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## **The effectiveness of EU sanctions: investigating the key drivers and conditions to reach the desired policy goals**

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# **The effectiveness of EU sanctions: investigating the key drivers and conditions to reach the desired policy goals**

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## **Abstract**

EU policymakers are increasingly using sanctions as a policy instrument within the framework of the EU's Common Foreign and Security Policy. This thesis aims to identify under what conditions the sanctions of the EU are most effective. Eight independent variables are identified as potential factors that could influence the effectiveness of sanctions, drawing from the International Relations (IR) theories of realism, liberalism and constructivism. Separate multivariate regression analyses are conducted for each IR theory, to assess the significance of the factors proposed by the theories. In addition, a comprehensive multivariate regression analysis is conducted, including the eight independent variables, in order to draw conclusions about the real-world scenario in which the multiple variables could interact. This analysis shows two significant results that influence the effectiveness of EU sanctions and would therefore be relevant for EU policymakers to understand while choosing their policy instrument and designing sanctions. Firstly, sanctions with higher costs imposed on the target demonstrate reduced effectiveness compared to those with lower costs. Secondly, the effectiveness of sanctions decreases when they are imposed on states possessing greater military capabilities. Yet, theoretical significance should not alone be paramount for societal relevance. Therefore, it would be relevant to further examine the variables that were only significant in the IR theory analyses or that indicated a large relation between the independent and dependent variable.

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## **Introduction**

Policymakers are increasingly relying on sanctions as a policy instrument. The number of sanctions enforced globally has doubled since 1990 (Felbermayr et al., 2020; Dean & Emerson, 2004). Over the past three decades the European Union (EU) was more than hundred times involved in imposing sanctions on a targeted state (Weber & Schneider, 2020). Sanctions are also increasingly imposed by other international organizations. During the period from 1945-1990 the United Nations (UN) Security Council enforced sanctions twice as a policy instrument. In the twelve years that followed, the Security Council has imposed sanctions even sixteen times (Brooks, 2002, p. 3).

Sanctions are policy instruments which are being used by sender states, in this case the EU, to change the behavior of the targeted state. Sanctions are typically viewed as a mean between diplomatic and military measures (Biersteker et al., 2016, pp. 222-223). The sanctions are an essential tool of the EU's Common Foreign and Security Policy to preserve peace, safeguard EU's values and promote democracy (European Council, n.d.). The imposition of these sanctions involves different EU actors. The Council makes decisions to adopt, lift or renew sanctions. EU Member States are responsible for the implementation of sanctions, while the European Commission is accountable for ensuring the uniform applications of the sanctions (European Union, 2023).

Yet, there is an ongoing academic debate about the effectiveness of sanctions. Many scholars maintain divergent views on how effective sanctions are and under what conditions sanctions are most effective (Pape, 1997). Galtung (1967), one of the first scholars who wrote about the effectiveness of sanctions, argued that sanctions are inherently not effective due to the problem of universality. If not all states in the world are involved in enforcing sanctions on the target, the targeted state can fall back on those states that did not support the sanctions. And even though all states would act as a block, the targeted state could depreciate on their stockpiles. Yet, Hufbauer et al. (1990, p. 158) demonstrated that in 34% of the 174 cases they examined sanctions were effective.

Assuming that sanctions can be effective, as highlighted by Hufbauer et al. (1990), the inquiry shifts towards identifying the conditions that lead to the highest effectiveness rate. In this thesis, the academic relevance is established by applying three IR theories to derive the conditions that potentially influence the effectiveness of sanctions. This approach is unique and contributes to the existing body of knowledge in the field. By explicitly utilizing these IR theories and integrating their insights into a single model, this research tries to fill the gap in the literature under what conditions sanctions are most effective. Moreover, this inquiry also has societal relevance, because EU policymakers are more often using sanctions as a policy instrument. In order to appropriately formulate the sanctions, policymakers require a comprehensive understanding of the most effective form of sanctions. If sanctions are imposed under these conditions, they are more likely to achieve the desired result, and people, time and resources have been used most effectively. Therefore, this thesis aims to address the following question:

*Under what conditions are sanctions, imposed by the European Union, effective?*

This study examines the effectiveness of sanctions imposed between 1990 and 2015. The study begins by reviewing existing literature to explore influential factors in determining the effectiveness of sanctions. Subsequently, independent variables that potentially influence the effectiveness of sanctions are derived from three IR theories. Then, the methodology section outlines the case selection, concepts, operationalization of the variables and method of analysis. Following this, multiple regression analyses are conducted, and the results are analyzed and interpreted. Finally, conclusions are drawn about which conditions are most effective concerning the real-world implications, accompanied by recommendations for policymakers and suggestions for further research.

### **Literature review**

Sanctions are policy instruments which are being used by sender states to change the behavior of the targeted state according to the policy objectives of the sender states (Biersteker et al., 2016, p. 222). The imposition of sanctions involves two stages. In the first stage, the threat stage, is the target warned of impending sanctions. When the target does not change its behavior, the second stage will start in which the sender will impose the sanctions (Hovi et al., 2005, p. 21). From previous literature, some conditions under which sanctions are most effective can be deduced.

Firstly, the effectiveness of sanctions depends on the amount of costs involved in the sanctions (Hovi et al., 2005, p. 21). It is commonly assumed that the higher the costs of the sanctions on the target, the more likely it is that the target will change its behavior. The effectiveness of sanctions would depend on the target's underestimation of the costs of the sanctions and the prompt recognition of this miscalculation just after the sanctions are imposed (Hovi et al., 2005, p. 21). Indeed, Hufbauer et al. (2007, p. 101) found that, on average, the costs borne by targeted states as a percentage of their gross national product (GNP) are twice as high in successful sanctions compared to those that are ineffective. Similarly, Drury (1998, p. 507) observed the same relationship between the costs borne by the target as a proportion of their GNP and the success rate of sanctions. However, when considering political costs and costs of implementing the changes, costly sanctions lead to less effectiveness. Hufbauer et al. (1990, p. 158) argued that sanctions were for 30% effective, when the sender demanded costly changes for the targeted state. In contrast, when the sender only demanded small changes, 50% of the sanctions were effective. So, the salience of the demand does not significantly affect the effectiveness of sanctions (Whang, 2010, p. 572). These contradicting outcomes are supported by the case study on Uzbekistan by Axyonova (2015). When the EU had imposed sanctions after demanding major changes to the legitimacy or stability of the regime, Uzbekistan did not comply with the sanctions. Yet, when smaller or vague demands were imposed, such as freeing a prisoner, the target was more likely to change its behavior.

Secondly, the effectiveness of sanctions depends on the policy objectives of the sanctions. A common classification of policy goals pertains to coercive, constraining and signaling sanctions. Coercive sanctions are used to change the target's behavior, constraining sanctions aim to thwart a target

from pursuing certain policy and signaling sanctions are imposed for sending a message to the target (Biersteker et al., 2016, pp. 225-226). According to Biersteker et al. (2016, p. 245), coercive sanctions are the least effective: only five out of fifty coercive sanctions worked. Constraining sanctions are slightly more effective: sixteen out of fifty-nine sanctions succeeded. Signaling sanctions have the highest effectiveness rate of 27%. Boogaerts and Drieskens (2020, pp. 87-89) applied this division of policy objectives to a case study on EU sanctions on the Middle East and North Africa. They found that coercive and constraining sanctions can have a positive effect on changing the targets behavior. However, signaling sanctions can have both a positive and negative influence. Signaling sanctions can only be effective if a key supporter of the undesired policy is targeted. Lindsay (1986) divided the policy objectives even in five types: compliance, subversion, deterrence, international symbolism and domestic symbolism. Lindsay (1986) suggested that the first three types of sanctions are not effective. Contrary, international and domestic symbolism can be effective, yet, the success of those sanctions depends on the amount of (international) publicity. Greater publicity increases the spread and impact of the message.

