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# Economic Interdependence and Conflict: The case of the post-Soviet space

Linn Alice Backlund

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Supervisor: Gunes Gokmen

## Abstract

There is still little consensus on whether trade promotes peace or not. This thesis aims at investigating the relationship between economic interdependence and conflicts in post-Soviet countries, contributing to the empirical literature on the regional level. Using dyadic measures on trade and conflict, I investigate the relationship between interdependence and onset conflict, ongoing conflict, and conflict intensity. A total of 347 observations are included over the period of 1987-2014. This means that the analysis includes the period of the states being a part of the USSR as well as independent states after the dissolution of the USSR. The results show a negative relationship between trade and conflict, indicating that conflict decreases as interdependence increases. I find that my result can be argued to support liberal, rational as well as conditional hypotheses.

Keywords: Trade, Interdependence, Conflict, Former Soviet Union

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# 1 Introduction

In 1991, after a sequence of events, the USSR dissolved and was replaced by 15 independent countries. An empire breaks up but its legacy lives on in many ways' years ahead. The period after the dissolution the future of the newly independent states was marked by structural changes, tensions, and conflicts. A vast amount of empirical and theoretical studies has been made investigating the relationship between conflict and trade, but few on specifically post-soviet conflicts. My aim is not to construct a model that will explain *all* conflicts, but rather identify in which ways trade and interdependence have affected the occurrence of conflicts explicitly between Russia and other post-soviet countries since the dissolution of the Soviet Union. The relationship between Russia and former soviet-states is determined by soviet legacy and is different from many other regions and dyadic relationships - I expect this to be reflected in the results. I provide an empirical analysis, assessing the trade and conflict relationships. My period of interest is 1987-2014, including all post-soviet countries. The dyads consist of Russia as state A and one of the other post-soviet states as state B. A total of 347 observations are included in the analysis. I begin with examining the relationship between onset conflict and interdependence, followed by extending the dependent variable to solely conflict. Lastly, examining the relationship between conflict and conflict intensity. As conflicts do not emerge in a vacuum, therefore I control for the level of democracy, geographic continuity, and formal alliances.

The empirical studies on the trade-conflict relation fail to reach a consensus on whether trade promotes peace or not. It is important to note that war does not emerge in a vacuum and that trade relations will spur conflicts in some conditions but have no significant effect on others (Cali 2015:11). Trade in this essay not only seen as a transfer of goods and services but also a means of power and influence, which in turn can lead to conflict. It is further important to denote that trade does not cause conflict but rather reflects the existing state of the dyadic relation. How can the case of post-soviet conflicts contribute to the general theory of conflict and trade? I hope to complement the extensive empirical studies on trade and conflict, in which studies on regional level are absent altogether from the analysis. Additionally, investigating the relationship between liberal theories applied on non-democratic countries can give an alternative level of analysis.

The result of the empirical analysis finds a negative relationship between the dependent variables onset conflict, conflict, and level of hostility and interdependence. This result indicates that the occurrence, persistent and intensity of conflict is decreasing as trade and trade interdependence increases. This could be argued to support liberal hypotheses of trade and conflict, however as most countries in the post-soviet sphere are not fully consolidated democracies, the support for this hypothesis weakens. Instead, the result indicates a support for the hypothesis that trade's impact is conditional on the trade interdependence. We find that the relationship between Russia and its former post-soviet countries has an asymmetrical trade pattern, where Russia's trade share within the dyad is significantly lower than its partner's trade share. Further, we could argue that the result also support the hypothesis that trade does not affect conflict significantly, as we do not find all regressions to be statistically significant.

The paper will be organized as follows. The first section will present the research question chosen, followed by four different hypotheses on the trade and conflict relations. Section three will present and discuss the main empirical studies in the literature. The fourth section will give an insight on the theoretical background on conflicts in the post-cold war era, as well as on globalization, the role of the state and trade in international relations. The interpretation and operationalization of the independent variable interdependence will be presented in section five. Further, in section six, the data used in the analysis will be presented. Section seven presents the empirical strategy, method and estimation issues. The results of the empirical analysis are displayed in section eight. Section nine discusses the results and future research. Lastly, the conclusion is presented in section ten.

## 2 Research question and Hypothesis

In the following section the research question aimed at answering in this essay will be presented. Four different hypotheses on the relationship between trade and conflict will be discussed. The hypotheses that will be introduced are following - *trade promotes peace*, *trade could promote peace conditional on the trade dependence*, *trade increases conflict* and lastly, *trade does not affect conflict significantly*.

## 2.1 Research question

The aim of this thesis is to investigate *if* or *how* economic interdependence affects the occurrence of conflicts in post-soviet countries. The research aims to complement current literature on trade and conflict. To do so, the following research questions have been chosen:

1. How does economic interdependence affect conflicts in post-soviet countries?

## 2.2 Trade promotes peace

The liberal approach to trade and conflict espouses that trade strengthens ties between countries, which will lead to incentives to ensure peace, as these ties in turn provide certain benefits to the countries within the dyad. Liberals do assume that trade is occurring voluntarily – and that if a trade relationship is established, this would in turn imply that the relationship is beneficial to both parties - otherwise one partner would abandon the other. Liberals, neoclassical economics, international trade theories and theories of comparative advantage, consider countries to be better off trading with each other, as resulting in an increase of their welfare (Barbieri 2005:23). In an economic sense, the cost of conflicts and war is equal to lost potential welfare gain as trade relations ends and decreases the level of dyadic trade. Conflict does not automatically lead to interruptions in trade but is nonetheless assumed to drive changes in trade patterns and cost of imports and exports. The act of trading is usually not by itself used as the primary threat in conflict, but rather the enabler of lost trade partners and thereby the economic benefits that the trade relation could bring (Barbieri 2005:23).

## 2.3 Trade's impact is conditional on the trade relation

In contrast to liberal theorists, Neo-Marxists do not assume that trade unconditionally leads to benefits for all parties included. Instead, the trade relationship and the dependence amidst countries within a dyad will affect the outcome of the overall relation and the persistence of peace or conflict.

