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The Partial and General Equilibrium Effects of the Greater Arab Free Trade Agreement

Zouheir El-Sahli

College of Business and Economics, Department of Economics and Finance, Qatar University, Doha, Qatar

ABSTRACT

The Greater Arab Free Trade Agreement (GAFTA) is a regional trade agreement among the Arab countries. We incorporate recent advances in the literature to investigate the partial and general equilibrium effects of GAFTA. The partial equilibrium estimates suggest that GAFTA had a positive and significant effect on bilateral trade of around 40% in 1998 and 61% after the phasing out of tariffs. The general equilibrium analysis suggests that the welfare effects of the agreement are mostly negligible. The results highlight that deeper integration among the Arab countries is imperative to bring about further welfare benefits to the member states.

KEYWORDS

Free trade agreements; Greater Arab Free Trade Agreement; economic integration; international trade; gravity model; general equilibrium

I. Introduction

Regional trade agreements (RTAs) have grown in number over the past three decades, from only 27 in 1992 to 310 in 2020 (based on the Regional Trade Agreements Database of the WTO). At the same time, while RTAs among developing countries have become more common, they remain largely understudied compared to RTAs in which developed countries are involved.[1] The Greater Arab Free Trade Agreement (henceforth GAFTA) is one such agreement between the Arab states of the Middle East and North Africa (MENA).[2] Many political and economic commentators consider GAFTA as an important first step to much-needed regional economic integration in the MENA region. GAFTA was first created by 14 Arab countries in 1997 with the goal of eliminating tariffs and non-tariff barriers (NTBs) between the member states (Abedini and Nicolas 2008, 849).[3] The agreement went into force in 1998, and originally, the member states agreed to eliminate tariffs by 2007 but later moved this forward to 2005. Nonetheless, GAFTA remains a rather shallow agreement. According to data reported in the World Bank Deep Trade

CONTACT Zouheir El-Sahli zouheir.sahli@gmail.com College of Business and Economics, Department of Economics and Finance, Qatar University, PO Box 2713, Doha, Qatar

[1]NAFTA (North American Free Trade Agreement), for example, is the most studied RTA in the literature.

[2]This agreement is sometimes called the Pan-Arab Free Trade Agreement (PAFTA).

[3]The original member signatories are Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, and the United Arab Emirates.

Supplemental data for this article can be accessed on the publisher's website.

Agreements Database, GAFTA is one of the shallowest free trade agreements ever signed. Out of the 52 provisions notified at the WTO, GAFTA has only two.[4] Compare this with 22 provisions registered for the North American Free Trade Agreement (NAFTA) – replaced by the United States–Mexico–Canada Agreement (USMCA) in 2020 – and 17 for Mercosur (South America's largest RTA). Another observation is that GAFTA only covers trade in goods and does not extend to services. In addition, GAFTA lacks provisions on dispute settlement, competition laws, and harmonization of standards, all of which hamper deeper integration (Romagnoli and Mengoni 2009). This is likely to be the reason why intra-Arab trade as a share of total trade remains extremely low in this block of countries. Figure 1 shows that the share of intra-Arab trade in total trade remains well below 10% even after GAFTA was signed. In fact, GAFTA does not seem to have any noticeable effect on this share. In comparison, Figure 1 shows that intra-NAFTA and intra-EU trades are 25% and 45% of total trade of the NAFTA and EU countries, respectively, in 2016.

Further trade liberalization attempts in the MENA region have since been very modest. The GCC (Gulf Cooperation Council) countries formed a customs union in 2003. Furthermore, four members of GAFTA – Morocco, Tunisia, Egypt, and Jordan – signed the Agadir Agreement, which went into force in 2007 and aimed at accelerating a Euro-Mediterranean free trade area.[5] Further attempts to form a customs union among GAFTA members have stalled following the Arab Spring and other geo-political issues.