Thirdly, unilateral imposed sanctions are more effective than multilateral sanctions, except if multilateral sanctions are imposed through an established international institution (Bapat & Morgan, 2009, p. 1093; Kaempfer & Lowenberg, 1999; Miers & Morgan, 2002). Unilateral sanctions are more effective than multilateral sanctions, because sender states have cross-cutting interests and different goals towards the target. A sender state could for example suffer economic losses due to disruption in trade with or investments in the target. This complicates the construction of sanctions and results in ambiguous signals and tepid measures. Although ad-hoc coalitions may construct sanctions successfully during the bargaining stage, the enforcement stage may be compromised by domestic incentives that change the behavior of one of the sender states (Drezner, 2000, p. 25). The free-riding problem can occur in ad-hoc sanctioning coalitions, when sender states participate in the coalition to signal their support for the sanctions, but do not implement the sanctions in order to avoid the costs (Bapat & Morgan, 2009, p. 1093). Yet, if the sanctions are imposed by an established international institution the free-rider problem could be resolved. Through those institutions each sender loses its ability to cut a side deal with the target and thereby making the threat of sanctions more credible (Bapat & Morgan, 2009, p. 1093; Drezner, 2000; Milgrom et al., 1991).

Fourthly, sanctions are more effective when they are imposed on democratic regimes compared to authoritarian regimes (Brooks, 2002, p. 49; Dashit-Gibson et al., 1997, p. 1645). For instance, comprehensive trade and financial sanctions pressure on the macroeconomy, which will create pressure on the average voter and incentivize democratic leaders to change the policy. However, in authoritarian states these measures are counterproductive. The sanctions tend to weaken the middle class while leaving elites unharmed, who are the ones with the power to change the policies (Brooks, 2002, p. 49). Yet, if the sanctions restrict the regime's access to instruments of repression or if the sanctions provide encouragement to opposition forces in organizing collective action, then the price of repression might rise (Kaempfer et al., 2004, p. 48; Dashti-Gibson et al., 1997, p. 615). Peksen (2019, pp. 263-265)

elaborates on this argument by distinguishing between different types of authoritarianism. Sanctions imposed on single-party and military regimes are generally less effective than sanctions imposed on democratic regimes, because these regime types have strong coercive and institutional capacity to cope with the economic and political burdens. On the other hand, personalist regimes lack strong institutional capacity to defy sanctions, making them as vulnerable to the effect of sanctions as democratic regimes are.

Fifthly, the effectiveness rate of sanctions is higher when the sanctions are targeted on allied states, with which the sanctioning state has close cultural, historical or strategic ties (Kaempfer & Lowenberg, 1999, p. 55; Driscoll et al., 2010). EU sanctions are more likely to positively affect human rights situations in states with which it has closer links. Furthermore, allied targets comply with sanctions even when they possess the capacity to resist sanctions, while non-allied targets tend to resist even when they know that on average the sender is likely to continue sanctioning in the face of resistance (Whang, 2010, p. 572).

### **Theoretical framework**

As seen in the literature review, there are already many factors that influence the effectiveness of sanctions. Yet, this thesis derives from the IR theories of realism, liberalism and constructivism to explain under what conditions sanctions are effective.

#### *Realism*

Mearsheimer (1994) asserts that realism is based on five assumptions concerning the nature of the international system. Firstly, the international system is anarchic and composed of independent political units or states. Secondly, states possess military and economic capabilities, which provides them with the potential to harm or destroy other states (Mearsheimer, 1994, p. 10). The extent of states' capabilities defines its amount of power. Realism places great emphasis on power as the primary variable in explaining the general trends and outcomes of global politics over time (Morgenthau, 1948). The theory is preoccupied with the influence of the uneven distribution of power in the international society (Gstöhl & Schunz, 2021). Thirdly, a state cannot be certain about the intentions of other states. This does not imply that states have necessarily malicious intentions, but that uncertainty is unavoidable. Fourthly, the principal motive driving states is survival (Mearsheimer, 1994, p. 10). States' main focus is security maximization and its self-preservation (Gstöhl & Schunz, 2021). Lastly, states think strategically about how to survive in the international system (Mearsheimer, 1994, p. 10). Foreign policy will be ascertained through the rational examination of the benefits and consequences of acts (Morgenthau, 1948).

From a realist perspective, the effectiveness of sanctions increases when the costs of the sanctions on the target are higher than the behavioral change that is demanded by the sending states (Hovi et al., 2005, p. 21). The targeted state is assumed to make a rational decision based on a cost-benefit analysis of the imposed sanctions (Lawrence, 2021, p. 158). The greater the costs imposed by

the sanctions, and the greater the perceived threat to the survival of the state, the more likely the targeted state is to comply with the sanctions. This leads to the following hypothesis.

*H.1: If the costs of the EU-imposed sanctions on the targeted state increases, the effectiveness of sanctions will increase.*

Furthermore, realist scholars are mostly concerned with power dynamics and the unequal distribution of power among states. States are more powerful if they have more tangible military and economic capabilities to use (Gstöhl & Schunz, 2021). Greater capabilities imply that a state has significantly more means to exert influence on other states in the international order (Mearsheimer, 2006). Observed differences in state strategies and goals are reflected by an assessment of what can be accomplished within the external political context. This context is understood as being shaped by the distribution of economic and military power (Moravcsik, 1992, p. 12). Therefore, a state's response to external pressures is contingent upon the constraints imposed by its own military and economic capabilities.

*H.2: If the economic capabilities of the targeted state are lower, the effectiveness of sanctions will increase.*

*H.3: If the military capabilities of the targeted state are lower, the effectiveness of sanctions will increase.*

### *Liberalism*

From the liberalist perspective, governments can overcome the competitive and decentralized nature of the international system through cooperation, and can create a stable and open system, solve security dilemmas and pursue collective action (Ikenberry, 2012, p. 63). Conflicts of interests are reduced by interdependence, and cooperation is seen as the key to addressing global problems (Keohane & Nye, 1989, p. 6).

As shown in the literature review, unilateral imposed sanctions are more effective than multilateral imposed sanctions, except when they are imposed through an established institution (Bapat & Morgan, 2009, p. 1093). Through cooperation in institutions the free-rider problem can be resolved. By imposing sanctions through an institution, the sender loses its ability to cut a side deal with the target and thereby making the threat of sanctions more credible (Bapat & Morgan, 2009, p. 1093). So, if states want to cooperate, it is most effective when they cooperate through institutions, because the free-rider problem will be resolved.

*H.4: If sanctions are imposed multilateral with the UN and/or US instead of unilateral by the EU, the effectiveness of sanctions will increase.*

The more states cooperate and become interconnected, the more dependent they are on the actions of other states for the realization of their objectives (Ikenberry, 2012, p. 316). This interdependence is a result of various international transactions, such as flows of money, goods and people across international borders. If these transactions result in reciprocal costly effects, interdependence exists (Keohane & Nye, 1989, p. 6). Especially economic interdependence and linkages are strong due to the great amounts of import and export flows between states (Jørgensen, 2021, p. 153). Economic interdependence affects the effectiveness of sanctions because the mutual reliance between states is essential for their optimal functioning. If targeted states depend for a larger part on the sending states, sanctions cause more damage (Jørgensen, 2021, p. 153). This perspective diverges from the realist economic argument, as the realist argument only emphasizes having more tangible economic capabilities, like money, instead of the direct effects of states' interconnection with each other.

*H.5: If the economic interdependence between the targeted state and the EU is stronger, the effectiveness of sanctions will increase.*

Another way of created interdependence and strong political and economic linkages is through post-colonial relationships. States with post-colonial relationships trade more and have more interconnection with one another, because ties with former colonies are often still strong and people in the former colony speak the same language as the settler state, therefore, there is no language barrier (Bliss & Russett, 1998).

*H.6: If one of the EU Member States has post-colonial ties with the targeted state, the effectiveness of sanctions will increase.*

### *Constructivism*

The constructivist perspective holds that power is determined by the distribution of ideas and culture (Wendt, 1999, p. 371). Ideas, rather than material forces, determine the meaning and content of power and the strategies by which states pursue their interests (Wendt, 1999, p. 309). Norms, collective identities, political culture and transnational networks are important factors for constructivists (McCourt, 2022).

