Bilateral Trade and Strategic Rivalry

Ksenia Dishkant, PhD
PhD in International Relations
PhD Candidate in Economics
University of Cema, Buenos Aires, Argentina

Abstract

Conflict is a costly endeavor. However, conflict itself is of unobservable magnitude which makes statistical inference problematic. The long-run economic cost of conflict is calculated as the sum of the contemporaneous costs and the discounted value of future costs. Typically, researchers use War or Militarized Interstate Conflicts as independent, discrete events to calculate its contemporaneous effect and then introduce a time binary variable to estimate the lagged effects since the end of the event. The conflict datasets accurately recognize the dates of the core conflict. However, they ignore the possibility that a lack of militarized conflict does not necessarily mean that issues have been settled, thus we are underestimating overall costs.

The present study estimates the economic costs of rivalry. The international rivalry cycle is a process in which a pair of states create and sustain a relationship of atypical hostility for some period. This paper is part of the renaissance of research activity in the applied economics of international trade. The gravity model is used to determine the economic cost of Rivalry on bilateral trade using panel data.

At the aggregate level, strategic and enduring rivalries have a negative and significant effect on trade flow. The results show that the total effect of rivalry accounts for 48%-57% of the fall in bilateral trade volume, which is equivalent in cost to 19% of the ad-valorem tax. If the rivalry is disaggregated by claim type: spatial, positional, and mixed, then we observe that the cost varies substantially with the type. Spatial rivalry explains 16%-26% of the fall in trade volume, while positional and mixed rivalry explain 49%-57% and 77%-82%, respectively.

Keywords: cost of conflict; rivalry; gravity model.

Introduction

International interdependence is a central feature of the world economy, Helpman (2011). Countries' economic destiny is entangled with trade, investment, and migration. Moreover, global supply chains are spread across countries, making production supply in one country highly dependent on economic activities in multiple foreign countries.

Nowadays, the changing nature of international economic interactions is extend beyond pure economic interaction; since the country's interactions reflect its political and economic characteristics. Then, it is crucial to understand how they relate to the changing nature of interdependence and rivalry behavior between political and military forces.

The study focuses on the estimation of the accumulated indirect economic costs of bilateral conflict, which is depicted by estimate the effect of conflict on the volume of bilateral trade. For these purposes, the study introduces rivalry as a conflict variable.

The empirical exercise results show that at the aggregate level, strategic rivalry have a negative and significant effect on trade flow. The results show that the total effect of rivalry accounts for 48%-57% of the fall in bilateral trade volume, which is equivalent in cost to 19% of the value-added rate. If the rivalry is disaggregated by claim type: spatial, positional, and mixed, we observe that the cost varies substantially with the type. Spatial rivalry explains 16%-26% of the fall in trade volume, while positional and mixed rivalry explain 49%-57% and 77%-82%, respectively.

The role of politics in economic analysis is not novel. In fact, International Economic Relations provides insight into how the rivalry framework could interact with the changing nature of international trade in this regard. The historical record shows that the international rivalry cycle is a process in which a pair of states create and sustain a relationship of atypical hostility for some period, Thompson, Sakuwa & Suhas (2021). The International System has been characterized by decrease in rivalry-proneness in the past century. After the de-escalation of the US-Soviet Cold War and the Sino-Soviet rivalry- at the beginning of the 90s- the major power subsystem became rivalry–free. However, the end of the Cold War provided the setting for new rivalries between major and minor powers; meanwhile, several minor power rivalries remained active. Last evidence points in such a direction, Thompson et. (2010).

By taking the globalization and strategic vulnerabilities view, this article attempts to clarify how all these contributions to the literature fit together. This paper is part of the renaissance of research activity in the applied economics of international trade. A growing theoretical and empirical literature relates bilateral trade flows to measures of joint economic activity and trade costs. For example, Anderson & Wincoop (2004) measure trade costs directly, as well as Limao & Venables (2001). An alternative approach estimates the trade cost from price differences across borders. Our research relies on indirect measures using the gravity model to estimate the trade cost from trade flows.

Also, this paper is related to economic literature that explores the direct impact of war and other forms of violence on trade, Bloomberg & Hess (2006) and the indirect impact of war on trade Taylor & Glick (2005). However, researchers use War or Militarized Interstate Conflicts - provided by COW data set – or disaggregate in more granular

level the type of conflict – revolutions, terrorist act, as independent, discrete events to calculate the contemporaneous effects and then introduce a time binary variable to estimate the additional effects since the end of the event. Our research differs from this line of research by using rivalry as a measure of accumulated costs. Nonetheless, we heavily rely on this literature's econometric procedure to identify the magnitude of the impact.

This work is related more broadly to the extensive literature on trade and war. The idea that trade promotes peace was formalized by Polachek (1980, 1999). It is based on the premise that conflict harms trade, and trade openness raises the opportunity cost of war. As such, the optimal conflict levels given current consumption and trade patterns can de determent. Like Polachek, we explore the effect of conflict on bilateral trade, but we introduce the rivalry variable explicitly in the regression instead rely on events data for conflict/cooperation level indicator. Hirschman (1969), Keohane and Nye (2012), emphasize that a country may also become dependent on another country trade, resulting in vulnerability. Martin, Mayer & Thoenig (2008) show that while bilateral trade lowers the probability of bilateral conflict. However, multilateral trade openness decreases dependence on any given country and hence increases the probability of a bilateral conflict.

The remainder of this chapter is structured as follows. Section 2 reviews conceptual, historical and empirical evidence of rivalry behavior. Section 3 introduces a general gravity theoretical framework for modeling rivalry behavior. Section 4 describes estimation methods, and additional techniques are used to perform empirical analyses. Section 5 focuses on the estimation *per se* and interpretation of the gravity equation for bilateral trade controlled directly by rivalry, our variables of interest. Using diverse estimation methods and exploring different levels of data aggregation, the policy coefficients are analyzed, and then we move from coefficients to economically meaningful impact measures. Section 6 concludes.

Why Rivalry Matters?

This section defines international rivalry. We ask why *Rivalry* should be a more accurate independent variable in estimating accumulative costs than War or other discrete militarized events.

Conflict Cost Assessment

Conflict itself is of unobservable magnitude which makes statistical inference problematic, Gardeazabl (2010). As a result, there is no consensus as to how to estimate the magnitude of the aggregate costs of conflict due to lost trade, but empirical evidence suggests that these costs are substantial and significant.

The accumulated or long-run economic cost of conflict is calculated as the sum of the contemporaneous costs - that is, those incurred during the active period of conflict - and the discounted value of future costs. Typically, researchers use War or Militarized Interstate Conflicts - provided by COW data set - as independent, discrete events to calculate the contemporaneous effects and then introduce a time binary variable to estimate the lagged effects. The sum of those two magnitudes provides the accumulated economic cost of conflict. For example, according to Taylor & Glick's (2005) estimation of the trade destruction during the IWW, the contemporaneous effect represented the fall by over 80% relative to pre-war period level. After the war, trade destruction averaged 63% during the five years after the war and during the consecutive four years it was 18%. In fact, the persistent effect of the First World War was greater than the contemporaneous effect of war.

