Does the Arab-Israeli conflict matter on Israel trade relations?*

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Abstract

As the geopolitical situation in the Middle-East particularly greatly weighs on the economic development of countries in this region, we try to assess the effects of regional conflicts on international trade. This paper is therefore the first to empirically study the possible effects of the Arab-Israeli conflict on Israeli trade relations. Using theory-consistent structural gravity model and robust empirical approaches with a worldwide database over 1948-2012, we decided to capture three main dimensions of the Arab-Israeli conflict on bilateral trade flows: diplomatic, military and religious. Findings reveal evidence that these three components of the Arab-Israeli conflict matter on Israeli trade, essentially with Muslim trading partners.

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Keywords: Israel, Arab-Israeli conflict, trade, gravity.

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1 Introduction

"Israel-Palestine peace would lead to major economic development within whole Arab world"[1]. Indeed, geopolitical instability in the region could undermine economic performance of Middle-East countries whereas a rapprochement between Israel and some of its neighbours would improve the business climate (OECD, 2016). Arnon et *al.* (1996), Ekholm et *al.* (1996), Tovias et *al.* (2007), Lavee et *al.* (2013) highlight the potential benefits of regional trade agreements between these countries allowing to increase welfare gains and reduce the probability of conflicts. Arnon and Weinblatt (2001), Cobham (2001), Naqib (2003) focus on the case of Israel and Palestine underlining the poor economic performance of Palestinian territories due to the particular political and economical system established by Israel at the expense of Palestinian development. The existing literature related to relations between Israel and Arab countries explored several aspects without pay attention to the spillover effects of regional conflicts on trade. The paper contribution is therefore the assessment of unexplored effects of the Arab-Israeli conflict on Israeli bilateral trade flows through three main dimensions: diplomatic, military and religious.

First, the Arab-Israeli conflict seems to isolate Israel in international relations due to its stances in the Middle-East. From then on, the main objective of the Israeli foreign policy is to obtain recognition of the State of Israel by the majority of countries composing the international community through the establishment of diplomatic relations. A soft diplomatic battle therefore appears between Israel and Arab countries, essentially due to the Palestinian issue. Since the independence of Israel in 1948, the Israeli economy has strongly benefited of the expected spillover effects of diplomatic exchanges. Indeed, Rose (2007), Yakop and Bergeijk (2011), Bergeijk et *al.* (2011), show that diplomatic representations in hosting countries allow to improve bilateral trade by facilitating trade and decreasing trade costs. For Nitsch (2007), Fuchs and Klann (2013), the official State visits imply the same trade-promoting effects whereas diplomatic ties are foreign policy tools used to achieve economic objectives sometimes at the expense of other countries (Didier, forthcoming).

Second, regional conflicts became the greatest risk to the global economy in both the short and long term[2]. Military conflicts between Israel and Arab countries persist by disrupting economic development. The negative impact of rising security risks and spillovers from regional conflicts lead to large inflows of refugees and trade disruptions. Since 1948, several armed conflicts have punctuated the Arab-Israeli

[1] https://www.rt.com/op-edge/266059-israel-palestine-conflict-economy-costs/

[2] http://www.businesswire.com/news/home/20050921005609/en/Global-Markets-Institute-Goldman-Sachs-Poll-Identifies

relations in the Middle-East due to land claims by the belligerents but also with outside countries not directly involved. Specialized literature on this topic such as Blomberg and Hess (2006) show that conflicts hindrance more bilateral trade than trade barriers. Martin et *al.* (2008) underline that more countries trade less the probability of conflicts is high. Qureshi (2013) finds that the trade-deteriorating effect of regional conflicts more increases when neighbors are institutionally weak.

Third, "over the years, religious and ethnic minorities in the Middle East have influenced political, social, and economic developments. Yet disputes over minorities have also caused tension"[3]. The dissimilarity of religion seems to exacerbate the spillovers of the Arab-Israeli conflict on the economic activity of countries. Following the UN resolution of 1947 about the partition of Palestine, the creation of the State of Israel concentrated the great majority of Muslim countries against him with the strong activism of the Arab League promoting the Israel's boycott[4]. For Helbe (2007), Lewer and Van den Berg (2007), Lee (2013), religious belief can influence trading behaviour where relations between Muslims and Jews trading partners have a negative effect on trade, notably due to the long-lasting conflict in this region.

We therefore perform a theory-consistent structural gravity model (Anderson and van Wincoop, 2003 ; Head and Mayer, 2014) with a worldwide database over the period 1948-2012 to capture the diplomatic, military and religious dimensions of the Arab-Israeli conflict on Israeli bilateral trade flows. We test these variables by resorting data about diplomatic ties with Israel coming from the Israel Ministry of Foreign Affairs, military conflicts and peace treaties from the Correlates of War (COW) project and religion with the CIA Factbooks database. Our specifications then include three sets of fixed effects: exporter-year, importer-year and country-pair to account for multilateral resistance terms and endogeneity of political factors. We also implement a Poisson pseudo-maximum likelihood (PPML) model with fixed effects for its robustness properties to avoid an omission bias due to zero trade flows in the sample (Santos Silva and Tenreyro, 2006, 2011 ; Gomez Herrera, 2013 ; Fally, 2015). Lagged terms are also included to better capture the effects over time of our variables of interest on trade.

This paper is organized as follows. Section 2 introduces the historical framework of the Arab-Israeli conflict. Section 3 presents a related literature. Section 4 describes the hypotheses, data and empirical issues. Section 5 provides empirical results. Some concluding remarks are offered in Section 6.

[3] http://www.washingtoninstitute.org/policy-analysis/view/prospects-for-religious-and-ethnic-conflict-in-the-middle-east

[4] http://www.nytimes.com/2013/03/07/opinion/global/end-the-arab-boycott-of-israel.html

2 Historical framework

To understand the nature of the unusual relationships between Israel and Arab countries, it is interesting to briefly present the evolution of the Arab-Israeli conflict.

2.1 The origins of the Arab-Israeli conflict

The conflict between Israel and the Arabs countries is one of the most important modern conflict, which began around the turn of the 20^{th} century. The origin of the conflict appeared with the willingness of a political movement, Zionism, to build one nation through a Jewish state in Palestine with the fierce opposition of Arab countries. Following the World War II, hostilities increased between them over the Palestinian territory but also with the British compelling Great Britain to relinquish its mandate over Palestine. On November 29, 1947, the UN General Assembly[5] voted to partition Palestine into two states, respectively one for the Arabs and one for the Jewishes. The Zionist leadership officially accepted the UN resolution unlike the Arab states who regarded this vote as an international betrayal due to the unfounded territory and population partition[6] with the interference of the US during the vote[7]. On 14 May 1948, the United Kingdom relinquished its mandate over Palestine and on the same day, the State of Israel had been proclaimed[8]. The first Arab-Israeli war began in 1948 until 1949 where the Zionist forces had secured control over most of the territory allotted to the Jewish state in the UN resolution. The consecration by the international community came on 11 May 1949[9] with the admission of Israel to membership in the UN[10] officially recognizing the Jewish State's territory.

[5] http://www.un.org/fr/documents/view_doc.asp?symbol=A/RES/181(II)

[6] http://www.un.org/Depts/dpi/palestine/ch2.pdf

[7] List of countries according to the nature of the vote. **Yes (33)**: US, Australia, Belgium, Bolivia, Brazil, Belarus, Canada, Costa Rica, Denmark, Dominican Republic, Ecuador, France, Guatemala, Haiti, Iceland, Liberia, Luxemburg, Netherlands, New-Zealand, Nicaragua, Norway, Panama, Paraguay, Peru, Philippines, Poland, Sweden, Czechoslovakia, Ukraine, South African Union, USSR, Uruguay and Venezuela. **No (13)**: Afghanistan, Saudi Arabia, Cuba, Egypt, Greece, India, Iran, Iraq, Lebanon, Pakistan, Syria, Turkey, Yemen. **Abstained (10)**: Argentina, Chili, China, Colombia, Salvador, Ethiopia, Honduras, Mexico, United Kingdom, Yugoslavia. http://unbisnet.un.org:8080/ipac20/ipac.jsp?session=1X811U81071J2.33263&profile=voting&uri=full=3100023~!909562~!601&ri=4&aspect=power&menu=search&source=~!horizon

[8] http://www.mfa.gov.il/mfa/foreignpolicy/peace/guide/pages/declaration%20of%20establishment%20of%20state%20of%20israel.aspx

[9] https://documents-dds-ny.un.org/doc/RESOLUTION/GEN/NR0/044/44/IMG/NR004444.pdf?OpenElement

[10] List of countries according to the nature of the vote. **Yes (37)**: Argentina, Australia, Belarus, Canada, Chile, China, Colombia, Costa Rica, Cuba, Czechoslovakia, Domini-

2.2 The Arab-Israeli inter-state conflicts

2.2.1 Sinai War

On July 1956, Egypt nationalized the Suez Canal and closed the canal to Israeli shipping violating at the same time the 1949 Armistice agreements. The Israeli armed forces decided to invade the Sinai with British and French support. The UN[11], the US and USSR required the withdrawal and a cease-fire. The Eisenhower administration's made economic pressure on the belligerents with mixed results: effective against Britain[12], ineffectual against Egypt, and also to some extent on France and Israel (Kunz, 1991). In 1957, Israel agreed to withdraw from Egyptian territory and Egypt accepted to freedom of navigation in the region and the demilitarization of the Sinai.