Neo-Marxists argue that economic relations, just like political and social relations, can be highly unequal. In this perception, economic ties are reflected and influenced by other power dynamics and economic interdependence. Further, dependency theorists argue that trade

relations are primarily a result of history and governed by determinism (Barbieri 2005:23). This leads to concluding trade relations not having to be fully voluntarily and unconditionally beneficial for both parties as liberals argue but could simply be a result of the past. Costs and benefits can be distributed unequally within a trade relation, creating asymmetrical dependence - which we observe in the dyadic relations in this dataset. The consequences of trade are therefore argued to be dependent on whether the trade relation is symmetrical or not.

## 2.4 Trade increases conflict

Some theorists do not believe that trade results in peaceful relationships, but rather increase the occurrence of conflict, arguing that interdependence alone can lead to an increase in disputes. This perception is often held by neorealists, Neo-Marxists and can be derived from the reasoning of resource-scarcity (Barbieri 2005:35). Resource-scarcity is the simple notion that there is a limited number of resources, both to trade with and to consume. This is argued to be one of the primary reasons causing trade to increase conflict somewhat, as trade becomes a measure of distributing available supply - when supply of a resource cannot meet demand. The competition over markets and over resources, between major powers and less powerful states, can simply escalate into dispute and conflict (Barbieri 2005:36).

## 2.5 Trade does not affect conflict significantly

As a final hypothesis, realist theorists argue that trade relations will not have a significant impact on the decision to engage in conflict or not. Trade relations are still important, as trade can be used as a means of influence, however it is not the cost and benefit of trade that will determine if a state engages in a conflict or not (Barbieri 2005:37). There is also a possibility that trade has an effect in some cases while in others not.

In a statistical and methodological way of approaching the trade-conflict relationship, non-significant statistical results imply the possibility of there not being a significant relationship between the two variables. This means that despite the existing approaches and theories within this field, without correct methods and reliable results, we cannot support our hypotheses.

### 3 Literature review

Reviewing the theoretical approaches on trade and conflict in section 4, this following section will instead provide an overview of previous empirical studies relating to interdependence and conflict. In recent discussions of the causes of conflicts, a controversial issue has been whether trade promotes peace or not. An extensive number of empirical studies has been done, yet there is little consensus whether trade promotes peace or not. The main empirical literature on trade and conflict consists of a small number of scholars. Scholars as such includes (Russett 1967; Polachek 1980; Oneal et al. 1996; Oneal & Russett 1999; Barbieri 1999; Mansfield 1994).

Among some of the liberal scholars finding a positive relationship between trade and war we find studies by (Russett 1967; de Vries 1990; Domke 1988; Wallenstein 1973). According to these scholars, trade has statistically significant benefits for reducing incentives to conflict and war. By extension their work supports the liberal notion and the democratic peace thesis which posits that democracies are hesitant to engage in conflict with other democracies. Polachek (1980) first introduced the dyadic measurement of trade and conflict, concluding that trade promotes peace, also supporting liberal theories. However, Polachek studies does contradict some basic conclusions and assumptions made in more recent studies (Barbieri 1999). Gasiorowski (1986), in opposition of previous work of Polachek, contributed with new insights on the relationship by introducing additional measures of dependence, and instead finding that trade does not reduce conflict. Later, Gasiorowski (1986) stresses the fact that it is the conditional nature of trade that promotes peace propositions. Barbieri extended the work of Gasiorowski, focusing and investigating how different dimensions of dependence could affect conflict. Barbieri found that it is the dyad specific symmetrical or asymmetrical dependence that will have a strong impact on the occurrence of conflict. The Findings that trade does not promote peace were opposed by Oneal & Russet (1999), who refined their studies based on the new interpretation of interdependence by Barbieri (1996), despite this still finding support for liberal hypotheses.

Several empirical studies, (Oneal & Ray 1997; Oneal et.al. 1996; Beck et al.1998; Oneal and Russett 1999) have used similar methods, despite this, different conclusions have been made. More recent studies such as Martin (2008) have instead used measurements of trade openness.



Martin (2008), based on studies of Barbieri, have used a gravity-type model of trade - finding that bilateral trade costs increase significantly with a bilateral conflict. In contrast to previous studies Martin et.al. constructed a model in which both trade and war are both endogenous.

To conclude, assessing previous research illustrates the difficulty to compare studies over time and across studies. The most common approach estimating the impact of trade on conflict is through statistical studies using regression or logistic regression models.

Differences in the employment of control variables, measures of trade and conflict and different approaches to econometrics methods. Differences in operationalization and specific definition of the dependent and independent variables as well as the set of cases included in the analysis, all contribute to the various conclusions.

## 4 Theoretical Background

In the following section the concept of “new wars” is introduced, which describe the nature of wars and conflicts in the post-cold war era. I will discuss the increasingly important role of globalization, trade, and economics in conflicts globally and in post-soviet countries. The section also aims at presenting the different theoretical perspectives on international relations, interdependence, and conflicts. Different political ideologies have different perceptions of how trade will affect conflict, depending on the understanding of the cost and benefits of trade and how it affects both domestic and international conditions. Different approaches are presented to gain an understanding of how states act in international relations and which concepts motivates the relations between states globally and by extension the incentives to trade with each other.

### 4.1 Globalization, trade and post-soviet conflicts

Since the end of the cold war changing characteristics and kinds of wars and conflicts have emerged. The changing nature of the world, globalization and of global power structures, contributed to wars being discussed in the context of “new wars” (Munkler 2005; Berdal 2003). Empirically this is of importance as the changing nature of conflicts will bring an insight on which variables should be used as control variables in empirical studies. Trade relations are assumed to have an impact on conflict as trade flows have the capacity to

directly influence the real income of a country, which in turn will have a large effect on countries - especially being already fragile ones (Cali 2015).

The dissolution of the Soviet Union was a fragile time, not only a beginning of new independent states but also of yearlong conflicts. Armed conflicts occurring in the post-soviet space have many of the characteristics of “new wars”. A recurring theme of explaining post-soviet wars is the new type of violent political actor. Combining military skills, economic activities and traits of nationalism, became the new kind of drivers in conflict. The dissolution of the Soviet Union created a vacuum in the economic sphere of the newly independent states (Zurcher 2007:4). Gaining economic power also often went hand in hand with political power. Oligarchs often have strong ties with the political leaders or parties, or simply being politicians themselves. The change in the global political economy, especially during the 1980s and 1990s, led to changes in trade patterns and the character of conflicts both in the post-soviet sphere and globally.