States relate with one another through ideas. The international system contains macro-level structures that socially construct the identities and interest of states (Wendt, 1999, p. 372). Societies of states emerge in different cultural and historical contexts, resulting in different constitutional structures characterized by varying conceptions of the moral purpose of the state and distinct ideas about procedural justice (Reus-Smit, 1997, p. 583). Depending on the political culture of a state, the social expectations about legitimate behavior and expectations about what a state can do and wants to do, are

formed (McCourt, 2022). Some states share the same ideas about legitimate behavior and will therefore act in the same way.

Previous literature showed that sanctions imposed on states with close cultural, historical or strategic ties to the sanctioning state are indeed more effective than if these ties did not exist (Kaempfer & Lowenberg, 1999). Targeted states close to sender states complied even with sanctions when they had the potential to resist the sanctions, while non-allied targets tend to resist even when they know that on average the sender is likely to continue sanctioning in the face of resistance (Whang, 2010, p. 572). A constructivist explanation for this phenomenon would be that targeted states with close links to the sender states have the same expectations about legitimate behavior, norms and ideas about what a state ought to do. Therefore, they will comply sooner with the sanctions.

*H.7: If targeted states are culturally close to the EU, the effectiveness of sanctions will increase.*

Moreover, states with the same practices and norms order themselves in diversity regimes, which are formal or informal legitimate units of political authority. All international societies are organized around different diversity regimes (Reus-Smit, 2017, p. 879). States sharing the same political regime tend to perceive a common political authority as legitimate. Consequently, they are more inclined to respond to sanctions imposed by a sender state that shares the same regime type. Therefore, sanctions imposed on democratic states will be more effective than on authoritarian states because the EU and EU Member States have democratic regime types.

*H.8: If sanctions are imposed on a target with the same political regime type as the EU, the effectiveness of sanctions will increase.*

## **Methodology**

To answer the research question and examine under what conditions the effectiveness of sanctions will increase, multiple multivariate regression analyses are conducted, utilizing the EUSANCT Dataset. This dataset is comprised of three prominent sanction data sources that have been developed in recent years, including the Threat and Imposition of Economic Sanctions Dataset, Hufbauer, Schott and Elliot Dataset and the GIGA Sanctions Dataset (Weber & Schneider, 2020).

The sanctions in the dataset were imposed on states between 1989-2015. The sanctions are of various origins including economic embargoes, import and export restrictions, diplomatic sanctions and arms embargoes. In addition, the sanctions could have been imposed for different purposes like leadership change, solve territorial dispute, improve human rights and fraud elections.

### *Case selection*

The choice was made to select all the cases in the EUSANCT Dataset in which the EU is the 'primary sender'. These sanctions are primarily designed and imposed by the EU, but may be imposed in combination with the US and/or UN (Weber & Schneider, 2020). The decision to not restrict to the cases in which the EU was the sole sender was made to avoid limiting the available cases to mere eighteen. Testing this small number of cases on eight independent variables leaves limited room for variation and may not produce significant results. By including cases in which the EU is the 'primary sender', the available cases expand to forty-one. However, it should be noted that coalition building with the US and/or UN may affect the results. Yet, the influence of this coalition building is relatively minor compared to selecting all cases in which the EU was involved, but not as 'primary sender'.

### *Conceptualization of effectiveness*

The concept 'effectiveness' can have different meanings for various scholars. In order to eliminate any potential disagreement regarding the definition of effectiveness, the concept is being clarified. After the conceptualization, this variable and the independent variables will be operationalized.

In this thesis, the effectiveness of sanctions imposed by the EU is the ability of the EU to shape the behavior of the target in accordance with the objectives it adopts on the issue (Thomas, 2012). Effectiveness is the degree in which purposive attainment of external objectives is reached (Gstöhl & Schunz, 2021). Effectiveness is closely linked with the power of an actor. Yet, power is mere a capacity: the ability to produce intended effects. If an actor is able to convert this capacity into actual influence by changing other actors' behavior, preferences or beliefs, an actor is effective (Gstöhl & Schunz, 2021).

### *Operationalization dependent variable: effectiveness of sanctions*

In the EUSANCT Dataset the HSE 'Success Score' is used to measure effectiveness. This 'Success Score' is the product of two other variables. Firstly, the variable 'Policy Result' which indicates up to which degree the goals stated by the sender are realized. This ordinal variable exists of four scores: 'Failed Outcome', 'Unclear but Possibly Positive Outcome', 'Positive Outcome' and 'Successful Outcome'. Secondly, the variable 'Sanction Contribution', which assesses the sanction's contribution to the achievement of the goals of the sender. This variable is also ordinal and is measured in four categories: 'Negative Contribution', 'Little or No Contribution', 'Substantial Contribution' and 'Decisive Contribution' (Weber & Schneider, 2020). Thus, the dependent variable includes the result of the sanction and the contribution of the sanction to access this result (Hufbauer et al., 2007, p. 50).

The HSE 'Success Score' ranges in value from 1 to 16. A score of 1 indicates that the EU failed to achieve its goals or has been left worse off than before the sanctions were imposed. Scores between 2 and 8 indicate that the sanctions had a negligible to moderate effect in contributing to the desired outcome. A score of 9 means that sanctions made a substantial contribution to the sender's objectives, with partial realization of the intended goals. A score of 16 means that the sanctions had a successful

outcome in the sense that the EU's goals were largely or entirely realized and sanctions had a decisive contribution (Hufbauer et al., 2007, pp. 50-51).

#### *Operationalization independent variables*

To test the hypotheses, independent variables from the dataset are used or added to the dataset to perform the multivariable regression analyses. Table 1 provides an overview of the hypotheses per IR theory and corresponding operationalized independent variables.

Firstly, to measure the effectiveness of sanctions as the sanctions' costs on the target increases, the variable 'Costs of Sanction' will be used. This variable is the product of two variables: the 'Imposed Sanction's Economic Costs' which is a proxy for the economic costs of the sanctions overall and the 'Imposed Sanction's Target Costs' which is a proxy for the general costs of the sanctions on the target. The variable 'Costs of Sanction' will be measured on a scale from 1 to 36 (Weber & Schneider, 2020). A score of 1 means that sanctions had little costs on the economy and the target, for example just imposing aid sanctions. A score of 36 means that the sanctions have high costs, such as a complete economic embargo.

Secondly, the effect of economic capabilities of a targeted state on the effectiveness of sanctions is measured with the variable 'Economic Capabilities' (Hufbauer et al., 2007). This variable exits out of the gross domestic product (GDP) of each targeted state. The GDP is considered the most fundamental yardstick in devising economic policy and therefore used here (Watanabe et al., 2018, pp. 226-227). GDP values were obtained from the World Developments Indicator database (World Bank, 2016). The GDP from the year 2015 was chosen because the EUSANCT dataset includes cases up to 2015.

Thirdly, to measure the effect of military capabilities of a targeted state on the effectiveness of sanctions the variable 'Military Capabilities' is created. This variable exits out of the Global Militarisation Index (GMI) (Moemcken et al., 2020). The GMI compares spending on the military and military equipment, with spending on other areas of society and thus allows statements about the social weighting of the military. To compose the measure, different aspects of militarisation such as expenditures, personal and heavy weapons are included in calculating the amount of militarisation (Moemcken et al., 2020). The level of militarisation is measured on a scale from 0 to 500, where a score of 500 represents the highest level of militarisation. The GMI from the year 2015 was chosen, because the EUSANCT Dataset includes cases up to 2015.

Fourthly, to measure whether sanctions are more effective unilaterally imposed or multilaterally (through an international organization), the dichotomic variable 'Multilateral Sanction' is created. This variable is coded 1 when the sanctions are imposed multilaterally by the UN, US and EU and coded 0 if the sanction is imposed solely by the EU.

