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Sanctions, Wars and MENA Trade

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Abstract

The paper investigates to what extent the intra-MENA political tensions adversely affect intra-regional trade (IRT). While traditional economic and political science literature focus on trade and wars, the paper considers other expressions of political tensions. In addition to inter-state wars, countries impose sanctions on financial collaboration, military collaboration, travel freedom, commercial relationships and diplomatic arrangements. The sanctions can be combined and simultaneous is order to achieve the highest impact. The analysis applies the gravity approach and the Pseudo-Poisson Maximum Likelihood estimator (PPML) to bilateral trade between the 18 MENA countries and 128 of their partners over the period 1971-2014. The results are that only commercial sanctions and inter-state wars are significant. They are negative meaning that they harm IRT.

Keywords: International Conflicts, Trade, MENA.
JEL Classifications: F14, F51, F63

Introduction

Political tensions and low intra-regional trade (IRT) are two major features of the MENA region. Efforts to increase such trade through regional integration have been a failure although they started earlier than in any other developing region (e.g. the Convention for Facilitating Trade and Regulating Trade Transit was signed in 1953) and have induced the signature of the highest number (over 20) of regional or sub-regional agreements. Various papers have examined whether and why intra-regional trade is low in the MENA. It appears that there are two important reasons. On the one hand the high number of de jure and de facto restrictions to trade the countries in the region are maintaining among them. On the other hand, political tensions between Arab states are omnipresent and limit the score of cooperation (see Sekkat, 2014 for a review).

Bhattacharya and Wolde (2010) show that Arab countries are trading more than 86 percent below what would be expected given the characteristics of their economies. Söderling (2005), focusing one the possible existence of unexploited trade opportunities by Arab countries, showed that there are many non-EU export markets that are underexploited by Arab countries. Researches, investigating the determinants of trade in MENA countries, confirm the explanations linked to trade policy (including trade agreements), foreign exchange policy, business climate (including infrastructure), governance, low exports sophistication and low productivity. Many of these reasons can be explained by political tensions among MENA countries.

On the political front, while the number of "fierce" intraregional wars has been very limited since the Second World War, political tensions between Arab states are omnipresent since the independence of these countries. The reasons of the tensions seem, however, to have changed over time. Following Santini (2017), during the 1950s and 1960s the region witnessed a sort of "Arab Cold War" which was were driven by Arab leaders and dominated by a deep ideological division. The latter opposes socialist revolutionary countries to Western-leaning ones. Starting in the 1970s, an era of intra-regional cooperation seemed to take place driven by antagonism with Israel. Since the 1979 Iranian revolution, the Arab character of the region became the pillar of the regional order. By the early 2000s, the region entered into a "New Regional Cold War" rooted in opposition between the Sunni's and Shiai's blocs.

Against this background, the present paper investigates to what extent the intra-MENA political tensions adversely affect IRT. It draws on the economic and political science literature which examines the relationship between trade and wars. As the number of "fierce" intra-MENA wars has been very limited while political tensions have been omnipresent, we extend the analysis to other expressions of political tensions that are sanctions. The sanctions include suspension or break of diplomatic relationships, boycott of athletic, cultural events or foreign goods, freeze property of targeted foreign citizens and so forth. These sanctions can be combined is order to achieve the highest impact. The United States is one of the leaders in imposing sanctions[2]

[2] Around 117 between 1970 and 1998

(Kilchevsky et al., 2007). Sanctions are popular because they often appear as a lower-cost method of punishing damaging behaviors or solving disputes between countries (Davis and Engerman, 2003). Examples of recent use of sanctions are the boycott of Danish goods by Muslim countries following the Muhammad Comic Crisis in 2005/2006, the Chinese boycott of Japanese goods in response to the Senkaku/Diaoyu Island conflict in 2012, the boycott of French products in the US over the Iraq War in 2003, and Turkey's boycott of Israel over the Gaza conflict in 2014 (Heilmann, 2016). However, sanctions, like wars, may be either ineffective, unfair or both. They sometimes fail to fulfill the objective or imposed by that large and wealthy countries without substantiated justifications (McCormack and Pascoe, 2017 and Haidar, 2017).

The above mentioned literature has been subject to qualifications. Firstly, the underlying assumption that economic exchange between countries will cease or be substantially reduced because of conflicts has been questioned. Barbieri and Levy (1999) draw form history numerous examples where trade between adversaries continues during wartime. Examining the cases of wars between Argentina and UK, UK and China, Cyprus and Turkey, Greece and Turkey, Uganda and Tanzania, UK and Egypt, and USA and China, they find that in most cases war does not have a significant impact on trade. It has sometimes a temporary negative effect on the level of bilateral trade but, in general, it induces no permanent negative effect.

Another qualification is that the links between war and trade are not automatic, but depend on a number of factors such as domestic institutions, civil liberties, government accountability, electoral effectiveness and transparency. To motivate this claim, it is useful to recall two uncontroversial facts related to political tensions and government. First, both in autocracy and democracy the decision to engage in conflict belongs to national leaders. Second, national leaders wish to retain office (whether out of altruistic concerns or self-interest). In general, autocratic leaders need to satisfy a narrower coalition than democratic leaders. Although some exceptions may exist, they are not concerned with large-scope public policy successes, e.g. economic growth. In contrast, democratic leaders need majority in a larger constituency and are, therefore, constrained to secure large-scope public policy successes such as growth. The potential role of international exchange in improving growth may make democratic leaders much more averse to conflict than autocratic ones. The existence of checks and balance and the quality of institutions are crucial in this respect. Much empirical evidence lends support to this claim. Gelpi and Grieco (2008), examining the sensitivity of national leaders to the costs of conflict in terms of trade losses, confirm that democratic states are unlikely to initiate conflicts. Mansfield et al. (2008), investigating the relationship between democracy and economic integration, find that the more democratic a country is, the more likely it is to sign integration agreements. Finally, Kono (2008) shows that public support for free trade leads to lower tariffs and that the liberalizing effects of such support are both larger and more significant in more democratic countries.

A last qualification is that war is not the only way to deal with interstate tensions and other mechanisms might be superior (more gains and less cost especially in terms of human life and

infrastructure destruction). Alternatives are sanctions which can take different form (Davis Engerman, 2003). They can be situated between diplomatic and military measures. They include the withholding of diplomatic recognition, the boycotting of athletic and cultural events and the sequestering of property of citizens of the targeted country. Following Hufbauer et al. (2020), through their use as tools of military containment, sanctions play an unappreciated role in international politics.

This paper investigates the impact of armed and non-armed conflicts on the MENA's trade. The contribution of the article is threefold: First, we evaluate the relationship between conflict and trade in 18 MENA countries. While the liberal and realistic approaches assume that trade will cease or substantially decrease after the outbreak of war, we don't take this vision for granted and we seek to test it.

Second, we focus on a particular region; that is the MENA. The idiosyncrasy of this region (oil export, inter-countries difference in wealth, same religion but with different practices and, finally, the complex relationships with Israel), offer a unique opportunity to test whether the literature findings are universal or are depending on the time and places (Kilchevsky et al., 2007). Mansfield and Pollins (2001) show that the relationship between trade and wars might differ over time and across countries. In this case, the ignorance of important regional differences around the world may impact the conclusions. We, therefore, need to move from the general insight offered by past studies to more region-specific models and analyses at lower levels of aggregation.