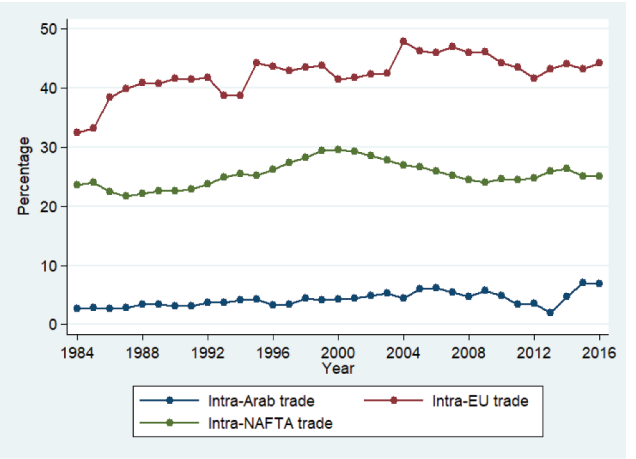

Figure 1. Share of intra-trade in total trade for the GAFTA, NAFTA, and EU.
Source: Author's own calculations based on trade data from the World Trade Flows database.

[4]The two provisions are tariff liberalization on industrial goods and tariff liberalization on agricultural goods. This is based on the author's own reflection of the data.

[5]This is because the EU allows its Mediterranean trade partners to add up value-added in their exports and turns a blind eye to where value is added. No sooner has this agreement been signed than it was suspended when Morocco signed a trade agreement with the USA which follows a different set of rules of origin.

Deeper economic integration among MENA countries is similarly hampered by the lack of progress in the reduction of non-tariff barriers (NTBs). While tariffs may have been reduced to zero, there is little evidence that other red tape restrictions have been addressed. Hoekman and Zarrouk (2009) report in a firm-level survey in nine Arab countries conducted post-GAFTA that while tariffs have been removed, constraints related to red tape and transport frictions are still very high. Peridy and Ghoneim (2013) estimate that the average tariff equivalents of NTBs in MENA countries are still significant post-GAFTA.

Given that GAFTA is a shallow agreement and that further integration in the region has largely failed, it is important that the effects of GAFTA be studied to highlight what GAFTA has accomplished for the member states in terms of trade and welfare. This is especially the case since the few existing studies on GAFTA suffer from shortcomings that have come to light with recent advances in the literature. GAFTA is also an example of a RTA among developing countries, which have been understudied in the literature. Hence, this study investigates the partial equilibrium (PE) and general equilibrium (GE) effects of GAFTA. This is the first comprehensive study that looks at both the PE and GE effects of GAFTA since its inception. In investigating the PE effects, this study addresses shortcomings in the existing empirical studies, to be highlighted below. Furthermore, this study is the only study that explores the GE effects of GAFTA ex-post and in all 14 countries that originally signed GAFTA. This is also the only study that looks at the effects of GAFTA at the time of enforcement and seven years later, since tariffs were phased out over seven years. The results suggest that GAFTA had a large positive and significant effect on bilateral trade flows between the GAFTA members relative to other country pairs. We estimate that GAFTA led to an increase in the members' bilateral trade of around 40% in 1998 and 61% seven years later. With respect to the GE effects, GAFTA had negligible effects. The highest welfare effects are calculated for Jordan and Oman where real wages increase by 0.22 and 0.24%, respectively, by 2005.

The literature on GAFTA is generally thin. The few existing studies that investigate the PE effects of GAFTA ex-post use the gravity model as a framework. These studies suffer from shortcomings brought to light by recent advances in the literature. These shortcomings lead to biased estimates and prevent us from reaching reliable and conclusive results about the true effects of GAFTA. The shortcomings include ignoring internal trade flows, failing to control for multilateral resistances, and not considering endogeneity. Recently, the literature has pointed out that including internal trade in the gravity equation estimations is consistent with the theoretical foundations of the gravity model and produces more precise estimates (Dai, Yotov, and Zylkin 2014, 322; Baier, Yotov, and Zylkin 2019, 208; Vaillant, Flores, and Moncarz 2020). This is because any effects in international trade come at the