However, Taylor & Glick's example is the exception and not the norm. And even their recognition for persistence of trade destruction after the militarized effect, they exclude additional issues conflict-related, such as the existence of conflicts that are not conducive to war, or correct identification of the conflict period initiation or finalization, thus we underestimate overall costs.

Utilizing rivalry frameworks might partially solve this limitation for the following reasons: 1. Removing war from the forefront by considering peace and conflict resolution as well as the origin/end of rivalry; 2. Identify the rivalry context within which conflictual relationships occur; 3. Focus on longitudinal and dynamic aspects of rivalry relationship analysis rather than static analysis, as Diehl & Goertz (1995) suggest.

Rivalry

Models of strategic behavior are one branch of a broad quantitative research program into the causes and patterns of conflict and war, Diehl & Goertz (1995). Research on rivalries challenges conventional theories of international behavior by emphasizing persistence over time, successive conflictual encounters which account for a disproportionate share of the world's conflict. Realistic behavior seems to be cyclical as sustain a relationship of atypical hostility over time, and the conflict patters are unevenly distributed across de regions, and that only 1% of all world dyad are responsible for 70% of the militarized events.

Rivalry setting

The theoretical literature on international rivalry emphasizes new characteristics of rivalry settings that come from new empirical evidence and militarized interstate dispute datasets: on average, more cooperation exists than conflict throughout the world, Polachek (1980).

According to Diehl & Goertz (2006), a rivalry setting is prone to disputes. Therefore, militarized international disputes tend to take place in the context of enduring rivalry[1]. This is contrary to a random conflict distribution model. Rivalry setting affects the severity of disputes. This implies that the severity of conflict will be higher on average than in other types of conflict. One explanation is that conflict becomes more severe with repeated interaction between two states. As a result, states adopt increasingly coercive bargaining strategies. It is possible that states involved in isolated conflicts do not wish to escalate tensions so high as to jeopardize their mutual interests. There are similar constraints to enduring rivalries, and there may be domestic political pressure to take hard lines against traditional enemies.

There is a greater likelihood of war in a rivalry setting. War will be more frequent in advanced rivalry contexts, Brecher (1984). The level of hostility increases in a given dispute, but the possibility of escalating tension culminating in war is always present. Disputes without a violent past are more likely to be resolved peacefully or at least without resorting to all-out military force. Rivalry is more closely associated with other significant international relations phenomena. Many territorial changes have been prompted by enduring rivalries. According to Holsti (1995) and Vasquez (1983) territory has been the primary source of international conflict over the past five centuries. The fact that territorial changes occur more frequently in long-lasting rivalries than in proto-rivalries further supports the importance of enduring rivalries. Those territorial changes that do occur in enduring rivalries are more likely to be achieved by military force than those that take place in other contexts. If a territorial change occurs between two historical enemies, it is more likely to be the result of military force than of peaceful diplomatic initiatives.

Strategic vs Enduring Rivalries

For the purpose of empirical analysis, Thompson & Colaresi's (2007) historical-perceptions approach is implemented. It differs from the dispute-density approach provided by Diehl & Goertz (2006) because for rivalry cycle identification it focuses on an interpretative threatening competitor (strategic rivals) whereas the second focuses on an empirical emphasis on satisfying a minimal number of military-based interstate disputes within some time frame (enduring and interstate rivalry). Thompson, Colaresi & Rasler (2007) suggest that a state's rival is more than simply an external threat Diehl & Goertz (2006) or continuing source of problems, Bennett (1996).

[1] 40% of MID disputes occur within the context of enduring rivalries. Thus, only a small percentage of all conflictual dyads (5%) and an even smaller percentage of all possible dyads, accounts for a disproportionate amount of international conflict. A total of 27 dyads, or 2.5% of all rivalries, generate almost 30% of all disputes.

	Goertz & Diehl (2006)	*Thompson, Colaresi & Rasler (2007)*
Number of dyad (1818-2001)	63	173
Source	Militarized International Dispuets	Protracted conflict of International Crisis Behavior.
Duration Condition	Enduring: at least 6 MID in 20 years threshold.	Onset and ending dates do not depend on MID event. No minimal duration is stipulated in advance
Variable	Year	Year
Severity Condition	Level of Hostility	Threat Perceptions and Level of Hostility
Variable	Enduring Rivarly	Strategic Rivalry
Spatial Consistency Condition	Independent state Bilateral interactions	Independent state Bilateral interactions
Variable	Dyad	Dyad
Competitiveness Condition	Militarized behavior of states	Enemy-Competitor status
	Militarized Competitivenes	Enemy & Protracted Conflict

Table 1. Measurement criteria of Rivalry's concept based on two approaches of the study of international conflict. Source: Author

In conclusion, rivalry setting matters. For being durable, more conflict-prone and display greater severity level, we assume that contemporaneous impact of negative events is large. Not just because of the trade by destruction but also through persistence. We should expect that the speed with which commercial exchanges can resume after a militarized event is slower. In fact, trade costs rise due to the presence of factors that increase fixed and variable costs. In other world, trade destruction and persistence is expected to be higher in the context of rivalry rather than in its absence. As a result, the aggregate costs of conflict are expected to be greater than during a specific militarized event outside rivalry. In order to test these quantitative implication of rivalry setting, we proceeded first, with theoretical dimension of the trade-conflict nexus.

Benchmark Model

Section focuses on the trade-conflict nexus. By affecting both surpluses -under peace and conflict-, which represent opportunity costs, trade is considered one of the factors that influence escalation or de-escalation of pre-existing disputes. As a result, the anticipation of a change in trade patterns and consumption levels may trigger escalation properties.

Crisis escalation model

We assume that conflict occurrence depends on crisis initiation that gives origin to the dispute and crisis escalation or dispute escalation[2]. During the dispute initiation phase, a state searches for concessions from the target of its threat, preferably gaining those concessions without having to enter in to war. In a crisis escalation phase, however, the threat creates coercive leverage since both sides must decide whether to make concessions or commit to war. When the states fail to agree on a common rule, bargaining fails, and both sides take outside options, precipitating the militarized dispute.

$$\Pr(conflict_{ij}) = \Pr(dispute_{ij})\, x\, \Pr(escalation_{ij} \mid dispute_{ij}) \quad (1)$$

In (1) we observe how the likelihood of militarized conflict occurrence depend on probability of dispute initiation and conditional probability of dispute escalation.