Third, in evaluating the relationship between conflict and trade, we consider other aspects of disputes than war. We consider the suspension of military, diplomatic, travel and commercial collaborations and compare their effects to those of war. Such sanctions might be popular when they substitute themselves to wars and appear as a lower-cost method of punishing or settling disputes between countries (Davis and Engerman, 2003).

The next Section reviews the relation of our paper to the literature. The following Section presents the data, their sources some summary statistics. Afterward, the methodology is discussed before the analysis of the results.

Empirical Literature on Conflict and Trade

The literature pertaining to conflicts and trade can be split in two branches. A first branch, mainly developed by political scientists, investigates the impact of economic ties on the likelihood of conflicts between countries. The second branch, mainly a concern for economists, looks at the impact of conflicts on inter-countries economic ties. Political conflicts can involve sates or international organizations. They can be militarized (i.e. war) or non-militarized. Under the class of wars, the literature distinguishes between threat of war, display of forces and "hard war". Non-militarized disputes span a larger spectrum including financial measures,

commercial sanctions, diplomatic restrictions or aid suspension. Now days, cyber war is becoming a common means way of attacks (Davis and Meunier, 2011).

While most analysis of the conflicts debate focuses on militarized disputes, the analysis of the sanctions is increasingly developing. Sanctions are initiated by one party called the sanctioning against another called the sanctioned. The reasons of the sanctions are also varying over time. Between 1914 and 1945, sanctions were typically deployed to avoid or stop military adventures. In subsequent years, sanctions have been used for a broader range of goals such as pushing freedom and democracy, protecting the environment or avoiding nuclear proliferation. An additional type of sanctions is reciprocal sanctions which the sanctioned party uses in response to the initiative of the sanctioning. However, these type of sanctions tend to be ineffective (Davis and Engerman, 2003).

While the use of sanctions targets the imposition of costs on the sanctioned countries, it is not costless for the sanctioning. Beside the cost of implementation, the sanctioning countries' firms are likely to lose sales and trade and see aid or financial flows disrupted. Moreover, the sanctioned responds by diversifying sources and destination of exchange flows or structuring production. Hence, the choice and effectiveness sanctions depends on a number of factors such as public opinion, technology and the relative power relations among and within nations (Elagab, 1988).

Impact of economic ties on conflicts

Wars

The role of international economic ties in reducing the risk of interstate conflicts leads to an intense debate among political scientists. A strand of the literature, referred to as Liberal, argues that economic interdependence lowers the likelihood of conflicts by increasing the value of trading over the alternative of aggression: interdependent states would rather trade than invade. In other words, rising tensions have a negative impact on business and motivate citizens to lobby their governments in order to make the necessary effort to avoid the conflict. Improvement of political relations is expected to follow. Hence, peace increases the value of trading over the alternative of aggression.

The other approach, referred to as Realist, argues that high interdependence means mutual dependence, thus potentially leading to vulnerability. It gives governments an incentive to adopt policies that reduce economic dependence and ensure continued access to necessary materials and goods. This can be achieved by initiating war and encouraging business actors to shift trade and investment to other partners. Political tensions, thus, would lead to a downward trend of economic exchange with a country relative to stable or increasing economic ties with other countries.

Empirical analyses sought to test the validity of the Liberals and the Realists views. In a seminal paper, Polachek (1980) analyzed the relationship between the volume of bilateral trade and an

indicator of conflict between countries. He found an inverse relationship between these variables, providing support to Liberal. Gowa and Mansfield (1993) argue that the relationship between trade and conflict is actually bidirectional. Trade may promote peace and peace can foster trade. Their empirical findings support that the relationship between trade and conflict is indeed bidirectional.

Gasiorowski (1986) pointed out; however, that trade may have different impacts on the likelihood of war depending on partners. For instance, the gains from economic exchange could inhibit conflict as the Liberals predict but an unequal distribution of these gains could aggravate conflict as Realists predict. Therefore, trade can have both conflict-inhibiting and conflict promoting effects. In a similar spirit, Barbieri (1996), focusing on the asymmetry of trade effects, supported the Realists in that trade can be conflict inducing. Although Barbieri's work has been criticized for a lack of robustness, it reinforced the claim that the effects are not invariable. Mansfield and Pollins (2001) convincingly showed how the relationship between trade and wars might differ over time and across countries depending, in particular, on domestic and international institutions.

Martin et al. (2008) examine the validity of the liberals and the realist approaches during the wave of globalization starting in 1950s. The argue that what matters ultimately is the geographical structure of trade and the balance between bilateral and multilateral exchanges. Bilateral trade, because it increases the opportunity cost of bilateral war, deters bilateral war. Multilateral trade, because it reduces this opportunity cost with any pair of countries, weakens the incentive to make concessions during negotiations and therefore increases the probability of war. Tests these predictions on a large data set of military conflicts between 1950 and 2000, they find robust evidence for the contrasting effects of bilateral and multilateral trade openness. Bilateral trade costs indeed increase significantly with bilateral conflicts while multilateral trade costs do not.

Kilchevsky et al. (2007), focusing on the case of the MENA, examine a similar question to Barbieri (1996) cited above. The question concerns the quantitative importance of trade and the degree of its asymmetry between partners. More precisely, they investigate whether countries with relatively high levels of trade, those with symmetrical trade and those showing mutual interdependence are less likely to enter into armed conflicts. The empirical analysis supports the validity of these hypotheses in the MENA. In this region, countries with high levels of trade are less likely to enter into armed conflicts with one another which is in accordance with the liberals. The symmetry in trade relations does not appear to be related to the probability of conflictive events between countries. The rest of the analysis shows that countries exhibiting that contiguity and common membership of intergovernmental organization are related to less conflict. Likewise, having similar political regimes is associated with lower probability of conflict at least for a part of the studied period. These results support the liberals approach and the importance of democracy in the Region. It seems, therefore, that increasing economic linkages in the region can help reducing the political tensions but countries in the region must, first, engage in deep reforms of their political systems.

The above discussion, focusing on goods, reflects a first wave studies in the field. More recently, the literature has been extended to capital. Polachek et al. (2007) is among the first papers to explore this issue. It presents a formal model that shows why Foreign Direct Investment (FDI) can improve international relations. Then the authors, proceed to test the model, using bilateral FDI and conflicts data between dyads during the period 1980-990. They found that FDI has a similar effect to trade on international conflicts. FDI flows moderate international conflicts and encouraged co-operation. Bussmann (2010) argues that, like for trade, the relationship between FDI and conflicts can be bidirectional. Using a simultaneous equations model that takes the endogeneity problem into account and data for the years 1980–2000, the author finds that inflows and stock of FDI reduce the risk of an outbreak of important disputes. Moreover, the results also support that significant conflicts reduce FDI inflows and stock. Lee and Mitchell (2012) explore the underlying mechanisms of the relationship between FDI and conflicts. It considers, the declining benefits of territorial conquest, the increasing preference similarity, the increasing opportunity costs of violence and improved information. Using data on geopolitical conflicts over territory, maritime areas, and cross-border rivers and FDI over 1970–2001 and find that increases in FDI reduce states' willingness to start new border disputes. Moreover, FDI reduces the likelihood of militarized conflicts even between pairs of states that have experienced prior militarization of contested issues.