expense of internal trade. In addition, the literature has highlighted the need to control for multilateral resistances that result from the same theoretical foundations (Anderson and van Wincoop 2003). Failing to do so produces biased estimates and is coined the "gold medal mistake" by Baldwin and Taglioni (2007).[6] The best way to control for multilateral resistances is to include exporter-time and importer-time fixed effects (Yotov et al. 2016, 19). Finally, while not new, the issue of endogeneity of RTAs is a serious issue that the literature has addressed. Including (directional) bilateral fixed effects addresses the problem to the extent that RTAs are correlated with time-invariant and unobserved bilateral factors. In addition, Baier and Bergstrand (2007) suggest including a lead term of the RTA and estimating an insignificant coefficient of this term as a way to check for the exogeneity of the RTA. Alternatively, Baier, Yotov, and Zylkin (2019, 209) add an interaction between a dummy for international trade flows and time to capture globalization trends whereas Bergstrand, Larch, and Yotov (2015, 311) suggest including dyadic-time trends to test for strict exogeneity. This article will address these shortcomings to arrive at more precise estimates than previous studies. We also improve on previous studies by using the PPML (Poisson pseudo-maximum likelihood) estimator proposed by Silva and Tenreyro (2006). The PPML estimator has emerged as the preferred estimator in gravity equations because it accounts for non-linearity and heteroscedasticity in the data as well as zero trade flows (Yotov et al. 2016, 25). Concerning the GE effects, this study takes advantage of recent contributions that permit estimating the GE effects of RTAs from bilateral trade flows. The method followed in this study is based on estimating the effects of a policy variable (such as RTAs) in a baseline versus a counterfactual scenario using the combined properties of structural gravity and the non-linear PPML estimator. The method was first proposed by Anderson, Larch, and Yotov (2015) and further developed in Yotov et al. (2016) and Baier, Yotov, and Zylkin (2019).

One of the first studies that explored the PE effects of GAFTA ex-post is Abedini and Nicolas (2008). The authors employ a gravity equation and a host of estimators and find that GAFTA has a positive effect on the members' bilateral trade in the magnitude of 16 to 24% depending on the estimator. The main drawback of the study is not controlling for multilateral resistances (gold medal mistake) which, we know by now, produces biased estimates. Abdmoulah (2011) estimates cross-sectional regressions for 1997 and 2008 using a zero-inflated negative binomial model. The study finds some support for a positive and significant average effect of GAFTA of around 35% in 2008 only. Limitations of this study include the fact that GAFTA went into force in 1998 and, therefore, an estimation of the effect in 1997 may not be appropriate.

[6]A simple way to conceptualize multilateral resistances would be to consider two countries that trade with each other. These two countries will trade more with each other if their trade with the rest of the world becomes more costly relative to their bilateral trade costs.

In addition, using cross-sectional data does not take advantage of the panel nature of trade data, and the interpretation is no longer ex-post. Furthermore, the study does not control for multilateral resistances or bilateral non-observable factors and does not address endogeneity. Yigezu et al. (2013) estimate country regressions to capture the effects of GAFTA on agricultural trade only in member states and find mixed results depending on the country. This study suffers from the same limitations as the previous study. Another strand of the literature investigates the general equilibrium (GE) effects of GAFTA using a CGE (computable general equilibrium) model. Konan (2003) is the only other study – as far as I am aware – that employs a CGE framework to estimate the GE effects of a pure GAFTA scenario (among other scenarios) for Egypt and Tunisia only and does so ex-ante. The author finds that a pure GAFTA agreement would have a small negative welfare effect for Tunisia and a modest positive welfare effect for Egypt.[7]

Moreover, this study is related to the large literature on the effects of RTAs. Lessons learned from this literature generally support the hypothesis that RTAs have a positive average effect on bilateral trade flows of their members (see, e.g., Baier and Bergstrand (2007) and Bergstrand, Larch, and Yotov (2015)). Freund and Ornelas (2010) review this literature. Recently, however, the literature has highlighted that RTAs have widely heterogeneous effects. Kohl (2014) and Kohl, Brakman, and Garretsen (2016) demonstrate that the depth of the agreement matters for the materialization of the RTA effects. Baier, Yotov, and Zylkin (2019) show the wide variation of the effects across 65 trade agreements.

The remainder of the article proceeds as follows. Section II presents the PE estimations of GAFTA. Section III performs the GE analysis and presents the results. Section IV presents the concluding remarks.

II. Partial equilibrium effects of GAFTA

Following the literature, this study will use the gravity framework to estimate the PE effects of GAFTA. The literature has dealt extensively with the origins and foundations of the gravity model (see, e.g., Anderson (2011) and De Benedictis and Taglioni (2011)). Recall that we are interested in estimating the effects of GAFTA ex-post. The GAFTA effect will be captured with a dummy variable that takes the value of one for country-pairs that have joined GAFTA, which went into force in 1998. As discussed above, we include in our estimations exporter- and importer-year fixed effects to control for