2.2.2 Six Days War

Three years before the Six-Day war began, the Palestine Liberation Organization (PLO)[13] was established in 1964 during the first summit of the Arab League[14]. This conflict was fought between June 5 and 10 in 1967 between Israel, Egypt, Jordan and Syria. In May 1967, Egyptian troops entered the Sinai region and decided a blockade of the Israeli port of Eilat because it located in Egyptian territorial waters. Israel attacked Egypt and Syria where Jordan joined in the fighting but the Egyptian, Syrian and Jordanian armies were strongly defeated and lost several territories (West Bank in Jordan, Golan Heights in Syria, Gaza Strip and Sinai in Egypt). This event exacerbated Israel's deepening international isolation in a context of economic crisis

can Republic, Ecuador, France, Guatemala, Haiti, Honduras, Iceland, Liberia, Luxemburg, Mexico, Netherlands, New-Zealand, Nicaragua, Norway, Panama, Paraguay, Peru, Philippines, Poland, Ukraine, South African Union, USSR, US, Uruguay, Venezuela and Yugoslavia. **No (12)**: Afghanistan, Burma, Saudi Arabia, Egypt, Ethiopia, India, Iran, Iraq, Lebanon, Pakistan, Syria, Yemen. **Abstained (9)**: Belgium, Brazil, Denmark, El Savador, Greece, Thailand, Sweden, Turkey, United Kingdom. http://unbisnet.un.org:8080/ipac20/ipac.jsp?session=1X811U81071J2.33263&profile=voting&uri=full=3100023~!909387~!350&ri=8&aspect=power&menu=search&source=~!horizon

[11] https://documents-dds-ny.un.org/doc/RESOLUTION/GEN/NR0/107/64/IMG/NR010764.pdf?OpenElement

[12] The Suez crisis lead to a financial crisis where the value of the currency of United Kingdom undergone speculative pressures with the involvement of International Monetary Fund (Boughton, 2000).

[13] On November 29, 2012 with the UN resolution 67/19, Palestine obtained the observer State status with 138 votes for, 42 abstention and 9 against (Australia, Canada, US, Israel, Marshall Islands, Micronesia, Nauru, Palaos, Panama, Czech Republic). http://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/a_res_67_19.pdf

[14] http://avalon.law.yale.edu/20th_century/plocov.asp

in Israel with unemployment and economic stagnation[15]. On 22 November 1967, the Security Council unanimously adopted the resolution 242[16]: i) the withdrawal of Israel forces from territories occupied, ii) termination of all claims or states of belligerency and respect of the sovereignty.

2.2.3 War of Attrition

The lack of diplomatic efforts to resolve tensions between these countries lead to a new step in the Arab-Israeli conflict. Egypt decided to intervene militarily in Sinai in order to compel Israel to withdraw of this zone. USSR militarily supported Arab countries during this conflict and deeply involved in the diplomacy of the Middle East. Despite the cease-fire agreement in 1970 under the American control, Egyptians maintained armed troops in the Suez Canal and on September 28, 1970 President Nasser dies and Sadat succeeded him. No obvious victors appear during the War of Attrition where no territory was exchanged. Sadat believed that by making peace with Israel, Egypt could obtain needed American financial assistance with Egypt's acute economic and social problems.

2.2.4 Yom Kippur War

The diplomatic overture initiated by Sadat in late 1970 was ignored by Israel and the US. Egypt and Syria attacked Israeli forces in their respective zones on the Jewish holy day of Yom Kippur. USSR and the US jointly requested an urgent meeting of the Security Council with the adoption of the resolution 338[17] in 1973. The ceasefire did not work and Sadat appealed directly the two powers to intervene in the region but without success. Finally, with the military intervention of the UN, the belligerents agreed to disengage their forces.

2.2.5 War over Lebanon

The 1982 Lebanon war was the result of the unresolved dispute with Israel's invasion of Lebanon provoking the clash with the PLO and Syria. Many of Palestinian guerrillas had grouped in Lebanon after being expelled from Jordan by King Hussein, and

[15] http://www.meforum.org/210/making-sense-of-the-six-day-war

[16] http://www.un.org/fr/documents/view_doc.asp?symbol=S/RES/242(1967)&Lang=E&style=B

[17] https://documents-dds-ny.un.org/doc/RESOLUTION/GEN/NR0/288/66/IMG/NR028866.pdf?OpenElement

began attacking Israel from there. For the first time in Israel's history, a consensus for war did not exist and Israel's 1985 withdrawal from Lebanon confirmed that.

2.2.6 First Intifada

In December 1987, Palestinian in the West Bank and Gaza launched an uprising against the Israeli occupation (First Intifada) supported by Iraq during the Gulf War. Massive demonstration, economic boycott protesting the military occupation of their land and demanding national independence. The movement lasted till 1993 and it brought them the attention of international community. Several measures initiated by the Security Council to ensure the safe protection of Palestinians were not adopted because of the lack of consensus among the permanent members.

2.2.7 Second Intifada

The second Palestinian uprising against Israel due to the Sharon's visit to the Temple Mount in September 2000. Like the First intifada, the Second intifada highlights the Palestinian rejection of the Israeli occupation, in particular the continuation of the colonization. If the two intifadas defend the same objective, the second differs from the first, on the one hand by the use of firearms and by the suicide bombings against Israeli civilians. The Sharm el-Sheikh Summit on 8 February 2005 between Abbas and Sharon officially stopped the uprising.

2.2.8 Second Lebanon War

"When Hizbullah guerrillas ambushed an Israeli patrol on the border on July 12 2006, killing three soldiers and capturing two others, it provided the spark for the second Lebanon war"[18]. Israel also imposed an air and naval blockade. On 11 August 2006, the United Nations Security Council unanimously approved UN Security Council Resolution 1701[19] in an effort to end the hostilities without disarm Hezbollah[20].

[18] https://www.theguardian.com/world/2008/jan/30/israelandthepalestinians.marktran

[19] https://documents-dds-ny.un.org/doc/UNDOC/GEN/N06/465/03/PDF/N0646503.pdf?OpenElement

[20] A political and military Islamist organisation in Lebanon. http://news.bbc.co.uk/2/hi/middle_east/4314423.stm

2.2.9 Gaza War

The Gaza war involved Palestinians in the Gaza Strip and Israel in December 2007 until January 2009. The Gaza Strip is a zone sandwiched between Israel and Egypt where Israel occupied Gaza in the 1967 by imposing restrictions on the movements of goods and people. Israel's stated goal was to stop Palestinian rocket fire into Israel and weapons smuggling into this region. Israel first declared a unilateral ceasefire, followed by Hamas[21].

3 Related literature

3.1 Economic diplomacy and trade

According to Bergeijk (2009), Moons and Bergeijk (forthcoming), "economic diplomacy is at the interface between these subject fields as its aim is to influence decisions about cross-border economic activities pursued by governments and non-state actors". Indeed, Rose (2007) analysed the effects of foreign services (embassies, consulates, foreign missions[22]) on the trade of exporting countries. These diplomatic representations sustain the interests of the represented States, but they also tend to improve market access through the fall of transactions costs. Yakop and Bergeijk (2011) focus on the impact of embassies and consulates within the OECD and in South-South trade (Bergeijk et *al.*, 2011). They confirm that these diplomatic tools decrease the risk of future (trade) distortions, and they further knowledge about foreign markets.

Nitsch (2007) studied the impact of political factors on trade through official visits of Heads of State in exporting countries. He found that the official travels of France, Germany and the US lead to the promotion of exports for host countries. Nitsch justifies these results by indicating that they improve the conditions of doing business in exporting economies. Fuchs and Klann (2013) suggest that countries receiving the Dalai Lama tend to export less to China over a recent period and for a limited duration. They argue that China creates pressure to avoid all forms of Tibet recognition by the international community, and the government does not hesitate to increase impediments for exporting economies to the Chinese market.