So far we have focused on the relationships between economic exchange and peace without reference to any bilateral or multilateral agreements. The literature suggests, however, that if the exchange relationships are taking place under the framework of intra-regional integration their effect on the likelihood of wars seems to be reinforced. Integration is seen to promote peace by removing an important foundation of domestic privilege. Integration agreements limit the capacity of participants to subsequently raise trade barriers following pressure from some domestic groups. Membership of integration agreements reduce antagonism by establishing a forum for bargaining and negotiation among members, thereby facilitating the resolution of inter-state tensions prior to open hostilities. Agreements can also help addressing the issue of distribution of gains. Integration agreements may promote arrangements guaranteeing that economic concessions made by one party will be repaid, rather than exploited, by its counterparties. In Europe, a redistribution system which was designed from the beginning, seems to plays a prime role in fostering public support for greater integration. Mansfield and Pevehouse (2000) tested whether the risk of inter-state war is lower between members of an integration agreement than between non-members, and found a strong negative relationship: parties to an agreement are less likely to engage in hostilities than other states, and the likelihood of a military dispute steadily declines as exchange increases between them.

Sanctions

While most analysis of conflicts focuses on militarized disputes, the analysis of the other means of conflicts, such as sanctions, are increasingly developing. Hafner-Burton and Montgomery (2008) investigates the role of sanctions. They confront two views. Using the argument developed above about bilateral or multilateral agreements, some scholars argue that Preferential Trade Agreements (PTAs) and the World Trade Organization (WTO) prevent

different forms of international disputes. In contrast, other put forward that trade arrangements could increase sanctioning behavior. For instance, PTAs increase the informal links between states through which collusion on sanctions can occur. Moreover, PTAs can exacerbate conflict by creating asymmetries in power. The empirical analysis gives support to both hypotheses depending on the context. On the one hand PTAs increase bilateral trade and decrease sanctioning behavior. On the other hand, centrality in the network of all PTAs or high difference in members' GDP make sanctioning more likely. Kim (2013) adds to the preceding analysis by focusing on FDI and the use of economic coercion. It argues that FDI matters but the extent of its effect depends the entry mode of FDI, that is cross-border M&As or joint ventures. The results strongly support that Cross-Border M&As has a negative impact on the probability of sanction onset. In contrast, the likelihood of sanctions increases with joint ventures.

Impact of conflict on economic ties

Wars

Here, we focus on the reverse effect to the one in the preceding section. The role of interstate tensions in hampering international economic ties. As in that section, we will first discuss issues related to wars and, then, turn to sanctions.

Keshk et al., (2004) test the impact of war on trade reconsidering the simultaneity issue of the simultaneous relationship between the two variables. Previous studies (e.g. Gowa and Mansfield, 1993) have found that the relationship between trade and conflict is actually bidirectional. This is questioned on the ground of econometric flaws. The used standard estimation procedures for simultaneous systems is not suitable when one of the dependent variable (e.g. war) is a discrete variable. Keshk et al., (2004) develop and apply more recent advances in simultaneous equation estimation that allow incorporating discrete dependent variables. The findings support the "primacy of politics" in the sense that while conflict inhibits trade does not bring peace. The apparent effect of trade on peace is the result from simultaneity bias.

Blomberg and Hess (2006) assess the trade cost of violence in comparison to the cost of trade barriers. Using data from 177 countries over more than 30 years, they find that peace has a strong statistical and economic impact on trade. When distinguishing the following types of violence: terrorism (T), external war (E), revolutions (R) and inter-ethnic fighting (IF), they find that, for a given country year, the cost of terrorism and internal or external conflict is equivalent to 30 percent tariff on trade. This impact is larger than the cost of border and language barriers and equivalent to tariff reduction associated with Generalized System of Preferences (GSPs) or WTO participation.

Wars do not only have direct costs on the belligerents. Costs can be indirect and affect neutral parties as well. This means that wars can have the collateral damages via large negative externality on trade of these neutral parties. Glick and Taylor (2010) examined this issue as well as the persistent effect of wars; that is whether trade resumes its pre-war level after some many years. Some major indirect costs of war are examined using a sample of 172 countries over the

period 1870–1997. The results imply that war affect neutral countries. It depresses trade between belligerents and neutrals by about 12%. Moreover, contemporaneous as well as and lagged effects on trade are all negative and statistically significant. The effect persists for 8 years after the start. Once a war ends, trade destruction declines roughly monotonically over time. Trade returns to its peacetime level about a decade later. Finally, major wars are especially damaging to trade of both neutrals and belligerents.

Karam and Zaki (2016) investigates the effects of war on trade in the MENA. They use an augmented gravity model and distinguish between different types of conflicts. These include armed conflicts between two parties, of which at least one is the government of a state, non-state conflicts between two organized armed groups, neither of which is the government of a state and one-sided violence when one actor is the government of a state. The results show that, in general conflicts a whole have a significantly negative impact on trade. Considering a sectoral disaggregation of the economy, the author found that non-state conflicts have a detrimental effect on manufacturing trade. None of the other types of conflict modeled affect trade in services.

Sanctions

As explained above, war is not the only means to deal into interstate tensions. Different forms of non-militarized sanctions are used by countries to settle their opposition. Davis and Meunier (2011) examined the impact a series of negative events such as demonstrations, reduction of diplomatic relations, expulsion, seizure of assets or the use of force, on trade and investment. More precisely, they focus on the bilateral relationships between the United States and France and between Japan and China from 1990 to 2006. Overall, no evidence that political tensions harmed economic relations emerged. The negative events reported in the media does not reduce the trade or investment flows for either the United States or Japan.

Heilmann (2016) focuses on the impact of consumer boycotts on bilateral trade relations. The author considers the boycott of Danish goods by Muslim countries following the Muhammad Comic crisis in 2005/2006, the Chinese boycott of Japanese goods in response to the Senkaku/Diaoyu Island conflict in 2012, the boycott of French products in the US over the Iraq War in 2003 and Turkey's boycott of Israel over the Gaza conflict in 2014. In contrast to the precedent study which did not consider consumer boycott, the results show such boycotts can have strong negative effects on bilateral trade in both goods and services. The results show strong heterogeneity in the response among the boycotting countries, with an average one-year reduction in imports of about 18.8%, 2.7%, and 1.7% of total trade in the Muslim boycott case, Senkaku conflict, and the US consumer boycott against France respectively. While no negative effect on Turkish imports from Israel was found, Israel reduces its imports from Turkey by 12.3%.

Before imposing sanctions, countries can start threatening to do so. This might be sufficient to settle the dispute and avoid the cost of sanction imposition to both countries. Afesorgbor (2019) compare the effect of threats of sanctions with the imposition of sanctions. Using a detailed

disaggregated data on sanctions from 1960 to 2009, they show that the impact of threats differs qualitatively and quantitatively from imposition. Imposed sanctions lead to a decrease in the trade flow between the sender and the target while threat of sanctions leads to an increase in the trade flow. One explanation is that in case of threat economic agents resort to stocks building up prior to the potential imposition and, hence, minimizing adverse consequences of the sanctions.