During the escalation phase, countries bargaining over surplus divisions using the Nash solution. The relative revolve- which reflects the utility associated with going to war- is unobservable. As a result, actors are uncertain about what each other will do during conflict. As a result of asymmetric information, the theory predicts that countries will not reach an agreement without an outside option and when disagreements (war) and agreements (peace) payoffs are close enough, Mayer et. al (2008).

$$\Pr(esclation_{ij}) = 1 - \frac{1}{4V^2}\frac{\left[\left(v_i^p + v_j^p\right) - \left(v_i^W + v_j^W\right)\right]^2}{v_i^W v_j^W} \quad (2)$$

In (2) we observe how the likelihood of escalation to war increases with the degree of asymmetric information -measured by observational noise- and decreases with the difference between surpluses under peace and war, which represents the total opportunity cost of war.

Based on what has been discussed above, we assume that economic variables can both influence disputes' initiation and their escalation to militarization. To keep things simple, we assume that the dispute as an exogenous variable, and allow that gain of trade change, both sides' willingness, by affecting only the dispute escalation to a militarized conflict. In what follows, we illustrate the source of gains of trade using the structural gravity model based on new trade theory.

Structural gravity model

In this section we illustrate how trade patterns determined by the structural gravity model. The gravity model is derived from the theoretical fundamentals provided by Paul Krugman (1979). The general idea is that trade is caused by economies of scale

[2] For more detailed analysis see Fearon (1995, 1996), Powell (1996) and Morrow (1999).

instead of differences in factor endowment or technology. This assumes that scale economies are internal to firms, with monopolistic competition. For full model derivation see Mayer at. al (2008) and Anderson and van Wincoop (2004).

Consumer preferences are assumed to be homothetic, homogeneous across countries, and given by a CES –utility function for country j:

$$U_i = \left[\sum_{h=1}^{R} (n_j\ c_{ij})^{\frac{\sigma-1}{\sigma}}\right]^{\frac{\sigma}{\sigma-1}} \quad (3)$$

In (3) Consumers derive their utility by consuming a large variety of domestic and foreign goods. In the World of R countries, each produce differentiated goods[3]. The number of varieties produced in country j is n_j, meanwhile c_{ij} denotes consumption of varieties from country j in country i. Finally, the elasticity of substitution σ is greater than 1 among different varieties from different countries indicated that goods are imperfect substitutes.

Consumer maximize equation (3) subject to the following standard Budget constraint:

$$\sum_i p_{ij}\, c_{ij} = E_j \quad (4)$$

In (4) Ej is total expenditure in the country j. The Price index for each country:

$$P_i = \left[\sum_{j=1}^{R} n_j \left(p_j T_{ij}\right)^{1-\sigma}\right]^{\frac{1}{1-\sigma}} \quad (5)$$

In (5) The Samuelson's iceberg trade costs are assumed to be positive and are captured by T_{ij}. The geography matter because the trade impediments depend on the distance and other trade impediment such as borders and barriers. The implication of the trade impediments is that some fraction of the one united good that is exported is lost, and only $\frac{1}{T_{ij}}$ units is consumed. The mil price of products made in j is represented by p_j. Mill prices in the manufacturing sector in all countries are identical and equal to the mark-up over marginal cost: $p_i = \frac{\sigma}{\sigma-1}$. For simplicity, is assumed that labor is the only factor of production. Each agents are endowed with 1 unit of labor. As a result, the total expenditure of country i is $E_i = \hat{L}_i$, where $\hat{L}_i \equiv a_i L_i$ is effective labor. The number of firms is proportional to GDP and set equal to $n_i = \frac{\hat{L}_i}{f\sigma}$.

Solving the optimization problem,

$$X_{ij} \equiv n_j p_j T_{ij} c_{ij} = E_i E_j \left(\frac{p_j T_{ij}}{P_i}\right)^{(1-\sigma)} \quad (6)$$

[3] The gravity equations can be viewed as basic expenditure equations showing how consumers allocate spending across countries under the constraints of trade barriers. According to Novy (2007) the motivation for purchasing foreign goods could be that they are either inherently different from domestic goods -as in an Armington world- or they are produced relatively more efficiently -as in a Ricardian world-.

In (6) the value of imports by country i from country j will then depend on both countries' incomes, prices, and trade costs.

At equilibrium, utility increases with trade flow and the number of varieties and decreases with trade costs:

$$U_i = \frac{\sigma-1}{\sigma}\left(\frac{f}{\sigma}\right)^{\frac{-1}{\sigma-1}}\left[\sum_{h=1}^{R} n_h^{\frac{1}{\sigma}}\left(\frac{m_{ih}}{T_{ih}}\right)^{\frac{\sigma-1}{\sigma}}\right]^{\frac{\sigma}{\sigma-1}} \quad (7)$$

The final step in the derivation of the structural gravity model is to impose market clearance for goods form each origin:

$$Y_i = \Sigma_j \left(\frac{\alpha_i\, p_i\, T_{ij}}{P_i}\right)^{(1-\sigma)} E_j \quad (8)$$

In (8) states that, at delivered prices the value of output in country, Yi, should be equal to the total expenditure of this country's variety in all countries in the world, including i itself.

$$X_{ij} = \frac{Y_i^{\alpha} Y_j^{\beta}}{Y}\left(\frac{t_{ij}}{\Pi_i P_j}\right)^{1-\sigma} \quad (9)$$

In (9) there are two terms that are relevant to our estimation. A size term is one, while a trade cost term is another.

First, a size term $\frac{Y_i^{\alpha} Y_j^{\beta}}{Y}$. With zero trade costs, consumers face the same prices for a given variety regardless of their geographical location. The general implications are three. Large producers will export more to all countries; Also, Large/rich markets will import more from all sources; Finally, Trade flows between countries i and j will be larger the more similar in size the trading partners are.

Second, a trade cost term $\left(\frac{t_{ij}}{\Pi_i P_j}\right)^{1-\sigma}$. The main insight from the theory is that bilateral trade depends on *relative* trade barriers. The general implication are three as well. In the first place, bilateral trade cost between partners - t_{ij} — is affected by three type of impediments: geographical distance, barriers, and borders. Additionally, the structural term -P_j -, embodies the inward multilateral resistance. It represents importers' ease of market access. Finally, the term -Π_i —identifies outward multilateral resistance as a measure of importers' ease of access to other countries' markets.

Assemble of two models

In this section, we address the issue of how change in trade patterns determined by the structural gravity model in the previous section affect conflict opportunity costs in the escalation dispute phase. Here is the main idea. Assume that future reductions

in trade costs will benefit our rival more than our own. Consequently, the competitor will be encouraged to escalate their dispute at a bilateral level or enlist third parties to reduce multilateral trade costs.

