source: WTO

In terms of the depth of these commitments (full commitment, commitment with limitation and no commitment), Oman level of commitments stands relatively strong compared to other countries with similar conditions of accession. Oman's level of commitments as indicated by WTO liberalization score (Table 2)[7] is highest for computer services (score of 100), Telecom services (100), insurance services (90), distribution services (70), environmental services (75), professional services (68), and education services (60). The services with lower liberalization scores include recreation services (0), health and social services (25), audiovisual services (30), maritime transport services (31) and banking and other financial services (33).

Table 2: Oman Index score of GATS and US-FTA commitments by selected sectors

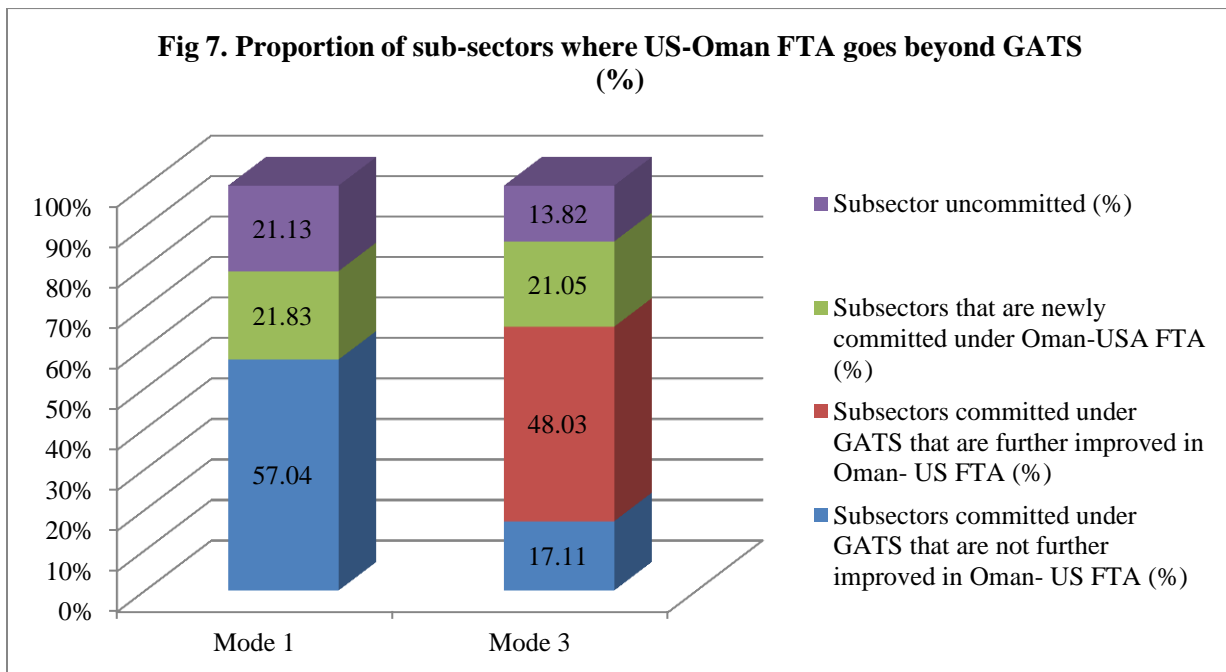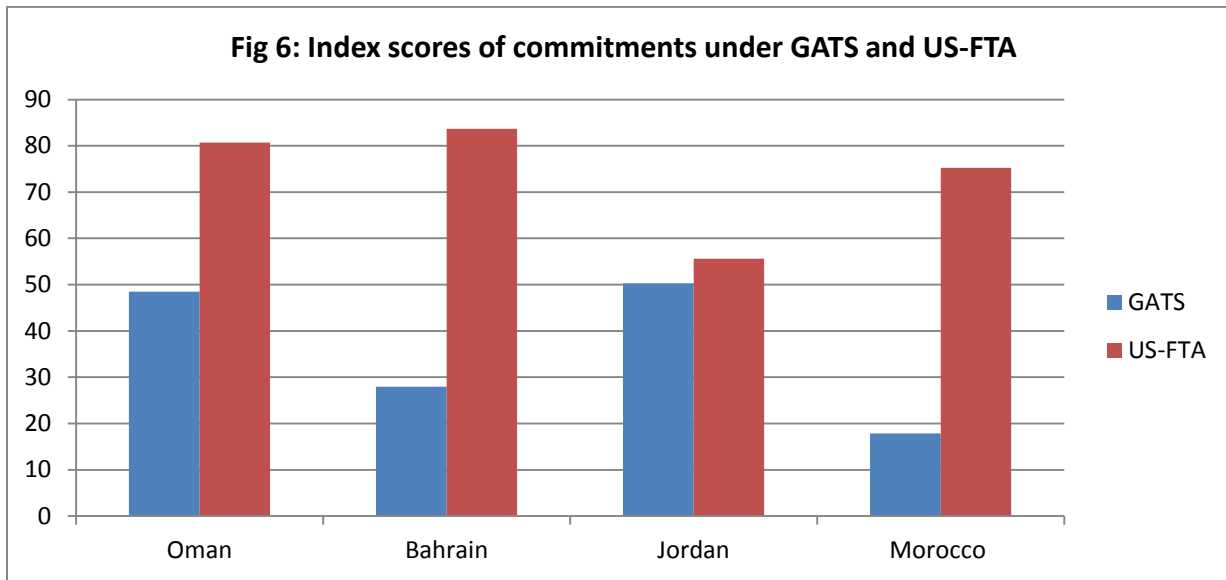| Sectors/Subsectors	GATS	US-OMAN FTA
Professional Services	68	98
Computer Services	100	100
Postal-Courier Services	50	50
Telecom Services	100	100
Audiovisual Services	30	60
Construction Services	58	100
Distribution Services	75	100
Education Services	60	100
Environmental Services	75	100
Insurance Services	90	100
Banking and other Financial Services	33	48
Health and Social Services	25	100
Tourism Services	50	63
Recreational Services	0	94
Maritime Transport Services	31	100
Air Transport Services	53	103
Auxiliary Transport Services	71	100