[7]Brown, Deardorff, and Stern (1996) use a CGE model for Tunisia to study the GE effects of the RTA between Tunisia and the EU in 1995 and find that the welfare effects range from negative to small positive depending on capital movements assumptions. Maskus and Konan (1997) find a similar result for Egypt in its trade with the EU. Rutherford, Rutstrom, and Tarr (2000) perform a counterfactual exercise in a CGE model and show that removing all import tariffs for imports from the EU by a representative Arab Mediterranean country would result in welfare gains of 0.1 to 1.6%.

multilateral resistances and country-pair fixed effects to capture observable (such as distance) and non-observable country-pair factors that determine bilateral trade. The reduced gravity equation we estimate becomes:

$$trade_{ijt} = b_0 + b_1 GAFTA_{ijt} + x_{ij} + u_{it} + v_{jt} + e_{ijt} \quad (1)$$

In Equation 1, the dependent variable is bilateral trade between exporter *i* and importer *j* in year *t*. The independent variables include GAFTA, the variable of interest, and the terms x_{ij}, u_{it}, and v_{jt}, which capture directional country-pair fixed effects as well as exporter- and importer-year fixed effects, respectively.

Trade data come from the World Trade Flows database obtained from the Center for International Data at UC Davis.[8] The dataset includes both exports and imports, and the advantage of this dataset is that it uses importer data where available. From this dataset, we choose a sample of 75 countries (a list of the countries is provided in Table A1 in the online appendix), which include the top 70 exporters and all 14 Arab countries that originally signed GAFTA (most of the Arab countries are in the group of top exporters). As we mention above, one of the shortcomings that this study addresses is including internal trade in the estimation process. Including internal trade is important because it allows for the possibility that international trade may come at the expense of internal trade (Bergstrand, Larch, and Yotov 2015). We construct internal trade values from the world input-output (IO) tables obtained from The EORA Global Supply Chain Database (see Lenzen et al. (2012) and Lenzen et al. (2013)). Finally, data on RTAs are obtained from Mario Larch's Regional Trade Agreements Database (Egger and Larch 2008). The trade data cover the period of 1984 to 2016 but because IO tables are only available between 1990 and 2015, our estimation period becomes restricted to the years between 1990 and 2015.

The PPML estimator is used to estimate Equation 1. The PPML estimator has emerged as the workhorse estimator to model trade flows in the gravity context (Anderson, Larch, and Yotov 2015; Head and Mayer 2014; Piermartini and Yotov 2016).[9] The results are presented in Table 1. The first four columns of the table present the results for the effects captured in 1998 – the first year of enforcement – using a continuous sample period (1990 to 2015) while the results in Column (5) use 3-year intervals between 1990 and 2015. In addition, the results in Column (5) include two lags of the GAFTA dummy variable in order to account for the phasing out of tariffs that took place between 1998 and 2004 and following Baier and Bergstrand (2007). All standard errors are clustered at the country-pair level in all estimates.

The results in Column (1) suggest a positive and large average effect of GAFTA on bilateral members' trade of around 62% ($e^{0.484} - 1$) in 1998 with

[8]The data can be downloaded from https://cid.econ.ucdavis.edu/Html/WTF bilateral.html.
[9]We use the STATA command ppmlhdfe to model trade flows, which allows us to use the PPML estimator with high dimensional fixed effects.

Table 1. Results from the PPML estimator for GAFTA.

	(1) PPML	(2) Glob. Trends	(3) Additional variable	(4) with lead	(5) with lags
GAFTA	0.484***	0.346***	0.385***	0.410***	0.222***
	(0.118)	(0.115)	(0.116)	(0.159)	
		(0.069)			
GAFTA (1st lag)					0.127**
					(0.059)
GAFTA (2nd lag)					0.196**
					(0.098)
GAFTA (lead)				−0.132	
				(0.111)	
NAFTA			0.226***		
			(0.080)		
RTA			0.149***		
			(0.044)		
Number of obs.	138,268	138,268	138,268	132,825	42,504
Country pairs	5,318	5,318	5,318	5,313	5,313
FE	Yes	Yes	Yes	Yes	Yes

Notes: All regressions include exporter- and importer-year fixed effects and bilateral directional country-pair fixed effects. Standard errors are clustered by country-pair. Significance levels: * $p < .1$; ** $p < .05$; *** $p < .01$.