To capture intuition, the equation (2) can be written using the trade patterns derived above from the gravity model. This will enable us to visualize how trade affects the opportunity cost of conflict.

$$\Pr(esclation_{ij}) = 1 - \frac{1}{4V^2}\left[\frac{\sigma\lambda}{\sigma-1} + \tau_{bil}\frac{m_{ij}}{E_i} + \left(\frac{\lambda}{\sigma-1}\tau_{multi}\right)\sum_{h\neq j,i}^{R}\frac{m_{ih}}{E_i}\right]^2 \quad (10)$$

Following Mayer at. al (2008) a country i's welfare under peace is $U_i^P = U(x_i)$. Where the vector $x_i \equiv (\hat{L}_i, \hat{L}_j, T_{ij}, T_{ih})$ this mean that it depends of effective labor of both rival countries and bilateral and multilateral trade costs. Under war, country i's welfare it is equal on average to an equilibrium vale $U_i^W = U[x_i(1-\Delta)]$ with: $\Delta \equiv (\lambda, \lambda, -\tau_{bil}, \tau_{mul})$.

We can access three different types of conflict - related costs with the brackets.

If $\frac{\sigma}{\sigma-1}$ is positive, then the war reduces available resources among the belligerents. The direct costs of conflict is associated with the destruction of infrastructure and killing of people. And the indirect cost affects the production capabilities, which reduces the variety of domestic products.

$\frac{m_{ij}}{E_i}$ this term represents the share of expenditures allocated to imports from a specific country from rival. If this term is positive, than it makes bilateral trade more expensive and decreases bilateral trade as a result of the war. This captures the indirect bilateral cost of conflict. Also, it produces inflationary pressure that affects consumer prices, because country's price index depends on the iceberg costs, meaning it depends on the distance between countries and other trade barriers, as we demonstrate in (5).

$\left(\frac{\lambda}{\sigma-1}\right)\sum_{h\neq j,i}^{R}\frac{m_{ih}}{E_i}$ this term represents the share of expenditures allocated to imports from a specific country from the rest of the world. If the term is positive, multilateral trade costs will increase, which will also lead to higher consumer prices. Additional assumptions address substitution elasticity.

The Method

In this section, we define the main variables in the database. Also, we describe the empirical model and the estimation method.

Main variables

This section describes the variables used to infer trade costs from the gravity model. Because the appropriate aggregation of trade costs is a crucial concern, the statistical summary (Table 2) reports the main impediments to trade, such as distance, barriers, and borders, by constructing its proxies.

Variable	**Obs**	**Mean**	**St. Dev.**	**Min**	**Max**
Importer	513078	429.17	255.04	2	990
Exporter	512908	427.67	253.98	2	990
Trade Flow	533780	0.88	2.97	-27.58	12.34
GDP importer	518193	9.76	2.23	256.668	16.09
GDP exporter	515352	9.47	2.35	2.54	16.09
Joint Distance	524964	8.57	0.84	4.54	9.89
Contiguity	528777	0.03	0.18	0	1
Common Language	525223	0.11	0.19	0	1
Colonial Past	528777	0.02	0.16	0	1
Common Colonizer	528777	0.08	0.27	0	1
Membership FTA	533780	0.02	0.15	0	1
Membership GATT/ WTO	504725	1.29	0.61	0	2
Rivalry TC	533780	0.005	0.072	0	1
Rivalry KGD	533780	0.005	0.076	0	1
Year	533780	1981.35	13.53	1950	2000

Table 2. Statistical summary
Source: Author

We combine data from five different sources for our project. First, the trade data are obtained from Rose (2004). The data we use for *Rivarly* come from three different sources and are given in country-year form, which we convert to dyadic form.

- The *Dependent variable is equal* to the logarithm of nominal bilateral international trade flows from exporter *i* to importer *j* at time *t*.

The bilateral trade data were collected from two sources. The trade data is from Barbieri's version N4 - for more reference, see Barbieri (2014) - because of historical data gaps; Barbieri's data is bridged with data from the IMF Direction of Trade (DOT) and denominated in U.S. dollars.

- GDP is the real gross national income of the importer (*Yi*) and exporter (*Yj*). It is expressed as the logarithm of the values of exporter output and importer expenditure, respectively.

Larger countries are expected to produce more goods and do so with economies of scale. Based on empirical studies, the coefficient of the variable should be positive and significant. International Monetary Fund and COMTRADE are the sources.

Distance is the key variable in the gravity setup and represents the geographical impediment to trade. Transport costs are the most common indicator.

- *Distance* represents the logarithm of bilateral distance between trading partners *i* and *j*. The distance measured in km between the capitals is the most reliable indicator of transport costs.

They are collected from the website http://www.indo.com/distance. Theory predicts that the greater the geographical distance between economic centers, the more time is allocated for transportation and the more expensive it is to trade. Therefore, the coefficient is expected to be negative and significant.

- *Contiguity* is an indicator variable capturing the presence of contiguous borders between trading partners i and j.

This is a binary variable, where 1 represents the countries that share the common border and 0 otherwise. The economic literature considers geography relevant because most trade flows between neighboring countries.

The second most important barrier to trade is the border.

- *Colonial Past* is an indicator of the presence of colonial ties between countries *i* and *j*.

This variable binary control by informative cost. It takes the value of 1 if the country was a colony or joined special status or protectorate.

- *Common Colonizer* is a binary variable.

As Gjankov (1992) suggests, this is a variable that counts for legal and regulatory costs.

- *Common Language* denotes a binary variable for the existence of a common official language between partners *i* and *j*.

This variable is taken from Andrew Rose's (2004) data set made available on his website, and updated for the year 2000.

Empirical studies have shown that trading costs are reduced if agents communicate effectively, present regulatory dissimilarity, and have high informative costs. Therefore, it is expected to observe a positive and significant coefficient.

A third type of impediment to trade is barriers.

- *Membership in GATT/WTO* is a proxy for public policy barriers. This variable is also broken down into two additional ones in this study.

In the case of both being members of the WTO, it implies that both countries are part of the World Trade Organization. However, only one is a member of the WTO. Studies have shown that membership in different types of trade agreements is positively correlated with trade flows between both member countries.

- *Free Trade Agreements*, like WTO Membership, are a variable used as a proxy for tariff barriers.

It is assumed that the effect of membership on trade costs is evenly distributed among all members of the Agreement. They are entered as a binary vector. However, it is used in empirical studies to estimate trade creation or diversions. Empirical studies have shown that bilateral variation in tariffs depends on the existence of a trade agreement. Information about recent free trade agreements is available on the WTO website at http://www.wto.org/english/tratop_e/region_e/region_e.htm. Therefore, the coefficient is expected to be positive and significant. Data on Membership in International Organizations came from Intergovernmental Organizations Data. The information on preferential trade agreements and membership in regional trade blocs comes from the same base. This information has been complemented with data from the World Trade Organization Database on Regional Trade Agreements.