Instead of imposing sanctions on a whole economy or only some of its sector and firms, more targeted sanctions such as longer-term financing transactions and transfer of certain specialized technologies can potentially more effective. Ahn and Ludema (2020) focus on the effectiveness sanctions and the endogenous response of the target regime including government "shielding". This refers to government transfer of resources to certain sanctioned firms. Using data of nearly 3000 firms throughout the world and a difference-in-difference approach, they compare the financial performance of the targeted firms to their non-targeted peers before and after sanctions were imposed. The findings indicate that targeted sanctions do impose considerable economic costs on targeted firms but the governments engage in shielding which shifts the burden of the sanctions from the target firms to the target government.

While sanctions impose economic costs on targeted firms or countries, it can also induce costs for the sanctioning body. In this spirit, Besedeš et al. (2021) analyze the impact on and the responses of German non-financial firms to the imposition by Germany of financial sanctions. They analyze the sanctions on 23 countries over the period 1999-2014 and use highly disaggregated data from the German balance of payments statistics. They, first, find that German financial activities with sanctioned countries are reduced after the imposition of sanctions. Second, firms doing business with sanctioned countries tend to be disproportionately large and often have alternative business opportunities. Third, firms affected by sanctions expand their activities with non-sanctioned countries. Finally, no effect of sanctions on broader measures of firm performance such as employment or total sales is found. Overall, it seems that the economic costs of financial sanctions to the sanctioning country are limited.

Coming back to the MENA region, Haidar (2017) studies the responses of Iran (the sanctioned country) to the US unilateral economic sanctions. Using more than 1.81 million Iranian transactions export data, the paper examines precisely the extent and mechanisms of export deflection of Iranian non-oil export following the imposition of sanctions. It finds that two-thirds of the value of Iranian exports thought to be destroyed by sanctions have actually been deflected to non-sanctioning countries. Moreover, exporters to non-sanctioning countries only increased significantly their export after sanctions. At the firm level, the outcome depends on exporter size, past export status, and pricing strategy. Some exporters reduced their product prices as they deflected exports to new destinations. Larger exporters deflected more of their exports than smaller exporters. In sum, export sanctions seem less effective in a more globalized world as exporters can deflect exports from one destination to another.

Data and Statistical analysis

Data

In this paper we apply the gravity approach combining various types of data (economic, political, sanctions and wars) which come from different sources. Our dependent variable is the bilateral exports of MENA countries to different countries. The combination of different data sources induces obviously a number of comparability issues and the data have to be homogenized. Our objective is to build a sample reflecting the relationship between the 18 MENA countries and the largest possible number of their partners. We end up with a total of 128 partners (18 MENA and 110 non-MENA) over the period 1971-2014. Our data includes:

Gravity variables drawn from the CEPII Web-site and include bilateral exports from each MENA country to the 127 MENA partners, GDPs of the origin and the destination country and distance between the origin and destination. Three additional groups of variables are also considered: trade policy indicators which include common membership of PTAs and membership of WTO, geographical/historical characteristics and concern colonial link, similar language and contiguity.

Political data are drawn from Polti iv which provides substantial information on regime types and behavior. Here, we focus primarily on autocracy score, democracy score, combined score (democracy score minus autocracy score) and the durability of each regime (in number of years). The first two scores scale from 1-10, with higher values indicating stronger autocracy or democracy.

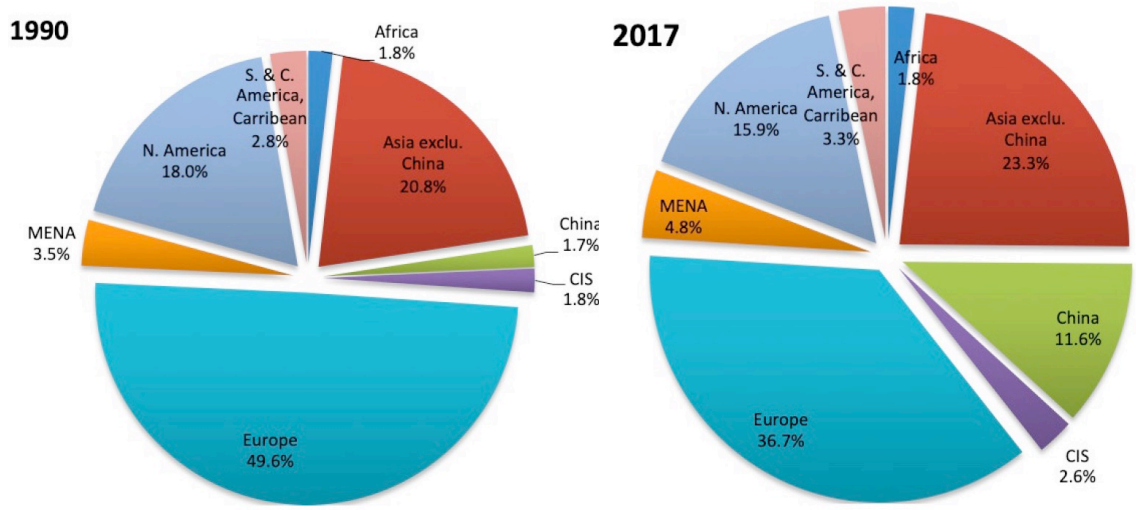
Conflicts data combines three type of information: Interstate wars, non-violent sanctions and a detailed set of commercial and diplomatic sanctions. We focus on conflict involving at least one MENA country:

- Interstate wars come from the Uppsala Conflict Data Program (UCDP) Dyadic dataset. The main unit in this dataset is a "Conflict Dyad". It reports the use of armed force between two parties, of which at least one is the government of a state. The conflict is reported if it results in at least 25 battle-related deaths in a calendar year (Harbom et al., 2008; Pettersson and Öberg, 2020 and Pettersson, 2020). Here we focus on the case where both parts to the armed to conflict are states.
- Sanctions come the Global Sanctions Database (GSDB) which covers 729 publicly traceable, multilateral, pluri-lateral, and purely bilateral sanction cases over the 1950-2016 period. It classifies these sanctions following on five fields: arm exports, military cooperation, trade, finance and freedom of travel (Felbermayr et al., 2020)
- Trade related sanctions are further detailed in the Threat and Imposition of Sanctions (TIES) Dataset. The data are provided from 1945-2005. The types of trade sanctions include total economic embargo, partial economic embargo, import restriction, export restriction, asset freeze, termination of foreign aid and travel ban (Clifton et al., 2014). The dataset also gives information on diplomatic sanctions following four dimensions: expulsion of ambassador, recall of ambassador, temporary closing of embassies and ending diplomatic contacts.

Statistical analysis

Figure 1 presents the share of bilateral trade in total trade by region of the world in 1990 and 2017. Unsurprisingly the highest share corresponds to Europe for both years with as sensible decrease over time. The second most important share corresponds Asia (excluding China) but, here the share is increasing overs time. North America occupies the third rank. The most impressive is increase is shown by China; from 1.7% in 1990 to 11.6% in 2017. The share of the MENA is among the lowest and is slightly increasing.