An empirical study by A. Mazhikeyev, T. H. Edwards (2021) have investigated the changing trade patterns between Russia and former soviet states in the period after the breakup of the USSR. Their findings indicate that dyads stayed strong just after the dissolution of the Soviet Union, followed by significant weakening. In some cases, integration efforts have been made, and therefore trade relations remained strong. Another study by Djankov and Freund (2002) concludes that the internal trade between former soviet countries declined with 40% during the initial years after the dissolution. Russia decreased its interrepublic trade share from 65% to 23%.

Theoretical studies of conflicts in the post-soviet sphere have focused on ethnicity, politics and domestic instability, moreover researchers have concentrated foremost on Russia. Limited empirical research has been done assessing the relationship between onset conflict and trade between Russia and other former USSR states. Paul J. D’Anieri (1999) assessed the economic interdependence relationship between Russia and Ukraine in his book *Economic interdependence in Ukrainian-Russian relations*. Describing the dilemma of former soviet countries in gaining complete political independence on the one hand, and closer economic ties on the other. The question addressed in the book is the following: *How is Ukraine pursuing an economically beneficial relationship with a Russia that is also perceived to be the primary threat to Ukraine’s independence?* Despite this book specifically focusing on the

Russia-Ukraine relationship, I would argue that similar dilemmas can be observed in almost all USSR states and strengthens the hypothesis that trade interdependence will have an effect on the occurrence of conflict in post-soviet countries.

## 4.2 Liberalism

The liberal idea that trade and the process of economic integration can bring about peace can be traced back to thinkers like Montesquieu and Kant in his essay on Perpetual Peace, where the cost-benefit relationship between indulging in conflict and trade is discussed (Barbieri 1999; Oneal et.al 1996; Martin 2008). Later, writers and thinkers such as Schumpeter developed this thought and idea (Zurcher 2007:3). Arguing that as globalization and capitalism increased worldwide, wars would gradually become more outdated as economic integration would increase (Martin 2008).

From a liberal point of view, the most important actor in international relations is the state and the individual (Barbieri 2005:19). This consequently implies that trade is aimed to be beneficial for not only the state but also the individual. Liberals likewise assume that the state is driven by the aspiration to maximize social welfare in which trade is perceived as a means to reach this aim. If maximizing social welfare is the ultimate goal for the state, then ensuring peace and trade relations is one of the priorities for the state. Individual self-interest can from this perspective produce outputs of cooperation and desirable relations. Trade policies, even if they are driven by individual interests, can lead to maintaining close relations and peace between different actors and countries (ibid.).

In an economic liberal perspective, liberalization of markets and deepening the economic integration among states has been assumed to decrease the level of conflict. The term globalization among free-market economists implies a deepening of markets, making national borders and protectionism less important. It is argued that democracies trade more than non-democracies - and as a result engage less in conflicts (Polachek 1999). This liberal idea indicates that trade deters conflict. In economic terms conflict leads to a loss of gains which can be illustrated in an expected utility model (Martin 2008).

### 4.3 Realism

For realists, the key actor in international relations is the state alone. The purpose of the state is, different from liberal approaches, motivated by maximizing power rather than social welfare. Trade is similarly seen as an instrument used to gain more power, by for example implementing trade policies. Thus, trade and other foreign policies are used to achieve or increase national power and security. From this point of view, breaking trade agreements to secure national interests, in contrast to liberal views, is from time to time favorable. This does additionally indicate that force as well as entering a conflict can increase utility further instead of maintaining peace if an interest of the nation is threatened. However, there can be conflicting national interests as trade relations can be negatively affected by conflict. As the aspiration of the state is maximizing power, a security dilemma occurs, which in turn can lead to conflicts. Barbieri (2005:19).

### 4.4 Marxism

The Marxist school of thought argues that it is not the state nor the individual that is the primary actor in international relations, but it is rather the social class that is the center of attention in analysis (Barbieri 2005:19). Just like realists, does Marxists desire to maximize wealth, but believes that it should be done in a way in which particular classes are benefitting rather than society as a whole. The state is not viewed as a unitary actor, but rather as a structure serving the interest of the ruling class in society. Additionally, the liberal and realist assumption of state neutrality is not adopted by Marxists, which leads us to the conclusion that trade relations and policies do not benefit individuals of all classes but only the ones of the dominant ones (Barbieri 2005:19-21).

## 5 Measuring economic interdependence

The following section will introduce the various ways to operationalize the variable interdependence. I will discuss the main methods used in the literature and compare the usage of independent variables in two different empirical studies. To review the measures of economic interdependence, I will compare interpretations by Barbieri (1996) on the one hand and Oneal & Russett (1999) on the other. There is an extensive number of empirical studies on trade and conflict, despite this, there is still an ongoing discussion on how to operationalize, interpret and define interdependence. The overall contrary results and conclusions shown in

empirical studies can partly be explained by the construction of the variable measuring dyadic interdependence.

Why is interdependence so complex? The aim is to create a variable that can explain and that is correlated with/or has an impact on the political process, which we assume it does (Pollins 1989). Trade relationships do not affect conflict alone but can affect politics in such a way that the probability of onset conflict changes. The more important question then is not only *if* trade affects conflicts, but rather *which* trade patterns and *how* it does so. This question does not have a simple answer and can only be at its best answered with a qualified guess. This as we cannot know how economic relationships are valued by different politicians and how these values in turn affect the decisions made. In the case of the post-soviet space, we can assume that the political and economic ties between Russia and other post-soviet countries will differ within the dyad - as Russia is a major power, economically important and politically influential. I will compare the different interpretations from studies by Barbieri (1996) and Oneal & Russett (1997, 1999) as they are well cited in the literature and have used different interpretations as well as reached different conclusions.