Violence is the fourth type of impediment to trade in this study.

- Militarized Disputes (MID): This variable is implemented as a proxy to measure the direct costs associated with violent disputes, i.e. the loss of resources used to wage war, primarily men and material.

To these costs, there is sometimes an additional cost for lost or damaged property. An empirical study used Maoz (2006) to measure how organized violence, in this case interstate violence, affects economic activity.

Three categories are used, 3, 4, and 5, involving a show of force, use of force, and war. In its original operationalization, Ghosn, Glenn & Bremer (2004) established five categories ranging from non-militarized actions to war -which demands a minimum of 1,000 deaths in the conflict. However, it is used to be reduced to a binary variable where 0 implies the absence of demonstration and exercise of force while 1 implies

otherwise. MID has been shown to have a negative and statistically significant effect on bilateral trade volume. As a result, it would be expected that the present study would maintain the behavior observed.

- *Strategic rivalry and enduring rivalry* depict the total cost associated with the cycle of rivalry. It includes the direct cost of militarized conflict as well as the indirect cost when it comes to war events. In addition, it accounts for the direct cost of trade destruction and trade diversion related to sustaining rivalry per se.

The variable comes from Thompson, Colaresi & Rasler (2007) and Diehl & Goertz (2006). The variable is specified as a binary vector, where 1 is the presence of rivalry, while 0 is its absence. It is therefore expected to observe a coefficient with a negative and significant sign.

- *Spatial issues* can be either about local –adjacent territory- or distant colonial territory.
- *Positional issues* deal with either regional or global hierarchies.
- *Mixt issues* are the combination of spatial and positional issues- which implies some combination of local/distant special and regional/global position issues.

This category concentrates on varieties of combinations between spatial-positional continuous: 1-. Local territory+ regional position, 2-. Local-distant territory + regional position, 3-. Local-Distant territory + global position, 4-. Local territory + regional/ global position; 5-. Distant territory + regional position; 6-. Distant territory + global position.

Gravity Equation

Given the multiplicative nature of the gravity equation, the standard procedure for estimating a gravity equation is simply take natural logarithms of all variables and obtain a log- linear equation.

The gravity equation

$$ln(m_{ijt}) = c + \beta_1 \ln(GDP_{it}) + \beta_2 \ln(GDP_{jt}) + \beta_3 ln(t_{ijt}) + \beta_4 \ln(\Pi_t) + \beta_5 ln\,(P_j) + u_{ijt}$$

Where is m_{ijt} is the log of imports form i to j, t_{ijt} is a set of observable to which bilateral trade barrier are related, u_{ijt} is a random error term, c is a regression constant. The parameters of an equation estimated in logarithms are elasticities. For example, indicating the percentage variation in trade following a 1 % increase in GDP.

The trade costs equation

$$(1-\sigma)t_{ijt} = Join\ Distance_{ij}^{\delta_1} \exp(\delta_2 Contiguity_{ij} + \delta_3 Common\ Language_{ij} + \delta_4 Common\ Colonia\ Past_{ij} + \delta_5 PTA_{ij} + \delta_6 WTO_{ij} + \delta_7 Common\ Colonizer_{ij} + \delta_8 Rivalry_{ij})$$

All variables presented in the equation capture trade costs are used in the present's studies. These variables have been found to be significant determinants of bilateral trade, with exception of rivalry.

Error term consideration

The sample size is 533780 observations. The robust standard errors are clustered at the country-pair level to address potential problems of heteroscedasticity and autocorrelation in the error terms.

Model's Parametrization

In this studies we describe two methods: 1-. Time-effects, 2-. Country-pair fixed effects. For both of them the same estimator of OLS (ordinary least square regression) is used, that include standard gravity variables and the key variables of interest that is coefficient of Rivalry which estimates both the trade destruction and trade diversion impact; with balanced panel data over the period 1950-2000.

Empirical Evidence

This section presents and discusses empirical results. The gravity model is used to determine the economic cost of Rivalry on bilateral trade using panel data. First, we assess its effect on trade volume, then we assess its equivalent effect on the ad-valorem tax. In the next step, the model is re-estimated by introducing three types of competition: spatial, positional, and mixed.

Aggregate Analysis

This section explores the impact of rivalry on the volume of bilateral trade. The rivalry's economic cost is estimated; then, it is compared to the cost of impediments to trade related to borders, barriers, and distance.

The first step of our empirical analysis is to assess if there is any difference in relative impact on bilateral trade between the rivalry based on a historical-perceptional approach and a dispute-density approach. Table 3 reports the summary of the two variables. Hence, the overall rivalry frequency of both variables is relatively balanced in the total sample (0.47% - 0.53% respectively).

	Sample size	
	533.780	
Rivalry Type	Freq	%
Rivalry TC	2849	47
Rivalry KGD	3164	53
Total	6013	100

Table 3. Tabulation for Rivalry type
Source: Author

Both variables are linearly correlated, because TP rivalry is a broader subset of the rivalry population that includes many of KDG dyads.

	Rivarly TP	**Rivarly KGD**
Rivarly TP	1.000	
Rivarly KGD	0.7029	1.000
	(0.000)	

Table 4. Correlation matrix
Source: Author

In columns (1) and (2) of Table 5, we investigate whether two types of rivalry differ in their effect on bilateral trade and the coefficients of the control variables.

	(1)	(2)
VARIABLES	**Time Effect**	**Time Effect**
GDPimporter	0.869***	0.871***
	(0.00538)	(0.00539)
GDPexporter	0.773***	0.775***
	(0.00538)	(0.00539)
Distance	-0.945***	-0.947***
	(0.0152)	(0.0152)
Contiguity	0.357***	0.316***
	(0.0682)	(0.0676)
Common Language	0.276***	0.239***
	(0.0643)	(0.0640)
Common Colonial Past	1.677***	1.688***
	(0.0834)	(0.0825)
Common Colonizer	0.779***	0.783***
	(0.0489)	(0.0490)
FTA	0.962***	0.961***
	(0.0505)	(0.0507)
GATT/WTO	0.119***	0.117***
	(0.0159)	(0.0159)
Rivalry_TC	**-0.837*** **	
	(0.167)	
Rivarly_KGD		**-0.733*** **
		(0.143)
Constant	-4.946***	-4.950***
	(0.151)	(0.151)
Observations	471,362	471,362
R-squared	0.597	0.597
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Table 5. Comparative impacts.
Source: Author