Figure 1: Share of intra-regional trade in total



Source: OECD, 2018

Table 1 shows MENA countries that are members of the WTO and the number of MENA and non-MENA countries having a PTA with MENA. Out of the 18 MENA countries one third is not member of the WTO. Regarding PTAs, the highest number of countries linked to MENA concerns MENA (17). This suggests a high degree of intraregional of integration within The Region but contrasts with the low level of interregional trade as shown above. The second region with the highest number of PTA with MENA is OECD (7). The country driving the high number of intra-MENA's PTAs is Turkey (5).

Table 1: MENA countries with WTO membership and PTAs by world region (over the period of observation)

	Number of bilateral PTAs and countries by region in the sample							Member of the WTO
	LAC	Transition	East Asia	MENA	OECD	SSA	South Asia	
Number of countries by region in the sample								
	17	24	8	18	18	34	14	
Number of bilateral PTAs by region in the sample								
Algeria	0	0	0	0	0	0	0	1
Bahrain	0	0	0	0	1	0	0	1
Egypt	0	0	0	1	0	0	0	1
Iran	0	0	0	1	0	0	0	0
Iraq	0	0	0	0	0	0	0	0
Israel	1	0	0	1	2	0	0	1
Jordan	0	0	0	1	2	0	1	1
Kuwait	0	0	0	2	0	0	0	1
Lebanon	0	0	0	1	0	0	0	0
Libya	0	0	0	0	0	0	0	0
Morocco	0	0	0	2	1	0	0	1
Oman	0	0	0	0	1	0	0	1
Saudi Arabia	0	0	0	0	0	0	0	0
Syria	0	0	0	1	0	0	0	0
Tunisia	0	0	0	1	0	0	0	1
Turkey	1	1	1	5	0	0	0	1
UAE	0	0	0	1	0	0	0	1
Yemen	0	0	0	0	0	0	0	1
Total	2	1	1	17	7	0	1	

Source: WTO

We turn to democracy scores. The degree of democracy is seen in the literature as an important determinant of openness to trade. Table 2 gives the democracy scores of MENA countries and regions of the World. The score varies between 0 and 10. The highest is the score, the most democratic is the country or the region. Almost unsurprisingly the least democratic region is MENA with half the score of SSA. Within the Region, Kuwait, Libya, Oman, Saudi Arabia, Syria and the UAE have a score of zero meaning no democracy at all. In contrast, Lebanon, Israel and Turkey appear as the most democratic with scores of respectively 5.71, 7.45 and 7.5. The rest of the countries are all below 1.2 meaning almost no democracy.

Table 2: Average scores of democracies

Democracy Scores			
MENA Countries		Regions	
Algeria	1.02	LAC	5.4
Bahrain	0.02	Transition	5.6
Egypt	0.14	East Asia	6.98
Iran	0.68	MENA	1.12
Iraq	0.59	OECD	9.67
Israel	7.45	SSA	2.25
Jordan	1.11	South Asia	3.20
Kuwait	0.00		
Lebanon	5.71		
Libya	0.00		
Morocco	0.09		
Oman	0.00		
Saudi Arabia	0.00		
Syria	0.00		
Tunisia	0.61		
Turkey	7.50		
UAE	0.00		
Yemen	1.19		

Source: Politi iv

The data on sanctions and interstate wars are highly important for our analysis. Table 3 gives the number of sanctions or interstate wars imposed on at least one MENA country by region of the imposing partner. Given its high length, we relegate the table disaggregating the information by MENA countries to the Appendix. Out of 460 incidents over the period of observation, 228 (the largest share) occurred between MENA countries. The SSA stands as the second in terms of confrontation with the MENA (174) while the other exhibits low numbers. The most frequent events between MENA countries concern sanctions on trade and finance. The number of interstate wars is much lower although non-negligible. Within the MENA, Iran and Iraq, and to a much lesser extent Jordan and Saudi Arabia, are the most involved in the incidents.

Table 3: Sanctions and wars imposed on MENA countries by imposing region (over the period of observation)

Sanctions	Lac	Transition	East Asia	MENA	OECD	SSA	South Asia	Total
Travel	0	0	0	14	0	28	0	42
Trade	0	0	0	57	0	45	0	102
Military	0	0	0	18	0	23	0	41
Interstate War	0	0	12	29	24	1	0	66
Financial	0	2	0	73	14	53	0	142
Diplomatic	0	1	0	20	5	0	0	26
Arms	0	0	0	17	0	24	0	41
Total	0	3	12	228	43	174	0	460

Source: GSDB, TIES, UCDP

Empirical Analysis

Model

The basic gravity model relates bilateral trade T_{ijt} to the GDP of the involved countries, distance D_{ij} between these countries and other explanatory variables X_{ijt} depending on the purpose of the analysis. In our analysis the specification can be summarized as follows:

$$T_{ijt} = f\left(GDP_{it},\ GDP_{jt}, D_{ij},\ Trade\ policy_{it}, Democracy_{it},\ Interstates\ wars_{ijt}, Sanctions_{ijt}\right) \quad (1)$$

It has proved successful in predicting the pattern of bilateral trade and assessing the effects of commercial and monetary policies. First introduced by Linnemann (1966), it can be derived as a reduced form of a broad class of structural models (see Anderson, 1979 and Bergstrand, 1989). Deardorff (1998) derived the gravity specification from a trade model with perfect competition and product differentiation while Feenstra et al. (2001) showed its compatibility with monopolistic competition and product differentiation. In both cases the resulting empirical specification is a double-log relation between bilateral flows and national income, distance, distance and other explanatory variables. The coefficients can, therefore, be interpreted as elasticities.

Regarding estimation, applying the usual OLS method to a log-linear expression of the equation was for a long time the common approach. However, Silva and Tenreyro (2006) criticize the OLS estimation of the log linear equation on two grounds: (i) In the presence of heteroscedastic errors, elasticity estimates are biased and (ii) the log linear transformation of zero trade observations is infeasible. Hence, the double-log specification omits country pairs for which the reported value of bilateral trade is zero. This is not very harmful when trade between developed countries is considered (Feenstra et al., 2001) because there are almost no zeros. In contrast, it is undesirable when trade with developing countries is considered. There may be a non-negligible number of zeros. These observations contain information on reasons why low levels of trade are sometimes observed. For instance, too low incomes and very long distances render quantities of potential trade uneconomical. Moreover, zero trade flows are rarely randomly distributed. Hence, truncating these observations can lead to biased results. Given the number of zero observations in our sample (around 25% of the total), the issue is important for our analysis and we should explore possible solutions.

Rather than throwing away the zero trade observations some authors estimate the model adding a small number to the zero observation and use a double log OLS. Others uses the Tobit estimator on a semi log specification. However, adding a small positive value to trade flows has no theoretical justification and can distort estimated results (Flowerdew and Aitkin, 1982). Because of these problems, the conventional OLS regression of the gravity equation will not yield consistent parameter estimates The Gravity Equation (1) can be estimated by nonlinear or linear OLS with fixed effects suggested by Anderson and van Wincoop (2003). However, Silva and Tenreyro (2006) still warn that the OLS estimation will not yield consistent estimates.