[21] A militant Palestinian Islamic organization operating in the West Bank and Gaza. http://edition.cnn.com/2012/11/16/world/meast/hamas-explainer/

[22] Head and Ries (2010) provide an empirical examination of how Canadian trade missions are associated with trade creation. In this case study, the authors find that trade missions do not increase bilateral trade between beneficiary and donor countries when country-pairs are included in gravity regressions.

Didier (forthcoming) shows that the vote by countries of China's recognition by UN in 1971 and the establishment of diplomatic ties with China strongly affect bilateral trade relations of China and Taiwan. For instance, there is a trade-deteriorating effect with China for countries having voted No and abstained during the first 5, 10 and 15 years after the UN vote. Countries having recognized the PRC as "one China" to the detriment of Taiwan enjoy better market access, reducing bilateral tensions with China and the probability of the use of retaliations.

3.2 Military conflicts and trade

Blomberg and Hess (2006) found that external and internal conflicts (such as terrorism) deteriorate trade and this effect is higher than trade barriers. Martin et *al.* (2008) show that military conflicts have a significant negative effect on trade and the probability of war escalation is lower when trading partners have important bilateral trade linkages. Martin et *al.* (2008) mainly found that trade openness of countries decrease the risk of high-intensity conflicts: "international trade can affect the opportunity cost of civil conflicts through both deterrence and insurance effects." Glick and Taylor (2010) demonstrated that the World War I strongly affected trade when at least one trading partner is engaged in this conflict. Vicard (2012) shows that deeper trade agreements with supranational institutions lead to prevent war allowing to increase intra-trade whereas shallow trade agreements have no effect on war probabilities. Qureshi (2013) found that intrastate and international war in neighboring states significantly undermine bilateral trade and this effect increases with neighbors being institutionally weak.

3.3 Religion and trade

Guo (2007) found that shared religion have greater impact on intra-regional trade than common language whereas there is a reverse effect for inter-regional trade flows. Shared religion seems to be more important for the neighboring trading partners that the remote countries allowing to decrease transaction costs. According to Helbe (2007), Lewer and Van den Berg (2007), Lee (2013), religious belief can influence trading behaviour because sharing the religion implies sharing similar values such as trust effect and this allows to create networks facilitating transactions. One of the main results underline the fact that relations between Muslims and Jews trading partners have a negative effect on trade flows, essentially due to the long-lasting conflict in the Middle-East. Lee and Park (2016) found that religious similarity strongly improved trade flows in services due to a "trust-related institutions" effect

even if religious pluralism has a higher effect on trade but a dominant religion lead to a trade-deteriorating effect. Same conclusions appear in the case of foreign direct investments (Hergueux, 2011).

4 Hypotheses, data and empirical specification

4.1 Hypotheses

Israeli foreign policy is largely influenced by the geopolitical situation of Israel with the Arab-Israeli conflict but also by the rejection of Israel by most of the Muslim countries with the Palestinian issue[23]. In this paper, we decide to focus on the possible effects of the Arab-Israeli conflict on bilateral trade flows of Israel. We decide to use three main dimensions characterising this conflict: diplomatic, military (armed conflicts and peace treaties) and religious.

First, the fact that countries have diplomatic ties with Israel implies that foreign countries officially recognize the State of Israel such as defined in the independence declaration in 1948 and at the same time this allows to develop diplomatic exchanges. For instance, "Dore Gold, director general of Israels foreign ministry, visited South Africa in March and signed a number of bilateral agreements to increase cooperation on issues such as agriculture, trade, science, and technology between the two nations"[24]. According to the actual Israeli Prime Minister Benjamin Netanyahu at the American Israel Public Affairs Committee (AIPAC) Policy Conference in March 2016: "Today we have diplomatic relations with 161 countries more than at any time in our history" (Tables 8). These diplomatic ties improve political relations with Israel ("trust effect") and reciprocally facilitate market access with the diplomatic missions and representations promoting the decrease of trade costs ("trade facilitation effect"). Moreover, noted that this diplomatic recognition which is made at the expense of Palestine[25] is an important component in the Arab-Israeli conflict. This situation strongly weakens *de facto* relationships between Israel and Arab countries where the great majority of Muslim countries has not diplomatic agreements with

[23]PLO declared independence of Palestine on 15 November 1988 in Alger where the UN General Assembly recognized this demarche without however authorize Palestine become a State member because of American and Israeli pressures. http://unbisnet.un.org:8080/ipac20/ipac.jsp?session=1J81340DV4796.6969&profile=voting&uri=full=3100023~!480085~!310&ri=1&aspect=power&menu=search&source=~!horizon

[24]http://www.thetower.org/3332-israeli-diplomacy-finding-friends-in-improbable-places/

[25]http://palestineun.org/about-palestine/diplomatic-relations/

Israel. Furthermore, several developing countries also decided to sever diplomatic ties with Israel to sustain Arab countries like during the Yom Kippur War in 1973 (Table 9).

Second, since the UN resolution in 1947 about the partition of Palestine, several armed conflicts appeared between Arab countries and Israel dividing the international community and particularly undermining relations in the Middle-East (Table 10). As previously presented, we know that military conflicts strongly deteriorate bilateral trade due to an increase of trade costs. We here suppose that when Israel is directly involved, there is a trade-deteriorating effect with trading partners of Israel even if these latter are not engaged in any conflicts themselves. Indeed, the involvement of Israel in these conflicts could lead to more isolate Israel in the bilateral trade relations, which would be a way to exerting pressure on the belligerents to cease. For instance, the Sinai War in 1956 perfectly illustrates the American pressure on Egypt, Israel, France and the United Kingdom to put a stop to the conflict using financial retaliations. However, the Arab-Israeli conflict also comprises some but few peace treaties between the main belligerents (Table 11). We here expect to find reverse effects relative to military conflicts on the Israel bilateral trade. In other words, peace agreements could to lead to a trade-promoting effect with trading partners of Israel whether or not they are directly involved in the conflict.

Third, we also want to take into account the crucial dimension of religion in the Arab-Israeli conflict (Table 12). We know that the majority of Muslim countries have not officially relationships with Israel because of their hostility towards the "unfounded" partition of Palestine having allowed the establishment of the State of Israel. In this specific context, we suppose that trade between Israel and Muslim countries could be negatively affected for at least three reasons: i) religious solidarity between Muslim countries and particularly with Palestine ; ii) the fear of an adverse response by radical Islamic groups (terrorism) ; iii) the threat of within instability with civil uprisings. Therefore, having dissimilar religions between trading partners this could more undermine bilateral trade given the lack of trust between them behaving like trade hindrances.

4.2 Data

We use a worldwide database (Head et *al.*, 2010)[26] with around 200 bilateral trading partners over the period 1948-2012. To estimate the impact of the Arab-Israeli conflicts on bilateral trade flows, we take the International Monetary Fund's (IMF)

[26]See the website of Keith Head for more details: https://blogs.ubc.ca/khead/publications/supplementary-materials

Direction of Trade Statistics (DOTS) and COMTRADE from the United Nations. It covers a time period far enough to assess the main Arab-Israeli events through a panel of worldwide bilateral trade flows.

We also decide to employ three channels to better grasp the Arab-Israeli conflict (Table 1) described in Section 2. First, the establishment of diplomatic relations between countries and Israel[27] (Tables 8-9) coming from the Israel Ministry of foreign affairs. Second, we include the main Arab-Israeli military conflicts delivered by the Correlates of War (COW) Project[28] which is some of the prominent conflict dataset often used in specialized literature (Table 10). Third, we use the formal alliances or peace treaties between Arab countries and Israel from the COW database[29] (Table 11). In order to take into account the religious dimension in the Arab-Israeli conflict, we resort the CIA World Factbook dataset about religion[30] (Table 12).

Table 1: Data sources of main estimated variables

Variable	**Source**
Total bilateral export flows	DOTS (IMF) & COMTRADE (UN)
Religion	CIA World Factbook
Diplomatic ties with Israel	Israel Ministry of Foreign Affairs
Arab-Israeli conflicts Arab-Israeli alliances	The Correlates of War (COW) project
FTA CU GATT-WTO	World Trade Organization (WTO)

4.3 Theoretical background and empirical issues

We will follow the usual practice by estimating expected bilateral trade flows using specifications based on the gravity model. We perform then a theory-consistent structural gravity model by taking into account multilateral resistance terms (Anderson and van Wincoop, 2003 ; Head and Mayer, 2014).

