Weaponized Interdependence & Global Security: The influence of weaponized interdependence in the networks of China, Russia and the US on global security

Brokken, Saskia

Universiteit Leiden
The Netherlands

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The influence of weaponized interdependence in the networks of China, Russia and the US on global security

Master Thesis

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Thesis supervisor: Dr. Rutger Hagen

Second reader: Dr. Femke Bakker

Student: Saskia Brokken

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Abstract

This master thesis looks at the relationship between weaponized interdependence and global security. Powerful states in a network create a weapon of their interdependence to make a situation beneficial while exploiting or leveraging other states. Many researchers have written about the topic interdependence, but there has not been a lot of academic attention to weaponized interdependence yet. The thesis builds on relevant literature to create five hypotheses that are favourable for weaponized interdependence having a negative influence on global security.

The study is conducted using statistical analysis with data retrieved from various publicly available datasets, being converted into a panel data. 211 countries are observed over a time frame from 1990 to 2007. This is done with Random Effects models for Linear and Logistic Regressions. The analysis finds no consistently significant results for the five hypotheses. There are some effects that have shown to be significant. However, these are either contradictory with the hypotheses or with the other variables, resulting in not being able to provide a concise answer to the research question.

Keywords: Weaponized interdependence – Global Security – Network - Peace - Conflict - Centrality

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Introduction

"The strong do what they can and the weak suffer what they must." This is how Thucydides described how the stronger Athenians negotiated with the Council of the island of Melos, where power was indicated to be more important for the Athenians than justice for the Melians (Braumoeller, 2013). This traditional view that powerful states make the rules is based on interdependence in one issue area; military security (Keohane & Nye, 2011, p. 36). The modern global systems are, however, multilateral networks connected by political, commercial, monetary, and technological ties, making states interdependent in many more areas. Yet stronger states have the ability to leverage and exploit other states due to their power and central position in an embedded network; referred to as weaponized interdependence (Ahram, 2022; Drezner, 2021).

This is a concept in which some states are in the position to leverage economic, interdependent relations to coerce other states (Farrell & Newman, 2019). It is essentially a state using its position and relations to other states as a weapon. Moreover: "Specifically, states with political authority over the central nodes in the international networked structures through which money, goods, and information travel are uniquely positioned to impose costs on others" (Farrell & Newman, 2019, p. 45). For instance, in the last twenty years, the United States has exploited the leverage generated by its central position in global economic networks to advance its foreign policy objectives, like imposing sanctions (Oatley, 2021, p. 115). A more specific instance where weaponized interdependence has happened is in the case of Europe's dependence on Russian gas (Drezner, 2021, p. 3). This makes Europe economically vulnerable and positions Russia in a place where it has relatively more political authority and can exploit Europe due to its powerful position.

The current globalized economy is asymmetrically organized with hubs and spokes, where the hubs enforce their interests on the spokes (Kim, 2021). Hence, the hub states can project their norms and ideas onto other states. These instances and asymmetrical relations will likely influence international politics. Moreover, global economic networks influence security, since there is a deepened interdependence between states that were before somewhat more autonomous (Farrell & Newman, 2019, p. 43). When weaponizing this deepened interdependence, there can be influences on global security due to more strained relations.

However, because of the asymmetrical organization of the networks, more instances of weaponized interdependence have likely occurred. Therefore, looking at these different situations and patterns of the concept contributes to academic knowledge of global systems and networks. Moreover, it is interesting for research purposes to have more information on weaponized interdependence as well as the way advantages are being exploited or disadvantages are endured and how it influences the global systems.

Accordingly, it is relevant to research the contexts of weaponized interdependence in the global system more. This leads to the research question:

To what extent does weaponized interdependence influence global security?

The following chapters of this thesis will give the reader insights into the research process. The literature review provides state-of-the-art literature on the scientific literature on global security, weaponized interdependence and their relation. Then the theoretical framework discusses appropriate theories and presents the hypotheses. Following is the methodology that gives insights into how the analyses for testing the hypotheses are conducted. This research question will be studied with a random effects model, including linear and logistic regressions, analysed with R. This quantitative research on a panel data design covers 211 countries in a time period of 18 years. Finally, the results of the analyses are presented and the research is critically discussed. In the end, a conclusion is provided.

Literature review

In this chapter, some relevant definitions, literature and findings will be discussed for global security and weaponized interdependence.

Global Security

The current security challenges are becoming more diverse and fragmented. These challenges are, for instance, global terrorism, harmful regional dynamics, western states exploiting vulnerable states and human security issues, such as environmental diseases and pandemics (Crocker et al., 2011, p. 39). To deal with these challenges, there is a new form of security cooperation, referred to as collective conflict management. This collective conflict management has been based on a UN-centred multilateral security system, which adapts to emerging issues while keeping international rules and values constant (Haas, 1993). Lepgold and Weiss (1998) have further developed the concept of collective conflict management. Their idea, which adds to the definition, discusses a way of interstate and intergovernmental collaboration on peacekeeping missions between the UN and NATO.

Peacekeeping missions in general are a way to promote security. An empirical research by Levin (2023) discovered that greater numbers of UN troops in peacekeeping operations are related to fewer attacks against aid works, which has increased their security.

Another way to promote security is by state's joining Defence Cooperation Agreements (Kinne, 2018). This is not an alliance and doesn't have mutual obligations, but it shows that if states trust each other by signing a DCA, the relations will be influenced positively. DCAs also have contributed to influencing networks in a way that relations between a pair of states also influence relations of others and that active states, the hubs, attract new partnerships more easily (Kinne, 2018). Japan, for instance, has deployed DCAs with Australia and the UK, which has contributed to strategic partnerships (Baldauff & Heng, 2023). The agreements are a way to create a more favourable security situation for Japan according to this research. It can be argued that it also positively influenced Australia's and Britain's securities.

Defining security is quite challenging since no universal term is defined (Oladipo, 2013, p. 83). There is an 'unacknowledged consensus' that has a common sense of the term, which is also established in relevant and linked concepts to security. This consensus sees security as interconnected issues that have an impact on survival and safety.

Besides the ambiguity of the term, authors have provided complementary definitions that are alike which is based on the idea that security includes a state's or individual's safety and the actions, conditions of existence and absence of threats concerned with it (Kaldor & Sassen, 2020, p.10). There is some nuance: whereas Buzan (1991, pp. 432-433) focuses more on protecting independence and integrity against hostile forces, Makinda (1998, p. 282) puts more emphasis on the idea of the preservation of norms, rules and values within societies and institutions and human protections, rights and freedoms. Ruzmetov's (2021) research implies that these nuances can also happen simultaneously

because the extent of human rights violations happening are proportional to growing global security threats. Therefore, human rights are connected to global security.

What global security entails and means is also dependent on the international context of conflict. Where during the Cold War years the focus was on the threat of nuclear annihilation and tracking superpower rivalry, the focus after the Cold War shifted to attention on civil wars on almost every continent (Crocker et al., 2011, p. 42). This resulted in redefining global security in regional and local terms and focusing on different ways of conflict management.

The security dilemma is a principle in which states, or other actors, are concerned about their security, fearing being attacked. This results in acquiring more power and investing in military strength to be more prepared for a potential attack. This, in turn, creates a feeling of insecurity for the other states, resulting in that state also becoming more powerful in preparing for an attack. Because none of them will ever feel completely secure, power competition ensues, which creates a vicious circle of security and power accumulation (Herz, 1950, p. 157; Jervis, 1978; Flint, 2017, p. 254). Within a network this could have implications for trust, flows and relations between states, which then can cause tensions and can affect global security. This appeared to be the case for the relation between India and Pakistan with both countries having nuclear weapons and military and terrorist actions happening leading to troop mobilizations on both sides (Shukla, 2016). Even though the relation between the two countries was not benign before , the security dilemma can worsen them.

Moreover, security issues and dilemmas exist both old and new security issues. Old security issues indicate the security of a state and how it can preserve its strength, such as interstate conflict and territorial disputes. These kind of threats are declining in Eastern and Central, except from states that recently experienced a war, whereas new sources of threats are increasing (Haerpfer et al., 1999). New security issues involve how states and societies are affected, or afflicted by, nonstate actors (Jackson, 2013, p. 6). The latter concept has emerged from the understanding that the strengthening of a state's military position won't necessarily increase its security (Jackson, 2013, p. 250). The stronger a country is, the more central of a position it enjoys, which results in experiencing more challenges from globalization forces. Having both old and new security issues creates an unstable security situation.