The explanatory power of the trade cost proxies is fairly high, with the R^2 rate of up to 59 percent. The coefficients are significant and they have the expected signs. The reported coefficients of gravity variables and their standard deviations are not significantly different between the two models. Thompson, Colaresi & Rasler rivalry reports have a more significant impact than Dighl & Goertz. Part of the results can be attributed to the size of the sample.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	**Time effects**	**Country & Time effects**	**Time effects**	**Country &Time effects**	**Time effects**	**Country & Time effects**
GDPimporter	0.869***	0.559***	0.882***	0.552***	0.870***	0.557***
	(0.00538)	(0.0163)	(0.00540)	(0.0164)	(0.00538)	(0.0163)
GDPexporter	0.773***	0.509***	0.783***	0.505***	0.774***	0.508***
	(0.00538)	(0.0149)	(0.00539)	(0.0153)	(0.00538)	(0.0149)
Distance	-0.945***	-1.146***	-0.950***	-1.149***	-0.944***	-1.146***
	(0.0152)	(0.0177)	(0.0152)	(0.0177)	(0.0152)	(0.0177)
Contiguity	0.358***	0.417***	0.323***	0.393***	0.349***	0.407***
	(0.0682)	(0.0702)	(0.0680)	(0.0696)	(0.0679)	(0.0700)
Common Language	0.276***	0.442***	0.280***	0.445***	0.253***	0.397***
	(0.0643)	(0.0701)	(0.0643)	(0.0703)	(0.0639)	(0.0698)
Common Colonial Past	1.677***	1.483***	1.613***	1.438***	1.682***	1.482***
	(0.0834)	(0.0774)	(0.0815)	(0.0743)	(0.0831)	(0.0772)
Common Colonizer	0.779***	0.833***	0.777***	0.839***	0.772***	0.831***
	(0.0489)	(0.0458)	(0.0492)	(0.0462)	(0.0490)	(0.0457)
FTA	0.961***	0.310***	0.920***	0.282***	0.949***	0.286***
	(0.0505)	(0.0501)	(0.0499)	(0.0505)	(0.0503)	(0.0501)
One is Member of WTO					-0.0748**	-0.219***
					(0.0317)	(0.0293)
Both are Members of WTO					0.137***	-0.0222
					(0.0345)	(0.0347)
GATT/WTO	0.119***	0.0551***	0.134***	0.123***		
	(0.0159)	(0.0159)	(0.0163)	(0.0164)		
MID			**-0.513*** **	**-0.523*** **		
			(0.0877)	(0.0792)		
Rivarly TC	**-0.846*** **	**-0.665*** **			**-0.848*** **	**-0.665*** **
	(0.166)	(0.146)			(0.167)	(0.147)
Constant	-4.946***	2.645	-5.199***	-2.996	-4.827***	2.952
	(0.151)	(6,724)	(0.151)	(2,804)	(0.151)	(13,332)
Observations	471,362	471,362	456,427	456,427	471,362	471,362
R-squared	0.597	0.674	0.599	0.675	0.598	0.675
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, *p<0.1						

Table 6. Compared Impact of Rivalry and MID
Source: Author

Next, we want to evaluate the impact of rivalry on bilateral trade volumes and compare it with the contemporaneous impact of militarized disputes. Also, we aim to assess the impact of rivalry on bilateral trade volumes, controlling for WTO's membership, -when one is a Member of the WTO and the other is not-, because the multilateral resistance terms are likely to be affected by WTO membership. Table 6 reports the estimated coefficients.

Volumen-Effect

Table 6 reports the estimated coefficients. The fixed effects increase the R^2 to 67%, what imply that the model fit the data better, explaining almost 70% of the variation in bilateral trade flow. But it is unclear whether the fixed effects capture trade cost elements that are difficult to observe such as red tape and technical barriers to trade (which would be specific to individual trading partners) or whether they reflect preference parameters.

All regressions include year dummies. All estimates other than the conflict variables, in both sets of results, are reasonably similar to what is usually found in the literature. Whether in the traditional gravity equation (column 1-2) or the controlling for WTO participation (column 5-6), the impact of a rivalry has a sizeable impact on bilateral trade. An economic analysis suggests that these costs are substantial, statistically significant, and persistent as the rivalry develops over time. As a result, trade fell by 48%-57% compared with predictions. This imply that the level of trade between two rivals, falls by 48%-57% relative to its pre-rivalry counterfactual level.

Models (3) and (4) report the coefficient of the variable Militarized Disputes, which represents the direct impact of organized violence associated with interstate conflicts on the commercial structure. According to estimates, the militarized conflict elasticity (MID) of trade is -0.4, which suggests that trade experienced a 40% drop during the war. Mayer & Martin (2008) found that the direct effect of the militarized conflict on bilateral trade volume was between 22% and 38%, depending on the model and estimation technique used. Glick & Taylor (2005) analyzed the direct impact of World War I and World War II and then extended the analysis to Militarized Events (hostility level 5 and hostility level 4 with HiAct=20) for their extended period. For a panel from 1870 to 1997 on bilateral trade. They found that the direct effect of the war was very large and reported a drop of between 70%-83%.

Regarding the income and distance elasticities, it can be observed that the income elasticity of trade in econometric models is very close to 1, Disdier & Head (2008); in models without fixed time and country pairs effects a statistically significant coefficient is observed. As expected, significant and positive, but with an elasticity $\hat{\beta}\_GDP$=0.89, though within acceptable limits. On the other hand, with the fixed effects of time and country pairs, the coefficient is reduced to 0.55. However, as Rose (2004) observed,

the coefficient of GDP with the incorporation of effects tends to be reduced by half. Therefore, a 10% increase in GDP is expected to translate into an increase of between 5% and 9% in bilateral trade. In the estimated models, $\hat{\beta}$_Distance is between -0.94 and -1.14; these results fall within the accepted range in the "classical" model, which is between -0.7 and -1.5. Therefore, an increase in the distance of 10% is expected to translate into a drop in bilateral trade between 9.4% and 11.4%. The impact of sharing the border, the colonial past, and the colonizer speaking the same official language is positive, statistically significant, and consistent with Head & Meyer's (2008) findings. Models (5) and (6) show the disaggregation of the World Trade Organization (WTO) variable, which seeks to detect trade creation and diversion while continuing to control the Rivalry variable. While the rivalry coefficient does not indicate a change in either significance or effect, it is observed that the effect produced is more pronounced than that associated with the diversion of trade associated with tariff regimes. As shown in model (2), WTO membership has a positive and statistically significant effect on bilateral trade. However, disaggregation demonstrates a negative effect in models (5) and (6). Rose (2004) observed that WTO membership is statistically significant, but the coefficient is giving the wrong signal since it gives a negative sign. However, this situation should change when the fixed effects for country pairs are included. In model (6), such a change is not reported, and only one WTO remains statistically significant. This situation demands a different interpretation. If both coefficients show a positive and significant sign, as Rose (2004) predicted, we should observe trade creation. However, the negative effect on both signs and significance only in the first case provides indications of trade diversion. This is because socialist countries trade with each other as part of COMECON. They are not members of the WTO and trade with the RoW to a minimal extent.