Source: WTO

Comparatively the depth of commitments under the GATT is for example comparable to Jordan but higher than Bahrain, Morocco and even higher than the European Union in many sectors (especially professional services).

The liberalization commitments of Oman in the GATS have been consolidated and improved under the USA-Oman Free trade area. Several of the commitments in the USA FTA well exceed

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[7] The methodology used in constructing the score index is that for each subsector, and for each mode of supply, a score of 0, 0.5 or 1 is given for members' existing GATS commitments: 1 for full commitments (without market access or national treatment limitations), 0.5 for partial commitments (with some market access and/or national treatment limitations), 0 for no commitments. Better partial commitments in RTAs are given a score of 0.75; The index value is determined by summing up the value given for each sub-sector and mode of supply, which is then converted to a 0-100 scale. see (ttp://www.wto.org/english/tratop_e/serv_e/dataset_e/dataset_e.htm)

those contained in GATS (Table 2), particularly in areas like recreation services, health and social services, maritime transport services, construction services, and education services. In comparison with other USA FTAs, more liberalization commitments were taken by Oman compared for example to Jordan and Morocco commitments in their respective FTAs with the US (Fig 5). The decomposition of Oman commitments under US-Oman FTA shows that approximately 21% of the subsectors committed in both mode 1 and mode 3 are new sectors with reference to GATS while 48% (mode 3) committed under GATS have been improved.

Fig 6: Index scores of commitments under GATS and US-FTA

Fig 7. Proportion of sub-sectors where US-Oman FTA goes beyond GATS (%)

V. Trade Performance in services

Methodology

This section assesses Oman service trade performance in a regional context (Arab world), employing an adapted version of the gravity model. The model uses unilateral variants of the variables found to be important in explaining bilateral trade. The dependent variable is the country total export/import while the determinants of trade are country-specific rather country pair-specific (Van Lynden 2011, Karami and Zaki, 2013). As Van Lynden explains, "it is not such much important with whom you trade as how much you trade" when it comes to the analysis of countries trade performance. Furthermore, contrary to trade in goods, bilateral trade data in service is still developing and of dubious quality to be used meaningfully in econometric analysis particularly for developing countries[8].

The gravity model has been an empirical success in explaining the determinants of countries' bilateral trade and has been extensively used in the literature. Intuitively ad using Newton metaphor in physics, the model postulates in its basic form that countries trade in proportion to their economic size and proximity. It was first used in international trade by Tinbergen (1962) as an empirical tool to explain world trade flows and was given its theoretical economic foundation by Anderson (1979) and later by Bergstrand (1985). Over time the model has been augmented and customized to various purposes to include the effects of geography, demographics, cultural ties, tariffs, regional trade agreements, etc. (i.e Anderson and Van Wincoop, 2003, Baldwin and Taglioni, 2006, Baier and Bergstrand, 2009). For a comprehensive review of the gravity model and related theoretical an empirical issues, see Yotov et al. (2015).