## 5.1 Operationalization

Trade share is composed by dividing the country's bilateral trade with the state of interest total trade. This measure brings us insight of the concentration of trade share between countries, where a larger share is interpreted as more vulnerable. By dividing the dyadic trade with the total trade share, one gets a share that aims to measure how important the dyadic trade relationship is relative to the country's other trade relationships. In the second row, salience is calculated by taking the square root of the product of trade share for the dyad. Symmetry is calculated by taking 1 minus the absolute value of the difference of trade share between both countries within the dyad. Lastly, interdependence is calculated by multiplying salience with symmetry, creating an interactive variable Barbieri (1996).

1.  $Trade\ Share_i = \frac{Dyadic\ Trade_{ij}}{Total\ Trade_i}$
2.  $Salience_{ij} = \sqrt{Trade\ Share_i * Trade\ Share_j}$
3.  $Symmetry_{ij} = 1 - |Trade\ Share_i - Trade\ Share_j|$
4.  $Interdependence_{ij} = Salience_{ij} * Symmetry_{ij}$

Barbieri has composed a measure which can measure the degree of disconnectedness of a state from trade with the world. This measurement fulfills the purpose of my study as the level of disconnectedness is expected to be high for the period of the USSR and shortly after the dissolution, later changing as countries became more integrated in the global market.

Oneal & Russett (1997, 1999) used the ratio of bilateral trade to a state's gross domestic product as the basis for their measure on independence. They suggest that the trade dependence of a state in the bilateral trade relationship is captured by the share of a state's economy - the state's GDP that is devoted to the dyadic trade relationship. Further, applying the weak link assumption, as seen in 3) to illustrate the trade dependence between country i and j. Lastly, using the highest of the value of dependence, the asymmetric trade relationship can be assessed. In this measurement, a high level of trade share could either indicate asymmetric trade relations, or few trade partners. Respectively, low trade share could likewise indicate an asymmetric trade concentration or having many trade partners.

1.  $Trade\ dependence_{ji} = \frac{(imports_{ji} + exports_{ji})}{GDP_j} + \frac{Trade_{ji}}{GDP_j}$
2.  $Trade\ dependence_{ij} = \frac{(imports_{ij} + exports_{ij})}{GDP_i} + \frac{Trade_{ij}}{GDP_i}$
3.  $Trade\ asymmetry_{ij} = higher\ of\ (dependence_{ij}\ and\ dependence_{ji})$
4.  $Trade\ interdependence_{ij} = lower\ of\ (dependence_{ij}\ and\ dependence_{ji})$

Oneal & Russett (1997, 1999)

How do the two different approaches relate to one another? The main difference between the operationalization by Barbieri and Oneal & Russett is the differences in interest of how the bilateral trade relates to the total trade of the state or how it relates to the country's overall economy. Despite this difference in interpretation, the different measures of trade share of Barbieri (1996) and Trade dependence of Oneal & Russett (1997, 1999) do mathematically relate to each other. Measures such as in Barbieri (1996) does more effectively capture the dependency aspect of the dyadic trade relationship. The different operationalizations do not theoretically contradict each other, despite showing different results. I would argue that

operationalization is more suitable for large data sets, while in this study, trade share brings an insight on the level of dependency as there will be large differences within the dyad.

Reviewing both methods of operationalization, we can conclude that both measures are relevant. Despite this, the complexity of the phenomenon does bring several problems with the measures presents. The measures aim at asses the way trade impacts the political process, which is not possible to do directly. Therefore, the interpretation of what interdependence consists of is only done by assumptions, and will by this cause some bias.

## 6 Data

The COW data is the most widely used data set on international conflict. The correlates of war dataset include dyadic and national trade figures for state system members (COW Project) for the period of 1870–2014. My time period of interest conducted from this particular data set is 1991-2014, after the dissolution of the USSR - when post-soviet countries formed their independence. Trade data from the COW project is collected from the IMF's Direction of Trade Statistics (DOTS) (IMF CD-ROM, 2007). A closer description of the method used in constructing the COW data set can be found in Barbieri (2009).

Trade data for the period 1987-1991 is collected from the United Nations digital library compiled by Misha V. Belkindas and Olga V. Ivanova (1995) and includes foreign trade statistics in the USSR and successor states. I have used the data on foreign trade as well as inter republic trade among the former USSR republics. All figures have been reported in million dollars. The data set included values reported by both states in the dyad, I have used numbers reported by country *i* importing from country *j*. The differences in values reported by the importing and exporting countries could possibly cause some bias.

Further, data for the control variables are likewise collected from the COW project. Following data sets have been used: *The Direct contiguity* data set, listing the land and sea borders of all states. Land contiguity is defined as “the intersection of the homeland territory of the two states in the dyad, either through a land boundary or a river” (COW). Additionally, the *Formal alliances* data set is used, which register formal alliances among states between 1816 and 2012, including mutual defense pacts, non-aggression treaties, and ententes. Lastly, the variable *HIHOST* is used for the level of hostility. Data on democracy is collected from

Freedom House Democracy scores, composed of numerical ratings, using a two-tiered system consisting of scores and status (Freedom House 2022)

## 7 Empirical strategy

In the following section I will present the chosen method to analyze the relationship between economic interdependence and conflict. All post-soviet countries are included in the dataset. The time period covered is 1987-2014. Further, the dependent, independent and control variables used will be described. The estimation method used for panel data where the binary dependent variable will be discussed in the following section. Lastly, the possible estimation issues will be discussed.

### 7.1 Method

Barbieri (1998) modeled the relationship between trade and conflict by logistic regression. The empirical strategy used in this thesis will be based on the methods of Barbieri, making some adjustment to fit my analysis. I will follow the measures used to estimate the effect of interdependence by Oneal & Russett (1999) where the estimations are done using both the operationalization by Barbieri (1996) and Oneal & Russett (1999).