Ad-valorem tax equivalent

To explore the comparability of the effects associated with the terms of our equation (1), we proceed to report the costs in their value-added tariff equivalents using models (2) and (6). According to Feenstra (2002) the equivalent to tariff barrier τ can be calculated as $\exp\{\tau\} = exp\frac{\{\hat{\beta}\}}{(1-\sigma)}$ -1 where σ is the elasticity of substitution between domestic and foreign goods. The elasticity of substitution is not determined endogenously, Anderson and van Wincoop (2004) survey estimates of **σ** and conclude that it typically falls in the range of 5 to 10. However, we proceed by following WTO (2010) in setting the values of 5 and 15 for the minimum and maximum ranges.

	(2)		(6)	
	Country & Time effects		**Country & Time effects**	
	σ=5	**σ=15**	**σ=5**	**σ=15**
	%	**%**	**%**	**%**
Distance	33.18	8.53	33.18	8.53
Contiguity	-9.9	-2.93	-9.67	-2.87
Common Language	-10.46	-3.11	-9.45	-2.8
Common Colonial Past	-30.98	-10.07	-30.96	-7.87
Common Colonizer	-18.8	-5.78	-18.76	-5.76
PTA	-7.46	-2.19	-6.9	-2.02
GATT/WTO	-1.37	-0.39	*	*
One is Member of WTO	*	*	5.63	1.58
Both are Member of WTO	*	*	0.56	0.16
Rivalry TC	**18.09**	**4.86**	18.09	4.86

Table 7. Economic cost of Rivalry tariff equivalent. Estimated for model (2) and (6). Source: Author

Glick & Taylor (2005) found that the war produced a drop in bilateral trade equivalent to 72% of the value-added tariff. Blomberg & Hess (2008) report that the effect produced by external conflicts on bilateral trade openness (X+M/GDP) is equivalent to 4% - 9.25% of the tariff barrier. However, they observe that the coefficient does not turn out to be statistically significant; one of the reasons for such behavior the authors attribute to the temporary extension of the sample: 1968-1999 and the infrequency of the events and the limited statistical information on trade for the countries. Nevertheless, it is greater than the effect associated with idiosyncratic differences and the border effect, confirming the results found by Bloomberg & Hess (2008).

Concerning the effect found for variables that capture different types of obstacles, the results differ slightly from those found by Anderson & Van Wincoop (2002), who assessed that the transportation costs derived from the model are 21%. Direct barriers to trade, that is, those related to public policies, are close to 8%. The tariff effect is between 5% and 10% for developed countries, while it is between 10% and 20% in developing countries. On the other hand, non-tariff barriers, especially anti-dumping measures. Informational barriers are at 6%, while language barriers are at 7%.

Competition type

This section divides the *Rivalry* variable into three sub-categories by its competition type to explore its impact on bilateral trade. For this purpose, three new variables are introduced: pure spatial, pure positional, and mixed. Based on fixed effects by country and time control, model (1) is used for estimation.

	Sample size	
	533.780	
Rivalry- proneness	Freq	%
Spatial	988	34.55754
Positional	1318	46.10003
Mix of Both	553	19.34243
Total	2859	100

Table 8. Summary of Rivalry's type

	Spatial	***Positional***	***Mix of Both***
Spatial	1.0000		
Positional	-0.0021 (0.1175)	1.0000	
Mix of Both	-0.0014 (0.3110)	-0.0016 (0.2418)	1.0000

Table 9. Correlation Matrix
Source: Author

Spatial Dispute

As Thompson, Colaresi & Rasler (2007) have argued, territorial disputes provide the fundamental motor for escalation to war among rivals. Within rivalry settings, territorial disputes are more likely to escalate into war than those that do not. Competing for a territory's control is known as spatial rivalry. Spatial rivalries are fought over land control and tend to be less intense that their position counterpart.

Spatial rivalries are more likely to involve minor powers and can even involve states with asymmetrical capabilities, although such asymmetry is thought to make rivalries end more quickly. So, we expect to find that the elasticities associated with spatial conflict are smaller than those associated with positional competition within the rivalry setting. Following Vasquez (1996), territorial disputes between neighbors are the primary source of interstate conflict between states with similar capabilities. Consequently, the disputants will likely resort to "power politics" - alliances, military build-ups, and coercive tactics - to create unilateral solutions to their problems when international organizations can provide a conflict resolution apparatus. However, the use of those tools enhances, rather than discourages, the probability of war onset because the techniques increase tension and hostility.

Positional Dispute

Positional rivalries, from Thompson's perspective, refer to competitions over relative positions. These are essentially regional or global power struggles that inherently assume some capability symmetry. In positional rivalries, decision-makers worry about national status, whether their state's prestige and ranking in the system's -or some subsystem's- hierarchy is being threatened, and whether or to what extent they can influence events outside their borders. The circumstances need not be restricted to defensive situations. Decision makers also seek opportunities to improve their spatial and positional standings. Vasquez (1983) argues that intangible issues are more conflict prone and less divisible, and thus less likely to be resolved quickly. So, we expect to find that the elasticities associated with positional conflict are more significant than those associated with spatial competition within the rivalry setting.

	(1)	(2)	(3)
VARIABLES	**Country & Time effects**	**Time effects**	**Country & Time effects**
GDP importer	0.559***	0.870***	0.559***
	(0.0163)	(0.00538)	(0.0163)
GDP exporer	0.509***	0.774***	0.509***
	(0.0149)	(0.00538)	(0.0149)
Distance	-1.146***	-0.946***	-1.145***
	(0.0177)	(0.0152)	(0.0177)
Contiguity	0.417***	0.356***	0.416***
	(0.0702)	(0.0682)	(0.0702)
Common Language	0.442***	0.274***	0.444***
	(0.0701)	(0.0642)	(0.0701)
Common Colonial Past	1.483***	1.676***	1.483***
	(0.0774)	(0.0832)	(0.0773)
Commom Colonizer	0.833***	0.780***	0.833***
	(0.0458)	(0.0490)	(0.0458)
PTA	0.310***	0.962***	0.311***
	(0.0501)	(0.0504)	(0.0499)
GATT/WTO	0.0551***	0.118***	0.0554***
	(0.0159)	(0.0159)	(0.0159)
Spatial		**-0.311**	**-0.167**
		(0.254)	(0.239)
Positional		**-0.851*** **	**-0.685*** **
		(0.258)	(0.212)
Mix of Both		**-1.763*** **	**-1.492*** **
		(0.253)	(0.239)
Rivalry TC	**-0.665*** **		
	(0.146)		
Constant	2.646	-4.947***	2.773
	(4,657)	(0.151)	(11,009)
Observations	471,362	471,362	471,362
R-squared	0.674	0.597	0.674
Robust standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

Table 10. Impacto por Tipo de Rivalidad
Source: Author

In models (2) and (3), Spatial, Positional, and Mixed coefficients are reported, all of which have a negative sign, however only Positional and Mixed are significant. The trade rivalry elasticity is between -0.48 and -0.57, broken down by type; the spatial elasticity is reported to be between -0.16 and -0.26. It can be seen that the reduction in bilateral

trade associated with spatial rivalry appears to be not statistically significant. However, the coefficient's negative sign reveals that there is still an impact on trade between the countries involved in the dispute. The elasticity of positional rivalry is -0.49–0.57. Finally, the substitution elasticity of rivalry, which presents mixed attributes, has being associated with a sharp drop in bilateral trade representing between 77% and 82%. Thompson's assumptions also appear to be consistent with the elasticities found for Positional and Spatial rivalries.