Fifthly, to measure the effect of economic interdependence on the effectiveness, the amount of import and export between the targeted state and the EU will be used in the new variable 'Economic Interdependence' (Hufbauer et al., 2007). The process of trade in which goods, services and humans

cross the national border increases the economic interdependence between states or the EU and states (Gómez et al., 2013, p. 1632). Therefore, the variable 'Economic Interdependence' is the proportion of the targeted state's total trade that is imported from the EU and exported to the EU. This percentage is obtained through the European Commission Statistics on Trade per trading partner (*EUtrade Statistics, 2023; EU member profile, n.d.; EU trade relationships by country/region, 2023*)

Sixthly, the effect of post-colonial ties on the effectiveness of EU's sanctions will be measured by the new dichotomic variable 'Post-Colonial Ties'. If any of the EU Member States has post-colonial ties with the targeted state than the case receives a 1. If no EU Member State has post-colonial ties, the case gets a 0. The regression analysis compares the effectiveness of sanctions between the two groups, with or without post-colonial ties.

Seventhly, the variable 'Cultural Distance' is created to assess the effect of cultural distance between the EU and the targeted state. The Hofstede Dimensions (power distance, uncertainty avoidance, individualism, masculinity, long term orientation and indulgence (Hofstede, 2011)) are commonly used to measure cultural values and distance (Daniels & Greguras, 2014; Kaasa et al., 2014). The dimension 'power distance' is selected for this study because other taxonomies of cultural values all have a cultural value that reflects power. Power distance is the degree to which societies accept inequalities. High power cultures view individuals with power as superior and paternalistic (Daniels & Greguras, 2014). Since values for the dimensions were only determined for states, the average value of EU Member States before the 2004 enlargement was used for a comparison with the targeted state values. This decision was made because many sanctions from the EUSANCT Dataset were implemented before the enlargement, and the cultural dimensions of the twelve states that joined the EU after 2004 have different values than the classic Western Member States. The mean value of these states on the dimension 'power distance' is 47,4.

Lastly, the effect of the regime type on the effectiveness of sanctions will be measured by the new dichotomic variable 'Political Regime Type'. The regime classification is derived from the Global State of Democracy, which measures the level of democracy in a state on five attributes: representative government, fundamental rights, checks on government, impartial administration and participatory engagement (*The Global State of Democracy, n.d.*). If the targeted state has a democratic political regime this variable is coded 0. If the targeted state has an authoritarian political regime this variable is coded 1. The regression analysis compares the effectiveness of sanctions between the two groups.

**Table 1. IR theories: hypotheses and operationalization**

<b>IR theory</b>	<b>Hypothesis</b>	<b>Name independent variable</b>	<b>Scale/values independent variable</b>
Realism	H.1: If the costs of the EU-imposed sanctions on the targeted state increases, the effectiveness of will also increase.	Costs of Sanctions	Scale 1-36 (1 = little costs, 36 = big costs)
	H.2: If the economic capabilities of the targeted state are lower, the effectiveness of sanctions will increase.	Economic Capabilities	Every number in million dollars
	H.3: If the military capabilities of the targeted state are lower, the effectiveness of sanctions will increase.	Military Capabilities	Scale 0-500 (0 = lowest level of militarisation, 500 = highest number of militarisation)
Liberalism	H.4: If sanctions are imposed multilateral with the UN and/or US instead of unilateral by the EU, the effectiveness of sanctions will increase.	Multilateral Imposed Sanction	Dichotomic (0 = unilaterally/US, 1 = institution/EU)
	H.5: If the economic interdependence between the targeted state and the EU is stronger, the effectiveness of sanctions will increase.	Economic Interdependence	Percentage on a scale 0-100
	H.6: If one of the EU Member States has post-colonial ties with the targeted state, the effectiveness of sanctions will increase.	Post-Colonial Ties	Dichotomic (0 = no post-colonial ties, 1 = post-colonial ties)
Constructivism	H.7: If targeted states are cultural close to the EU, the effectiveness of sanctions will increase.	Cultural Distance	Scale between 0-100 (0 = no cultural distance, 100 = total cultural distance)
	H.8: If sanctions are imposed on a target with the same political regime type as the EU, the effectiveness of sanctions will increase.	Political Regime Type	Dichotomic (0 = democratic regime 1 = authoritarian regime)

*Method of data analysis*

To address the research question and test the eight hypotheses, multiple multivariate regression analyses are conducted. Initially, a smaller multivariate regression analysis will be performed for each IR theory, compromising the independent variables related to that theory. The results of these analyses will be used to assess the significance of the factors proposed by each theory.

In addition, a bigger multivariate regression analysis will be performed, including all the eight independent variables (the Comprehensive Model). This analysis is particularly important because it pertains to the real-world scenario. The three smaller regression analyses explain the effectiveness of sanctions only from their theoretical perspective, while in reality all these factors may play a role and interact with one another to influence the effectiveness of sanctions. The Comprehensive Model will be used to interpret the coefficients and derive conclusions regarding the conditions under which sanctions are most effective.

### **Data modification and assumptions**

The four regression analyses are tested for six assumptions: independent error, multicollinearity, linearity, heteroskedasticity, normal distribution and outliers (Field, 2018). The outputs are listed in Appendix B. No assumption was violated.

Data modification was applied prior to conducting the regression analyses, because the dataset had missing values in three independent variables. Because of the missing data, twenty out of the forty-one cases could be used for the Comprehensive Model, which led to little variance and multicollinearity. To solve this problem the missing values of the variable 'Costs of Sanctions' were filled with the median value of 8, resulting in twenty-seven usable cases in the Comprehensive Model. This approach was deemed appropriate due to the variable's normal distribution and lack of outliers, which ensured that filling the missing values with the median value did not affect the dataset's dispersion.

To test the implications of this modification, an additional regression analysis was performed (Appendix B.1.7). This extra analysis included the three realist independent variables and excluded the supplemented data for the 'Costs of Sanctions' variable. The coefficients obtained from this analysis (Appendix B.1.7) were found to be similar to those obtained in the original analysis (Appendix A.1.2), indicating that the data modification did not have a significant impact on the result. Therefore, all the regression analyses were performed with the supplemented independent variable.

Furthermore, for each IR theory another additional regression analyses was conducted, because the Comprehensive Model included a smaller number of cases (27) than the IR theory analyses. These new analyses included only the twenty-seven cases used in the Comprehensive Model. The results of these new analyses were compared to those obtained at first. If the coefficients of both IR theory analyses were similar, it would suggest that any change in the coefficients of the independent variables in the Comprehensive Model, compared to the regression analyses of the IR theories, were due to interactions between the variables, rather than the smaller number of cases.

### **Analysis and results**

The outputs of the seven multivariate regression analyses (three IR theory analyses, the Comprehensive Model, three IR theory with twenty-seven cases) can be found in Appendix A. The results of the three IR theory analyses and the Comprehensive Model can be found in table 2.

**Table 2. Regression analyses: realism, liberalism, constructivism and the complete model including all factors**

	<b>Realism</b>	<b>Liberalism</b>	<b>Constructivism</b>	<b>Complete Model</b>
(Constant)	12,190*** (2,977)	3,286 (1,798)	6,893*** (1,059)	16,908*** (3,517)
Costs of sanctions	-0,149 (0,245)			-0,485* (0,212)
Economic capabilities	-0,001 (0,002)			0,000 (0,001)
Military capabilities	-0,018* (0,008)			-0,025* (0,009)
Multilateral sanctions		1,732 (1,131)		-0,526 (1,178)
Economic interdependence		0,070* (0,034)		0,023 (0,037)
Post-colonial ties		0,707 (1,271)		-0,793 (1,736)
Cultural distance			0,088** (1,260)	0,041 (0,037)
Political regime type			-5,076*** (1,260)	-2,772 (1,643)
R <sup>2</sup>	0,262	0,135	0,442	0,739
Adj. R <sup>2</sup>	0,190	0,065	0,395	0,623
N	35	41	27	27

Note: Regression coefficients with standard error in brackets.