[27] http://mfa.gov.il/MFA/AboutTheMinistry/Pages/Israel-s%20Diplomatic%20Missions%20Abroad.aspx

[28] http://www.correlatesofwar.org/data-sets/MIDs

[29] http://www.correlatesofwar.org/data-sets/formal-alliances

[30] https://www.cia.gov/library/publications/the-world-factbook/

$$X_{ijt} = \frac{Y_{it}}{\Omega_{it}} \frac{X_{jt}}{\Phi_{nt}} \phi_{ijt}, \tag{1}$$

where $Y_i = \sum_j X_{ij}$ is the value of total production, $X_j = \sum_i X_{ij}$ is the value of expenditure, and Ω_{it} and Φ_{jt} the multilateral resistance terms defined as

$$\Phi_{jt} = \sum_l \frac{\phi_{jtl} Y_l}{\Omega_l} \qquad \text{and} \qquad \Omega_{it} = \sum_l \frac{\phi_{lit} X_l}{\Phi_l}. \tag{2}$$

In Equation 1, bilateral trade X_{ijt} is a function of supply, demand, and bilateral frictions. The supplier term in the structural gravity equation $S_{it} = \frac{Y_{it}}{\Omega_{it}}$ weights total production Y_{it} by the exporter's multilateral resistance Ω_{it}, and the demand term $M_{jt} = \frac{X_{jt}}{\Phi_{jt}}$ weights total expenditure X_j by the importer's multilateral resistance Φ_{jt}.

One of the important application of the gravity model is to estimate the effect of bilateral trade determinants. Most trade models express bilateral accessibility through $0 < \phi_{ij} = \tau_{ij}^{\theta} < 1$, in which θ is the elasticity of trade flows to trade costs, and trade costs τ_{ij} contain the bilateral elements defining the level of frictions to trade between the two partners. Among which geographical distance, common language, shared border, currency, and common history.

Following this theory-consistent framework, the empirical gravity equation is:

$$lnX_{ijt} = Diplomacy_{ijt} + Conflicts_{ijt} + Alliances_{ijt} + FTA_{ijt} + CU_{ijt} \tag{3}$$

$$+GATT - WTO_{ijt} + F_{it} + F_{jt} + F_{ij} + F_t + \epsilon_{ijt}$$

where X_{ijt} are bilateral export flows between i and j countries at year t. FTA_{ijt}, CU_{ijt}, $GATT - WTO_{ijt}$ are respectively binary variables when trading partners belong to the same free trade agreement (FTA) or custom union (CU) or participate to the GATT-WTO at year t. Following Baldwin and Taglioni (2006), Baier and Bergstrand (2007), Head and Mayer (2014), we include three sets of fixed effects[31] commonly practiced in the economic literature to have robust[32] results. Exporter(importer)-year fixed effects ($F_{i(j)t}$) take into account changes in multilateral resistance over time (Equation 2). This approach captures other trade costs

[31] Unilateral time-varying (GDP, population, GDP per capita) and bilateral time-unvarying (distance, common language, contiguity) determinants of trade are deleted in specifications using these fixed effects due to the collinearity issue between them.

[32] We also improve our regressions with a Huber-White estimator to avoid any heteroscedasticity issue and thus to have robust standard errors clustered by country-pair.

across other export and import markets through relative price effects. The exclusion of these terms leads to an omission bias with more unobserved trade barriers. Country-pair fixed effects (F_{ij}) correct the omitted variable bias because the unobserved variables could be correlated with the bilateral characteristics of the dyadic variables. Time fixed effects (F_t) capture a common year-specific factor influencing trade flows. ϵ_{ijt} is a random error term satisfying typical assumptions.

The variable $Diplomacy_{ijt}$ takes 1 for relations between countries having diplomatic ties with Israel and Israel for each years since the establishment of diplomatic agreements, 0 otherwise. The variable $Conflicts_{ijt}$ is equal to 1 for relations between countries and Israel if at least one of the trading partners is directly involved in the Arab-Israeli conflicts at year t, 0 otherwise. The variable $Alliances_{ijt}$ is 1 for relations between countries and Israel if at least one of the trading partners belong to Arab-Israeli alliances at year t, 0 otherwise. We break down these variables across the main trading partners[33] of Israel (EU, North-America and BRIC countries) and Muslim countries (Table 13) to better capture the religious dimension in the Arab-Israeli conflicts on trade. For instance, $Diplomacy\_Muslim_{ijt}$ takes 1 for relations between Muslim countries having diplomatic ties with Israel and Israel for each years since the entry into force of the diplomatic agreement, and so on.

Alternatively, we re-express Equation 3 as follows through PPML-fixed effects (Santos Silva and Tenreyro, 2006 ; Gomez Herrera, 2013 ; Fally, 2015):

$$X_{ijt} = exp(Diplomacy_{ijt} + Conflicts_{ijt} + Alliances_{ijt} + FTA_{ijt} + CU_{ijt} \quad (4)$$

$$+GATT - WTO_{ijt} + F_{it} + F_{jt} + F_{ij} + F_t)\eta_{ijt}$$

with $\eta_{ijt} = \exp(\epsilon_{ijt})$. The log-linear form is unable to handle zero trade flows because the logarithm of zero is undefined. In this respect, PPML is the empirical method most often employed because of its robustness[34] compared with the other estimators which have large biases (Santos Silva and Tenreyro, 2011). Indeed, according to their Monte Carlo simulation, they show that the PPML-estimator is well-behaved and performs well when the data can exhibit over-dispersion and also have excess zeros.

[33] In the total Israeli exports for 1995 and 2015, EU, North-America and BRIC respectively represent 30% and 29.4%, 33% and 23%, 5% and 11%.

[34] "... when there is evidence of heteroskedasticity, the Poisson pseudo-maximum-likelihood estimator should be used as a substitute for the standard log linear model (Santos Silva and Tenreyro, 2006).

We also include lagged terms for each variables of interest due to the large time period of our sample but also to capture the post-effects on trade. First, we break down them all 5 years, that is to say respectively 5 and 10 years after the establishment of diplomatic ties and peace treaties at year t. Second, we introduce two lags terms, i.e. 2 and 5 years after the military conflicts because the effect of regional intrastate and international conflicts can persist between two and five years (Glick and Taylor, 2010 ; Qureshi, 2013).

5 Empirical results

We begin by presenting the estimated results without lags (Tables 2-3-4) and after that with lags (Tables 5-6-7) to check the robustness of our findings. We privilege the analysis of results with the PPML-fixed effects estimator for its robutsness properties. Indeed, we observe that the presence of zero trade flows in the world sample seems to significantly affect estimates compared with the first specification with the three sets of fixed effects. We also remark that the control bilateral time-varying variables (FTA, CU) have the expected positive effect on trade flows.

5.1 Results without lags

5.1.1 Diplomatic ties with Israel and trade

Table 2 presents the results about the average effects of diplomatic ties with Israel for the two-way trade flows of Israel across trading partners. When countries have diplomatic relations with Israel, Israeli exports to EU significantly decrease whereas there is an increase for exports to BRIC and Muslim countries and not significant for North-America. The negative effect for EU countries can explain by the fact that relations between them have been strained by tension over the Middle-East peace process. In the mid-1970s, EU had no political position on the Arab-Israeli where member countries were divided on this topic. Solely in 1980 with the Venice Declaration[35] that EU formally advocates the establishment of two states within the borders of 1967 and encourages Israel "to put an end to the territorial occupation". Israeli government blamed the EU position increasing tension between them: "Nothing will remain of the Venice Resolution but its bitter memory"[36]. Herein, we suppose that the EU stances about the Arab-Israeli conflict negatively carry weight

[35] https://eeas.europa.eu/mepp/docs/venice_declaration_1980_en.pdf

[36] http://www.mfa.gov.il/mfa/foreignpolicy/mfadocuments/yearbook4/pages/100%20resolution%20of%20the%20heads%20of%20government%20and%20mini.aspx

on Israeli exports. Nevertheless, the expected signs of diplomacy appear for Israeli trade with BRIC and Muslim countries. It is interesting to see that Muslim countries having diplomatic ties with Israel achieve an increase in bilateral trade flows despite their marginal stance relative to the other Muslim countries. These results are confirmed for BRIC and Muslim countries exports to Israel but this time we observe a trade-promoting effect of diplomacy for EU exports.

5.1.2 Arab-Israeli military conflicts and trade

As shown in Table 3, the Arab-Israeli conflicts seems to have not effect on Israeli bilateral trade with EU, North-America, BRIC and Muslim countries. We suppose that the fact that these trading partners are not directly involved into this conflict (for the three first) could explain the non-significant impact at this stage even if the inclusion of lagged terms changes some of these findings.