The literature on the application of gravity model to service is quite limited and has mostly focused on a small number of high income economies. Among the first to apply this approach to services, Francois (2003) estimated a gravity equation for service imports using the GTAP database and derived the tariff equivalents for barriers to trade in services using a constant elasticity import demand function. Trade barriers are approximated by the differences between actual and predicted imports. Walsh (2006) estimated a gravity model for bilateral services taken for the OECD international trade on services via (EUROSTAT). He found that he gravity model fits the service trade flows in a similar manner as in goods. However, the distance variable is insignificant in conformity with some of the literature views that services do not usually require to be transported as they may be in some cases electronically transmitted[9]. Grunfled and Moxnes (2003) applied the gravity model to the bilateral trade in services representing mode 1 in the WTO parlor as well as bilateral outward FDI stocks representing mode 3, for of the OECD countries They included as explanatory variables the GDP's of both the importing and the exporting countries, the distance between them, and a service trade restrictiveness index (STRI). Their results contrary to Walsh 92006) indicate that the distance has considerable negative

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[8] The trade in service database of the World bank (http://data.worldbank.org/data-catalog/trade-in-services) includes mostly bilateral trade between developed economies and covers only few large developing countries.
[9] Distance effect on services is ambiguous and the literature produced conflicting results on this matter. For example Kimura and Lee (2004) results indicate that distance between countries is more important in services trade than goods . The relationship between distance and service flows will however depend on the nature of the service and its mode of supply. For example, in the transport services, the distance effect was found to be positive as it is expected (Francois et al., 2007)

impact on trade in services (mode 1 and mode 3). This is driven as they explain by the importance of physical proximity between producer and consumer giving a strong boost to the distance effect. They also show that the GDP's of both the exporting and the importing countries are highly significant for both exports and FDI' while the restrictiveness index is shown to have a detrimental effect on aggregate cross border service trade but not on trade through FDI. Kumura and Lee (2004) employed a gravity model to assess the determinants of bilateral trade in services compared to that of goods for 10 OECD countries. They found that the geographical distance is more important in service than in goods, implying that the cost of transport for tradable services is also higher than that for goods. They noted however that different services, such as communication, financial intermediation and business service may behave differently. In their study, the authors include economic freedom[10] as an explanatory variable and was found to have greater impact on services trade than on goods trade. They conclude that the gravity model performs better in service international trade than in goods.

Because comprehensive bilateral trade in services is lacking, studies that go beyond the OECD countries have used total trade (trade to the world) as the dependent variable in their gravity approach. Within this strand of literature, Karam and Zaki (2013) used an adaptation of the gravity model to study the determinants of the flow of service trade in the MENA region. They included WTO membership and the number of bound commitments in GATS as determinants of trade performance. Their results show that being a member of WTO as well as making a higher number of service commitments boosts service exports and imports. Lynden (2011) used similar approach to examine the pattern of trade for both goods and services for 179 countries for the period 1996-2008. He found that the determinants of aggregate trade are the same as those found in the literature for bilateral trade. In addition to the standard gravity variables, he included infrastructure indictors in the model and found that infrastructure matters quite significantly for service. He found for example that a 100 % increase in the number of mobile and fixed lines increase trade in services by 0.6. The distance variable, both in Lynden (2011) and Karam and Zaki (2013) was found to be less important in service trade than in goods. Finally, Francois et al 2007) developed a gravity-based approach to estimating barriers to overall trade in services. They regressed service imports with the usual gravity variables, i.e. GDP per capita, population and distance[11]. In a two stage estimation process and assuming an import elasticity of substitution equal to 3.6, they derived tariff equivalents for 178 countries expressed as trade costs percentage of delivered services.

Following Lynden (2011) and Karam and Zaki (2013), the model in this paper is specified as follows:

$$lntrade_{it} = \beta_0 + \beta_1 lnGDP_{it} + \beta_2 lnRWGDP_{it} + \beta_3 lndist_{it} + \beta_4 WTO_{it} + \beta_5 USAFTA_{it} + +\beta_6 ER_{it} + \beta_7 ComBank_{it} + \beta_8 intuser_{it} + \beta_9 Tereduc_{it} + \beta_{10} lnSTRI_i + \varepsilon_{it} \qquad (i = 1 \dots 20, \ t = 1 \dots, 11)$$

Where

$trade_{it}$: Represents either service exports or imports of country i (Arab countries) to (from) the world. As explained by Lynden (2011), a country would be more interested in its trade performance with the world than trade performance with a specific partner.