An alternative approach to addressing the zero trade issue is to use a sample selection model, such as the Heckman's, which apply selection bias method. However, Liu (2009) argues that since the Heckman gravity model adopts the log-linear specification as the conventional OLS estimation, it is still subject to the heteroscedasticity problem. These authors suggest the use of the Poisson family regressions, in particular the Poisson Pseudo Maximum Likelihood (PPML), which gets ride of the zero trade flows issue. The gravity equation is estimated multiplicatively without introducing the log linear transformation. The PPML model can handle zero trade flows and consists of two parts. The first part contains a Logit (Probit) equation modeling the probability of zero bilateral trade flows (no trade at all). The second part takes bilateral trade flows including zero trade values as count data and estimates a Poisson model. The probability mass functions of the first and second parts are respectively:

$$Pr(T_{ijt}) = exp^{-\mu} \qquad if\ T_{ijt} = 0 \quad (2)$$

$$Pr(T_{ijt}) = \frac{exp^{-\mu}\ \mu^{t_{ijt}}}{T_{ijt}!} \qquad if\ T_{ijt} > 0 \quad (3)$$

where

$$\mu_{ijt} = Y^*_{ijt} - log(GDP_{it}) - log(GDP_{ijt}) - log(Dist_{ij}) - X_{ijt}$$

and Y^* is a latent variable on whether there is trade or no between i and j.

Results

The results are discussed in five steps. Firstly, we examine the PPML estimation using the basic specification based on equations 2 and 3. The specification represents the basic gravity model which include the Log (GDP importer), the Log (GDP exporter) and the Log (Distance) between the two partners. We add dummies for interstate wars and the various types of sanctions. Each dummy is equal to 1 for the period during which and event take place. The available lit of events available in the data sets cover the suspension of financial or military collaboration, restraints to travel freedom between partners, commercial sanctions, diplomatic sanctions and inter-state wars. The aim is to detangle which type of events adversely affect bilateral trade. if an event. Since the 6 groups of events are split by sub-groups (see Appendix B), in the second step we try to identify whether one or more events are more effective, than the remaining of the sub-groups the domains, in reducing trade. Thirdly, using specification which summarize the findings of the two previous steps, we include additional control variables, to check the robustness of these findings. The additional control variables concern whether the partners have a Preferential trade arrangement, are members of GATT, have a Colonial link, share a Similar language, are Contiguity and their score of democracy. Finally, and line with the literature in the field, we examine Timing of the effects of each event. In particular, we examine the number of years since its initiation it takes an event to affect bilateral trade as well as the number of years since its end it takes an event to see trade recovering.

Table 4 compares the results of the basic specification using the 3 methods of estimation discussed above (OLS, Tobit and PPML). Among the traditional gravity variables, the

coefficient of GDP of the exporter and the Distance are significant with the expected sign irrespective of the estimation method. They are positive and negative respectively. The GDP of importer is never significant. Among the conflict variables, the significance and the sign differ highly. The coefficients of financial collaboration and diplomatic sanctions are never significant. The coefficients of travel freedom and commercial sanctions are significant only with the PPML method. They have the negative expected sign meaning that sanctions on the freedom to travel and on commercial relationship reduce bilateral trade. The coefficient of military collaboration is significantly negative with OLS and Tobit and insignificant with the PPML. The coefficient of interstate war is significantly negative irrespective of the estimation method. It is worth noting that coefficients are always higher in absolute term with OLS and Tobit than with PPML. Given our above discussion about the estimation methods we will consider only the PPML results in what follow.

Table 4: Basic model estimation results

	OLS	Tobit	PPML
Dependent Variable	Log(Trade+1)	Log(Trade+1)	Trade
Explanatory Variables			
Log (GDP $_{importer}$)	-0.045	-0.055	-0.003
	(1.422)	(1.197)	(0.613)
Log (GDP $_{exporter}$)	0.952***	1.340***	0.137***
	(30.069)	(28.459)	(23.646)
Log (Distance)	-0.278***	-0.433***	-0.063***
	(2.601)	(2.812)	(3.242)
Financial collaboration	1.744	2.260	0.504
	(1.111)	(1.033)	(1.279)
Military collaboration	-4.459*	-6.86**	1.184
	(1.736)	(1.976)	(1.353)
Travel freedom	-2.362	-3.291	-1.323*
	(0.721)	(0.718)	(1.784)
Commercial sanctions	-1.599	-2.449	-0.375**
	(1.346)	(1.593)	(2.057)
Diplomatic sanctions	1.322	2.712	0.722
	(0.673)	(0.798)	(1.479)
Inter-state wars	-3.279***	-4.946***	-0.566***
	(2.818)	(3.140)	(3.098)
Number of observations	21060	21060	21060
Adjusted R-squared	0.13		
P-value; F (zero slopes = 0)		0.00	
Fraction of positive observations		0.70	

***, ** and * means respectively significant at 1%, 5% and 10%.

Table 5 presents the second step of the analysis. We focus only on those sanctions having a significant coefficient with PPML in Table 4. However, in the GSDB data bank, commercial sanctions are split among 14 different components among which only four appear to have been implemented in our sample These components are total economic embargo (The sender(s) stop the flow of all economic exchange to and from the target state), import restriction (The sender(s) bans or places restrictions on certain goods imported from the target state), blockade (The sender(s) attempts to prevent all states from engaging in economic transactions with the target state) and asset freeze (The sender(s) partially or completely seize all assets of the target state). The results with each component are presented in a different column. The coefficients of the traditional gravity variables are very similar to those in Table 4. The coefficient of travel freedom which was of very low significance in Table 4 becomes insignificant. Among the components of commercial sanctions only import restriction has a significantly negative coefficient. Inter-state wars always exhibit a significantly negative coefficient. Interestingly the two coefficients are of similar magnitude meaning that import restriction and inter-state wars affect bilateral trade in a similar extent. One pacific implication of this similarity is that, overall, import restriction is a cheaper means to achieve the sanctioning's objective than war. The harm to bilateral trade is similar but the cost in terms of human life and infrastructure destruction is avoided. A vehement implication is that combining import restriction and inter-state war impose higher costs on the sanctioned and, therefore, is more effective.

At the end of this second step, our preferred speciation includes two hostile engagements which effectively affect trade. Our next step of the analysis is to see whether these results are robust to the introduction of additional variables.

Table 5: Determining effective commercial sanctions (PPML)

	Type of commercial sanctions			
	Total Economic Embargo	Import Restriction	Blockade	Asset Freeze
Log ($GDP_{importer}$)	-0.003	-0.003	-0.003	-0.003
	(0.551)	(0.545)	(0.534)	(0.526)
Log ($GDP_{exporter}$)	0.137***	0.138***	0.137***	0.137***
	(23.668)	(23.7)	(23.642)	(23.636)
Log (Distance)	-0.063***	-0.062***	-0.063***	-0.063***
	(3.241)	(3.21)	(3.257)	(3.233)
Travel freedom	-0.155	-0.155	-0.155	-0.155
	(0.379)	(0.38)	(0.379)	(0.379)
Commercial sanctions	0.264	-0.639***	-0.662	0.444
	(1.574)	(2.858)	(0.761)	(0.705)
Inter-state wars	-0.567***	-0.568***	-0.566***	-0.565***
	(3.105)	(3.108)	(3.097)	(3.094)
Number of observations	26495	26495	26495	26495

***, ** and * means respectively significant at 1%, 5% and 10%.

Table 6 shows the results of our third step of analysis. It consists of our preferred specification in Table 5 with additional control variables. We group the additional variables in three groups: trade policy indicators (Preferential trade arrangement, GATT/WTO members), geographical/historical (Colonial link, Similar language, Contiguity, oil exporters) and polity (Scores of democratic) indicators. In Table 6, the results with each group are presented in a different column. The coefficients of the traditional gravity variables are broadly similar to above. The same holds for the coefficient of inter-state wars while the coefficient of import restriction change across specification. In particular, it becomes higher (in absolute terms) when control is made for the score of democracy. Democracy in the exporting country is positive and significant meaning that more democratic country exports more. Finally, countries sharing the similar language trade more than the others. The coefficients of the other control variables are non-significant.