I use data from 1987 to 2014, consisting of 365 observations and 15 variables. 40 cases of onset conflicts are observed. Onset conflicts are a rare occurrence and as a majority of the interstate conflicts observed consists of Russia on the one side, conflicts between all countries will not be included in the analysis. To estimate the relationship, a fixed-effect log regression model for panel data is used. The regression has been made with a fixed effect estimator to eliminate country and time variations. Fixed effect models do not control for variables that are fixed over time, such as contiguity, therefore this variable is omitted in the result of the regression, as the borders of the countries have not changed over the time period of interest. The model investigates the relationship between onset conflict and economic interdependence. as well as other factors such as if the countries are bordering, have entered a formal alliance and if the country is a democracy or not. Further description of the dependent, independent and control variables will be presented in the following section.



## 7.2 Model specifications

The following model will be used to assess the relationship between conflict and interdependence:

$$MID_{ijt} = \beta_1 Interdependence_{ijt} + \beta_2 Democracy_{it} + \beta_3 Alliance_{it} + \beta_4 Contiguity_{it} + \varepsilon_{it}$$

MID is a dichotomy variable taking the value 1 if the occurrence of a dyadic militarized interstate conflict takes place between the two countries and 0 otherwise. Democracy takes the value 1 if the country is considered a consolidated democracy or semi-democracy and 0 otherwise. Alliance is taking the value of 1 if country i and j has entered a formal alliance, and 0 if not. Finally, Contiguity takes the value of 1 if country i and j have direct borders, and 0 if not. Though, using fixed effects in the model, contiguity will be omitted due to the variable being constant over time. The trend time has been included in the model to allow shift of the intercept over time.

My dependent variable of interest is onset conflict, ongoing conflict and conflict intensity. The dyadic Militarized interstate disputes (MIDs) data set, compiled through the Correlates of War project, is used. In this data set Militarized interstate disputes are defined as “Militarized interstate disputes are united historical cases of conflict in which the threat, display or use of military force short of war by one member state is explicitly directed towards the government, official representatives, official forces, property, or territory of another state. Disputes are composed of incidents that range in intensity from threats to use force to actual combat short of war” (Jones et al. 1996: 163). Investigating the research question if “trade promotes peace”, MIDs are used as an indicator of the opposite of peace - conflict. This is only a simplification as conflicts can take other forms, but as these alternative forms might be more difficult to measure, I have chosen MIDs as a suitable dependent variable.

Barbieri defines MIDs as following, “a set of interaction between or among states involving threats to use military force, displays of military force or actual use of military force” (Barbieri 1996). Used as a dichotomous variable, the disputes from both data sets are coded as one when engaging in a dispute, and as zero if not. For the first analysis I am interested in the relationship between trade and conflict onset, the disputes are only coded once, at the start of

the conflict and not during the whole period of conflict. For the second analysis, the disputes are coded yearly for the whole period of conflict. In the third analysis, the variable *HIHOST* from MID.5.01 which measures Highest level of hostility in dyadic dispute ranging from 1 to 5. 1) None 2) Threat to use force 3) Display of force 4) Use of force 5) Interstate war. The mean value of HIHOST in the data is 4) - use of force. I am using this variable as my dependent variable in the third analysis, investigating the relationship between interdependence and intensity of conflicts.

The independent variable is interdependence. This variable must be operationalized as there is no consensus on how it should be measured. I have chosen to combine the operationalization of Barbieri (1996) and Oneal & Russett (1997, 1999). Barbieri followed, though making some adjustments, the operationalization of Hirschman (1986). A more in-depth description and interpretation of the variables has previously been described in section 5. Barbieri argues that trade share cannot be used alone to assess the relationship between interdependence and conflict. While I agree with Barbieri that in general, trade share does not give enough information of the dyadic interdependence, I do not agree with the conclusion that it therefore should be excluded from *this* analysis. In my analysis trade share can give an insight on interdependence as there will be no variation when it comes to State A being the lower of dependence, and State B being higher of dependence. Therefore, I have, just like Oneal & Russett, chosen to include this as my independent variable in the regressions.

1.  $Trade\ Share_i = \frac{Dyadic\ Trade_{ij}}{Total\ Trade_i} = \frac{(imports_{ij}+exports_{ij})}{GDP_i} + \frac{Trade_{ij}}{GDP_i}$
2.  $Saliency_{ij} = \sqrt{Trade\ Share_i * Trade\ Share_j}$
3.  $Symmetry_{ij} = 1 - |Trade\ Share_i - Trade\ Share_j|$
4.  $Interdependence_{ij} = Saliency_{ij} * Symmetry_{ij}$
5.  $Trade\ asymmetry_{ij} = higher\ of\ (dependence_{ij}\ and\ dependence_{ji})$
6.  $Trade\ interdependence_{ij} = lower\ of\ (dependence_{ij}\ and\ dependence_{ji})$

(Oneal & Russett 1997, 1999; Barbieri 1996)

The variable *Trade flow 2* has been used as the measure of dyadic trade, identifying imports of Country B from Country A, in US millions of current dollars. Country B is one of the post-soviet countries, while country A is Russia. Further, Oneal & Russett have used the same

calculation as Barbieri (1996) as seen in row 1, using dyadic trade between country  $i$  and  $j$  over total trade. In this specific dataset, Russia's will always be the lower of *dependence<sub>ij</sub>* and *dependence<sub>ji</sub>* while the other country in the dyad, thus will be of the higher trade share.

The COW *Direct Contiguity* dataset shows direct contiguity relationships between states, that includes all direct borders, both land contiguity and water contiguity. Direct Contiguity and distance between countries is assumed to affect both dyadic trade and conflict. Conflict comes to occur more frequently between countries that border each other, just as trade (Cali 2015:11). The post-soviet countries direct contiguity relationship with Russia are coded as one if they are directly bordering, and as zero if not.

Liberal scholars argue that free trade and creating ties between countries will both unite allies as well as former rivals and economic competitors. Strong economic ties should therefore correlate with formal alliances. Formal alliances are expected to lower the probability of onset conflict as entering an alliance increases the cost of conflict, as breaking an alliance can affect not only political relations but economical ones as well. Data for formal alliance identifies two states that fall into one of following groups of defense pacts: neutrality or non-aggression treaty, or entente agreement. Similarly, if the countries have a formal alliance, they are coded as one and zero otherwise.