the coefficient being statistically significant at the 1% significance level. In Column (2), we include a globalization trend by interacting a year trend with an indicator that takes the value of one for bilateral (non-internal) trade flows as in Baier, Yotov, and Zylkin (2019), and the estimated effect of GAFTA drops to around 40% ($e^{0.346}$–1). Subsequently, we introduce two additional dummy variables, RTA and NAFTA, in Column (3). The RTA dummy variable stands for regional trade agreements and takes the value of one if there is a RTA between countries i and j in year t. The NAFTA variable takes the value of one if the exporter or importer is the United States, Canada, or Mexico from 1994. Including RTA and NAFTA allows us to compare the GAFTA effect to the average effects of NAFTA and other RTAs in the sample. It is important to note here that all three variables (GAFTA, NAFTA, and RTA) are coded to be mutually exclusive. This means that the RTA dummy indicates that there is a trade agreement between the two trading partner countries unless these countries are both either members of NAFTA or GAFTA. We estimate that the GAFTA effect in 1998 (coefficient 0.385) is larger than both the NAFTA (coefficient 0.226) and RTA (coefficient 0.149) effects. In addition, following Baier and Bergstrand (2007) and Bergstrand, Larch, and Yotov (2015), we include a lead term of the GAFTA dummy in Column (4) where the coefficient on the lead term should be statistically insignificant as a test for strict exogeneity, and this is confirmed by the results. Finally, in Column (5), we estimate that GAFTA has significant lagged effects up to 7 years following enforcement. Recall that, in Column (5), we estimate specification (1) with 3-year intervals and include two lags of the GAFTA variable to capture the

gradual phasing out of tariffs over a period of 7 years. The total effect is estimated to be around 61% ($(e^{0.222}-1) + (e^{0.127}-1) + (e^{0.196}-1)$).

The estimated effect of around 41% in the preferred estimation in Column (2) is slightly larger than the 16 to 24% effect estimated for 1998 in Abedini and Nicolas (2008). The estimated effect of 60% in Column (5), which captures the phasing out of tariffs, is also larger than the 35% effect estimated in Abdmoulah (2011) for the year 2008. This suggests that not accounting for internal trade and multilateral resistances, as we do in this study, may bias the estimates downward. We test the robustness of these results by estimating robust standard errors and including dyadic-trend terms, and the results are qualitatively similar to the main results. These estimates can be obtained from the author upon request.

With respect to magnitude, the average trade flow between Arab countries is 53 million USD in 1997, much lower than the average trade of 1.45 billion USD for all country pairs in the sample in 1997. Using the estimates in Columns (2) and (5), this means that GAFTA leads to an average increase in bilateral trade flows between Arab countries of around 22 million USD in 1998 and 32 million USD in 2005. Hence, while the effects of GAFTA are substantial in relative terms, these effects remain modest in absolute terms because intra-Arab trade flows are small to start with.

III. General equilibrium effects of GAFTA

To estimate the GE effects of GAFTA, we closely follow the method in Baier, Yotov, and Zylkin (2019). Obtaining the GE estimates involves solving a system of equations that starts with the theoretical gravity equation of international trade:

$$X_{ij} = \frac{A_i w_i^{-\theta} \tau_{ij}^{-\theta}}{\sum_i A_i w_i^{-\theta} \tau_{ij}^{-\theta}} E_j \tag{2}$$

In Equation 2, exports from country i to country j depend directly on A_i – the technology used in production in i, w_i – wages paid in the origin country, and iceberg trade costs τ_{ij} to send goods from i to j. These cost factors enter the equation relative to the cost factors of all other exporters to country j, and that is accounted for by the summation term in the denominator. Goods are imperfect substitutes, and trade elasticity θ is constant and bigger than one.

Assuming labor is the only factor of production and imposing market clearing means that expenditure in country j can be written as:

$$E_j = w_j L_j + D_j, \tag{3}$$

where L_j is the labor force and D_j is an exogenous trade balance term. In GE, a country's shipments across all destinations must add up to labor income ($Y_i = w_iL_i = \Sigma j\, X_{ij}$). As a result, using Equations 2 and 3, one can write country i's total output or labor income as:

$$\mathbf{w_i L_i} = \sum j \frac{\mathbf{A_i w_i^{-\theta} \tau_{ij}^{-\theta}}}{\sum_{\mathbf{k}} \mathbf{A_k w_k^{-\theta} \tau_{kj}^{-\theta}}} \left(\mathbf{w_j L_j} + \mathbf{D_j}\right) \tag{4}$$