\*\*\*p < 0,001 \*\*p < 0,01 \*p < 0,05

### *IR Theory Models*

The theoretical analyses of IR theories offer valuable perspectives on which theory is the best to examine the effectiveness of sanctions and identify the key variables that contribute to their success. Firstly, from the realist perspective, the variable ‘Military Capabilities’ has significant influence on the effectiveness of sanctions (B = -0.018, p = 0.042). If the military capabilities of the targeted state increases 1 point (on a scale of 0-500), then the effectiveness decreases with 0,018.

Secondly, the liberalist variable ‘Economic Interdependence’ has a significant positive effect on the effectiveness of sanctions (B = 0,070, p = 0,048), suggesting that if there is more trade between the EU and the targeted state, imposing sanctions would be 0,07 points more effective. Thirdly, the constructivist regression analysis includes two significant variables. Cultural distance has a significant positive effect on the effectiveness of sanctions (B = 0,088, p = 0.006). If the cultural distance between the EU and the targeted state is bigger, the imposition of sanctions will be more effective. In addition, the political regime type has also a significant effect on the effectiveness of sanctions (B = -5,076, p < 0,001). If sanctions are imposed on a democratic regime, they are 5,076 points (on a scale of 16) more effective than if they were imposed on an authoritarian regime.

Furthermore, the  $R^2$  adj. shows that from theoretical perspectives, constructivism is the best explanatory model. 39,5% of the variance in the dependent variable is explained in this model, in comparison with 19,0% in the realist model and 6,5% in the liberalist model.

### *Comprehensive Model*

However, in order to further assess the explanatory variables for the effectiveness of sanctions in a real-world situation, a comprehensive model has been conducted as well, containing all eight variables. The interaction between the eight independent variables in the Comprehensive Model can influence the coefficients. To rule out changes due to the smaller case selection, three IR theory regression analyses were rerun with only the 27 cases which were included in the Comprehensive Model. In table 3 the outputs prior to the data modification and after data modification (including only the 27 cases) are shown.

In the Comprehensive Model two realist variables have a significant negative relation with the effectiveness of sanctions. Firstly, if the costs of sanctions increase, the effectiveness decreases ( $B = -0,485$ ,  $p = 0,035$ ), which contradict the hypothesis. A similar relation was found in the realist analysis, although the coefficient ( $B = -0,149$ ) was not significant and deviated from the coefficient in the Comprehensive Model. The deviation in the coefficient may be attributed to missing cases, as the coefficient in the realist analysis with twenty-seven cases was  $-0,429$ , which is much closer to the coefficient in the Comprehensive Model. Secondly, the target's military capabilities also have a negative significant effect on the effectiveness of sanctions ( $B = -0,025$ ,  $p = 0,012$ ). This finding corresponds with the hypothesis and suggests that if the military capabilities of a target increase, the effectiveness will decrease. In contrast, the third variable 'Economic Capabilities' shows that there is no relation between the tangible economic capabilities of the target ( $B = 0,000$ ,  $p = 0,841$ ) and the effectiveness of sanctions. This contradicts the hypothesis.

The three variables from the liberalist theory are not significant in the Comprehensive Model. Firstly, if sanctions are multilaterally imposed by the EU and the US and/or UN, sanctions are less effective than imposed unilateral by the EU ( $B = -0,025$ ,  $p = 0,661$ ), which contradicts the hypothesis. Noticeable, both liberalist analyses show an opposite, positive relation between this variable and the effectiveness of sanctions ( $B = 1,732$  &  $B = 1,286$ ). From this finding can be concluded that the change of the coefficient in the Comprehensive Model is caused by the interaction with other variables and not due to the smaller number of cases included in the model.

Secondly, the variable 'Economic Interdependence' has a positive effect on the effectiveness of sanctions ( $B = 0,023$ ,  $p = 0,546$ ), which is in line with the hypothesis. In both liberalist analyses this same relation is found to be significant. The non-significant coefficient in the Comprehensive Model is therefore caused by the interaction with other variables.

Thirdly, the variable 'Post-Colonial Ties' demonstrates a negative coefficient ( $B = -0,793$ ,  $p = 0,653$ ) in the Comprehensive Model, suggesting that if there are no post-colonial ties between the target

and any EU Member State, sanctions would be 0,793 points more effective. This finding contradicts the hypothesis. Yet, the constructivist analysis revealed a positive relation ( $B = 0,707$ ,  $p = 0,581$ ). These contradicting findings could be due to twelve of twenty cases with post-colonial ties being excluded from the Comprehensive Model due to missing cases in other independent variables. Indeed, the additional constructivist analysis, like the Comprehensive Model, revealed a negative relation ( $B = -0,166$ ,  $p = 0,925$ ).

**Table 3. Regression analyses to test the smaller number of cases: the first columns are the original IR theory analyses (also in table 2, prior to data modification), the second columns are the extra tested analyses after data modification.**

	Realism prior	Realism after	Liberalism prior	Liberalism after	Constructivism prior	Constructivism after
(Constant)	12,190*** (2,977)	17,667*** (2,965)	3,286 (1,798)	2,142 (2,341)	6,893*** (1,059)	6,893*** (1,059)
Costs of sanctions	-0,149 (0,245)	-0,429 (0,229)				
Economic capabilities	-0,001 (0,002)	-0,001 (0,002)				
Military capabilities	-0,018* (0,008)	-0,029* (0,008)				
Multilateral sanctions			1,732 (1,131)	1,286 (1,420)		
Economic interdependence			0,070* (0,034)	0,100* (0,044)		
Post-colonial ties			0,707 (1,271)	-0,166 (1,736)		
Cultural distance					0,088** (1,260)	0,088** (1,260)
Political regime type					-5,076*** (1,260)	-5,076*** (1,260)
R <sup>2</sup>	0,262	0,520	0,135	0,242	0,442	0,442
Adj. R <sup>2</sup>	0,190	0,457	0,065	0,143	0,395	0,395
N	35	27	41	27	27	27

Note: Regression coefficients with standard error in brackets.

\*\*\*p < 0,001 \*\*p < 0,01 \*p < 0,05

The constructivist variables were significant in the theoretical analysis, but not in the Comprehensive Model. Yet, the direction of the relations stayed the same. The variable ‘Cultural Distance’ has a positive effect on the effectiveness of sanctions ( $B = 0,041$ ,  $p = 0,283$ ). If the cultural distance between the target and the EU increases, the effectiveness increases. This contradicts the hypothesis. The variable ‘Political Regime Type’ has a negative effect on the effectiveness ( $B = -2,772$ ,  $p = 0,109$ ), suggesting that if sanctions are imposed on a democratic regime, the sanctions would be 2,772 points higher in effectiveness than if they were imposed on an authoritarian regime. This is in line with the hypothesis.

## Interpretation and explanations

The variables 'Military Capabilities' and 'Costs of Sanctions' were found to be significant in the Comprehensive Model and in the IR theory analyses some other variables showed a significant relation. This sections aims to provide potential explanations for the findings and interpretation of the results.

### *Interpreting realist variables*

Although the constructivist analysis explains the most variance in the dependent variable, from a more practical standpoint realism seems to be the best explanatory IR theory. Two of the three realist variables are significant in the Comprehensive Model and the variable 'Military Capabilities' has also a significant relation with the dependent variable in the realist analysis.

Firstly, the Comprehensive Model shows that if costs on the target increase 1 point (36-points scale), the effectiveness of sanctions decreases 0,485 point on a 16-points scale. Therefore, higher costs leads to a decrease in effectiveness in large increments. This significant finding contradicts the realist perception that sanctions would be more effective if costs of the sanctions increase. Realists assume that a cost-benefit analysis is made to deal with the sanctions (Lawrence, 2021, p. 158). Yet, the finding is substantiated by prior literature. Hufbauer et al. (2007) found that effective sanctions borne twice as high costs on the target as percentage of their GNP compared to ineffective sanctions. However, the effectiveness of sanctions may be diminished by taking into account political costs or implementing big changes, beyond mere economic costs (Hufbauer et al., 1990; Whang, 2010). Given that the 'Costs of Sanctions' variable includes economic costs as well as general costs, a negative relationship may be consistent with previous literature.