5.1.3 Arab-Israeli alliances and trade

Table 4 provides evidence that peace treaties in the Arab-Israeli conflict have heterogeneous effect on Israeli trade according to trading partners. Indeed, we find the expected signs for Israeli exports to North-America and BRIC from the alliance of 1979, the same thing for exports to EU from the alliance of 1983 and also for exports to North-America, BRIC and Muslim countries from the alliance of 1994. Noted that a trade-deteriorating effect of Arab-Israeli peace treaties appears for trade with Muslim countries since the alliance between Egypt and Israel in 1979. This result can explain by the fact that the Arab League disapproved the unilateral initiative of Egypt with Israel and decided to expel Egypt from the organization in 1979[37]. The same findings appear with the Lebanon and Israel peace treaty in 1983 for Muslim exports to Israel due to the official boycott of Israel adopted by the Arab League since December 1945[38]. However, we remark that the Jordan and Israel alliance in 1994 lead to a trade-promoting effect between Muslim countries and Israel probably due to the Oslo Peace Accords in 1990s[39] weakening the boycott.

[37] http://www.nytimes.com/1990/09/11/world/confrontation-gulf-badly-divided-arab-league-votes-return-headquarters-cairo.html

[38] https://www.foreignaffairs.com/articles/middle-east/1977-04-01/middle-east-arab-boycott-israel

[39] Peace process between PLO and Israel based on the UN Security Council resolution 242 and 338 allowing the creation of the Palestinian Authority and "the right of the Palestinian people to self-determination".

Table 2: Estimation results for diplomatic ties with Israel (without lags)

	MFE-DFE	PPML
FTA_{ijt}	0.07^b	0.05^a
	(0.03)	(0.01)
CU_{ijt}	0.05^c	0.04^a
	(0.02)	(0.005)
$GATT\text{-}WTO_{ijt}$	0.14^a	-0.12^a
	(0.02)	(0.02)
Diplomatic ties with Israel (Israeli exports)		
$Israel\_EU_{ijt}$	0.49^b	-0.17^b
	(0.24)	(0.08)
$Israel\_NorthAmerica_{ijt}$	2.38^a	0.11
	(0.32)	(1.03)
$Israel\_BRIC_{ijt}$	2.71^a	1.30^a
	(0.68)	(0.22)
$Israel\_Muslim_{ijt}$	-0.54^c	0.35^a
	(0.27)	(0.11)
Diplomatic ties with Israel (exports to Israel)		
EU_Israel_{ijt}	0.80^b	0.39^a
	(0.31)	(0.09)
$NorthAmerica\_Israel_{ijt}$	0.54^c	-0.02
	(0.28)	(1.30)
$BRIC\_Israel_{ijt}$	2.20^a	2.04^a
	(0.29)	(0.22)
$Muslim\_Israel_{ijt}$	-0.65^a	1.20^a
	(0.17)	(0.15)
Constant	0.71^a	
	(0.01)	
Observations	839589	1293064
Exporter-year fixed effects	Yes	Yes
Importer-year fixed effects	Yes	Yes
Country-pair fixed effects	Yes	Yes
Time fixed effects	Yes	Yes
R^2	0.85	0.99

Note: Robust standard errors clustered by country-pair in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. MFE-DFE and PPML respectively mean monadic fixed effects-dyadic fixed effects and Poisson Pseudo-Maximum Likelihood.

Table 3: Estimation results for Arab-Israeli conflicts (without lags)

	MFE-DFE	PPML
FTA_{ijt}	0.07^{b}	0.05^{a}
	(0.03)	(0.01)
CU_{ijt}	0.05^{c}	0.04^{a}
	(0.02	(0.005)
$GATT\text{-}WTO_{ijt}$	0.14^{a}	-0.12^{a}
	(0.02)	0.02)
Arab-Israeli conflicts (Israeli exports)		
$Israel\_EU_{ijt}$	-0.13^{c}	0.01
	(0.06)	0.05)
$Israel\_NorthAmerica_{ijt}$	0.01	-0.002
	(0.13)	(0.07)
$Israel\_BRIC_{ijt}$	0.57^{a}	-0.10
	(0.15)	(0.09)
$Israel\_Muslim_{ijt}$	-0.29^{c}	0.05
	(0.16)	(0.10)
Arab-Israeli conflicts (exports to Israel)		
EU_Israel_{ijt}	0.02	0.02
	(0.08)	(0.05)
$NorthAmerica\_Israel_{ijt}$	-0.02	0.03
	(0.08)	(0.06)
$BRIC\_Israel_{ijt}$	0.32	0.07
	(0.24)	(0.06)
$Muslim\_Israel_{ijt}$	-0.07	-0.05
	(0.17)	(0.13)
Constant	0.71^{a}	
	(0.01)	
Observations	839589	1293064
Exporter-year fixed effects	Yes	Yes
Importer-year fixed effects	Yes	Yes
Country-pair fixed effects	Yes	Yes
Time fixed effects	Yes	Yes
R^2	0.85	0.99

Note: Robust standard errors clustered by country-pair in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. MFE-DFE and PPML respectively mean monadic fixed effects-dyadic fixed effects and Poisson Pseudo-Maximum Likelihood.

Table 4: Estimation results for Arab-Israeli alliances (without lags)

	MFE-DFE	PPML
FTA_{ijt}	0.07^{b}	0.05^{a}
	(0.03)	(0.01)
CU_{ijt}	0.05^{c}	0.04^{a}
	(0.02)	(0.005)
$GATT\text{-}WTO_{ijt}$	0.14^{a}	-0.12^{a}
	(0.02)	(0.02)
Arab-Israeli alliance 1979 (Israeli exports)		
$Israel\_EU_{ijt}$	-0.21	-0.08
	(0.17)	(0.08)
$Israel\_NorthAmerica_{ijt}$	0.15	0.42*a*
	(0.30)	(0.08)
$Israel\_BRIC_{ijt}$	1.31*b*	0.99*a*
	(0.51)	(0.21)
$Israel\_Muslim_{ijt}$	-1.92^{a}	-1.93^{a}
	(0.38)	(0.25)
Arab-Israeli alliance 1983 (Israeli exports)		
$Israel\_EU_{ijt}$	-0.02	0.20^{c}
	(0.15)	(0.11)
$Israel\_NorthAmerica_{ijt}$	-0.02	0.08
	(0.13)	(0.10)
$Israel\_BRIC_{ijt}$	-0.64^{a}	-0.92^{a}
	(0.23)	(0.25)
$Israel\_Muslim_{ijt}$	-0.12	-0.15
	(0.35)	(0.37)
Arab-Israeli alliances 1994 (Israeli exports)		
$Israel\_EU_{ijt}$	-0.03	-0.15^{b}
	(0.14)	(0.06)
$Israel\_NorthAmerica_{ijt}$	0.13	0.29^{a}
	(0.13)	(0.06)
$Israel\_BRIC_{ijt}$	0.93^{b}	0.67^{a}
	(0.42)	(0.12)
$Israel\_Muslim_{ijt}$	1.33^{b}	0.89^{a}
	(0.56)	(0.16)
Arab-Israeli alliance 1979 (exports to Israel)		
EU_Israel_{ijt}	0.15	-0.25^{b}
	(0.22)	(0.10)
$NorthAmerica\_Israel_{ijt}$	0.25	-0.38^{a}
	(0.25)	(0.10)
$BRIC\_Israel_{ijt}$	0.86	-0.25
	(0.92)	(0.28)
$Muslim\_Israel_{ijt}$	-1.71^{a}	-1.66^{a}
	(0.47)	(0.22)
Arab-Israeli alliance 1983 (exports to Israel)		
EU_Israel_{ijt}	-0.08	-0.37
	(0.17)	(0.29)
$NorthAmerica\_Israel_{ijt}$	-0.04	-0.28
	(0.18)	(0.29)
$BRIC\_Israel_{ijt}$	0.25	-0.18
	(0.37)	(0.56)
$Muslim\_Israel_{ijt}$	-0.26	-0.95^{b}
	(0.42)	(0.38)
Arab-Israeli alliance 1994 (exports to Israel)		
EU_Israel_{ijt}	0.14	-0.20^{b}
	(0.20	(0.09)
$NorthAmerica\_Israel_{ijt}$	-0.20	0.09
	(0.17	(0.09)
$BRIC\_Israel_{ijt}$	0.69	1.24^{a}
	(0.66	(0.17)
$Muslim\_Israel_{ijt}$	0.88	1.47^{a}
	(0.64)	(0.14))
Constant	0.71^{a}	
	(0.01)	
Observations	839589	1293064
Exporter-year fixed effects	Yes	Yes
Importer-year fixed effects	Yes	Yes
Country-pair fixed effects	Yes	Yes
Time fixed effects	Yes	Yes
R2	0.85	0.99

Note: Robust standard errors clustered by country-pair in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. MFE-DFE and PPML respectively mean monadic fixed effects-dyadic fixed effects and Poisson Pseudo-Maximum Likelihood.

5.2 Results with lags

Findings with lagged terms (Tables 5-6-7) reveal that the three dimensions of the Arab-Israeli conflict studied have more statistically significant effects on trade flows than previous results showing the importance of taking into account such lagged effects due to our large sample-period.