Let $P_j = \left[\sum_{\mathbf{k}} \mathrm{A_k} w_{\mathbf{k}}^{-\theta} \tau_{\mathbf{kj}}^{-\theta}\right]^{-\frac{1}{\theta}}$, which is the inward multilateral resistance term that was introduced in Anderson and van Wincoop (2003) and stands for the effective price level in each country. The next step is to solve the system of equations represented by Equation 4 in changes. If we denote changes with a "hat" (e.g.,[10] $\hat{w}_i = w_i'/w_i$) and noting that, we can write the equilibrium change in wages as:

$$Y_i \hat{w}_i = \hat{w}_i^{-\theta} \sum_j \left(\frac{\pi_{ij} e^{\beta FTA_{ij}}}{\hat{P}_j^{-\theta}}\right) \left(Y_i \hat{w}_j + D_j\right) \tag{5}$$

Once the change in wages in Equation 5 is calculated, one can calculate the following GE changes in wages, real wages, and total trade volumes:
GE wages effect:

$$\mathrm{W}_i = \hat{E}i/\hat{P}i \tag{6}$$

GE real wages effect:

$$r\hat{\mathbb{W}}_i = \hat{w}_i/\hat{P}_i \tag{7}$$

GE total exports effect:

$$\hat{X}_i = \sum j \frac{\hat{w}_i^{-\theta} e^{\beta FTA_{ij}}}{\hat{P}_j^{-\theta}} \hat{E}_j \tag{8}$$

The above GE welfare equations can be easily solved in STATA using the "GE gravity" command (Baier, Yotov, and Zylkin 2019). This GE exercise is used to estimate the GE effects in 1998 and 2005 separately to allow for the gradual full implementation of GAFTA. This exercise requires defining a baseline, which is 1994 for a GAFTA effect in 1998 and 1997 for a GAFTA effect in 2005. The choice of the baseline years follows the baseline PPML estimation, which precedes the counterfactual exercise, and which is done with intervals (see supplementary material in Baier, Yotov, and Zylkin (2019)). We choose 4-year intervals for the 1998 GAFTA GE effects estimation, and uneven intervals for the 2005 GAFTA GE effects estimation (1990, 1997, 2005, 2010,

[10]The coefficient β is obtained from estimating the partial effect of an FTA on bilateral trade from a structural gravity equation: $X_{ijt} = \exp\left(lna_{it} + lna_{jt} + lna_{ij} + \beta FTA_{ijt}\right) + e_{ijt}$.

and 2015). We test the robustness of these estimates to the choice of baselines years below. This exercise also requires assuming a value of trade elasticity θ, and we assume a value of four following Baier, Yotov, and Zylkin (2019). The exercise then calculates counterfactual trade and wage levels for the baseline given the GAFTA effect and GE effects are consequently obtained by taking the difference between the baseline and the counterfactual scenarios. The results from this exercise are presented in Table 2. These results confirm that the welfare effect of GAFTA is very modest if not negligible. Generally, smaller economies benefit more than larger ones. In addition, the welfare effects are generally higher in 2005 compared to 1998. The highest welfare effects (real wages) are registered for Oman (0.22%) and Jordan (0.24%) in 2005. Similarly, the overall GE trade effects are very small and not always positive. The highest trade effects are estimated for Iraq (0.42%) and Syria (0.25%). In some cases, the aggregate GE trade effects are negative which suggests that the diversion effects of GAFTA may be greater than the creation effects in some countries.

The robustness of these results is further examined by assuming a value of the trade elasticity θ of seven, which is also used in the literature (Yotov et al. 2016). Table A2 in the online appendix[11] presents the results and shows that the results are qualitatively similar to the benchmark results in Table 2. We also test the robustness of the results to the choice of baseline years by taking the same baseline year (1996) for both the 1998 and 2005 GE estimations. This requires assuming 3-year intervals in the baseline PPML estimation in the case of the 1998 estimation and uneven intervals in the case of the 2005 estimation (1990, 1993, 1996, 2005, 2010, and 2015). The results are reported in Table A3 in the online appendix. Here too, the results are qualitatively similar.