Security and conflict are related to power and competition. When a state, or actor, has power, it has the capacity to have an impact on others that otherwise would not have done that or turned out that way (Wilson III, 2008, p. 114). Soft power is a way to exercise power but with the ability to persuade other states to do what that one state wants (Nye, 1990; Wilson III, 2008). Thus, to get something or let others do something, from a soft security perspective, one must do that through attraction or persuasion, not coercion. When using coercion, or military force, to influence other states to do something is what is meant by the concept of hard power. Arguably, weaponized interdependence is a way of exercising soft power since it uses its powerful position in a network to influence other states to make it beneficial to them. Nevertheless, this does not preclude hard power (e.g. military actions) from being combined with soft power.

Weaponized interdependence

The matter of international integration happening is represented in the concept of globalization (Surugiu & Surugiu, 2015, p. 132). Expanded international ties with increased exchange of goods and services and social and cultural influences cause the development of this integration.

Globalization has created global networks of exchange, based on financial or informational ties, that have interconnected national economies regionally or internationally (Farrell & Newman, 2019, p. 47). According to Keohane and Nye (2011, p. 225), the concept of globalism can be defined as "networks of interdependence at multicontinental distances, linked through flows and influences of capital and goods, information and ideas, people and force…".

Flint (2017, p. 36) discusses that the current definition of globalization has a foundation in the idea that the number of networks, and the intensity of the flows through those networks, has been greater than at any other time in history. Here, Keohane and Nye (2011) speak of interconnectedness. This concept is different from interdependence by not being influenced by costly effects. Interdependence is when costly effects, which can be a way of exercising interdependence strategically, are present due to constraints linked to the transactions.

Due to globalization, and its expansion, countries are becoming increasingly interdependent (Surugiu & Surugiu, 2015). Hence, it involves mutual dependence based on reciprocal effects (Keohane & Nye, 2011, p. 7). This dependence is not necessarily symmetrical. In the case of an asymmetric network structure, the potential is initiated for weaponized interdependence, in which some states can leverage interdependent relations to coerce others (Farrell & Newman, 2021, p. 21)

The practice of weaponized interdependence is not new. The perception of interdependence influencing international relations has been developed in the literature (Drezner, 2021; James, 2021). This is mainly embedded in literature based on interdependence and asymmetries in networks. The concept and the term, however, have been established quite recently in the field (Drezner, 2021, p. 6)

Farrell and Newman (2019) are prominent scientists regarding weaponized interdependence. It is the ability that powerful positions some countries in a network have, the hub states, over weaker states, to exploit or leverage states. Networks are webs of ties that exist as "a series of connections of points in a system" (Keohane & Nye, 2011, p. 252). Accordingly, a network is a group of states that are linked based on their relations with each other. There are two sorts of weaponized interdependence: there are 'Panopticon effects', in which the hub has leverage and is controlling and observing the position of the spokes - the weaker states - and 'chokepoint effects' that hinder the interests of a country that is in a spoke position (Farrell & Newman, 2019; Kim, 2021). This is all to extract informational advantages over adversaries (Warren & Bartley, 2023, p. 168). When states experience the coercion of a hub state, they could either deviate from the network or create new networks without that coercing, weaponizing, state but with its competitors to limit its vulnerable position (Kim, 2021; Farrell & Newman, 2019).

However, if either panopticon or chokepoint effects happen, the tension between the powerful and weaker states can rise. This could have implications for global security as a result. Moreover, there are mixed results on the USA having weaponized its interdependence (Oatley, 2021, p. 116). On the one hand, it limited the influence of terrorist groups and made North Korea and Iran join back to multilateral negotiations due to economic sanctions. On the other hand, some sanctions have not had their desired results and, foremost, it has created uneasiness in the network, also among traditional allies. This uneasiness generates discussions on an alternative network. Considering, weaponized interdependence can influence relations between states, that could have an impact on global security.

Theoretical Framework

This chapter focuses on relevant theories regarding answering the research question. It will provide a conceptualization of relevant terms and the hypotheses will be presented.

Weaponized Interdependence and Global Security

In the liberal school of international relations, theories exist concerning the impact of (economic) interdependence on global security. One of those theories is the liberal peace theory emphasizing that mutual economic interdependence between states can be a helpful way to improve international peace (Lee & Pyun, 2016, p. 328). This is, partially, due to economic intercourse leading to more communication, which predicts cooperative political relations (Mansfield & Pollins, 2001, p. 836). Also, liberal democracies, that have shared liberal norms, are likely to have a decrease in war-proneness (Bakker, 2020). Hence, the bigger the trade interdependence is, the less likely a conflict will arise (Krustev, 2006). Buzan (1984, p. 598) captures this by saying "The essence of the liberal case is that a liberal economic order makes a substantial and positive contribution to the maintenance of international security".

However, "weaponizing interdependence disrupts an order that rests on interdependence" (Mastanduno, 2021, p. 68), meaning that weaponizing interdependence does not have to lead to less conflict or more peace. There is quite some academic literature written on economic interdependence, but not necessarily on weaponized interdependence. It can be argued that the realist school of thought has some characteristics that apply to weaponized interdependence.

Namely, realism supports the idea that interdependence will cause an increase in the likelihood of militarized conflict since states want to reduce vulnerability, which applies to decreasing dependency (Copeland, 2015, p. 21). This is the case when a powerful state relies too much on weaponized interdependence, it can erode the cooperation that helped build the network and relations. Namely, when it is being overused, the weapon - the leverage a powerful state has - will deteriorate when states realize it forms a threat to them (James, 2021, p. 101). This sometimes makes other states give up their membership in a network to avoid being vulnerable to coercion, leading to an increase in international fragmentation and the decay of cooperation in that network (Farrell & Newman, 2019). This deterioration of the network is not beneficial for relations between states, which can cause some global insecurity.

Another way in which weaponized interdependence can influence global security is based on asymmetric network structures. Namely, these have the conditions for weaponized interdependence happening and without asymmetry, it is unlikely to happen (Farrell & Newman, 2019, p. 45-50). In the case of asymmetric economic interdependence, there could be a negative effect on a state, threatening national autonomy for instance, which can contribute to interstate disputes (Santos, 1970).

Also, even with economic coercion as a substitute for military force, they have not necessarily shown to be more amiable. Economic sanctions and coercion measures, that are linked to weaponized

interdependence, regularly have harsh economic effects on local societies. When weaponized interdependence leads to this, it can contribute to structural violence, being no less lethal than a military conflict (Ahram, 2022, p. 38).

States can weaponize networks to collect information or block off economic and information relations and ties, similarly detect and exploit vulnerabilities, force policy change and block unwanted situations or activities (Farrell & Newman, 2021, p. 21). Nonetheless, these ways of weaponizing are hard to measure.

Conceptualization

The complex interdependence theory by Keohane and Nye (1987) studies how economic, political and societal flows with other countries influence governments. It shows that state behaviour can be explained by studying the webs of ties that link states together; networks. Flint (2017, p. 35) discusses that there are many possible forms of relations and linkages between states and that nodes can be connected to a great number of other nodes. According to Brass and Burckhardt (1992) the central position in a network, the node, is the most influential and strongest position. This points to a correlation between centrality in a network and power. However, having ties with influential actors does not have to lead to power. Namely, in situations where negotiations between a powerful actor and a less powerful state happen, it can lead to negative effects for the less powerful state. Thus, the most central position is the most powerful position. Slaughter (2009) has also contributed to the idea of networks and centrality within those. She stated that a country with the most connections will be the central player, and, therefore, can set the global agenda, which indicates US dominance (Slaughter, 2009, p. 95).

This US focus has been clear in a relatively large amount of research concerning weaponized interdependence (e.g. Farrell & Newman, 2019; Warren & Bartley, 2023; Ahram, 2022). Therefore, the US is a hub state, also referred to as the most powerful state, that has the power and ability to weaponize its interdependence (Wachman, 2010). Another state that is an emerging hegemonic power and has used its interdependence as a weapon is China. It has used its position as a weapon in the cases of TikTok, for example. A third state that is also a great power that has weaponized its interdependence is Russia, in the case of Russian gas for instance (Farrell & Newman, 2021, p. 3; Wachman, 2010). These three states are the prominent states in the literature that have weaponized their interdependence.