5.2.1 Diplomatic ties with Israel and trade

Table 5 clearly shows that when trading partners have diplomatic ties with Israel, there is overall a trade-promoting lagged effect on bilateral trade. More precisely, we find strong evidence that diplomacy plays a significant role in international trade relations of Israel even with Muslim countries (except for Israeli exports to Muslim countries ten years after). The same conclusions also appear for BRIC countries and North-America but only ten years after the establishment of diplomatic ties. About EU countries, diplomatic relations with Israel have a negative effect on Israeli exports ten years after and a positive impact five years after for exports to Israel.

5.2.2 Arab-Israeli military conflicts and trade

The results in the Table 6 always underlines the non-significant effect of the Arab-Israeli conflicts as previously described but with some interesting exceptions. These military conflicts seem to have a positive effect on EU exports to Israel and Israeli exports to BRIC, respectively five years after the armed conflicts and two years after. Concerning Muslim countries, we find evidence that these conflicts undermine Israeli exports five years after but improve exports to Israel two years after.

5.2.3 Arab-Israeli alliances and trade

Our empirical results (Table 7) also suggest that the Arab-Israeli peace agreements which could foster regional and bilateral trade flows may have positive consequences for political relations. This situation is present for Israeli exports to North-America, respectively two years after the alliance of 1979 and five years after the alliance of 1994. These results also appear for Israeli exports to Muslim countries essentially with the alliance of 1994, i.e. two and five years after. Once again, we find that the alliance of 1979 has negative effects on Israeli trade flows due to the retaliation measures by the Arab League on Egypt since this bilateral peace treaty. Compared with the other peace agreements, those of 1983 and 1994 seem to significantly improve Israeli bilateral trade, particularly with Muslim countries.

Table 5: Estimation results for diplomatic ties with Israel (with lags)

	MFE-DFE (lags)	PPML (lags)
FTA_{ijt}	0.07^{b}	0.05^{a}
	(0.03)	(0.01)
CU_{ijt}	0.05^{c}	0.04^{a}
	(0.02)	(0.005)
$GATT\text{-}WTO_{ijt}$	0.14^{a}	-0.12^{a}
	(0.02)	(0.02)
Diplomatic ties with Israel (Israeli exports, 5 years after)		
$Israel\_EU_{ijt}$	0.29	-0.02
	(0.18)	(0.07)
$Israel\_NorthAmerica_{ijt}$	0.15	-0.17
	(0.22)	(0.29)
$Israel\_BRIC_{ijt}$	1.73^{a}	0.38^{a}
	(0.51)	(0.13)
$Israel\_Muslim_{ijt}$	-0.13	0.32^{a}
	(0.23)	(0.09)
Diplomatic ties with Israel (Israeli exports, 10 years after)		
$Israel\_EU_{ijt}$	-0.28	-0.34^{a}
	(0.17)	(0.05)
$Israel\_NorthAmerica_{ijt}$	0.39	0.67^{a}
	(0.28)	(0.12)
$Israel\_BRIC_{ijt}$	-0.01	0.004
	(0.27)	(0.07)
$Israel\_Muslim_{ijt}$	-0.16	0.09
	(0.17)	(0.07)
Diplomatic ties with Israel (exports to Israel, 5 years after)		
EU_Israel_{ijt}	0.15	0.18^{c}
	(0.18)	(0.09)
$NorthAmerica\_Israel_{ijt}$	0.16	-0.04
	(0.23)	(0.21)
$BRIC\_Israel_{ijt}$	1.82^{a}	0.81^{a}
	(0.34)	(0.20)
$Muslim\_Israel_{ijt}$	0.80	0.93^{a}
	(0.65)	(0.15)
Diplomatic ties with Israel (exports to Israel, 10 years after)		
EU_Israel_{ijt}	0.38^{c}	0.10
	(0.18)	(0.09)
$NorthAmerica\_Israel_{ijt}$	0.40	0.57^{a}
	(0.37)	(0.15)
$BRIC\_Israel_{ijt}$	-0.13	0.29^{a}
	(0.17)	(0.10)
$Muslim\_Israel_{ijt}$	0.30	0.31^{a}
	(0.30)	(0.11)
Constant	0.71^{a}	
	(0.01)	
Observations	839589	1293064
Exporter-year fixed effects	Yes	Yes
Importer-year fixed effects	Yes	Yes
Country-pair fixed effects	Yes	Yes
Time fixed effects	Yes	Yes
R^2	0.85	0.99

Note: Robust standard errors clustered by country-pair in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. MFE-DFE and PPML respectively mean monadic fixed effects-dyadic fixed effects and Poisson Pseudo-Maximum Likelihood.

Table 6: Estimation results for Arab-Israeli conflicts (with lags)

	MFE-DFE (lags)	PPML (lags)
FTA_{ijt}	0.07^{b}	0.05^{a}
	(0.03)	(0.01)
CU_{ijt}	0.05^{c}	0.04^{a}
	(0.02)	(0.005)
$GATT\text{-}WTO_{ijt}$	0.14^{a}	-0.12^{a}
	(0.02)	(0.02)
Arab-Israeli conflicts (Israeli exports, 2 years after)		
$Israel\_EU_{ijt}$	-0.02	-0.05
	(0.06)	(0.05)
$Israel\_NorthAmerica_{ijt}$	0.19^{c}	0.04
	(0.11)	(0.06)
$Israel\_BRIC_{ijt}$	0.66^{a}	0.11^{c}
	(0.18)	(0.06)
$Israel\_Muslim_{ijt}$	-0.38^{b}	-0.07
	(0.17)	(0.10)
Arab-Israeli conflicts (Israeli exports, 5 years after)		
EU_Israel_{ijt}	-0.07	-0.06
	(0.06)	(0.05)
$NorthAmerica\_Israel_{ijt}$	0.07	0.003
	(0.11)	(0.06)
$BRIC\_Israel_{ijt}$	0.77^{b}	-0.09
	(0.32)	(0.06)
$Muslim\_Israel_{ijt}$	-0.21	-0.26^{b}
	(0.17)	(0.10)
Arab-Israeli conflicts (exports to Israel, 2 years after)		
EU_Israel_{ijt}	0.19^{b}	0.02
	(0.09)	(0.05)
$NorthAmerica\_Israel_{ijt}$	0.12	0.07
	(0.11)	(0.07)
$BRIC\_Israel_{ijt}$	0.54^{b}	0.11
	(0.25)	(0.10)
$Muslim\_Israel_{ijt}$	0.04	0.29^{b}
	(0.28)	(0.13)
Arab-Israeli conflicts (exports to Israel, 5 years after)		
EU_Israel_{ijt}	0.19^{b}	0.11^{b}
	(0.09)	(0.05)
$NorthAmerica\_Israel_{ijt}$	0.18^{b}	0.10
	(0.09)	(0.06)
$BRIC\_Israel_{ijt}$	0.56	-0.03
	(0.37)	(0.09)
$Muslim\_Israel_{ijt}$	-0.17	-0.20
	(0.16)	(0.12)
Constant	0.71^{a}	
	(0.01)	
Observations	839589	1293064
Exporter-year fixed effects	Yes	Yes
Importer-year fixed effects	Yes	Yes
Country-pair fixed effects	Yes	Yes
Time fixed effects	Yes	Yes
R^2	0.85	0.99

Note: Robust standard errors clustered by country-pair in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. MFE-DFE and PPML respectively mean monadic fixed effects-dyadic fixed effects and Poisson Pseudo-Maximum Likelihood.