Secondly, according to realists, the distribution of military and economic capabilities ensures how states respond to pressure from other states and how much power a state has (Mearsheimer, 1994, p. 10). A state with more capabilities will feel less pressure to change its behavior in response to imposed sanctions (Moravcsik, 1992, p. 12). For military capabilities this theory and the hypothesis are correct, suggesting that more military capabilities will lead to less effective sanctions. Yet, the results show that economic capabilities do not affect the effectiveness of sanctions. If a country's GDP increases by 1 million, the effectiveness of sanctions does not change. An explanation for this finding could be that states with fewer economic capacities look for third states, *black knights*, to reduce the pressure and costs of sanctions (Pape, 1997, p.107). These *black knights* emerge as a mean to balance power against a more powerful state. The combination of economic capabilities of the targeted state and *black knights* will give them more absolute power and protect them against hegemons (Early, 2009, p. 67). Thus, it is possible that a state's economic capabilities do not necessarily dictate the effectiveness of sanctions, as states can form coalitions with other states to increase economic capabilities and power, and thereby reduce the costs of sanctions and balance power against sanctioning state(s).

### *Interpreting liberalist variables*

The liberalist analysis shows that the variables only explain 6,5% of the variance in the dependent variable, and in the Comprehensive Model, no variable is found to be significant. Yet, the liberalist perspective indicates a significant relation between economic interdependence and the effectiveness of sanctions, a finding that aligns with the hypothesis and prior research. When the interconnectedness and mutual reliance between the EU and the targeted state is stronger and the trade between the EU and the target increases 1%, sanctions cause 0,023 point more damage (Jørgensen, 2021, p. 153). Although this finding is also significant in the liberalist analysis, and slightly higher ( $B = 0,07$ ), the findings suggest that a substantial increase in trade would be necessary for sanctions to significantly enhance their effectiveness.

Onward, the Comprehensive Model shows that multilateral sanctions imposed by the EU in combination with the UN and/or US are 0,526 point less effective than unilateral imposed sanctions. This finding contradicts previous literature which showed that sanctions imposed through international institutions were more effective than multilateral sanctions, because cooperation through institutions can resolve the free-riding problem (Bapat & Morgan, 2009, p. 1093). However, it could be possible that the potential benefits of international institutions in enhancing cooperation and solving the free-rider problem are diminished when sanctions are imposed through collaboration between the EU, US or UN rather than being primarily imposed through institutions like the EU or UN. In that case, the data may support earlier findings, suggesting that unilateral sanctions are more effective than multilateral imposed sanctions (Bapat & Morgan, 2009).

The third liberalist variable 'Post-Colonial Ties' has a negative relation with the effectiveness of sanctions, which contradicts the hypothesis. Although this may be due to the missing cases, another explanations could be that the former colonizing states have no legitimacy in the post-colonial targeted states, because of their earlier role in that state. According to some post-colonial scholars (neo)colonialism and post-colonial ties are seen as benevolent (Uzoigwe, 2019). Sanctions imposed by former colonizing states could be seen as illegitimate and therefore not change the behavior of the targeted state.

### *Interpreting constructivist variables*

The constructivist analysis explains 39,5% of the variance in the dependent variable, which is much higher compared to the other IR theories, and it shows two significant variables. Although the coefficients are not significant in the Comprehensive Model, the same relations are found. The analyses show that cultural distance between the EU and the targeted state has a positive effect on the effectiveness of sanctions. If the cultural distance increases with 1 point on a 100-points scale, the effectiveness increases with 0,041 point. A substantial increase in cultural distance is required for a corresponding significant increase in the effectiveness of sanctions, as the increments observed are relatively modest. Moreover, the findings contradict the hypothesis and previous literature, which

proposed that sanctions would be more effective on targets that are culturally and historically close to the EU (Kaempfer & Lowenberg, 1999; Whang, 2010). An explanation for these conflicting results is that states that are culturally and historically close to the EU Member States are EU Member States themselves. States subjected to EU sanctions are mostly non-Western states. Therefore, measuring cultural distance may not capture the full range of potential differences between sender and target states. Further research could examine the relation between power distance and the effectiveness of sanctions, as well as additional cultural dimensions and their influence on the effectiveness.

The finding that imposing sanctions on democratic regimes, rather than on authoritarian regimes, is 2,7 points more effective, is consistent with previous literature. This literature showed that a state's political culture, including the social expectations about legitimate behavior and expectations of what a state can do and wants to do, shapes its response to sanctions (McCourt, 2022). Thus, sanctions are more effective when imposed on democratic states since they share similar ideas with the democratic EU and EU Member States about legitimate behavior, which makes them more likely to comply with the sanctions.

## **Conclusions**

This thesis investigated under what conditions EU sanctions are most effective through exploring the impact of eight independent factors derived from three IR theories. The research question is answered through conducting seven multivariate regression analyses. Firstly, two analyses for each IR theory to examine the theoretical significant factors and test for missing cases. Secondly, the Comprehensive Model, which incorporates the eight independent variables.

The IR theory analyses indicate that constructivism is the most suitable IR theory to explain the effectiveness of sanctions, as it highlights the significant impact of cultural distance and political regime type. This research is academically relevant because it provides the insight that from a theoretical perspective the constructivist factors best explain the effectiveness of sanctions. Yet, from a more practical standpoint, realism seems the best explanatory theory, because the only two significant variables in the Comprehensive Model, are derived from realism.

In addition, the Comprehensive Model provides two conclusions about the conditions under which sanctions are most effective in the real-world scenario. These conclusions are especially relevant for EU policymakers, who are increasingly using sanctions as a policy instrument. It is important for those policymakers to understand when to use sanctions and how to design sanctions, so the most successful results will be reached and money, people and time are effectively used. Firstly, EU policymakers should impose sanctions that bear lower costs on the target or that require smaller changes, because these sanctions are more effective compared to those that bear high costs. Secondly, the effectiveness of sanctions is reduced when they are imposed on states with greater military capabilities. Thus, if the EU policymakers want to target a big military power it could be wise to consider another policy instrument.

Theoretical significance should not alone be paramount for societal relevance. If the non-significant relations between the factors and the effectiveness of sanctions does exist in the real-world, policymakers ought to give careful attention to these outcomes. Especially those variables that were only significant in the IR theory analyses or indicated a large relation between the independent and dependent variable should be further investigated. For instance, the political regime type of the targeted state indicates large differences in the effectiveness of sanctions imposed on democratic regimes compared to authoritarian regimes. Sanctions imposed on authoritarian regimes seem to be far less effective. Therefore, if policymakers want to target an authoritarian state, it could be useful to consider other policy instruments. Furthermore, EU policymakers could use sanctions as a more effective policy instrument imposed on major trade partners compared to less interconnected states. Sanctions may serve as a viable policy tool for inducing behavioral changes in states with which the EU engages in significant export and import activities. This is due to the increased mutual reliance between the EU and the targeted state, which amplifies the potential impact of sanctions on the targeted state's optimal functioning.

Further research could also focus on creating a new dataset including a sufficient number of cases in which the EU unilaterally imposes sanctions. This would provide more accurate results about the effectiveness of EU imposed sanctions and illuminate the effect of the multilateral imposed cases in this dataset. The variable 'Multilateral Imposed Sanctions' already provides a marginally explanation about the effect of these multilateral imposed sanctions in the dataset. This variable showed a negative influence on the effectiveness of sanctions, suggesting that the results could be overall less effective than in reality. Yet, this finding was not significant. In addition, the extended dataset could also solve the problem of the missing cases, which will lead to more reliable results.

Finally, the eight independent variables, which were included in the Comprehensive Model, explain 62,3% of the variance in the dependent variable. Thus, it is evident that additional variables exist, which exert an influence on the effectiveness of sanctions. Further research should be conducted to examine more factors, derived from IR theories or previous literature.