The predominant definition of security is the one from Bellamy: “Security itself is a relative freedom from war, coupled with a relatively high expectation that defeat will not be a consequence of any war that should occur” (Buzan, 1991, p. 16). In times when people were still strongly connected to their states and military, diplomatic and economic flows as only significant cross-border interactions, the dominant idea of security regarding states was logical. The traditional way of studying security is unhelpfully militarized (Prins, 1995, p. 823). However, this way of security is in decline and so is the way of thinking about it this way (Hough, 2018, p. 247). External threats from other states have

diminished. What makes global security different from security in itself is taking cultural diversity into account. Hence, when trying to solve a global security issue, the solutions are considered to be efficient and accepted across different cultures (Prins, 1995, p. 826).

Moreover, global security is concerned with actions taken by states and international organizations, such as the peacekeeping operations of the United Nations, to safeguard survival and safety (Oladipo, 2013, pp. 82-83). These actions can be military or diplomatic, such as treaties, alliances or DCAs.

UN peacekeeping operations, often collaborating with regional security organizations, have contributed to reducing conflict (Hough, 2018, p. 43). When peacekeeping operation troops are deployed, the expected number of human casualties due to the conflict drops significantly (Hultman, Kathman & Shannon, 2014). Because of the correlation between increasing numbers of armed military troops and reduced battlefield deaths, it can be said that UN peacekeeping missions reduce conflict. As Hegre et al. (2019, p. 215) state: "UN peacekeeping is clearly a cost-effective way of increasing global security". This is why PKOs have been chosen as a dependent variable that contributes to indicating the influence weaponized interdependence has on peace.

Another action that concerns global security is DCAs (Defence Cooperation Agreements). These are bilateral framework treaties that institutionalize states' defence relations. Kinne (2020) discusses that DCAs lead to fewer interstate military disputes. This would mean that DCAs can have a positive effect on promoting global security.

Alliances are also a part of society that influences global security. Alliances provide ways of communication and decision-making based on making compromises over the distribution of rights and responsibilities (Ikenberry, 2013, p. 108). A way in which states can diminish external threats is by entering military alliances (Johnson, 2015, p. 666). Something that motivates states to enter a military alliance is an increase in their security. When alliances are created and present, potential challengers are more reluctant to initiate some sort of conflict, which can also create more security. Moreover, when states feel more secure, the chances of the security dilemma happening are smaller, which can also support global security.

Notwithstanding, conflict is strongly linked to global security since it is said to be that: "the presence of conflict gives rise to the need for peace" (Abolurin, 2010, p. 145) and "Conflict … breads nothing but insecurity, chaos and destruction" (Oladipo, 2013, p. 80). A conflict can lead to a war. It does not necessarily have to lead to war but if they do escalate further they become crises (Singer, 1972, p. 264). Traditionally, looking at borders has been mainly concerning military terms. Most of the inter-state conflicts have been about territorial defence and conquest (Andreas, 2003). This is a way of analysing that fits in the realist tradition that looks at conflict over territory. Accordingly, in the case of any territorial change, it could indicate some way of increasing global insecurity.

The current image of war is based on the idea that there is a conflict between states, performed by regular armed forces (Kaldor, 2013). The goal of these forces is the military capture of territory, which will be done by combat. The cause of this image is the wars in Europe that have led to the modern state system. It is said that this type of war has an extremist logic due to all technological developments in combination with populist or patriotic beliefs (Kaldor, 2013, p. 119). The more common way for contemporary organized violence is, however, via military inventions and air strikes regarding ethnic conflict or terrorism, for example.

For this analysis, it has been chosen to divide the dependent variables into multiple variables. This is based on the two dimensions of peace and conflict, which also have been enacted in the conceptualization. The reasoning behind this is that global security is a complex and ambiguous concept, which is why it would be hard to capture its relation to weaponized interdependence based on one dependent variable. That is why these multiple variables will be combined as dependent variables to help answer the research question. These dependent variables will be tested based on the hypotheses.

Alliances, DCAs and peacekeeping missions promote peace, and, therefore, have a positive effect on global security. However, based on the literature, it can be expected that weaponized interdependence will negatively affect global security. Hence, weaponized interdependence has a negative influence on alliances, DCAs and peacekeeping operations, leading to a decrease in these. Meanwhile, wars and territorial change have a negative influence on global security, which is why, based on the literature, it can be assumed that weaponized interdependence leads to an increase in wars and territorial change.

Hypotheses

This leads to the following hypotheses:

Hypothesis 1: Weaponized interdependence leads to fewer alliances, which decreases global security.

Hypothesis 2: Weaponized interdependence leads to fewer DCAs signed, which decreases global security.

Hypothesis 3: Weaponized interdependence leads to fewer peacekeeping operations, which decreases global security.

Hypothesis 4: Weaponized interdependence leads to territorial change, which increases global insecurity.

Hypothesis 5: Weaponized interdependence leads to wars, which increases global insecurity.

Methodology

This thesis researches a causal relationship between the independent variable, weaponized interdependence, and the dependent variable, global security. A dataset was built by combining data from different datasets. This data collection, besides the scope of the study and the analysis, is discussed in this chapter.

Scope of the study

This thesis focuses on the participation of states in actions that are linked to global security between 1990 and 2007. The 211 countries included are based on the countries that are presented in the datasets of the World Bank (2024) and the International Monetary Fund (2024). The states that are included and have information and data in both datasets are included in the analysis (Appendix A).

Because networks are about relations between countries, hubs and spokes, all countries need to be taken into account to be able to gather information on weaponized interdependence (Farrel & Newman, 2019). Also, every country contributes to global security in some way or another, so including all countries to look at the influence they, and their relations with each other, have on global security is appropriate.

The time frame from 1990 to 2007 is the period in which most data from all datasets overlapped, and, therefore, provided the most available data to analyse. This makes it possible to better compare the models since big data samples facilitate discovering trends and relations that might not be discovered in smaller samples (Kosinski, 2016, p. 493).

The time frame also includes the post-Cold War period, which has generated new challenges concerning global and regional security governance (Kirchner, 2007, p. 4). These new challenges arose because of the developing role of non-state actors, and open economies and societies that make preserving security more challenging. But also terrorist attacks, such as 9/11, have influenced attention to a reconstruction of the global systems of security. Thus, besides this period providing most data, it also provides a period in which security issues are present, which makes it a relevant time frame for the analysis.

This analysis is done based on panel data. Panel data is a combination of time-series and cross-sectional data, which is why it is applicable for this analysis since there is a time-series of 18 years for 211 countries (cross-sectional). Panel data is beneficial for having large numbers of data while being able to enhance the degrees of freedom and to limit the risk of collinearity (Eom, Lee & Xu, 2008, p. 579)

Data selection

For this analysis, datasets are combined to have all relevant data to provide an answer to the research question. An overview of the data from those datasets is presented in Appendix B.

Independent variable

As mentioned in the theoretical framework, there are different network flows that states can leverage and different ways in which states can weaponize their interdependence (Farrell & Newman, 2019). In this thesis, the focus is on weaponized economic interdependence since that is the most apparent way to measure weaponized interdependence being present. A variable is created that indicates the centrality of a state in a network that is either centred around the USA, China or Russia. The networks of the USA, China and Russia are chosen since they are great power in networks and already have been shown to have weaponized their interdependence (Farrell & Newman, 2021, p. 3; Wachman, 2010). The likelihood of these three states weaponizing their interdependence again is higher than choosing other states for which it is unsure if they have used it as a weapon.

This centrality variable is constructed by the export of states to one of the three hubs divided by the Gross Domestic Product (GDP) of that state. The GDP can illustrate the size and growth of national economies (Callen, n.d.). So, by dividing export by GDP a ratio of how much the export to the hub state makes up for their whole GDP, is created. Hence, it can indicate the size that the economic flows to the hub state make up for a state's economy, and, therefore, to what extent a state is dependent on the hub state. The higher the ratio is, the closer the proximity to and dependence on the hub state. This enables the hub states to weaponize their interdependence since the other state is in a vulnerable position due to being dependent on exporting to the hub state.

It is important to note that this variable, however, does not directly indicate that weaponized interdependence is present or has happened, but it is a way in which weaponized interdependence is measurable by having the conditions that make it possible to happen.

Centrality has been shown to make a state powerful, which is the case with those three countries (Brass and Burckhardt, 1992; Slaughter, 2009). The other countries that have high centrality, and are thus dependent on them, are in the position that they can be leveraged or exploited by the hub state. This is how the variable of centrality, based on the ratio, can be an indicator of weaponized interdependence.

The data on GDP per country is derived from the series GDP in USD that is part of the database World Development, created by the World Bank (2024). It provides data on countries and aggregates starting in the year 1960. For this analysis, the countries and the data from the time frame 1990-2007 are used.