Table 7: Estimation results for Arab-Israeli alliances (with lags)

	MFE-DFE (lags)	PPML (lags)
FTA_{ijt}	0.07^{b}	0.05^{a}
	(0.03)	(0.01)
CU_{ijt}	0.05^{c}	0.04^{a}
	(0.02)	(0.005)
GATT-WTO_{ijt}	0.14^{a}	-0.12^{a}
	(0.02)	(0.02)
Arab-Israeli alliance 1979 (Israeli exports, 2 years after)		
Israel_EU_{ijt}	-0.17	0.06
	(0.18)	(0.10)
$\text{Israel\_NorthAmerica}_{ijt}$	-0.06	0.45^{a}
	(0.29)	(0.08)
Israel_BRIC_{ijt}	0.67	0.86^{b}
	(0.49)	(0.33)
$\text{Israel\_Muslim}_{ijt}$	-1.11^{a}	-1.56^{a}
	(0.31)	(0.30)
Arab-Israeli alliance 1983 (Israeli exports, 2 years after)		
Israel_EU_{ijt}	-0.15	0.21^{c}
	(0.15)	(0.12)
$\text{Israel\_NorthAmerica}_{ijt}$	0.04	0.10
	(0.14)	(0.11)
Israel_BRIC_{ijt}	0.74	-0.75^{b}
	(0.55)	(0.33)
$\text{Israel\_Muslim}_{ijt}$	-0.81^{b}	-0.11
	(0.35)	(0.33)
Arab-Israeli alliance 1994 (Israeli exports, 2 years after)		
Israel_EU_{ijt}	-0.05	0.01
	(0.12)	(0.11)
$\text{Israel\_NorthAmerica}_{ijt}$	-0.02	0.06
	(0.13)	(0.11)
Israel_BRIC_{ijt}	0.26	0.23
	(0.16)	(0.17)
$\text{Israel\_Muslim}_{ijt}$	1.18^{b}	0.44^{c}
	(0.49)	(0.23)
Arab-Israeli alliance 1979 (Israeli exports, 5 years after)		
EU_Israel_{ijt}	-0.02	-0.23^{b}
	(0.16)	(0.09)
$\text{NorthAmerica\_Israel}_{ijt}$	0.35^{b}	0.02
	(0.14)	(0.08)
BRIC_Israel_{ijt}	1.16^{c}	-0.16
	(0.70)	(0.23)
$\text{Muslim\_Israel}_{ijt}$	-0.48	0.01
	(0.33)	(0.24)
Arab-Israeli alliance 1983 (Israeli exports, 5 years after)		
EU_Israel_{ijt}	-0.06	-0.04
	(0.12)	(0.14)
$\text{NorthAmerica\_Israel}_{ijt}$	-0.09	-0.14
	(0.11)	(0.13)
BRIC_Israel_{ijt}	-0.10	-0.41
	(0.30)	(0.29)
$\text{Muslim\_Israel}_{ijt}$	-1.22^{c}	-0.23
	(0.68)	(0.37)
Arab-Israeli alliance 1994 (Israeli exports, 5 years after)		
EU_Israel_{ijt}	0.03	-0.12
	(0.11)	(0.10)
$\text{NorthAmerica\_Israel}_{ijt}$	0.06	0.21^{b}
	(0.11)	(0.10)
BRIC_Israel_{ijt}	-0.05	0.18
	(0.25)	(0.12)
$\text{Muslim\_Israel}_{ijt}$	-0.03	0.51^{a}
	(0.26)	(0.16)

	MFE-DFE (lags)	PPML (lags)
Arab-Israeli alliance 1979 (exports to Israel, 2 years after)		
EU_Israel_{ijt}	-0.01	-0.63^{b}
	(0.22)	(0.26)
$\text{NorthAmerica\_Israel}_{ijt}$	0.22	-0.53^{b}
	(0.23)	(0.27)
BRIC_Israel_{ijt}	0.96	0.72^{b}
	(0.72)	(0.34)
$\text{Muslim\_Israel}_{ijt}$	-1.32^{a}	-1.12^{a}
	(0.17)	(0.38)
Arab-Israeli alliance 1983 (exports to Israel, 2 years after)		
EU_Israel_{ijt}	-0.31	-0.11
	(0.35)	(0.25)
$\text{NorthAmerica\_Israel}_{ijt}$	0.32^{c}	0.10
	(0.18)	(0.25)
BRIC_Israel_{ijt}	0.03	-0.44
	(0.23)	(0.49)
$\text{Muslim\_Israel}_{ijt}$	-0.46	-0.94^{a}
	(0.57)	(0.36)
Arab-Israeli alliance 1994 (exports to Israel, 2 years after)		
EU_Israel_{ijt}	-0.06	-0.02
	(0.17)	(0.09)
$\text{NorthAmerica\_Israel}_{ijt}$	0.007	0.01
	(0.16)	(0.09)
BRIC_Israel_{ijt}	0.28	0.62^{a}
	(0.34)	(0.19)
$\text{Muslim\_Israel}_{ijt}$	0.28	0.75^{a}
	(0.42)	(0.22)
Arab-Israeli alliance 1979 (exports to Israel, 5 years after)		
EU_Israel_{ijt}	0.34^{c}	0.70^{a}
	(0.19)	(0.24)
$\text{NorthAmerica\_Israel}_{ijt}$	-0.07	0.35
	(0.19)	(0.24)
BRIC_Israel_{ijt}	0.20	-0.68^{a}
	(0.47)	(0.24)
$\text{Muslim\_Israel}_{ijt}$	-0.01	0.53
	(0.63)	(0.33)
Arab-Israeli alliance 1983 (exports to Israel, 5 years after)		
EU_Israel_{ijt}	0.13	0.16
	(0.25)	(0.15)
$\text{NorthAmerica\_Israel}_{ijt}$	0.26	0.16
	(0.26)	(0.14)
BRIC_Israel_{ijt}	0.53	0.03
	(0.50)	(0.37)
$\text{Muslim\_Israel}_{ijt}$	0.34	-0.43^{c}
	(0.38)	(0.23)
Arab-Israeli alliance 1994 (exports to Israel, 5 years after)		
EU_Israel_{ijt}	0.03	-0.38^{a}
	(0.15)	(0.08)
$\text{NorthAmerica\_Israel}_{ijt}$	-0.14	0.07
	(0.16)	(0.08)
BRIC_Israel_{ijt}	0.09	0.38^{b}
	(0.15)	(0.15)
$\text{Muslim\_Israel}_{ijt}$	1.13^{b}	0.31^{c}
	(0.48)	(0.16)
Constant	0.71^{a}	
	(0.01)	
Observations	839589	1293064
Exporter-year fixed effects	Yes	Yes
Importer-year fixed effects	Yes	Yes
Country-pair fixed effects	Yes	Yes
Time fixed effects	Yes	Yes
R^2	0.85	0.99

Note: Robust standard errors clustered by country-pair in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. MFE-DFE and PPML respectively mean monadic fixed effects-dyadic fixed effects and Poisson Pseudo-Maximum Likelihood.

6 Conclusion

Using a theory-consistent structural gravity model, this paper investigates the unexplored effects of the Arab-Israeli conflict on bilateral trade relations of Israel. The geopolitical situation in the Middle-East drastically affects the economic development of countries in this region but also relationships with foreign countries due to the stances sometimes taken of trading partners about this conflict. In order to fully assess these effects on trade, we decided to study three main dimensions of the Arab-Israeli conflict: diplomatic, military and religious. Findings highlights evidence that these components matter on Israeli trade flows, in particular with Muslim countries.

First, the results reveal that diplomatic ties with Israel lead to improve Israeli bilateral trade flows whatever the trading partner and mainly with Muslim countries because of the decrease of trade costs and the trade facilitation effect allowed by diplomatic exchanges. Second, the Arab-Israeli conflicts since 1948 seem to more affect Muslim countries than outside countries with essentially a trade-deteriorating effect for Israeli exports five years after these armed conflicts. Third, findings underscore that the nature of Arab-Israeli peace agreements strongly influences Israeli trade with trading partners. Compared with the two other peace treaties, this between Egypt and Israel in 1979 deteriorates exports of foreign countries to Israel due to the retaliation measures applied by the Arab League on Egypt against this unilateral initiative. However, the peace treaty between Jordan and Israel in 1994, in the context of the Oslo Peace Process, promoted bilateral trade with Muslim countries.

Finally, "The Arab-Israeli conflict has defied peaceful accommodation, let alone resolution, for more than 50 years. [...] Yet the United States and the Western world have never fully employed an essential resource that they could bring to the search for peace: economic development, which creates regional opportunities for trade, investment, and jobs"[40].