Concluding Remarks

Conflict is a costly endeavor. Governments divert resources from cooperative activities, such as trade, to defense concerns, including maintenance of standing armies, intelligence, purchasing and building weaponry, and other military-related costs, and costly diplomatic activities.

Studies often pay particular attention to the contemporaneous effects of conflict Hess & Blomberg (2006) and the direct costs Taylor (2005) such as loss of life and resources used for war. The present study puts particular attention on the accumulated economic costs of conflict by proposing the introduction of rivalry as a conflict variable. In addition, the study examines the indirect costs of rivalry, namely the effect of a rivalry setting on the volume of bilateral trade.

In their laconic definition, rivalries constitute competitive relationships that persist over time, through successive conflictual encounters, and account for a disproportionate amount of the world's conflict. The purpose of the study is to estimate how costly this endeavor might be in terms of gain of trade losses equivalent to an ad valorem tariff.

The effects of Rivalry on bilateral trade are estimated using a structural gravity model of international trade. Using the CES and Monopolistic Competition as the theoretical underpinning of the gravity model, the empirical exercise is performed based on panel data for the period 1950-2000. Based on the results of the econometric analysis, these costs are quantitatively large, statistically significant, and very persistent because the rivalry is developed in a prolonged period of time.

The results show that the total effect of rivalry accounts for 48%-57% of the fall in bilateral trade volume, which is equivalent in cost to 19% of the value-added tax. If rivalry is disaggregated by the specific issue at stake: spatial, positional, and mixed, we observe that the cost varies substantially with the type. Spatial rivalry explains 16%-26% of the fall in trade volume, while positional and mixed rivalry explain 49%-57% and 77%-82%, respectively.

Bibliography

1. Alesina, A. & Spolaore, E., 2003. *The size of Nations.* Cambridge, Massachusetts: The MIT Press.
2. Anderson J. E., & Van Wincoop, E., 2004. Trade costs. *Journal of Economic literature*, 42(3), 691-751.
3. Aumann, R. J. & Lloyd, S. S., 1994. Long-Term Competition, A game theoretic Analysis. En: *Essay in game theory.* New York: Springer, pp. 1-15.
4. Bennett, S., 1996. Security, Bargaining, and the End of Interstate Rivalry. *International Studies Quarterly*, 40, pp. 157-184
5. Bercovitch, J., & DeRouen Jr, K., 2008. Enduring internal rivalries: A new framework for the study of civil war. *Journal of Peace Research*, 45(1), 55-74.
6. Blomberg, S. B. & Hess, G. D., 2006. How much does violence tax trade?. *The Review of Economic and Statistics,* 88(4), pp. 599-612.
7. Brecher, M., 1984. International crisis and protracted conflicts. *International interactions,* 11(3-4), 237-297.
8. Disdier, A.C, & Head, K., 2008. The puzzling persistence of the distance effect on bilateral trade. *The Review of Economic and statistics*, 90(1), 37-48.
9. Esteban, J., Flamand, S., Morelli, M. & Rohner, D., 2018. A dynamic Theory of Secession. *Center for Economic Studies and ifo Institute (CESifo),* Volumen CESifo Working Paper, 7257.
10. Fearon, J. D., 1995. Rational Expectation for War. *International Organization,* 49(3), pp. 379-414.
11. Gancia, G., Ponzetto, G. A. & Ventura, J., 2020. Globalization and Political Structure. *National Bureau of Economic Research.*
12. Gardeazabal, J., 2010. Methods for measuring aggregate costs of conflict.
13. Glick, R. & Taylor, A. M., 2005. Collateral Damage: Trade Distruption and the economic impact of war. *National Bureau of Economic Research.*
14. Goertz, G. & Diehl, P. F., 1995. The initiation and Termination of Enduring Rivalries: The impact of political Shocks. *American Journal of Political Science,* 39(1), pp. 30-52.
15. Helpman, E., 2011. *Understanding Global Trade.* Cambridge, Massachusetts: The Belknap Press of Harvard University Press.
16. Hirschman, A. O., 1969. *National Power and the Structure of Foreign Trade.* First ed. Berkeley and Los Angeles: University of California Press.
17. Hirshleifer, J., 1995. Theorizing about conflict. *UCLA Department of Economic,* Volumen Working Paper 727.

18. Holsti, K. J., 1995. War, Peace and the State of the States. *International political science review*, 16(4), 319-339.
19. Keohane, R. O. & Nye, Jr, J. S., 2012. *Power and Interdependence.* Fourth Edition ed. New York: Pearson.
20. Klein, J. P., Goertz, G. & Diehl, P. F., 2006. The new Rivalry Dataset: Procedures and Patterns. *Journal of Peace Research,* 43(3), pp. 331-348.
21. Limao, N. & Venables, A. J., 2001. Infrastructure, geographical disadvantage, transport costs, and trade. *The world bank economic review*, 15(3), 451-479
22. Maoz, Z., 2006. Network polarization, network interdependence, and international conflict, 1816-2002. *Journal of Peace Research,* 43(4), 391-411.
23. Martin, P., Mayer, T. & Thoenig, M., 2008. Make Trade not War?. *Review of Economic Studies,* 75(1), pp. 865-900.
24. Polachek, S. W., 1980. Conflict and Trade. *Crossroad,* 5(1), pp. 119-151.
25. Polachek, S. W., Robst, J. & Chang, Y.-C., 1999. Liberalims and Interdependence: Extending the Trade-Conflict Model. *Journal of Peace Research,* 36(4), pp. 405-422.
26. Rose, A.K. 2004. Do we really know that the WTO increases trade? American economic review, 97(1), 98-114.
27. Thompson. W., Colaresi M., & Rasler, K., 2007. *Strategic Rivalries in World Politics. Position, Space and Conflict Escalation.* First ed. New York: Cambridge University Press
28. Vasquez, J.A., 1983. The tangibility of issues and global conflict: A test of Rosenau's issues area typology. *Journal of Peace Research,* 20(2), 179-192.

Presented: March 2023
Included for Publishing: June 2023
Published: July 2023 , Volume 14, Issue 28 Academicus International Scientific Journal