GDP_{it} : Country i Gross Domestic Product at current prices. It represents the market size and it is expected that a country with larger market size (higher GDP) will trade more with the rest of the world.

$RWGDP_{it}$: The rest of the world GDP calculated as the world GDP minus the country i GDP and is expected to be positively related to country i trade.

$dist_{it}$: Distance variable, specified as the latitude of country, which indicates its proximity to the western world markets, concentrated away from the equator. The sign of the distance is expected to be negative but as mentioned above, services are intangible and quite heterogeneous and their trade may not be sensitive to distance, or their value may increase with distance (transport services).

ER_{it} : The exchange rate of country i currency obtained from IMF and defined as local currency per SDR (Special Drawing Rights). An increase in the ER indicates a devaluation of the currency and a positive export response.

WTO_{it} : A dummy variable which takes the value of 1 if the Arab country is a WTO member and 0 otherwise. Among the 21 Arab countries, only 12 are WTO-member and therefore made liberalization commitments under GATS. It is expected that WTO membership would enhance trade in services as members are expected to align their trade and regulatory policies to their GATS liberal commitments.

$USAFTA_{it}$: A dummy variable which takes the value of 1 if country i has a free trade area with the USA and 0 otherwise. The sign of this variable is expected to be positive as it is shown above, the liberalization commitments made under the FTA with the US go beyond their GATS commitments.

$ComBank_{it}$: Commercial bank branches per 100000 adults as one indication of the quality of the basic service infrastructure. This variable is taken to measure the quality of the banking network and assumed to influence positively trade in services.

$intuser_{it}$: Internet user per 100 people as an indication of the quality of the communication network. The sign of this variable is expected to be positive as better access to communication infrastructure enhances trade.

$Tereduc_{it}$: Total enrollment in tertiary education expressed as a percentage of total population finishing secondary school. This variable is an indication of human capital endowment. Services, compared to goods are more skill intensive and therefore could be an important factor explaining

trade patterns in services (Covaci and Moldovan, 2015). This variable is expected to be positively related to trade in aggregate services.

$STRI_i$: Service Trade Restrictiveness Index representing the degree of openness of a specific service sector. The STRI, developed by the World Bank provides a quantification of the restrictiveness of applied service policies for 103 countries and 5 broad service industries in a 5 point scale [0, 0.25, 0.50, 0.75, 1.00] where 0 indicates that the industry is completely open and 1 indicates that the industry is completely closed.

Data and data sources

Exports and imports of services in value terms are obtained from the ITC trade map for various services sectors. These are based on IMF statistics obtained from countries' balance of payment components (mode 1 and 2). Data used in this analysis are for total imports and total exports as for a number of countries disaggregated data series for specific sub-sectors are incomplete. The GDP, population, infrastructure indicators as well as education indicators are obtained from the world development indicators of the World Bank. The distance variable is obtained from the CPII. The Service restrictiveness indicators are obtained from the World Bank trade in services website. The data sample includes 20 Arab countries and covers 11 years of trade flows.

Results and Discussion

Panel data estimation techniques were used to estimate the model specified above for both total service imports and exports. Table 3 shows the pooled OLS estimation results with standard errors corrected for heteroskedasticity and cross section correlation. The estimation included a "time effect" to account for common shocks affecting countries over the sample time period. As some of the regressors in the specified model are highly correlated with a correlation coefficient higher than 0.6, the export and import regressions may slightly differ with respect to the variables included or excluded in (from) the estimation.

According to the results, the GDP variables of the home country and the rest of the world have the expected signs and are highly significant at 1% level in the export regression implying that economic size matters, while only the GDP of the home country is significant in the import model[12]. The distance variable is negative but not significant in the export equation while it is negative and highly significant in the import equation. This ambiguity in the distance effect is not unique to this study but as indicated above the literature on the effect of distance on service bilateral trade is not clear cut. In his review of the literature on trade in service, De (2013) indicated that some studies such as Kimura and lee (2006) found that distance between countries is more important in services trade than goods trade. In other studies such as Lejour and de Paiva Verheijden (2004), distance was found to less important.

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[12] The GDP of the rest of the world was found to be highly correlated with some of the other variables so it was omitted from the import equation.