[40] https://www.foreignaffairs.com/articles/middle-east/2002-09-01/advancing-peace-middle-east-economic-path-out-conflict

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Table 8: List of countries and dates diplomatic relations established

Countries	Year of establishment	Countries	Year of establishment	Countries	Year of establishment
Albania	1991	Greece	1991	Paraguay	1949
Andorra	1994	Grenada	1975	Peru	1949
Angola	1992	Guatemala	1950	Philippines	1957
Argentina	1949	Guinea-Bissau	1994	Poland	1948
Armenia	1992	Guyana	1992	Portugal	1977
Australia	1949	Haiti	1950	Qatar	1996
Austria	1949	Holy See	1993	Romania	1948
Azebaijan	1992	Honduras	1950	Russia	1992
Bahamas	1974	Hungary	1948	Rwanda	1994
Barbados	1967	Iceland	1948	Samoa	1977
Belarus	1992	India	1992	San Marino	1995
Belgium	1949	Ireland	1975	Sao Tome and Principe	1983
Belize	1981	Italy	1949	Senegal	1960
Benin	1961	Jamaica	1962	Serbia	1948
Bolivia	1950	Japan	1952	Seychelles	1992
Bosnia and Herzegovina	1997	Jordan	1994	Sierra Leone	1992
Bostwana	1993	Kazakhstan	1992	Singapore	1969
Brazil	1950	Kenya	1963	Slovak	1993
Bulgaria	1948	Kiribati	1984	Slovenia	1992
Burkina Fasso	1961	South Korea	1963	Solomon Islands	1989
Burundi	1995	Kyrghizstan	1992	South Africa	1975
Cambodia	1960	Laos	1957	Spain	1986
Cameroon	1960	Latvia	1992	Sri Lanka	1950
Canada	1949	Lesotho	1986	St Kitts and Nevis	1984
Cape Verde	1994	Liberia	1949	St Lucia	1979
Central African Republic	1991	Liechtenstein	1992	St Vincent & The Grenadi,es	1981
Chile	1949	Lithuania	1992	Oman	1996
China	1992	Luxembourg	1949	Surinam	1976
Colombia	1949	Macedonia	1995	Swaziland	1968
Congo	1960	Madagascar	1994	Sweden	1949
Costa Rica	1949	Malawi	1964	Switzerland	1949
Ivoiry Cost	1961	Malta	1965	Tajikistan	1992
Croatia	1997	Marshall Islands	1986	Tanzania	1995
Cyprus	1960	Mauritania	1999	Thailand	1958
Czech Republic	1948	Mauritius	1993	Togo	1987
DRC	1960	Mexico	1950	Tonga	1977
Denmark	1949	Micronesia	1987	Trinidad and Tobago	1962
Dominica	1978	Moldova	1992	Tunisia	1996
Dominican Republic	1949	Monaco	1964	Turkey	1991
East Timor	2002	Mongolia	1991	Turkmenistan	1993
Ecuador	1950	Montenegro	2006	Tuvalu	1984
Egypt	1980	Morocco	1994	Uganda	1994
El Savador	1950	Mozambique	1993	Ukraine	1991
Equatorial Guinea	1994	Myanmar	1949	United Kingdom	1949
Eritrea	1993	Namibia	1994	USA	1948
Estonia	1992	Nauru	1994	USSR	1948
Ethiopia	1961	Nepal	1960	Uruguay	1948
Fiji	1970	Netherlands	1949	Uzbekistan	1992
Finland	1949	New Zealand	1949	Vanuatu	1993
France	1949	Nicaragua	1948	Venezuela	1950
Gabon	1993	Nigeria	1960	Vietnam	1993
Gambia	1992	Norway	1949	Zambia	1991
Georgia	1992	Palau	1994	Zimbabwe	1993
Germany	1965	Panama	1949	Chad	1961
Ghana	1994	Papua New Guinea	1978	Guinea	1958
				Maldives	2009

Source: Israel Ministry of Foreign Affairs.

Table 9: List of countries and dates diplomatic relations severed

Countries	Years of suspension
Benin	1973-1991
Bolivia	2009
Bostwana	1973-1992
Bulgaria	1967-1989
Burkina Fasso	1973-1992
Burundi	1973-1994
Cambodia	1975-1992
Cameroon	1973-1986
Central African Republic	1973-1990
Congo	1972-1991
Ivoiry Cost	1973-1986
Czech Republic	1967-1990
Democratic Republic of Congo	1973-1982
Equatorial Guinea	1973-1993
Ethiopia	1973-1989
Gabon	1973-1993
Gambia	1973-1992
Ghana	1973-1994
Guinea	1967
Guyana	1974-1991
Hungary	1967-1990
Kenya	1973-1988
Laos	1973-1993
Liberia	1973-1983
Madagascar	1973-1993
Mauritius	1976-1993
Mauritania	2009
Nicaragua	2010
Nigeria	1973-1992
Poland	1967-1989
Rwanda	1973-1994
Senegal	1973-1994
Chad	1972
Venezuela	2009
Sierra Leone	1973-1991
Tanzania	1973-1994
Togo	1973-1987
Uganda	1972-1994
Zambia	1973-1991

Source: Israel Ministry of Foreign Affairs.

Table 10: List of main Arab-Israeli conflicts

Year	War name	Belligerents
1948-1949	Arab-Israeli War	Israel, Arab League
1956	Sinai War	Israel, UK, France, Egypt
1967	Six Days War	Israel, Egypt, Syria, Jordan, Iraq, Lebanon
1967-1970	War of Attrition	Israel, Egypt, USSR, Palestine, Jordan, Syria
1973	Yom Kippur War	Israel, Egypt, Syria
1982-1985	War over Lebanon	Lebanon, Hezbollah, Palestine, Israel
1987-1993	First Intifada	Palestine, Israel
2000-2004	Al Aqsa Intifada	Palestine, Israel
2006	Second Lebanon War	Hezbollah, Israel
2008-2009	Gaza War	Palestine, Israel

Source: The Correlates of War (COW) project.

Table 11: List of main Arab-Israeli alliances

Year	Interstate alliances	Type of agreement
1979	Israel-Egypt	Non-agression
1983-1984	Israel-Lebanon	Non-agression
1994	Israel-Jordan	Neutrality and non-agression

Source: The Correlates of War (COW) project.

Table 12: List of countries by religion

Countries	Religion	Countries	Religion	Countries	Religion
Bulgaria	O	Iran	M	Equator	C
Romania	O	Belgium	C	Colombia	C
Hungary	C	Peru	C	Zimbabwe	C
North-Korea	B	Lebanon	M	Kiribati	C
Czech Republic	NA	Rwanda	C	Vanuatu	C
Poland	C	Senegal	M	Antigua and Barbuda	C
Mongolia	B	Iceland	L	Angola	C
Albania	M	Cyprus	O	Ivoiry Cost	M
India	H	Malta	C	Lesotho	C
Switzerland	C	Mexico	C	United Arab Emirates	M
Vietnam	NA	Argentina	C	Bolivia	C
Indonesia	M	United Kingdom	C	Grenada	C
Sweden	L	Mauritius	H	Nicaragua	C
Denmark	L	Netherlands	C	Belize	C
Burma	B	Greece	O	Uruguay	C
Liechtenstein	C	Guyana	C	Qatar	M
Finland	L	Togo	NA	Palestine	M
Pakistan	M	Japan	B	Bahrain	M
Norway	L	Germany	C	Micronesia	C
Afghanistan	M	Maldvies	M	Namibia	C
Nepal	H	Madagascar	C	Saudi Arabia	M
Egypt	M	Luxembourg	C	Singapore	B
Syria	M	Jamaica	C	Marshall Islands	C
Sri Lanka	B	Chad	M	Estonia	NA
Cambodia	B	Australia	C	Latvia	NA
Iraq	M	New Zealand	C	Lithuania	C
Morocco	M	Spain	C	Brunei	M
Algeria	M	Burkina Faso	M	Uzbekistan	M
Sudan	M	Guinea-Bissau	M	Kazakhstan	M
Guinea	M	Gabon	C	Tajikistan	M
Ghana	C	Malaysia	M	Ukraine	O
Cuba	C	Trinidad and Tobago	C	Kyrgyzstan	M
Mali	M	Venezuela	C	Turkmenistan	M
Somalia	M	Niger	M	Belarus	O
Congo	C	Brazil	C	Israel	J
Laos	B	Gambia	M	Moldova	O
Uganda	C	Botswana	C	Azerbaijan	M
Kenya	C	Philippines	C	Armenia	O
Burundi	C	Mozambique	C	Serbia	O
Tunisia	M	Thailand	B	Georgia	O
France	C	Sao Tome and Principe	C	Slovenia	C
Democratic Republic of Congo	C	Bangladesh	M	Croatia	C
Tanzania	C	Fiji	C	South-Korea	C
Central African Republic	C	Samoa	C	Eritrea	M
Zambia	C	Comoros	M	Macedonia	O
Benin	C	Cape Verde	C	Bosnia and Herzegovina	C
Mauritania	M	Suriname	C	Cook Islands	C
Canada	C	Seychelles	C	South Africa	C
Equatorial Guinea	C	Papua New Guinea	C	Tonga	C
Ethiopia	O	Liberia	C	East Timor	C
Italia	C	Jordan	M	Nauru	C
Chili	C	Barbados	C	Montenegro	O
Nigeria	M	Oman	M	Costa Rica	C
Kuwait	M	Libya	M	Niue	C
Cameroon	C	United States	C	Malawi	C
Austria	C	Djibouti	M	Swaziland	C
Sierra Leone	M	Portugal	C	Paraguay	C
Turkey	M	Ireland	C	Dominican Republic	C
Nicaragua	C	Taiwan	B	Yemen	M
China	NA	Bhutan	B	Russia	O

Source: CIA World Factbook.
Note: M, C, B, O, L, H and NA respectively mean Muslim, Christian, Buddhist, Orthodox, Lutheran, Hindu and unaffiliated.