For the data on exports per country, a database of the International Monetary Fund was used ("IMF Data", 2024). The exact data used is gathered in the table 'Exports and Imports by Areas and Countries' which is part of the 'Direction of Trade Statistics (DOTS)' dataset. It offers monthly, quarterly and yearly data from 1960 and IMF member states, non-member states, the world and major areas. Since

most other variables in this thesis focus on yearly data, this thesis focuses on yearly data from 1990 till 2007. The world and major areas are excluded from the analysis because they do not align with the countries in the datasets of the other variables. It is a numerical variable that is concerned with the size of the import and its originating country to either the USA, Russia or China. Only the data on the import to China, Russia and the USA, all three in separate tables, is used. All data is in USD, but in dollars in millions (for instance, a value of 1 indicates $ 1,000,000 that a state is exporting to the hub state). To make it in line with the GDP data and to create the ratio, all values are recalculated by multiplying it by a million to make them into exact amounts of USD. Namely, this thesis attended to the imports to the three hub states instead of the export per country because it is easier to analyse import and see it as export from each originating country to a hub state than analyse the export for each country to a hub state individually.

Dependent Variables

Alliances

As described in the theory section, alliances contribute to security (Johnson, 2015). Therefore, it is a variable that supports a way of measuring global security. For this thesis, the dataset 'Formal Alliances (v4.1)', by member, is used (Gibler, 2009). This dataset provides information on when states entered or left an alliance when alliances entered the Correlates of War system and some characteristics of the alliance, such as the type of alliance. For this thesis, all kinds of alliances are taken into account. What is used is every alliance between 1990 and 2007 and counted as ongoing alliances. For instance, when state X entered an alliance in 1991 and three in 1994, the state is coded as being in 4 alliances by 1994, if it has not left an alliance in the meantime.

DCAs

For all DCAs the country code is used, so to know what the abbreviations stand for, the dataset 'COW Country Codes' (n.d.) is used. The dataset used is from Correlates of War, which is a database that has relevant information on all kinds of indicators for global security, peace and war. There are several variables that have that originate from COW since it has clear information on the role of states in actions regarding global security. The dataset used for this dependent variable is 'Defense Cooperation Agreement Dataset' (Kinne, 2020). It entails information on dates regarding the DCA and the characteristics of the DCAs. The data used for the analysis is DCAs that are characterized as 'Full DCA' and then from the years 1990 till 2007 for each state. The data has been re-coded to a state either signing as the first state or as a second state, which has been separated into two distinct variables. Namely, it can be said that there is more initiative from a country if they are the first to sign. Therefore, there could be a different relation between weaponized interdependence and a state being a first or a second signer of a DCA.

If there is no information on any signature for a specific country in the chosen period, there will be no values, and interpreted as missing values in the analysis. However, if a state had at least one or more signatures for a DCA in one of the 18 years, the years there was no data were coded as 0 values. The reasoning for this is that for the others it is unsure if it is missing data in the dataset or if there have not been DCAs at all for that country. But, for a country that has some data, it can be expected that there would have been data for other years so the chances of there not being any DCAs for that year are bigger.

Peacekeeping Operations

As became clear from the theoretical framework; peacekeeping operations do influence global security, which makes it a relevant dependent variable to support answering the research question. From the available information that the dataset provides on peacekeeping missions, for this analysis data on the amount of peacekeeping missions and peacekeeping troops per year for the years 1990-2007 per country is used (International Peace Institute, n.d.). Both variables are interesting in relation to how they are influenced by weaponized interdependence.

Territorial Change

For the dependent variable territorial change, the dataset 'Territorial Change (v6)' is used (Tir et al., 2018). This variable is separated into three ways to measure: territorial change, gain and loss. It is coded as a binomial variable with value 1 for some sort of territorial change and 0 for none at all. Information that is used from the dataset is, therefore, countries on both the gaining and losing side and the years the territorial change happened, from 1990 till 2007. The model of territorial change is the loss and gain combined, so there is a value 1 if there has been gain or loss or both happening, and 0 if there is no information on it.

War

The dependent variable war is based on the data from dataset (Sarkees & Wayman, 2010). The 'Inter-State War' dataset contains information on, for example, the name of the war, the country involved, start and end date, if the state initiated the war and where the combat was fought. The data used is from the period 1990-2007 on the country involved and is coded is a binomial variable. Value 1 is when the conflict was happening in that year, and 0 if there was no conflict.

Random effects model

A Hausman test is performed to test if the fixed effects model or random effects model works better for the models. Since 6 out of the 9 variables random effects is better, it is decided that all models will be done with a random effects, to improve efficiency and model comparisons. The outcomes of the Hausman test are included in Appendix C.

Random Effects model has model parameters as random variables (Borenstein et al., 2010). Additionally, it is a model that has a distribution of true effect sizes that can differ.

The regression equation of panel data of random effect is:

$y_{it} = \propto + y_{it} = \propto + \beta^t X_{it} + u_i + \varepsilon_{it}$

For:
i = 1,2, …, N and t = 1,2 …, T.

Where:
N = the number of countries
T = the number of years
ε_{it}= the residual as a whole where the residual is a combination of cross section and time series
u_i= the individual residual which is the random characteristic ofunit observation the i-thand remains at all times

The five hypotheses require two kinds of analyses. These analyses are done in R. The dependent variables of hypothesis 1, 2 and 3 are numerical since they contain the numbers of how many actions of those dependent variables happened. To predict the outcomes for these three dependent variables, a linear regression is used. The other two hypotheses, 4 and 5, require a logistic regression because they are based on binomial variables.

Results

Descriptive Statistics

Independent Variables

The sample in this thesis consisted of 211 states and their influence in actions linked to global security between 1990 and 2007. The independent variables concern a state's position towards the USA, China or Russia. Table 1 presents the descriptive statistics.

The N is bigger than those 211 states because of it being panel data. What can be said is that the N is the biggest for Centrality USA, with 3142 values. Besides this, the mean for centrality is for the variable of the USA the highest, whose mean is 0.049. For the variable of China, the highest centrality is 0.345, which is for the Republic of the Congo in 2006. The variable Centrality Russia has the highest centrality (0.476) for Moldova in 1996. With 1.282 as centrality, Aruba has more export to the USA in 2005 than its GDP is.

Table 1. Descriptive statistics of independent variables

	N	Minimum	Mean	Maximum	Standard Deviation
Centrality China	2885	0	0,011	0.345	0.031
Centrality Russia	2269	0	0,008	0.476	0.031
Centrality USA	3142	0	0,049	1.282	0.085

Dependent Variables

In Table 2 the descriptive statistics for the dependent variables can be found. There is a difference in N between the variables that are linear and logistic regressions. Whereas the linear variables have smaller N's due to missing values, the logistic variables linked to the hypothesis of territorial change have no missing values do to it being binomial values. The variable war has a smaller N because the missing values were removed during the analysis.

The country that has been in the most alliances (20) and has had the most alliances from 1992 onwards, is Russia. There are more states that are first signers of DCAs (0.454) than second signers (0.417). The maximum amount of peacekeeping missions is 13, which is represented in seven instances, from which four are from Sweden. The maximum amount of peacekeeping troops sent (10703) is by Pakistan in 2007. There has been more territorial gain (0.013) than territorial loss (0.008).

Table 2. Descriptive statistics of dependent variables

	N	Minimum	Mean	Maximum	Standard Deviation
Alliances	1499	0	1.628	20	2.457
DCA first signer	1721	0	0.454	7	0.913
DCA second signer	1843	0	0.417	7	0.869
Peace Keeping Missions	1391	0	4.478	13	3.030
Peace Keeping Troops	1390	0	552.531	10703	1153.580
Territory Change	3798	0	0.018	1	0.132
Territory Gain	3798	0	0.013	1	0.115
Territory loss	3798	0	0.008	1	0.087
War[1]	337	0	0.021	1	0.140

Regression Results

This rest of this chapter will focus on the outcomes of the regression models. The results for the linear regressions, linked to hypotheses 1, 2 and 3, are discussed, followed by the results of the logistic regressions linked to hypotheses 4 and 5. For all five hypotheses, the independent variables in the models stay the same and only the dependent variables will vary.

It can be assumed that the models for hypotheses 1,2 and 3 will present to be negative and significant because weaponized interdependence is expected to lead to a decrease of global security.

For the logistic variables of hypotheses 4 and 5, a positive, but non-significant, effect can be expected. The positive effect is because of the expectation that weaponized interdependence will increase global insecurity.