Table 6: Additional explanatory variables (PPML)

Specification	1	2	3	4
Explanatory variables				
Log (GDP $_{importer}$)	-0.004	-0.003	-0.003	-0.004
	(0.716)	(0.499)	(0.509)	(0.608)
Log (GDP $_{exporter}$)	0.139***	0.141***	0.110***	0.117***
	(23.407)	(24.206)	(16.738)	(18.124)
Log (Distance)	-0.063***	-0.062***	-0.037*	-0.039**
	(3.237)	(2.996)	(1.786)	(1.967)
Import Restriction	-0.630***	-0.608***	-0.951***	-0.945***
	(2.819)	(2.686)	(3.55)	(3.492)
Inter-state wars	-0.557***	-0.456**	-0.642***	-0.531**
	(3.045)	(2.440)	(2.891)	(2.426)
Preferential trade arrangement	0.057			
	(0.419)			
GATT/WTO members	0.025			
	(1.072)			
Colonial link ever		-0.068		
		(0.813)		
Similar language		0.260***		0.170***
		(11.577)		(7.154)
Contiguity		-0.020		
		(0.336)		
Score of democratic $_{importer}$			-0.001	
			(0.663)	
Score of democratic $_{exporter}$			0.023***	0.020***
			(13.717)	(11.359)
Number of observations	25433	25433	25433	25433

***, ** and * means respectively significant at 1%, 5% and 10%.

We retain the specification as our preferred one and use it to address tow questions frequently investigated in the literature. One concerns the number of years after the initiation of conflict, do bilateral trade start declining. The other looks at the number of years after the end of conflicts, do bilateral trade start resuming. Because of the time dimension of our sample, we consider only the first, second, third years separately and pool the years from the fourth on together. The first column of Table 7 gives only the results for the years after the start of hostility, the second column examines only the years after the end of hostility and the third column provides the estimation results of the specification incorporating bot the years after the start and those after the end. After the start of a war the adverse effect on bilateral trade appear only from the fourth year on. Its magnitude is comparable to above. Interestingly, the effect of import restriction appears as quickly as in the first year of the imposition. It is negative and of very high magnitude (in absolute terms) than before. A second effect of sanction emerges after the third year of imposition. Remembering that these results for sanctions are to be compared to the estimate in the fourth column of Table 6. We see that the coefficient in Table 6 is broadly equal to the average of the two coefficients in Table 7. Turning to the post-hostility coefficients, none is significant for wars while those for sanctions are negative when significant. Finally, column brings no interesting insight.

Table 7: Timing of the effects (PPML)

Specification	1	2	3
First year of war	0.084		0.089
	(0.118)		(0.124)
Second year of war	-0.489		-0.486
	(0.789)		(0.784)
Third year of war	-0.858		-0.856
	(1.151)		(1.149)
After the third year of war	-0.654***		-0.655***
	(2.669)		(2.674)
First year of Import Restrictions	-1.482***		-1.491***
	(3.254)		(3.274)
Second year of Import Restrictions	0.161		0.151
	(0.257)		(0.241)
Third year of Import Restrictions	0.043		0.034
	(0.088)		(0.068)
After the third year of Import Restrictions	-0.633*		-0.637*
	(1.980)		(1.994)
First year of war end		0.104	0.098
		(0.135)	(0.127)
Second year of war end		11.255	114.508
		(0.000)	(0.000)
Third year of war end		-0.659	-0.663
		(1.376)	(1.385)
After the third year of war end		0.725	0.721
		(1.194)	(1.189)
First year of Import Restrictions end		-0.848***	0.000
		(2.627)	(0.000)
Second year of Import Restrictions end		0.792	0.000
		(1.476)	(0.000)
Third year of Import Restrictions end		0.675*	0.000
		(1.820)	(0.000)
After the third year of Import Restrictions		-0.583**	-0.588**
		(2.518)	(2.538)
Number of observations	26005	26005	26005

***, ** and * means respectively significant at 1%, 5% and 10%.

Conclusion

The paper investigates the impact of armed and non-armed conflicts on the MENA's trade. We focus on this Region because political tensions and low intra-regional trade are two major features of it. Other idiosyncrasies of this region (oil export, inter-countries difference in wealth, same religion but with different practices and, finally, the complex relationships with Israel), offer a unique opportunity to test whether the literature findings are universal or are depending on the time and places. The analysis confirms that the share of bilateral trade in total trade is

the lowest is the lowest as compared to other regions of the world. The same observation holds for the score of democracy. Trade policy differs across countries of the region. In terms of sanctions and interstate wars, more than half of their occurrence in the World, over the period of observation, takes place within the MENA. The econometric tests show that import restriction and inter-state wars are the most harmful to the Region trade. The coefficients of these two variables are of similar magnitude meaning that import restriction and inter-state wars affect bilateral trade in a similar extent. The adverse effect of inter-states wars on bilateral trade appear four years after the start of a war. The effect of import restriction appears as quickly as in the first year of the imposition of the sanction and after the third year of imposition. Adding other control variables, we find that more democratic country exports more. This complements the findings in the literature that increasing economic linkages help reducing the political tensions in the MENA. Hence, democracy fosters peace directly by reducing the likelihood the conflict and indirectly by increasing trade which, in turn, reduce the probability of entering into conflict. Moreover, our results have the interpretation that import restriction is a cheaper means to achieve the sanctioning's objective than war. The harm to bilateral trade is similar but the cost in terms of human life and infrastructure destruction is avoided. Of course, a vehement interpretation is that combining import restriction and inter-state wars imposes higher costs on the sanctioned and, therefore, is more effective.