Democratic states are less likely to participate in conflicts. The theory of democratic peace - the belief that states that are more democratic tend to engage less in conflicts with one another (Munkler 2005). In practice, this relationship is argued to be determined by certain tendencies observed in democratic societies such as higher cost of war, the development of institutions which ensures that rationality is determined by not only economic factors but also political ones. These early liberal thoughts by Kant of the relationship between the global economy and conflict and the causes of war since in empirical research been linked to utilitarian calculation, political participation and peacemaking missions - have been observed to support the claim that democracies do not engage in wars and conflicts against one another (Martin 2008).

Freedom House measures the level of democratic governance, by an index including separate ratings on national and local governance, electoral process, independent media, civil society,

judicial framework and independence, and corruption. Countries classified as consolidated regimes or Semi-Consolidated Democracy, are coded as 1, while transitional and hybrid regimes, Semi-Consolidated Authoritarian Regime and Consolidated Authoritarian Regime are coded as zero. For the USSR period, all countries are coded as zero.

### 7.3 Estimation issues

This section aims at describing different potential estimation issues that could cause bias. Despite trade and conflict being a well-researched field, little consensus regarding statistical methods and analysis have been made. The model used is constructed in order to assess the relationship between trade and conflict in the former Soviet Union and control variables have been chosen accordingly. In the model I will control for contiguity, alliance and democracy. I have chosen control variables applicable for the whole time period, that includes both when countries were part of the USSR and later as independent states. Other control variables that could be considered would be relative capabilities, major power, national attributes and political change, but as data for these variables does not include data for individual countries within the Soviet Union for the time 1987-1991, I have chosen not to include them and by not doing so we can assume the result being less significant.

An extensive discussion in the conflict-trade literature is if conflict itself affects trade patterns and not simply the other way around. Causation and correlation can exist simultaneously, causing difficulties reaching conclusions. We can expect conflict to interrupt existing trade patterns, but how they later developed and their relation with future conflicts is less clear (Barbieri 1999). It is not yet concluded whether trade affects the occurrence of conflict more than conflict affects trade.

In my model both trade and conflict are endogenous which could possibly lead to estimation issues (Martin 2008). We must assume that if peace could improve trade, further it must be possible for trade to cause peace (Blomberg & Hess 2006). This perception is mostly reflected in the liberal school of thought, and it is possible to criticize this statement. Since I do not strictly assume that trade will cause peace in this thesis, believing that asymmetric trade and interdependence might show other relations, endogeneity will not be as obvious of a problem.

Using the operationalization of the independent variable such as in regression 5) and 6) estimation issues occur as there will not be any variation of Russia being the lower of dependence, while the other country in the dyad will be having higher dependence. There will however be variation between the dyads as  $(imports_{ji} + exports_{ji})$  will differ for each country. In a larger data set this method would show a stronger relationship, despite this I have chosen to include these regressions being aware of this issue.

## 8 Empirical analysis

In the following section the results from the analysis will be presented followed by a discussion of the findings. We find a statistically significant result at the 10 percent level for model 1), 3) and 5) - Indicating that trade does influence conflict. Further, the dependent variable used in the second model will be conflict. Lastly, a regression will be done investigating the relationship between interdependence and conflict intensity.

### 8.1 Results

In table 1. the results of the first empirical analysis are presented. I have followed the interpretation of interdependence by Barbieri and Oneal & Russett to explore how asymmetric trade has influenced onset conflict. The result includes 347 observations. Firstly, enter on with presenting the means of the independent variables chosen. The variables can take a value ranging from 0 to 1. We find that *Salience* has a mean value of 0,0819, *Symmetry* 0,748 *Interdependence* 0,052, *trade share* for post-soviet not including Russia 0,28. Lastly, *Trade share* for Russia displays 0,033. The trade share represents the interdependent and asymmetry between the countries in the dyad. A mean of 0,28 indicates that almost a third of total trade is done with Russia. While Russia is significantly less dependent on its trade partners as they on average only represent 3% of the country's total trade. To conclude, we can observe a trade relationship that can be described as asymmetrical, indicating that the importance of the trade relationship in terms of trade share, differs significantly within the dyad.

*Table 1. Interdependence and Onset Conflict*

Dependent variable: Onset Conflict	(1)	(2)	(3)	(4)	(5)
Salience	-0.500** (-2.90)				
Symmetry		0.0575 (0.55)			
Interdependence			-0.724** (-2.93)		
Trade Asymmetry				-0.136 (-1.51)	
Trade Interdependence					-0.524** (-2.56)
Democracy	-0.0211 (-0.17)	-0.0312 (-0.25)	-0.0176 (-0.14)	-0.0394 (-0.32)	-0.0186 (-0.15)
Contiguity	-	-	-	-	-
Alliance	-0.0667 (-0.77)	-0.113 (-1.29)	-0.0794 (-0.92)	-0.0926 (-1.06)	-0.0997 (-1.17)
_cons	0.197* (2.57)	0.146 (1.24)	0.202** (2.63)	0.215** (2.75)	0.194** (2.56)
N	347				
t statistics in parentheses					
* p<0.05, ** p<0.01, *** p<0.001					
Estimations include country fixed effects and time fixed effects.					

The first model of salience shows, statistically significant at a 10 percent level, a result of -0,50, indicating that salience decreases the probability of onset conflict. This variable aims to describe the relationship between the trade shares of country i and j. It measures to what extent a trade relationship is dependent on the other, and how important they therefore are towards each other. Salience has a mean value of 0,0819, indicating that the trade relationship is not as important for *both* partners in the dyad. In our case, this reflects how Russia is less dependent on the other country. The second model is Symmetry. We find that the model displays a value of 0,0575, though not being significant we cannot conclude a statistically

significant relationship between Symmetry and onset conflict. In the third model with interdependence as the independent variable, we find a result of -0,727, statistically significant at a 10 percent level. This result indicates that interdependence increases the probability of onset conflict. In the fourth and fifth model presented in table 1, using the operationalization by Oneal & Russett (1997, 1999), we are using the trade share as the independent variable. Trade Asymmetry consists of the trade share for state B, and Trade Interdependence captures the trade share for State A, which is Russia. Trade Asymmetry displays a result of -0.1494, indicating a negative relationship between Trade Asymmetry and conflict. Further, Trade Interdependence shows a result of -0.532, with a significant at the 10% level, indicating a negative relationship between Trade Interdependence and conflict. Democracy and Alliance, as expected, is negatively related to conflict. Which means that democracy lowers the probability of onset conflicts. There are no variations in the variable *Contiguity*, hence it is omitted due to elimination of fixed-effects.