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## **Appendix A: Analyses**

The outputs of seven multivariate regression analyses can be found in Appendix A. Firstly, the three multivariate regression analyses for each IR theory. The results of these analyses will be used to assess the significance of the factors proposed by each IR theory. Secondly, a bigger multivariate regression analysis, named the Comprehensive Model. This analysis is particularly important because it pertains to the real-world scenario. The three smaller regression analyses explain the effectiveness of sanctions only from their theoretical perspective, while in reality all these factors may play a role and interact with one another to influence the effectiveness of sanctions. The Comprehensive Model will be used to interpret the coefficients and derive conclusions regarding the circumstances under which sanctions are most effective. Thirdly, three extra tested regression analyses for each IR theory. These extra analyses include only the twenty-seven cases which are used in the Comprehensive Model. The results of these new analyses were compared to those obtained at first. If the coefficients were similar, it would suggest that any changes in the coefficients of the independent variables in the Comprehensive Model, compared to the regression analyses of the IR theories, were due to interactions between the variables, rather than the smaller number of cases.

## A.1 Realism

### A.1.1 Descriptive analysis

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
cost of sanctions on target	41	1	12	7,93	2,464
economic capabilities in billions	41	1,00	1363,00	235,9237	410,05244
military capabilities	35	77,81	450,56	239,9921	94,45926
Valid N (listwise)	35				

### A.1.2 Linear regression

#### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	military capabilities, cost of sanctions on target , economic capabilities in billions <sup>b</sup>	.	Enter

a. Dependent Variable: effectiveness rate of sanctions

b. All requested variables entered.

#### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,512 <sup>a</sup>	,262	,190	3,494	2,429

a. Predictors: (Constant), military capabilities, cost of sanctions on target , economic capabilities in billions

b. Dependent Variable: effectiveness rate of sanctions

#### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	134,263	3	44,754	3,666	,023 <sup>b</sup>
	Residual	378,480	31	12,209		
	Total	512,743	34			

a. Dependent Variable: effectiveness rate of sanctions

b. Predictors: (Constant), military capabilities, cost of sanctions on target , economic capabilities in billions

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	12,190	2,977		4,095	<,001		
	cost of sanctions on target	-,149	,245	-,099	-,609	,547	,908	1,102
	economic capabilities in billions	-,001	,002	-,135	-,690	,495	,618	1,618
	military capabilities	-,018	,008	-,427	-2,125	,042	,589	1,699

a. Dependent Variable: effectiveness rate of sanctions

## A.2 Liberalism

### A.2.1 Descriptive analysis

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
multilateral imposed sanctions	41	0	1	,51	,506
economic interdependence	41	3,7	65,0	31,798	18,9372
post-colonial ties	41	0	1	,49	,506
Valid N (listwise)	41				

### A.2.2 Linear regression

#### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	post-colonial ties , multilateral imposed sanctions, economic interdependence <sup>b</sup>	.	Enter

a. Dependent Variable: effectiveness rate of sanctions

b. All requested variables entered.

#### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,367 <sup>a</sup>	,135	,065	3,545	2,311

a. Predictors: (Constant), post-colonial ties , multilateral imposed sanctions, economic interdependence

b. Dependent Variable: effectiveness rate of sanctions

#### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	72,584	3	24,195	1,925	,142 <sup>b</sup>
	Residual	464,976	37	12,567		
	Total	537,561	40			

a. Dependent Variable: effectiveness rate of sanctions

b. Predictors: (Constant), post-colonial ties , multilateral imposed sanctions, economic interdependence

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3,286	1,798		1,827	,076		
	multilateral imposed sanctions	1,732	1,131	,239	1,532	,134	,959	1,043
	economic interdependence	,070	,034	,364	2,044	,048	,739	1,354
	post-colonial ties	,707	1,271	,098	,556	,581	,759	1,318

a. Dependent Variable: effectiveness rate of sanctions

## A.3 Constructivism

### A.3.1 Descriptive analysis

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
cultural_power distance	27	-34,4	47,6	28,674	21,6616
political regime type of targeted state: democracy or authoritarian	41	0	1	,63	,488
Valid N (listwise)	27				

### A.3.2 Linear regression

#### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	political regime type of targeted state: democracy or authoritarian, cultural_power distance <sup>b</sup>		Enter

a. Dependent Variable: effectiveness rate of sanctions

b. All requested variables entered.

#### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,665 <sup>a</sup>	,442	,395	3,037	2,228

a. Predictors: (Constant), political regime type of targeted state: democracy or authoritarian, cultural\_power distance

b. Dependent Variable: effectiveness rate of sanctions

#### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	175,097	2	87,549	9,489	<,001 <sup>b</sup>
	Residual	221,421	24	9,226		
	Total	396,519	26			

a. Dependent Variable: effectiveness rate of sanctions

b. Predictors: (Constant), political regime type of targeted state: democracy or authoritarian, cultural\_power distance

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized	t	Sig.	Collinearity Statistics	
		B	Std. Error	Coefficients Beta			Tolerance	VIF
1	(Constant)	6,893	1,059		6,508	<,001		
	cultural_power distance	,088	,029	,487	2,985	,006	,872	1,146
	political regime type of targeted state: democracy or authoritarian	-5,076	1,260	-,658	-4,030	<,001	,872	1,146

a. Dependent Variable: effectiveness rate of sanctions

## A.4 Comprehensive model

### A.4.1 Descriptive analysis

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
cost of sanctions on target	41	1	12	7,93	2,464
economic capabilities in billions	41	1,00	1363,00	235,9237	410,05244
military capabilities	35	77,81	450,56	239,9921	94,45926
multilateral imposed sanctions	41	0	1	,51	,506
economic interdependence	41	3,7	65,0	31,798	18,9372
post-colonial ties	41	0	1	,49	,506
cultural_power distance	27	-34,4	47,6	28,674	21,6616
political regime type of targeted state: democracy or authoritarian	41	0	1	,63	,488
Valid N (listwise)	27				

### A.4.2 Linear regression

#### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	political regime type of targeted state: democracy or authoritarian, cost of sanctions on target , multilateral imposed sanctions, economic capabilities in billions, economic interdependence, military capabilities, post-colonial ties , cultural_power distance <sup>b</sup>	.	Enter

a. Dependent Variable: effectiveness rate of sanctions

b. All requested variables entered.

#### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,860 <sup>a</sup>	,739	,623	2,398	2,104

a. Predictors: (Constant), political regime type of targeted state: democracy or authoritarian, cost of sanctions on target , multilateral imposed sanctions, economic capabilities in billions, economic interdependence, military capabilities, post-colonial ties , cultural\_power distance

b. Dependent Variable: effectiveness rate of sanctions

## ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	293,018	8	36,627	6,370	<,001 <sup>b</sup>
	Residual	103,501	18	5,750		
	Total	396,519	26			

a. Dependent Variable: effectiveness rate of sanctions

b. Predictors: (Constant), political regime type of targeted state: democracy or authoritarian, cost of sanctions on target , multilateral imposed sanctions, economic capabilities in billions, economic interdependence, military capabilities, post-colonial ties , cultural\_power distance

## Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	16,908	3,517		4,808	<,001		
	cost of sanctions on target	-,485	,212	-,323	-2,286	,035	,728	1,374
	economic capabilities in billions	,000	,001	-,037	-,204	,841	,452	2,214
	military capabilities	-,025	,009	-,586	-2,788	,012	,328	3,045
	multilateral imposed sanctions	-,526	1,178	-,069	-,446	,661	,615	1,627
	economic interdependence	,023	,037	,110	,616	,546	,456	2,191
	post-colonial ties	-,793	1,736	-,094	-,457	,653	,339	2,951
	cultural_power distance	,041	,037	,229	1,107	,283	,339	2,951
	political regime type of targeted state: democracy or authoritarian	-2,772	1,643	-,359	-1,687	,109	,319	3,131

a. Dependent Variable: effectiveness rate of sanctions

## A.5 Realism – check for 27 cases

### A.5.1 Descriptive analysis

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
cost_sanctions_regression	27	1	12	7,93	2,601
economic capabilities of target in billions	27	10,00	1363,00	344,7778	471,37828
military capabilities of target	27	96,55	450,56	258,5398	92,68996
Valid N (listwise)	27				

### A.5.2 Linear regression

#### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	military capabilities of target, cost_sanctions_regression, economic capabilities of target in billions <sup>b</sup>	.	Enter

a. Dependent Variable: effectiveness rate of sanctions

b. All requested variables entered.