Two variables are of particular interest to the Arab region: WTO membership and US FTA. The results indicate the WTO variable as well as the US-FTA variable are highly significant and are positively related to both exports and imports of services. WTO members trade approximately twice more with the world ($e^{0.8} - 1$) than nom members. These estimates are comparable to those obtained for example by Chang &lee (2011) and Subramanian and Wei (2007)[13]. Accession and membership plays an important role in the path of trade liberalization and building better institutions, hence increasing trade. Similarly countries that have signed a free trade area with the USA trade approximately twice more with the world than those non signatories of such a free trade area. The FTA with the USA has been negotiated with a strong view on services, and many of the commitments undertaken by the signatories went beyond those made in the GATS with new bindings or improved bindings. For example, in the case of Oman-USA FTA, 50% of the subsectors committed for liberalization are new sectors compared to the GATS, while the proportion is 60% , 39%, and 16% respectively for Morocco, Bahrain and Jordan.

The exchange rate coefficient is as expected positive and highly significant indicating that exports are enhanced with the devaluation of the local currency. For imports however the relationship is not significant. For the infrastructure variables, only the internet use indicator seems to affect significantly export of services.

Three variables indicating the restrictiveness of applied service policies are included in the empirical model. We experiment with trade restrictions indicators of all services as well as restrictions indicators in the finance and the communication sector. I turns out that only the service trade restrictiveness index in the communication sector (STRI_com) have the expected sign and significant in affecting both exports and imports of services.

Table 3: Results of the pooled panel regressions

Variable	Exports		Imports	
	Coefficients	Standard errors	Coefficients	Standard errors
Constant	-934.67***	97.72	0.26854	0.6799
LnGDP	0.44149***	0.8459E-01	1.0817***	0.4386E-01
LnRWGDP	105.78***	11.16		
lnPop			0.82257***	0.2492E-01
WTO	0.79156***	0.9378E-01	0.23885***	0.5108E-01
USA-FTA	0.66030***	0.7580E-01		
LnLat	-0.12702	0.1424	-0.48065**	0.1043
lnER	0.20854***	0.2325E-01	0.64809E-01	0.1563
Cwar	0.92588E-01	0.2796	-0.21383***	0.5798E-01
lnIntuse	0.85082 ***	0.1222	-0.13172E-02	0.3123E-01
Ln STRI_all	0.59946	0.6201	1.4129	0.9129
Ln STRI_fin	0.32747	0.5403	-1.0869***	0.1574
Ln STRI_com	-0.33095**	0.1190	-0.27978***	0.4877E-01

[13] The empirical literature on the trade effect of WTO accession and membership produced conflicting results. For example, Rose (2005) claimed that the effect of WTO membership is insignificant.

R-Square	0.72	0.94
No. Obs.	198	198
Time effect	Yes	Yes
Country effect	No	No

Notes: *** Significant at 1% probability level; ** significant at 5% probability level; *significant at 10% probability level

Using the coefficients of the estimated model, the trade potential for exports of the Arab countries was estimated. The trade potential was calculated as the ratio of the predicted exports to actual exports. A ratio that is higher than one indicates a potential of export expansion. Table 4 shows the trade potential calculated for the average period 2005-2015 It turns out that comparatively Oman has the highest export potential among the Arab countries, followed by Egypt, Qatar and UAE. It indicates that these countries could potentially increase their exports more than what is actually traded.

Table 4: Trade potential in services (average 2005-2015)

	Actual Exports (US$)	Predicted exports (US$)	Export Potential
Algeria	3289527727	3334248397	1.01
Djibouti	319209547.1	117193674.9	0.37
Egypt	20056954545	27674029722	1.40
Iraq	2406736091	2070517584	0.86
Jordan	5094958182	3396722887	0.67
Kuwait	8478551000	4111858199	0.48
Lebanon	7571938273	5285831852	0.70
Morocco	14094484455	9518446191	0.68
Oman	2109162000	4193843240	1.99
Qatar	6950767364	7913694257	1.14
Saudi Arabia	12109050909	9547560182	0.79
Syria	8960314091	2583159977	0.29
Tunisia	4729831727	3091369957	0.65
UAE	13848753091	14480218688	1.10
Yemen	3172276818	4151635124	0.76

Source: Authors 'calculation

VI. Simulation of Trade liberalization in services

The service trade restrictiveness index (STRI) indicates trade barriers for the countries in the sample.. Using the estimated model and the coefficients of STRI's we can predict trade flows under a trade liberalization regime. As full liberalization in services is not realistic, the trade liberalization scenario considers that all countries reduce their STRI to the level of the most open

country in the sample. Fig 8 shows actual exports in 2015 and exports under a trade liberalization scenario. The GCC countries, Qatar, Kuwait and Oman witnessed the highest percentage change in exports under trade liberalization with respectively 74%, 54% and 45%, while Morocco, Egypt, Tunisia, and UAE, witnessed the lowest changes in exports with approximately 7% increase in service exports.