*Table 2. Interdependence and Conflict*

Dependent variable: Conflict	(1)	(2)	(3)	(4)	(5)
Saliency	-0.514** (-3.01)				
Symmetry		0.0728 (0.71)			
Interdependence			-0.734** (-3.0)		
Trade Asymmetry				-0.1495 (-1.64)	
Trade Interdependence					-0.532** (-2.62)
Democracy	-0.0209 (-0.17)	-0.033 (-0.27)	-0.0175 (-0.15)	-.04087 (-0.34)	-.0185 (-0.15)
Contiguity	-	-	-	-	-
Alliance	-0.0665 (-0.76)	-0.11 (-1.27)	-0.0787 (-0.93)	-.0896 (-1.03)	-0.0993 (-1.18)
_cons	0.199** (2.57)	0.135 (1.16)	0.204** (2.70)	0.22** (2.83)	0.197** (2.60)
N	347				
t statistics in parentheses					
* p<0.05, ** p<0.01, *** p<0.001					
Estimations include country fixed effects and time fixed effects.					

In the following regression the dependent variable is no longer onset conflict, but simply conflict. This means that the aim is to investigate the relationship between interdependence and ongoing conflict. Some of the conflicts in the data set goes on for several years while others just one. The following results aim to capture how interdependence will affect not only onset conflict, but also in which ways it affects the whole period of conflict. The result is not substantially different from table.1. Most conflicts in the data have a duration of only one year, making it the same as onset conflict. The coefficients displayed in table 2. Is for saliency



(-0,514), symmetry (0,0728), interdependence (0,732), trade asymmetry (-0,1495) and trade interdependence (-0,532). Regressions are statistically significant on the 10 percent level for model 1), 3) and 5).

*Table 3. Interdependence and Level of Hostility*

Dependent variable: Level of hostility	(1)	(2)	(3)	(4)	(5)
Saliency	-5.098* (-1.63)				
Symmetry		0.5817 (0.557)			
Interdependence			-2.799 (-0.48)		
Trade Asymmetry				-0.733 (-0.82)	
Trade Interdependence					-10.20 (-1.74)
Democracy	-	-	-	-	-
Contiguity	-	-	-	-	-
Alliance	-1.074 (-2.03)	-0.696 (-1.43)	-0.0703 (-1.39)	-.0751 (-1.55)	-1.023 (-2.07)
_cons	4.668 (9.61)	3.686 (4.89)	4.248 (8.85)	4.36*** (9.40)	4.56*** (10.91)

N 347

t statistics in parentheses

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Estimations include country fixed effects and time fixed effects.

Table 3. reports the last analysis using level of hostility as the dependent variable. The coefficients displayed in table 3. for saliency (-5,098), symmetry (0,5817), interdependence (-2,799), trade asymmetry (-0,733) and trade interdependence (-10,20) are statistically significant on the 10 percent level for model 1).

The regression has been run in order to investigate the relationship between interdependence and intensity of conflict. The dependent variable is *Level of Hostility*, ranging from 1-5 where 1 is the lowest level of hostility, and 5 the highest. This will be done by a regression with the variable describing highest level of hostility in dyadic dispute conditioned of the occurrence of conflict. By doing this, we can analyze the relationship between interdependence and the intensity of an ongoing conflict.

## 8.2 Key findings

The findings of the empirical analysis provide support for the liberal theory of trade and conflict. The results in model 1) indicated a negative relation between dyads engaging in MIDs and salience. In model 2) the independent variable Symmetry, which aims to measure symmetry of dependence, shows a positive coefficient. This result does not support the belief that balance of dependence and dyads that have a similar degree of dependence are engaging less in conflicts. In this analysis even highly asymmetric relationships engage less in disputes. Model 3) indicates that interdependence, which measures the interaction of the two variables in previous models, has a negative relationship with onset MIDs. This means that high levels of interdependence do not increase the occurrence of conflict. The analysis using onset conflict, compared to conflict, shows similar results, thus with small variations. This is because most of the conflicts taking place in the post-soviet sphere have in general been short, sometimes less than a year. Model 4) and model 5) describes the relationship between trade asymmetry, trade interdependence and conflict. Model asymmetry represents the trade share of the country having the lower trade share, and interdependence represents the higher of the higher trade share. In this data set, as Russia is the larger economy and country, trade interdependence will equal the trade share of Russia, and trade asymmetry with the other country within the dyad.

The aim of this essay is to answer how trade and interdependence affect the occurrence of conflicts in post-soviet countries. By the empirical analysis we find a result that could support the liberal hypothesis of trade and conflict - that trade promotes peace. The liberal approach to trade and conflict does explain the positive relation not only because of trade liberalization, but also the spreading of liberal values such as democracy, strong civil society, absence of corruption and strong judicial framework. The trade relations can be seen as a consequence of

other variables that also correlates with peace. The correlation between conflict and democracy in the data set is -0,0074. This indicates that democracy does have an impact on conflict, but the effect is relatively small. In my analysis, the results do support liberal approaches, despite most of the countries in the data set not being democracies nor leaning towards liberal values and norms. This brings us to the conclusion that the results rather confirm the hypothesis that the type of trade relations does matter, and that interdependence influences the outcome, which can be both negative and positive. The finding could therefore be argued to support the hypothesis that trade's effect on conflict is conditional on the nature of trade. A third interpretation of the result could be that trade does not have a significant impact on conflict. We can observe the results and draw certain conclusions, but only conditional on the significance of the results.