Linear Regressions

To study if weaponized interdependence - represented in the variables of centrality - influences alliances, DCA's and peacekeeping operations negatively by leading to a decrease of these occurring, linear regressions are done. This is to test hypotheses 1,2 and 3. The results of this are presented in Table 3.

Alliances

[1] When doing the analysis for this dependent variable the No Hessian error came up, which eventually was not possible to overcome. Therefore, a model is created where the missing values are removed, which creates a smaller sample size, but makes it possible to conduct the random effects analysis.

Firstly, the coefficient for centrality China is positive and significant (B=5.103). This contradicts the assumption of a negative significant coefficient. It is also a rather big effect for having strong ties with China leading to more alliances. Moreover, the other two coefficients for the USA and Russia are both positive and non-significant. This is both not in line with the expectations, even though the effect of being central in Russia's network is rather small (B=0.016).

DCAs

First of all, the coefficients of centrality in China's network the effects are positive and non-significant which is opposing to what was expected. The same goes for the coefficients for centrality in Russia's network The coefficient for USA's network and being a first signer is negative and significant, which is in line with the hypothesis. If a state is central in USA's network, there is a decrease in that state being the first one to sign a DCA (B=-1.680). There is also a negative effect for having a high centrality in the network of the USA and signing a DCA as the second state (B=-1.231), but this coefficient is not significant.

Peacekeeping operations

Firstly, there is a significant and positive coefficient for centrality in China's network in relation to peacekeeping missions (B=25.883). This means that the more linked a state is to China, the more peacekeeping missions they contribute to. This positive effect is not in line with the expectations, yet it being significant. For the coefficients of the centrality in the networks of Russia and USA, positive and insignificant is presented, in relation to peacekeeping missions. Both a positive relation and non-significance was not assumed. Secondly, there are no significant coefficients for peacekeeping troops. Nonetheless, the three coefficients of centrality China, Russia and the USA are negative, which is conforming the expectations.

Table 3. Linear regression analysis for the influence on global security between 1990 and 2007

		DCAs		Peacekeeping operations	
	Alliances	**First signer**	**Second signer**	**Missions**	**Troops**
(Intercept)	1.697 *** (0.208)	0.600 *** (0.068)	0.498 *** (0.056)	3.451 *** (0.265)	508.260 *** (96.244)
Centrality China	5.103 *** (0.775)	0.272 (0.970)	0.785 (1.016)	25.883 *** (3.896)	-1031.539 (1873.018)
Centrality Russia	0.016 (0.858)	0.235 (0.991)	1.472 (0.915)	2.169 (7.759)	-1721.693 (3446.273)
Centrality USA	0.958 (0.734)	-1.680 ** (0.632)	-1.231 (0.665)	4.012 (2.231)	-387.721 (972.179)
R^2	0.048	0.007	0.003	0.022	0.001
Adj. R^2	0.045	0.004	0.001	0.019	-0.001
p	0.000	0.062	0.090	0.000	0.862
N	957	1223	1312	1151	1150

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

Logistic Regressions

For researching whether weaponized interdependence - based on variables of centrality - has a negative influence on global security, and, therefore, increasing territorial change and war, logistic regressions are done. This is to test hypotheses 4 and 5. An overview of the results can be seen in Table 4.

Territorial Change

For all three variables - territorial change, gain and loss - there is a negative and insignificant effect for the independent variable of being central in China's network. This is not in line with hypothesis 4 since it assumed a positive relation.

Then, for the three variables of being central in Russia's network, there are positive coefficients, which are conforming the expectation. However, they are not significant. The independent variable for USA's centrality has three negative and non-significant coefficients for the variables of territorial change. This is not in line with the hypothesis.

War

Both China's centrality and Russia's centrality have negative and not significant coefficients, which contrasts the expectations. The variable for USA's centrality is also insignificant yet has a positive effect (B=0.133). This positive coefficient is according to hypothesis 5.

Table 4. Logistic regression analysis for the influence on global security between 1990 and 2007

	Territorial Change			
	Territorial Change	**Territorial Gain**	**Territorial Loss**	**War**
(Intercept)	-4.267 *** (0.254)	-5.029 *** (0.720)	-4.543 *** (0.302)	-11.060 * (4.915)
Centrality China	-1.182 (7.742)	-5.193 (12.731)	-4.615 (11.820)	-3.222 (3.558)
Centrality Russia	4.642 (3.316)	6.315 (3.598)	6.056 (3.149)	-16.796 (11.137)
Centrality USA	-3.823 (4,055)	-1.704 (4.591)	-5.114 (5.379)	0.133 (0.235)
Log Likelihood	-138.458	-87.621	-106.047	-28.803
AIC	286.915	185.243	222.093	67.605
N				337

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

Discussion

Interpretation and Implications of Results

Based on the results, it can be seen that from all coefficients, in total there are three significances, relating to hypothesis 1, 2 and 3. The influence of weaponized interdependence is, therefore, not consistent in being significant in decreasing global security (or increasing global insecurity).

For the first hypothesis, based on weaponized interdependence leading to a decrease alliances, the coefficients are opposite to what was expected. It presented a positive relationship between weaponized interdependence and alliances for all three networks with a significance for China's. This means hypothesis 1 can be rejected, based on the effect, and partially on significance.

The second hypothesis, based on centrality leading to a decrease of DCAs, also has one significant coefficient, which is also in line with the expectations. The other two coefficients are both insignificant and the opposite effect, which is more in line with the research of Lee and Pyun (2016). Because the expected effect is analysed, the second hypothesis can be justified, based on effect and significance. It has to be noted that this is based on one network, so the hypothesis is not completely justified. The USA has for both kinds of DCAs an, expected, negative effect, which demonstrates that being close to the US leads to a decrease of signing DCAs.

The third hypothesis, weaponized interdependence decreasing peacekeeping operations, is difficult to either justify or reject. Namely, for the peacekeeping missions there is a significant positive effect, which was not line with the hypothesis. On the other side, for all three networks peacekeeping troops show to experience a decrease, which is in line with the hypothesis. Therefore, the hypothesis can be rejected based on one significant opposite effect; or it can be justified based, non-significant but three expected effects.

Hypothesis four is that weaponized interdependence leads to (an increase of) territorial change. This is the case for states being dependent on Russia for all three sub-variables. Based on this information, the thesis can be justified, although they are not significant it is a noteworthy effect. For states in the networks of China and the USA a decrease of experiencing territorial change is likely, which can increase global security. Based on these effects, the hypothesis can be rejected, but there is also no significance to these effects to reject with confidence.

The last, the fifth, hypothesis is that weaponized interdependence leads to an increase of wars, so more global insecurity. The only coefficient in line with this hypothesis is being dependent on the USA. This illustrates that having strong ties with the US, a state is more likely to be in a war. However, there is no significant effect, neither for the opposite effects from China's and Russia's centrality.

All in all, some results are more in line with the theories on economic interdependence, as mentioned in the theoretical framework, and others are in line with those of weaponized interdependence.

Limitations and Recommendations

A limitation to this thesis is that not all models and analyses that are done are the same, which makes it harder to compare. Both logistic and linear models are created and for 8 out of the 9 variables models with all missing values are used, but for 1 these had to be excluded. This makes it harder to compare the results.

Also, there are only three significant effects, which can indicate that the data is not sufficient enough in showing the relation between weaponized interdependence and global security. For future research it can be interesting to delve deeper into the topic and use different data, in the hope to get more significant results.

Moreover, weaponized interdependence is difficult to measure. In this thesis, the created independent variable of centrality points to weaponized interdependence and can give an indication of it more likely to happen if the centrality ratio is higher. However, there has been no proof on weaponized interdependence actually being present at those times between the hubs and the other states. For further research, it can be interesting to use a different way of measuring weaponized interdependence that is able to directly show if it has been present or not.

Furthermore, in this thesis the focus was on weaponized economic interdependence, but other kinds of interdependence and flows have been ignored, due to the size of the research. Therefore, it could be interesting for the field to look into other kinds of weaponized interdependence and their relation to global security.

Additionally, for this thesis it was decided to look at specific indicators for global security, but there is a chance that other indicators, that have not been included in this research can present more significant results in relation to weaponized interdependence.

It is unclear which states have what positions. Since this was not relevant to know for the research question, it is not included in the analysis. However, it could be interesting for future research to look at this.