The small GE effects of GAFTA estimated in this study echo the findings of the ex-ante CGE study of Konan (2003), which found that a pure GAFTA would have very small, albeit mixed, effects in Tunisia and Egypt. The estimated small effects are likely to be the results of the lack of depth of the GAFTA agreement, which does not go farther than removing tariffs among the member states. To put this in context, NAFTA, which is a much deeper trade agreement, has led to an increase in real consumption of 3.8% in Mexico, 3.4% in Canada, and 0.33% in the US (Larch and Yotov 2016).

Taken together, the PE effects on bilateral trade and the GE effects on welfare suggest GAFTA has had limited success in bringing about real economic benefits to the member states. This is perhaps not surprising given the very limited scope of GAFTA as we discussed previously. In addition, the fact that the member states have been, so far, unsuccessful in negotiating a deeper RTA reflects the complicated political picture in the region, especially following the Arab Spring. While usually lumped together as one club of countries,

[11]The appendix can be found online at www.tandfonline.com/uitj.

Table 2. The GE welfare effects of GAFTA in 1998 and 2005.

	1998			2005		
Exporter	% d wages	% d real wages	% d trade	% d wages	% d real wages	% d trade
AGO	0.000	0.000	0.000	0.000	0.000	−0.001
ARE	0.009	0.009	0.008	0.045	0.045	0.049
ARG	0.000	0.000	0.000	0.000	0.000	−0.001
AUS	0.000	0.000	0.000	0.000	0.000	−0.001
AUT	0.000	0.000	0.000	0.000	0.000	−0.001
BEL	0.000	0.000	0.000	0.000	0.000	−0.001
BGD	0.000	0.000	0.000	0.000	0.000	0.001
BHR	0.069	0.055	−0.089	0.039	0.040	0.069
BRA	0.000	0.000	0.000	0.000	0.000	−0.001
CAN	0.000	0.000	0.000	0.000	0.000	0.000
CHE	0.000	0.000	0.000	0.000	0.000	−0.002
CHL	0.000	0.000	0.000	0.000	0.000	−0.001
CHN	0.000	0.000	0.000	0.000	0.000	−0.001
COL	0.000	0.000	0.000	0.000	0.000	−0.001
CRI	0.000	0.000	0.000	0.000	0.000	−0.001
CUB	0.000	0.000	0.000	0.000	0.000	−0.001
DEU	0.000	0.000	0.000	0.000	0.000	−0.001
DNK	0.000	0.000	0.000	0.000	0.000	−0.001
DOM	0.000	0.000	0.000	0.000	0.000	0.000
DZA	0.000	0.000	0.000	−0.001	−0.001	0.000
ECU	0.000	0.000	0.000	0.000	0.000	0.000
EGY	0.003	0.003	0.009	0.022	0.021	−0.014
ESP	0.000	0.000	0.000	0.000	0.000	−0.001
ETH	0.000	0.000	0.000	−0.005	−0.005	0.000
FIN	0.000	0.000	0.000	0.000	0.000	−0.001
FRA	0.000	0.000	0.000	0.000	0.000	−0.002
GBR	0.000	0.000	0.000	0.000	0.000	−0.001
GHA	0.000	0.000	0.000	0.000	0.000	−0.001
GRC	0.000	0.000	0.000	0.000	0.000	−0.001
GTM	0.000	0.000	0.000	0.000	0.000	−0.001
HUN	0.000	0.000	0.000	0.000	0.000	−0.001
IDN	0.000	0.000	0.000	0.000	0.000	0.000
IND	0.000	0.000	0.000	0.000	0.000	0.000
IRL	0.000	0.000	0.000	0.000	0.000	−0.001
IRN	0.000	0.000	−0.001	0.000	0.000	−0.001
IRQ	0.020	0.020	0.197	0.159	0.090	0.420
ISR	0.000	0.000	0.000	0.000	0.000	−0.001
ITA	0.000	0.000	0.000	0.000	0.000	−0.001
JOR	0.030	0.032	0.010	0.215	0.219	0.024
JPN	0.000	0.000	0.000	0.000	0.000	0.000
KAZ	0.000	0.000	0.000	0.000	0.000	−0.001
KEN	0.000	0.000	0.000	−0.001	−0.001	0.003
KOR	0.000	0.000	0.000	0.000	0.000	0.001
KWT	0.013	0.013	−0.016	0.094	0.102	−0.095
LBN	0.005	0.009	0.020	0.091	0.073	−0.095
LBY	0.003	0.003	−0.002	0.039	0.039	0.004
LKA	0.000	0.000	0.000	0.000	0.000	−0.001
MAR	0.006	0.005	−0.015	0.040	0.038	−0.091
MEX	0.000	0.000	0.000	0.000	0.000	0.000
MMR	0.000	0.000	0.000	0.000	0.000	−0.001
MYS	0.000	0.000	0.000	0.000	0.000	−0.001
NGA	0.000	0.000	0.000	0.000	0.000	−0.002
NLD	0.000	0.000	0.000	0.000	0.000	−0.001
NOR	0.000	0.000	0.000	0.000	0.000	−0.001
NZL	0.000	0.000	0.000	0.000	0.000	0.000
OMN	0.034	0.036	−0.026	0.226	0.235	−0.088
PAK	0.000	0.000	−0.001	0.000	0.000	0.001
PAN	0.000	0.000	0.000	0.000	0.000	0.000
PER	0.000	0.000	0.000	0.000	0.000	−0.001
PHL	0.000	0.000	0.000	0.000	0.000	0.000
POL	0.000	0.000	0.000	0.000	0.000	−0.001