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Appendix A

Table A.3: List of countries

Algeria	Guinea	Norway
Angola	Honduras	Oman
Argentina	Hong Kong	Pakistan
Australia	Hungary	Panama
Austria	India	Paraguay
Azerbaijan	Indonesia	Peru
Bahrain	Iran	Philippines
Bangladesh	Iraq	Poland
Belarus	Ireland	Portugal
Belgium	Israel	Romania
Benin	Italy	Russia
Bolivia	Jamaica	Rwanda
Botswana	Japan	Saudi Arabia
Brazil	Jordan	Senegal
Bulgaria	Kazakhstan	Sierra Leone
Burkina Faso	Kenya	Singapore
Burundi	Korea Democratic	Slovakia
Cambodia	Korea	Slovenia
Canada	Kuwait	Somalia
Central Africa	Kyrgyzstan	South Africa
Chad	Laos	Spain
Chile	Latvia	Sri Lanka
China	Lebanon	Sweden
Colombia	Lesotho	Switzerland
Congo	Liberia	Syria
Congo Democratic	Libya	Taiwan
Côte d'Ivoire	Lithuania	Tajikistan
Cuba	Macedonia	Tanzania
Czech	Madagascar	Thailand
Denmark	Malawi	Togo
Dominican	Malaysia	Tunisia
Ecuador	Mali	Turkey
Egypt	Mauritania	Turkmenistan
El Salvador	Mexico	Uganda
Estonia	Moldova	Ukraine
Ethiopia	Mongolia	United Arab Emirates
Finland	Morocco	United Kingdom
France	Mozambique	United States
Gabon	Myanmar	Uruguay
Georgia	Nepal	Uzbekistan
Germany	Netherlands	Viet Nam
Ghana	New Zealand	Yemen
Greece	Niger	Zambia
Guatemala	Nigeria	Zimbabwe

Table A.2: Sanctions and wars imposed on MENA countries by imposing region

		Lac	Transition	East Asia	MENA	OECD	SSA	South Asia
Algeria	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	0	0	0	0
	Interstate	0	0	0	0	0	0	0
Bahrain	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	0	0	0	0
	Interstate war	0	0	0	0	0	0	0
Egypt	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	8	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	1	0	0	0	0	0
	Interstate war	0	0	0	1	0	0	0
Iran	Trade	0	0	0	27	0	8	0
	Arms	0	0	0	3	0	8	0
	Military	0	0	0	0	0	8	0
	Financial	0	0	0	23	0	12	0
	Travel	0	0	0	1	0	8	0
	Diplomatic	0	0	0	0	4	0	0
	Interstate war	0	0	0	11	0	0	0
Iraq	Trade	0	0	0	22	0	25	0
	Arms	0	0	0	0	0	8	0
	Military	0	0	0	0	0	7	0
	Financial	0	0	0	15	0	15	0
	Travel	0	0	0	0	0	11	0
	Diplomatic	0	0	0	8	0	0	0
	Interstate war	0	0	12	14	24	0	0
Israel	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	4	0	0	0
	Financial	0	2	0	0	14	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	0	0	0	0
	Interstate war	0	0	0	2	0	0	0
Jordan	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	13	0	0	0
	Military	0	0	0	13	0	0	0
	Financial	0	0	0	13	0	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	0	0	0	0
	Interstate war	0	0	0	0	0	0	0

Kuwait	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	8	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	0	0	0	0
	Interstate war	0	0	0	0	0	0	0
Lebanon	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	2	0	0	0
	Interstate war	0	0	0	0	0	0	0
Libya	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	1	0	0	0
	Military	0	0	0	1	0	0	0
	Financial	0	0	0	9	0	0	0
	Travel	0	0	0	13	0	0	0
	Diplomatic	0	0	0	6	0	0	0
	Interstate war	0	0	0	0	0	1	0
Morocco	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	0	0	0	0
	Interstate war	0	0	0	0	0	0	0
Oman	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	0	0	0	0
	Interstate war	0	0	0	0	0	0	0
Saudi	Trade	0	0	0	8	0	12	0
	Arms	0	0	0	0	0	8	0
	Military	0	0	0	0	0	8	0
	Financial	0	0	0	13	0	10	0
	Travel	0	0	0	0	0	9	0
	Diplomatic	0	0	0	2	0	0	0
	Interstate war	0	0	0	0	0	0	0
Syria	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	1	0	0	0
	Interstate war	0	0	0	1	0	0	0

Tunisia	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	0	0	0	0
	Interstate war	0	0	0	0	0	0	0
Turkey	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	0	1	0	0
	Interstate war	0	0	0	0	0	0	0
UAE	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	1	0	0	0
	Interstate war	0	0	0	0	0	0	0
Yemen	Trade	0	0	0	0	0	0	0
	Arms	0	0	0	0	0	0	0
	Military	0	0	0	0	0	0	0
	Financial	0	0	0	0	0	0	0
	Travel	0	0	0	0	0	0	0
	Diplomatic	0	0	0	0	0	0	0
	Interstate war	0	0	0	0	0	0	0
	Total	0	3	12	228	43	174	0

Table A.3: Descriptive statistics

	Mean	Std. Dev	Minimum	Maximum
Log (GDP $_{importer}$)	23.27	2.38	7.59	30.00
Log (GDP $_{exporter}$)	23.68	1.47	18.01	26.99
Log (distance)	8.43	0.73	4.74	9.87
Democracy	-4.88	5.66	-10.00	9.00

Table A.4: Descriptive statistics

	Log (GDPD $_{importer}$)	Log (GDP $_{exporter}$)	Log (distance)	Democracy
Log (GDP $_{importer}$)	1.00			
Log (GDP $_{exporter}$)	0.24	1.00		
Log (distance)	0.02	-0.03	1.00	
Democracy	0.08	0.31	-0.06	1.00

Appendix B: Economic Sanctions

The types economic of sanctions are:

- Total Economic Embargo: The sender(s) stop the flow of all economic exchange to and from the target state.
- Partial Economic Embargo: The sender(s) stop the flow of certain commodities or services to and from the target state. For example, a sender may ban all exchanges in military goods to and from a target. For a case to qualify as a partial embargo, some exchange must still be allowed while a sectors trade must be frozen.
- Import Restriction: The sender(s) refuses to allow or places a restriction on a certain good or set of goods to be imported from the target state. Import restrictions differ from partial embargoes in that import restrictions only restrict the. ow of goods into the sender(s). While the sender does not restrict the flow of goods to the target, the sender may prevent target commodities from being traded in its home markets or impose tariffs or duties on target commodities.
- Export Restriction: The sender(s) refuses to allow certain goods or services to be exported to the target state. Export restrictions differ from partial embargoes in that export restrictions only restrict the flow of goods to the target from the sender(s). Although the sender places no restriction on goods from the target for import, the sender does not allow a certain good or set of goods to flow out of the sender(s) firms to the target. An example of such a restriction is an export control on dual use technology.
- Blockade: The sender(s) attempts to physically prevent all states from engaging in economic transactions with the target state. Such actions may be enforced physically by the sender(s) military. An alternative is for the sender to threaten any state that engages in transactions with the target with similar economic sanctions.
- Asset Freeze: The sender(s) partially or completely seize all assets of the target state under the sender(s). jurisdiction.
- Termination of Foreign Aid: The sender(s) reduces or ends foreign aid or loans if the target state does not comply with the sender(s) demands.
- Travel Ban: The sender(s) ceases allowing an individual, group, or citizenry of the target country to enter the territory of the sender(s).
- Suspension of Economic Agreement: The sender(s) threaten to partially or completely cancel or void previous economic arrangements or contracts between the sender(s) and the target state.
- Other Sanction Type: This field indicates that a description of the type of sanctions imposed if the Sanction Type variable is coded as "Other."

The types of diplomatic sanctions are:

- Expulsion of Ambassador: The sender(s) order a diplomat or a set of diplomats from the target country to leave the territory of the sender government(s).
- Recall of Ambassador: The sender(s) order their own diplomats to return from the target country.
- Temporary Closing of Embassies: The sender(s) order all diplomatic personnel to leave the territory of the target state.
- Ending Diplomatic Contact: The sender(s) permanently end all diplomatic contact with the target state.