Lastly, it is not included in any of the literature, but for future research it could be interesting to study what the role of the powerful hubs was in their own network. Since for this thesis a variable of centrality, to indicate weaponized interdependence, is created based on GDP and export to that hub, the hub itself is not included with data in their own network. Namely, they do not have export to themselves. It could be interesting to see if, for instance, weaponized interdependence leading to a decrease of contributions to peacekeeping troops is because the hub states donates more, so that the dependent states do not have to. The same accounts for centrality to Russia leading to more territorial change since it could show weaponized interdependence but there is also a possibility that other causes come into play that are not taken into account in this thesis, such as it being the period that the USSR became Russia and the whole previously USSR territory had to deal with the all changes.

Conclusion

This thesis had the purpose to determine the influence of weaponized interdependence on global security. Based on regressions done with the random effects model to analyse states' centralities and global security indicators, it can be concluded that there is no consistent significant impact that weaponized interdependence has on global security. Only the relation between being central in the network of the USA and a state being first signing a DCA is significant and has the expected causal relationship. Two other significances that were not expected are for having strong economic ties with China in relation to an increase in taking part in an alliance and an increase in contributions to peacekeeping missions.

The gathered information from the literature on the effect of weaponized interdependence on global security, in line with some realist theory, is not supported by the findings of this research. With only three significant coefficients, there is some influence but not sufficient to make a claim on it either negatively or positively influencing global security. However, for answering the research question: ***To what extent does weaponized interdependence influence global security?***, it can be said that to a little extent there is an influence that weaponized interdependence has on global security. There is an influence when being dependent on the USA which can lead to a (limited) decrease in global security. Nevertheless, another influence is being dependent on China leading to an increase in global security, especially for contributing to peacekeeping missions since this is a rather large effect size (B=25.883). Moreover, there are a lot of different effects measured in the analysis, which makes it complicated to provide a concise answer to the research question.

In situations where knowledge on weaponized interdependence and global security is required, states being more dependent on hubs tend to decreasingly contribute to providing troops in peacekeeping operations. Besides this, a similar comment can be made for states being dependent on Russia being more likely to experience some form of territorial change. This information can be useful for states to get more knowledge on the positions they are in.

Bibliography

Abolurin, A. (2010). *Democratization and Conflict Management in Nigeria.* Ibadan: John Archers (Publishers) Ltd.

Ahram, A. I. (2022). Weaponizing interdependence in the Middle East. *Middle East Policy*, *29*(3), 37–47. https://doi.org/10.1111/mepo.12646

Andreas, P. (2003). Redrawing the Line: Borders and Security in the Twenty-first Century. *International Security, 28*(2), 78–111. https://doi.org/10.1162/016228803322761973

Bakker, F. E. (2020). The microfoundations of normative democratic peace theory. Experiments in the US, Russia and China. *Political Research Exchange*, *2*(1), 1753084. https://doi.org/10.1080/2474736x.2020.1753084

Baldauff, N., & Heng, Y. (2023). Evaluating Japan's defense cooperation agreements and their transformative potential: upgrading strategic partnerships with Australia and the UK. *International Relations of the Asia-Pacific*, *24*, 183–215. https://doi.org/10.1093/irap/lcad012

Borenstein, M., Hedegs, L.V., Higgins, P.T., & Rothstein, H.R. (2010). A basic introduction to fixed effect and random-effects models for meta-analysis. *Research Synthesis Methods, 1*, 97-111. doi: 10.1002/jrsm.12

Brass, D., & Burckhardt, M. (1992). Centrality and Power in Organizations. In N. Nohria & R. G. Eccles (Eds.), *Networks and Organizations* (pp. 191–215). Harvard Business School.

Braumoeller, B. F. (2013). Introduction. In *The Great Powers and the International System* (pp. 1–22). Cambridge University Press. https://doi.org/10.1017/cbo9780511793967

Buzan, B. (1984). Economic structure and international security: the limits of the liberal Case. *International Organization*, *38*(4), 597–624. https://doi.org/10.1017/s0020818300026886

Buzan, B. (1991). New patterns of global security in the twenty-first century. *International Affairs*, *67*(3), 431–451. https://doi.org/10.2307/2621945

Copeland, D. C. (2015). CHAPTER ONE. Theory of Economic Interdependence and War. In *Economic Interdependence and War* (pp. 16–50). Princeton University Press. https://doi.org/10.1515/9781400852703-004

Correlates of War. (n.d.). *COW Country Codes* [Dataset]. https://correlatesofwar.org/data-sets/cow-country-codes-2/

Crocker, C. A., Hampson, F. O., & Aall, P. (2011). Collective conflict management: a new formula for global peace and security cooperation? *International Affairs*, *87*(1), 39–58. https://doi.org/10.1111/j.1468-2346.2011.00959.x

Drezner, D. W. (2021). Introduction: The Uses and Abuses of Weaponized Interdependence. In D. W. Drezner, H. Farrell, & A. L. Newman (Eds.), *The Uses and Abuses of Weaponized Interdependence* (pp. 1–16). Brookings Institution Press. http://www.jstor.org/stable/10.7864/j.ctv11sn64z.3

Eom, T.H., Lee, S.H., & Xu, H. (2008). Introduction to Panel Data Analysis: Concepts and Practices. In K. Yang & G.J. Miller (Eds.), *Handbook of Research Methods in Public Administration* (pp. 5 75-594). Boca Raton, London, New York: CRC Press.

Farrell, H., & Newman, A. L. (2019). Weaponized Interdependence: How global economic networks shape state coercion. *International Security, 44*(1), 42–79. https://doi.org/10.1162/isec_a_00351

Farrell, H., & Newman, A. L. (2021). Weaponized Interdependence: How global economic networks shape state coercion. In D. W. Drezner, H. Farrell, & A. L. Newman (Eds.), *The Uses and Abuses of Weaponized Interdependence* (pp. 19–66). Brookings Institution Press. http://www.jstor.org/stable/10.7864/j.ctv11sn64z.3

Flint, C. (2017). *Introduction to geopolitics* (3rd ed.). Routledge.

Gibler, D. M. (2009). *International military alliances, 1648-2008 (v4.1)* [Dataset]. CQ Press. https://correlatesofwar.org/data-sets/formal-alliances/

Haas, E.B. (1993). Collective Conflict Management: Evidence for a New World Order? In T.G. Weiss (Ed.), *Collective Security in a Changing World* (pp. 63-118). Boulder, USA: Lynne Rienner Publishers. https://doi.org/10.1515/9781685856397-008

Haerpfer, C., Milosinski, C., & Wallace, C. (1999). Old and New Security Issues in Post-Communist Eastern Europe: Results of an 11 Nation Study. *Europe-Asia Studies*, *51*(6), 989–1011. https://doi.org/10.1080/09668139998606

Hegre, H., Hultman, L., & Nygård, H. M. (2019). Evaluating the Conflict-Reducing Effect of UN Peacekeeping Operations. *The Journal Of Politics, 81*(1), 215–232. https://doi.org/10.1086/700203

Herz, J. H. (1950). Idealist internationalism and the security dilemma. *World Politics*, *2*(2), 157–180. https://doi.org/10.2307/2009187

Hough, P. (2018). Understanding Global Security (4th ed.). Routledge. https://doi-org.ezproxy.leidenuniv.nl/10.4324/9781315191164

Hultman, L., Kathman, J., & Shannon, M. (2014). Beyond Keeping Peace: United Nations Effectiveness in the Midst of Fighting. *American Political Science Review*, *108*(4), 737–753. doi:10.1017/S0003055414000446

Ikenberry, G. J. (2013). Global Security Cooperation in the Twenty-First Century*. In *Columbia University Press eBooks* (pp. 94–116). https://doi.org/10.7312/columbia/9780231156868.003.0004

IMF Data. (2024). *Direction of Trade Statistics (DOTS)* [Dataset]. https://data.imf.org/?sk=9d6028d4-f14a-464c-a2f2-59b2cd424b85

International Peace Institute. (n.d.). *Peacekeeping Database* [Dataset]. https://www.ipinst.org/providing-for-peacekeeping-database?sp=28185#sub

Jackson, R. J. (2013). *Global politics in the 21st century*. Cambridge University Press.