(*Continued*)

Table 2. (Continued).

	1998			2005		
Exporter	% d wages	% d real wages	% d trade	% d wages	% d real wages	% d trade
PRT	0.000	0.000	0.000	0.000	0.000	−0.001
QAT	0.020	0.019	0.007	0.018	0.018	−0.005
ROM	0.000	0.000	0.000	0.000	0.000	0.000
SAU	0.005	0.005	0.015	0.021	0.017	0.063
SWE	0.000	0.000	0.000	0.000	0.000	−0.001
SYR	0.005	0.006	0.015	0.083	0.079	0.249
THA	0.000	0.000	0.000	0.000	0.000	−0.001
TUN	0.006	0.006	0.003	0.059	0.057	−0.024
TUR	0.000	0.000	0.001	0.000	0.000	0.001
TWN	0.000	0.000	0.000	0.000	0.000	−0.001
URY	0.000	0.000	0.000	0.000	0.000	−0.001
USA	0.000	0.000	0.000	0.000	0.000	0.000
ZAF	0.000	0.000	0.000	0.000	0.000	−0.001

Notes: All numbers are in percentages. Trade elasticity is assumed to be four.

the club of Arab countries is rather fragmented in terms of political and economic worldviews. The GCC countries, for example, are politically allied with the US and the West and have generally embraced globalization and the Western economic model. Iraq, Syria, and Lebanon, on the other hand, belong to the Iranian-Russian camp. Other countries such as Tunisia, where the Arab Spring was arguably more successful in instating democracy, are still struggling to draw a future economic trajectory for themselves. Furthermore, civil conflict still rages in Libya, Syria, and Yemen with overwhelming international influence from countries with conflicting+ strategic interests. It is, therefore, not surprising that further integration is unlikely in the current political and economic climates. The shortcomings of GAFTA are comparable to the South Asian Free Trade Area (SAFTA). SAFTA includes countries with political and economic rivalries such as between India and Pakistan, and politically unstable countries such as Afghanistan. The diverging economic realities and strategic interests of SAFTA countries have also led to limited success in trade integration among the member countries (Weerakoon 2010).

IV. Conclusion

This article examines the partial and general equilibrium effects of the Greater Arab Free Trade Agreement (GAFTA). In doing so, this study addresses the empirical shortcomings that occur in the limited number of existing studies that investigate the effects of GAFTA. This is also the first study that conducts a comprehensive ex-post analysis of the GE effects of GAFTA. The PE estimates suggest that GAFTA had a significant effect on the members' bilateral trade flows, but these effects may be small in absolute terms owning to the initial small trade flows between members. The GE effects paint a picture of the low effectiveness of GAFTA in

bringing about substantial welfare and trade effects for the member states. This is in contrast with other RTAs that have proven to be more beneficial to their participants. These results highlight the need for deeper integration in the Arab countries to capitalize on the benefits of free trade. This is especially crucial after the Arab Spring has laid bare the chronic economic failures in the region. The literature points to the right direction. Deeper integration through deeper trade agreements is needed, and a move toward further harmonization of procedures and standards can go a long way in this respect. Future research should investigate possible additional benefits to the Arab states that deeper integration may bring about.

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ORCID

Zouheir El-Sahli http://orcid.org/0000-0002-2963-5929

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