## 9 Discussion

Investigating whether the occurrence of conflict differs between the period before and after the period of the USSR would give an insight on the changing nature of interdependence and trade. This aim could not be reached due to lack of data on the period before the dissolution of the USSR. The data used in the analysis does include interrepublic trade between the period of 1987 and 1992, a relatively short period of time. Additionally, during this period only a few conflicts took place within the USSR. Including the data in the analysis gave an insight on a longer period and added validity to the empirical result, however, does not bring any significant results for the period alone. Further research could investigate this relationship further, of conflicts taking place in in other regions where post-colonial or post-empire ties are or have been present.

Additionally, future research could also investigate the connection between current changes in the global economic environment and economic agendas in conflicts. The Russian invasion of Ukraine brings up the question of interdependence and conflict once again. The close economic ties with the global market contributed to disbelief that Russia would invade Ukraine, one of the country's primary trading partners. One could come to different conclusions as to which role trade interdependence has played in the current war, but it should be of interest for future research to investigate how the change of Russia's economical role on the global market, could affect its relations with other countries.

In the aftermath of the war of Ukraine, we can already observe an emergence a renewed discussion on the issue of economic interdependence and Russia's asymmetric trade globally, in particular energy dependence. The current sanctions imposed on Russia, does in my opinion contradict the liberal approach on trade and conflict, as in the liberal notion retaining economic ties with Russia would be assumed to lower the probability of escalation of war. This is not how we observe the states to act, rather the opposite. This could also be an implication that the relationship between trade and conflict should be reassessed, as the current change in the global economy could possibly bring new insights on the conflict-trade relation.

## 10 Conclusion

The aim of this paper is to investigate the relationship between trade interdependence and conflict in post-soviet countries. The period of interest is 1987-2014, resulting in 347 observations and three empirical analyses. The empirical analysis is estimated with a fixed effect panel regression model, eliminating country and time fixed effects. The analysis has followed the operationalization and estimators proposed by Barbieri (1996) and ONeal & Russett (1997, 1999). The results bring an insight on the regional level relationship on trade and conflict, expanding the current literature. Previous literature has extensively focused on large datasets, over a long period of time, while this analysis focuses on, and uses more recent data, to assess the relationship between conflict and trade in post-soviet countries.

I find that the particular dyadic trade relation in the analysis displays a negative relationship between trade and conflict. This indicates that if trade increases, the occurrence of conflict will decrease. Despite this notion, I would not argue that this conclusion supports the liberal hypothesis that trade promotes peace. Few post-soviet countries are considered fully consolidated democracies, which makes the results less applicable on liberal thoughts and thesis. To conclude, the results of the empirical analysis shows support for the hypothesis that trade's impact is conditional on the trade relation. Additionally, the hypothesis that trade does not affect conflict significantly could also be argued to be supported by the results.

Yet, the conclusions made and the hypotheses strengthened, should be examined in the context of the empirical estimation biases and issued followed by operationalizations. The independent variable *interdependence* is complex and does contribute difficulties to assess the

accuracy of the results and in turn the actual relationship. Although this paper does suggest that there is a negative relationship between trade interdependence and conflict in post-soviet countries. It is important to note that other factors do affect the relationship in which can not be captures in the model, such as historical, ethnical and political. I would suggest that future research continues to conduct empirical analyses on the regional and local level. To find a “one fits all” theory on conflict and trade is in my opinion not realistic. In order to assess the actual impact of trade relations in current conflicts, research should focus on the specific attributes of the regions of interest.

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## Appendix

*Table 1. Interdependence and Onset Conflict*

Dependent variable: Onset Conflict	(1)	(2)	(3)	(4)	(5)
Salience	-0.500** (-2.90)				
Symmetry		0.0575 (0.55)			
Interdependence			-0.724** (-2.93)		
Trade Asymmetry				-0.136 (-1.51)	
Trade Interdependence					-0.524** (-2.56)
Democracy	-0.0211 (-0.17)	-0.0312 (-0.25)	-0.0176 (-0.14)	-0.0394 (-0.32)	-0.0186 (-0.15)
Contiguity	-	-	-	-	-
Alliance	-0.0667 (-0.77)	-0.113 (-1.29)	-0.0794 (-0.92)	-0.0926 (-1.06)	-0.0997 (-1.17)
_cons	0.197* (2.57)	0.146 (1.24)	0.202** (2.63)	0.215** (2.75)	0.194** (2.56)

N 347

t statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Estimations include country fixed effects and time fixed effects.

*Table 2. Interdependence and Conflict*

Dependent variable: Conflict	(1)	(2)	(3)	(4)	(5)
Saliency	-0.514** (-3.01)				
Symmetry		0.0728 (0.71)			
Interdependence			-0.734** (-3.0)		
Trade Asymmetry				-0.1495 (-1.64)	
Trade Interdependence					-0.532** (-2.62)
Democracy	-0.0209 (-0.17)	-0.033 (-0.27)	-0.0175 (-0.15)	-.04087 (-0.34)	-.0185 (-0.15)
Contiguity	-	-	-	-	-
Alliance	-0.0665 (-0.76)	-0.11 (-1.27)	-0.0787 (-0.93)	-.0896 (-1.03)	-0.0993 (-1.18)
_cons	0.199** (2.57)	0.135 (1.16)	0.204** (2.70)	0.22** (2.83)	0.197** (2.60)
N	347				
t statistics in parentheses					
* p<0.05, ** p<0.01, *** p<0.001					
Estimations include country fixed effects and time fixed effects.					

*Table 3. Interdependence and Level of Hostility*

Dependent variable: Level of hostility	(1)	(2)	(3)	(4)	(5)
Saliency	-5.098* (-1.63)				
Symmetry		0.5817 (0.557)			
Interdependence			-2.799 (-0.48)		
Trade Asymmetry				-0.733 (-0.82)	
Trade Interdependence					-10.20 (-1.74)
Democracy	-	-	-	-	-
Contiguity	-	-	-	-	-
Alliance	-1.074 (-2.03)	-0.696 (-1.43)	-0.0703 (-1.39)	-0.0751 (-1.55)	-1.023 (-2.07)
_cons	4.668 (9.61)	3.686 (4.89)	4.248 (8.85)	4.36*** (9.40)	4.56*** (10.91)
N	347				
t statistics in parentheses					
* p<0.05, ** p<0.01, *** p<0.001					
Estimations include country fixed effects and time fixed effects.					