James, H. (2021). Weaponized Interdependence and International Monetary Systems. In D. W. Drezner, H. Farrell, & A. L. Newman (Eds.), *The Uses and Abuses of Weaponized Interdependence* (pp. 101–114). Brookings Institution Press. http://www.jstor.org/stable/10.7864/j.ctv11sn64z.3

Jervis, R. (1978). Cooperation under the Security Dilemma. *World Politics*, *30*(2), 167–214. doi:10.2307/2009958

Johnson, J. C. (2015). The cost of security: Foreign policy concessions and military alliances. *Journal Of Peace Research, 5*2(5), 665–679. https://doi.org/10.1177/0022343314565434

Kaldor, M. (2013). 5. Restructuring Global Security for the Twenty-First Century. In J. Stiglitz & M. Kaldor (Ed.), *The Quest for Security: Protection Without Protectionism and the Challenge of Global Governance* (pp. 117-142). New York Chichester, West Sussex: Columbia University Press. https://doi-org.ezproxy.leidenuniv.nl/10.7312/stig15686-009

Kaldor, M. & Sassen, S. (2020). Introduction: Global Insecurity and Urban Capabilities. In M. Kaldor & S. Sassen (Ed.), *Cities at War: Global Insecurity and Urban Resistance* (pp. 1-24). New York Chichester, West Sussex: Columbia University Press. https://doi.org/10.7312/kald18538-002

Keohane, R. O., & Nye, J. S. (1987). Power and interdependence revisited. *International Organization*, *41*(4), 725–753. https://doi.org/10.1017/s0020818300027661

Keohane, R. O., & Nye, J. S. (2011). *Power and interdependence* (4th ed.). Longman.

Kim, Y. (2021). Interactions between Japan's "weaponized interdependence" and Korea's responses: "decoupling from Japan" vs. "decoupling from Japanese firms." *International Trade, Politics and development*, *5*(1), 19–31. https://doi.org/10.1108/itpd-11-2020-0082

Kinne, B. J. (2018). Defense cooperation agreements and the emergence of a global security network. *International Organization*, *72*(4), 799–837. https://doi.org/10.1017/s0020818318000218

Kinne, B. J. (2020). The Defense Cooperation Agreement Dataset (DCAD) [Dataset]. *Journal of Conflict Resolution, 64*(4), 729-755. https://doi.org/10.1177/0022002719857796

Kirchner, E. J. (2007). Regional and global security: Changing threats and institutional responses. In *Global Security Governance* (pp. 21–40). Routledge. https://doi.org/10.4324/9780203964705-10

Kosinski, M., Wang, Y., Lakkaraju, H., & Leskovec, J. (2016). Mining Big Data to Extract Patterns and Predict Real-Life Outcomes. *Psychological Methods*, *21*(4), 493–506. https://doi.org/10.1037/met0000105

Krustev, V. L. (2006). Interdependence and the Duration of Militarized Conflict. *Journal Of Peace Research*, *43*(3), 243–260. https://doi.org/10.1177/0022343306063930

Lee, J.W. & Pyun, J.H. (2016). Does Trade Integration Contribute to Peace? Review of Development Economics, 20(1), 327-344. doi:10.1111/rode.12222

Lepgold, J., & Weiss, T. G. (1998). Collective Conflict Management and Changing World Politics. SUNY Press.

Levin, A. (2023). The composition of UN peacekeeping operations and aid worker security. *Journal of Peace Research*, 1–18. https://doi.org/10.1177/00223433231159186

Makinda, S. M. (1998). Sovereignty and global security. *Security Dialogue*, *29*(3), 281–292. https://doi.org/10.1177/0967010698029003003

Mansfield, E. D., & Pollins, B. M. (2001). The Study of Interdependence and Conflict. *Journal Of Conflict Resolution*, *45*(6), 691–859. https://doi.org/10.1177/0022002701045006007

Mastanduno, M. (2021). Hegemony and Fear: The National Security Determinants of Weaponized Interdependence. In D. W. Drezner, H. Farrell, & A. L. Newman (Eds.), *The Uses and Abuses of Weaponized Interdependence* (pp. 101–114). Brookings Institution Press. http://www.jstor.org/stable/10.7864/j.ctv11sn64z.3

Nye, J. S. (1990). Soft Power. *Foreign Policy, 80*, 153–171. https://doi.org/10.2307/1148580

Oatley, T. (2021). Weaponizing International Financial Interdependence. In D. W. Drezner, H. Farrell, & A. L. Newman (Eds.), *The Uses and Abuses of Weaponized Interdependence* (pp. 115-130). Brookings Institution Press. http://www.jstor.org/stable/10.7864/j.ctv11sn64z.3

Oladipo, B. S. (2013). CONFLICT, GLOBAL PEACE & SECURITY: THE ROLE OF CIVIL DEFENCE. *Asian Journal of Management Sciences & Education*, *2*(1), 80–88. http://www.ajmse.leena-luna.co.jp/AJMSEPDFs/Vol.2(1)/AJMSE2013(2.1-07).pdf

Prins, G. (1995). Notes Toward the Definition of Global Security. *American Behavioral Scientist, 38*(6), 817-829. https://doi.org/10.1177/0002764295038006003

Ruzmetov, B. (2021). Violation of human rights as the basis for the threats to international security. *Law And Safety*, *83*(4), 178–184. https://doi.org/10.32631/pb.2021.4.18

Santos, T. D. (1970). The Structure of Dependence. *The American Economic Review*, *60*(2), 231–236. http://www.jstor.org/stable/1815811

Sarkees, M., & Wayman, F. (2010). *Resort to War, 1816-2007* [Dataset]. CQ Press. https://doi.org/10.4135/9781608718276

Shukla, D. (2016). Indo-Pakistan Security Dilemma and its Global Implications. *Indian Journal of Political Science*, *77*(1), 93–104.

Singer, J.D. (1972). "The 'Correlates of War' Project: Interim Report and Rationale." *World Politics 24*(2), 243–70.

Slaughter, A.M. (2009). America's Edge: Power in the Networked Century. *Foreign Affairs*,*88*(1), 94–113. http://www.jstor.org/stable/20699436

Surugiu, M., & Surugiu, C. (2015). International Trade, Globalization and Economic Interdependence between European Countries: Implications for Businesses and Marketing Framework. *Procedia Economics And Finance*, *32*, 131–138. https://doi.org/10.1016/s2212-5671(15)01374-x

Tir, J., Schafer, P., Diehl, P. F., & Goertz, G. (2018). Territorial Changes, 1816–2018: Procedures and data [Dataset]. *Conflict Management and Peace Science*, *16*(1), 89–97. https://doi.org/10.1177/073889429801600105

Wachman, A. M. (2010). Suffering What It Must? Mongolia and the Power of the 'Weak.' *Orbis (Philadelphia)*, *54*(4), 583–602. https://doi.org/10.1016/j.orbis.2010.07.006

Warren, A., & Bartley, A. N. (2023). The Digital Power Paradox: U.S.-China Competition, Semiconductors, and Weaponized Interdependence. In E. Kath, J. C. H. Lee, & A. Warren (Eds.), *The digital global condition* (pp. 157–177). Springer Singapore. https://doi.org/10.1007/978-981-19-9980-2_7

Wilson III, E. J. (2008). Hard power, soft power, smart power. *The ANNALS of the American Academy of Political and Social Science*, *616*(1), 110–124. https://doi.org/10.1177/0002716207312618

World Bank. (2024). *World Development Indicators* [Dataset]. https://databank.worldbank.org/reports.aspx?source=2&series=NY.GDP.MKTP.CD&country#

Appendix A – Countries Included in Dataset

1. Afghanistan
2. Albania
3. Algeria
4. American Samoa
5. Angola
6. Antigua and Barbuda
7. Argentina
8. Armenia
9. Aruba
10. Australia
11. Austria
12. Azerbaijan
13. Bahamas
14. Bahrain
15. Bangladesh
16. Barbados
17. Belarus
18. Belgium
19. Belize
20. Benin
21. Bermuda
22. Bhutan
23. Bolivia
24. Bosnia and Herzegovina
25. Botswana
26. Brazil
27. Brunei Darussalam
28. Bulgaria
29. Burkina Faso
30. Burundi
31. Cabo Verde
32. Cambodia
33. Cameroon
34. Canada
35. Cayman Islands
36. Central African Republic
37. Chad
38. Channel Islands
39. Chile
40. China
41. Colombia
42. Comoros
43. Congo, Dem. Rep.
44. Congo, Rep.
45. Costa Rica
46. Cote d'Ivoire
47. Croatia
48. Cuba
49. Cyprus
50. Czechia
51. Denmark
52. Djibouti
53. Dominica
54. Dominican Republic
55. Ecuador
56. Egypt
57. El Salvador
58. Equatorial Guinea
59. Eritrea
60. Estonia
61. Eswatini
62. Ethiopia
63. Faroe Islands
64. Fiji
65. Finland
66. France
67. French Polynesia
68. Gabon
69. Gambia
70. Georgia
71. Germany
72. Ghana
73. Gibraltar
74. Greece
75. Greenland
76. Grenada
77. Guam
78. Guatemala
79. Guinea
80. Guinea-Bissau
81. Guyana
82. Haiti
83. Honduras
84. Hong Kong SAR, China
85. Hungary
86. Iceland
87. India
88. Indonesia
89. Iran
90. Iraq
91. Ireland
92. Isle of Man