Fig 8: Service Exports (M US$):Actual versus Liberalization Scenario
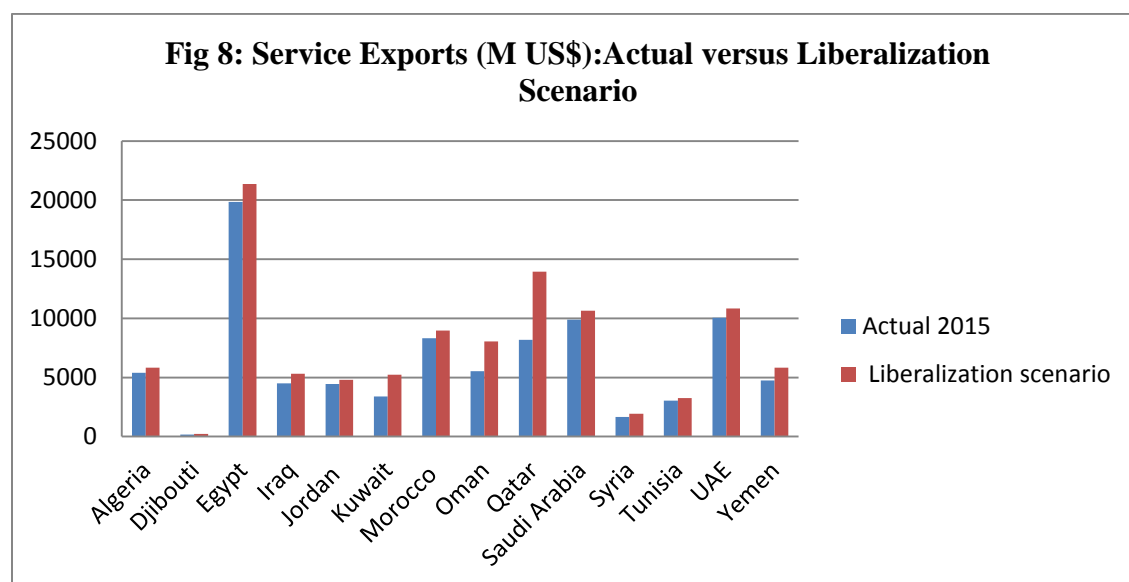
Source: Authors' calculation

VII. Conclusion

The paper investigates the extent of service trade liberalization in Oman and its trade performance within the context of the Arab region. The status of service trade liberalization was described by analyzing and comparing Oman's liberalization commitments under the GATS and under the preferential trade agreement with the USA. The analysis indicated that Oman has the third most extensive GATS commitments (97 subsector) in the Arab region, following Saudi Arabia (127) and Jordan (128). Oman's sub-sectoral commitments is higher than the average of all members but lower than the average in developed economies. In terms of the depth of these commitments (WTO score), Oman level of commitment stands relatively strong compared to other countries with similar conditions of accession. The liberalization commitments of Oman in the GATS have been consolidated and improved under the USA-Oman Free trade area with 21% of the subsectors committed in both mode 1 and mode 3 being new sectors (with reference to GATS) while 48% (mode 3) comitted with further improvements.

Trade determinats and performance were assessed using an adapted version of the gravity model in which the standard determinants of trade are augmented with a WTO membership variable, an FTA with the US variable, infrastructure variables, and a trade barriers variable. Results indicate

that WTO membership and US-FTA variables are highly significant and positively related to both exports and imports of services. WTO members trade approximately twice more with the world   than nom members. Similarly countries that have signed a free trade area with the USA trade approximately twice more with the world than otherwise. The distance variable is significant in the import equations but not significant in the export equation conforming with the results found in the literature in trade in services. As expected trade barriers in telecommunication and financial services are found to be significant and negatively related to overall trade.

Trade potential calculation showed that comparatively Oman has the highest export potential among the Arab countries, followed by Egypt, Qatar and UAE. It indicates that these countries could potentially increase their exports more than what is actually traded. A partial trade liberalization scenario indicated that the GCC countries like Qatar, Kuwait and Oman would benefit the most from further liberalizing trade with respectively 74%, 54% and 45% change in exports compared to the actual exports of the year 2015.

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