93. Israel
94. Italy
95. Jamaica
96. Japan
97. Jordan
98. Kazakhstan
99. Kenya
100. Kiribati
101. Korea, Dem. People's Rep.
102. Korea, Rep.
103. Kuwait
104. Kyrgyz Republic
105. Laos
106. Latvia
107. Lebanon
108. Lesotho
109. Liberia
110. Libya
111. Liechtenstein
112. Lithuania
113. Luxembourg
114. Macao SAR, China
115. Madagascar
116. Malawi
117. Malaysia
118. Maldives
119. Mali
120. Malta
121. Marshall Islands
122. Mauritania
123. Mauritius
124. Mexico
125. Micronesia
126. Moldova
127. Monaco
128. Mongolia
129. Montenegro
130. Morocco
131. Mozambique
132. Myanmar
133. Namibia
134. Nauru
135. Nepal
136. Netherlands Antilles
137. Netherlands
138. New Caledonia
139. New Zealand
140. Nicaragua
141. Niger
142. Nigeria
143. North Macedonia
144. Northern Mariana Islands
145. Norway
146. Oman
147. Pakistan
148. Palau
149. Panama
150. Papua New Guinea
151. Paraguay
152. Peru
153. Philippines
154. Poland
155. Portugal
156. Puerto Rico
157. Qatar
158. Romania
159. Russian Federation
160. Rwanda
161. Samoa
162. San Marino
163. Sao Tome and Principe
164. Saudi Arabia
165. Senegal
166. Serbia
167. Seychelles
168. Sierra Leone
169. Singapore
170. Slovakia
171. Slovenia
172. Solomon Islands
173. Somalia
174. South Africa
175. Spain
176. Sri Lanka
177. St. Kitts and Nevis
178. St. Lucia
179. St. Vincent and the Grenadines
180. Sudan
181. Suriname
182. Sweden
183. Switzerland
184. Syria
185. Tajikistan
186. Tanzania

187. Thailand
188. Timor-Leste
189. Togo
190. Tonga
191. Trinidad and Tobago
192. Tunisia
193. Turkiye
194. Turkmenistan
195. Turks and Caicos Islands
196. Tuvalu
197. Uganda
198. Ukraine
199. United Arab Emirates
200. United Kingdom
201. United States
202. Uruguay
203. Uzbekistan
204. Vanuatu
205. Venezuela
206. Vietnam
207. Virgin Islands (U.S.)
208. West Bank and Gaza
209. Yemen
210. Zambia
211. Zimbabwe

Appendix B – Overview of Used Datasets

Contents of dataset:	**References:**
GDP (current US$) Dataset: World Development Indicators Country: 217 countries, 0 Aggregates Available time frame: 1960 - 2023	**The World Bank** World Bank. (2024). *World Development Indicators* [Dataset]. https://databank.worldbank.org/reports.aspx?source=2&series=NY.GDP.MKTP.CD&country#
Direction of Trade Statistics (DOTS) Exports and Imports by Areas and Countries Dataset: Imports, CIF from Partner Countries, US Dollars, Millions Country: China, Russia and USA (separately), in relation to all countries Available time frame: 1947 - 2024	**International Monetary Fund Data** IMF Data. (2024). *Direction of Trade Statistics (DOTS)* [Dataset]. https://data.imf.org/?sk=9d6028d4-f14a-464c-a2f2-59b2cd424b85
Formal Alliances (v4.1) Dataset: alliance_v4.1_by_member Available time frame: 1816 - 2012	**Correlates of War** Gibler, D. M. (2009). *International military alliances, 1648-2008 (v4.1)* [Dataset]. CQ Press. https://correlatesofwar.org/data-sets/formal-alliances/
Defence Cooperation Agreement Dataset: DCAD-v1.0-main Available time frame: 1980 - 2010	**Correlates of War** Kinne, B. J. (2020). The Defense Cooperation Agreement Dataset (DCAD) [Dataset]. *Journal of Conflict Resolution, 64*(4), 729-755. https://doi.org/10.1177/0022002719857796
Peacekeeping Database Dataset: country-level data Available timeframe: 1990-2018	**International Peace Institute (IPI)** International Peace Institute. (n.d.). *Peacekeeping Database* [Dataset]. https://www.ipinst.org/providing-for-peacekeeping-database?sp=28185#sub
Territorial Change, 1816-2018 (v6) Available timeframe: 1816-2018 Dataset: tc2018.csv	**Correlates of War** Tir, J., Schafer, P., Diehl, P. F., & Goertz, G. (2018). Territorial Changes, 1816– 2018: Procedures and data (v6) [Dataset]. *Conflict Management and Peace Science*, *16*(1), 89–97. ttps://doi.org/10.1177/073889429801600105
COW War Data, 1816-2007 (v4.0) Available time frame: 1816 - 2007 Dataset: The Inter-State War Data	**Correlates of War** Sarkees, M., & Wayman, F. (2010). *Resort to War, 1816-2007* [Dataset]. CQ Press. https://doi.org/10.4135/9781608718276
COW Country Codes This Dataset has been used to code other datasets when country codes are used instead of names of countries.	**Correlates of War** Correlates of War. (n.d.). *COW Country Codes* [Dataset]. https://correlatesofwar.org/data-sets/cow-country-codes-2/

Appendix C – Results of the Hausman Tests for all dependent variables

Variables Linear Regression

Alliances

```
        Hausman Test

data:  alliances ~ centralitychina + centralityrussia + centralityusa
chisq = 44.625, df = 3, p-value = 1.111e-09
alternative hypothesis: one model is inconsistent
```

➔ Fixed Effects Model provides a better model, because $p < 0.05$

DCA first signer

```
        Hausman Test

data:  DCAs1 ~ centralitychina + centralityrussia + centralityusa
chisq = 3.6878, df = 3, p-value = 0.2972
alternative hypothesis: one model is inconsistent
```

➔ Random Effect Model provides a better model, because $p > 0.05$

DCA second signer

```
        Hausman Test

data:  DCAs2 ~ centralitychina + centralityrussia + centralityusa
chisq = 8.8479, df = 3, p-value = 0.03138
alternative hypothesis: one model is inconsistent
```

➔ Fixed Effects Model provides a better model, because $p < 0.05$

Peacekeeping Missions

```
        Hausman Test

data:  peacemissions ~ centralitychina + centralityrussia + centralityusa
chisq = 27.436, df = 3, p-value = 4.769e-06
alternative hypothesis: one model is inconsistent
```

➔ Fixed Effects Model provides a better model, because $p < 0.05$

Peacekeeping Troops

```
        Hausman Test

data:  peacetroops ~ centralitychina + centralityrussia + centralityusa
chisq = 1.3195, df = 3, p-value = 0.7245
alternative hypothesis: one model is inconsistent
```

➔ Random Effect Model provides a better model, because $p > 0.05$

Variables Logistic Regression

Territorial Change

```
        Hausman Test

data:  territorychange ~ centralitychina + centralityrussia + centralityusa
chisq = 3.1394, df = 3, p-value = 0.3706
alternative hypothesis: one model is inconsistent
```

➔ Random Effect Model provides a better model, because $p > 0.05$

Territorial Gain

```
        Hausman Test

data:  territorygain ~ centralitychina + centralityrussia + centralityusa
chisq = 3.6015, df = 3, p-value = 0.3078
alternative hypothesis: one model is inconsistent
```

➔ Random Effect Model provides a better model, because $p > 0.05$

Territorial Loss

```
        Hausman Test

data:  territoryloss ~ centralitychina + centralityrussia + centralityusa
chisq = 5.2602, df = 3, p-value = 0.1537
alternative hypothesis: one model is inconsistent
```

➔ Random Effect Model provides a better model, because p > 0.05

War (model with missing values removed)

```
        Hausman Test

data:  war ~ centralitychina + centralityrussia + centralityusa
chisq = 3.1859, df = 3, p-value = 0.3638
alternative hypothesis: one model is inconsistent
```

➔ Random Effect Model provides a better model, because p > 0.05