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,721 <sup>a</sup>	,520	,457	2,877

a. Predictors: (Constant), military capabilities of target, cost\_sanctions\_regression, economic capabilities of target in billions

#### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	206,097	3	68,699	8,298	<,001 <sup>b</sup>
	Residual	190,422	23	8,279		
	Total	396,519	26			

a. Dependent Variable: effectiveness rate of sanctions

b. Predictors: (Constant), military capabilities of target, cost\_sanctions\_regression, economic capabilities of target in billions

### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	17,667	2,965		5,958	<,001
	cost_sanctions_regression	-,429	,229	-,285	-1,869	,074
	economic capabilities of target in billions	-,001	,002	-,078	-,430	,671
	military capabilities of target	-,029	,008	-,684	-3,642	,001

a. Dependent Variable: effectiveness rate of sanctions

## A.6 Liberalism – check for 27 cases

### A.6.1 Descriptive analysis

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
sanctions imposed in combination	27	0	1	,52	,509
percentage of total trade targeted state with the EU	27	11,9	65,0	38,404	18,7704
post-colonial ties with the targeted state by one of the EU member states	27	0	1	,30	,465
Valid N (listwise)	27				

### A.2 Linear regression

#### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	post-colonial ties with the targeted state by one of the EU member states, sanctions imposed in combination, percentage of total trade targeted state with the EU <sup>b</sup>		Enter

a. Dependent Variable: effectiveness rate of sanctions

b. All requested variables entered.

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,492 <sup>a</sup>	,242	,143	3,615

a. Predictors: (Constant), post-colonial ties with the targeted state by one of the EU member states, sanctions imposed in combination, percentage of total trade targeted state with the EU

#### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	95,918	3	31,973	2,446	,090 <sup>b</sup>
	Residual	300,600	23	13,070		
	Total	396,519	26			

a. Dependent Variable: effectiveness rate of sanctions

b. Predictors: (Constant), post-colonial ties with the targeted state by one of the EU member states, sanctions imposed in combination, percentage of total trade targeted state with the EU

### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,142	2,341		,915	,370
	sanctions imposed in combination	1,286	1,420	,168	,905	,375
	percentage of total trade targeted state with the EU	,100	,044	,480	2,290	,031
	post-colonial ties with the targeted state by one of the EU member states	-,166	1,736	-,020	-,096	,925

a. Dependent Variable: effectiveness rate of sanctions

## A.7 Constructivism – check for 27 cases

### A.3.1 Descriptive analysis

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
cultural_power distance	27	-34,4	47,6	28,674	21,6616
political regime type of targeted state: democracy or authoritarian	41	0	1	,63	,488
Valid N (listwise)	27				

### A.3.2 Linear regression

#### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	political regime type of targeted state: democracy or authoritarian, cultural_power distance <sup>b</sup>		Enter

a. Dependent Variable: effectiveness rate of sanctions

b. All requested variables entered.

#### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,665 <sup>a</sup>	,442	,395	3,037	2,228

a. Predictors: (Constant), political regime type of targeted state: democracy or authoritarian, cultural\_power distance

b. Dependent Variable: effectiveness rate of sanctions

#### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	175,097	2	87,549	9,489	<,001 <sup>b</sup>
	Residual	221,421	24	9,226		
	Total	396,519	26			

a. Dependent Variable: effectiveness rate of sanctions

b. Predictors: (Constant), political regime type of targeted state: democracy or authoritarian, cultural\_power distance

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized	t	Sig.	Collinearity Statistics	
		B	Std. Error	Coefficients Beta			Tolerance	VIF
1	(Constant)	6,893	1,059		6,508	<,001		
	cultural_power distance	,088	,029	,487	2,985	,006	,872	1,146
	political regime type of targeted state: democracy or authoritarian	-5,076	1,260	-,658	-4,030	<,001	,872	1,146

a. Dependent Variable: effectiveness rate of sanctions

## Appendix B: Assumptions

When performing a regression analysis, the data should always be tested for six assumptions: independent error, multicollinearity, linearity, heteroskedasticity, normal distribution and outliers (Field, 2018). For the regression analyses and factors of the three IR theories and the Comprehensive Model, these six assumptions were tested in SPSS. The outputs of the tested assumptions are included in this appendix. For each assumption, the output is given and then a brief explanation of why the assumption is violated or not, how this was resolved or what implication a violated assumption has for the study. Key findings and changes are also included in the thesis.

**Table B.1 Assumptions\***

Assumption	What	How to test	Assumption satisfied
Independent error	Errors made in measuring one variable should not depend on the errors made in measuring another variable.	Durbon-Watson test	Value between 1 and 3. 2 is the most optimal.
Multicollinearity	The degree to which the independent variables correlate with each other and are therefore make it difficult to distinguish their effects on the dependent variable.	Variance factor inflation (VIF): how much the variance of a coefficient is increased by the presence of multicollinearity	Value lower than 5
Linearity	There should be a linear relationship between the dependent and independent variables, such that a change in the dependent variable is proportional to a change in the independent variable.	Partial plots	The points in the scatterplot must show approximately a linear trend.
Heteroskedasticity	The variance in the dependent variable remains constant for any value of the independent variable.	Partial plots	The points in the scatterplot must be equally spaced vertically for the x-values
Normal distribution	The values in the dependent variable should follow a normal distribution and be symmetrically distributed around the mean.	Normal probability plot	The points must be close to the diagonal line.
Outliers	Extreme values in the dataset that have a major impact on the coefficient estimates and reduce the accuracy of the model.	Standardized residuals	No more than 1% with ZRE > 2,58 No more than 5% with ZRE > 1,96

\* (Field, 2018)

## B.1 Realism

### B.1.1 Independent errors

#### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,512 <sup>a</sup>	,262	,190	3,494	2,429

a. Predictors: (Constant), military capabilities, cost of sanctions on target , economic capabilities in billions

b. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of independent errors was not violated, because the Durbin-Watson value was 2,429. This value is between the 1 and 3.

### B.1.2 Multicollinearity

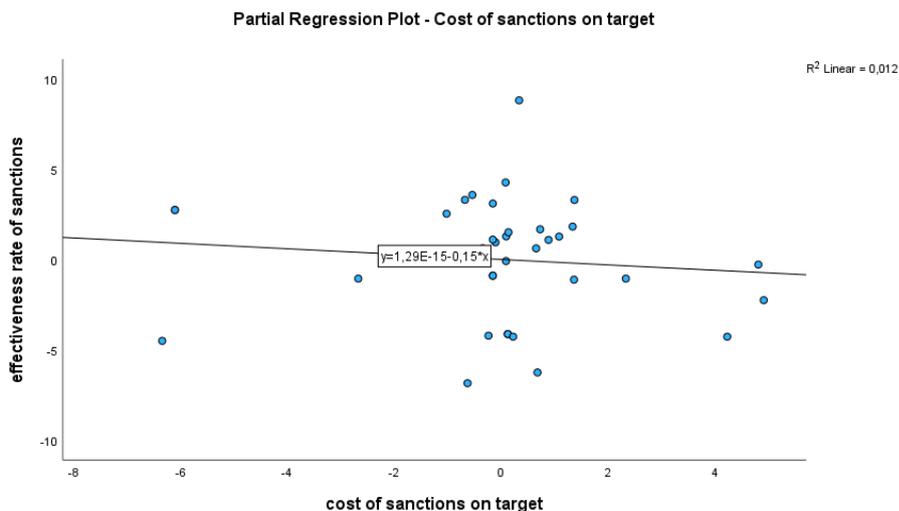
#### Coefficients<sup>a</sup>

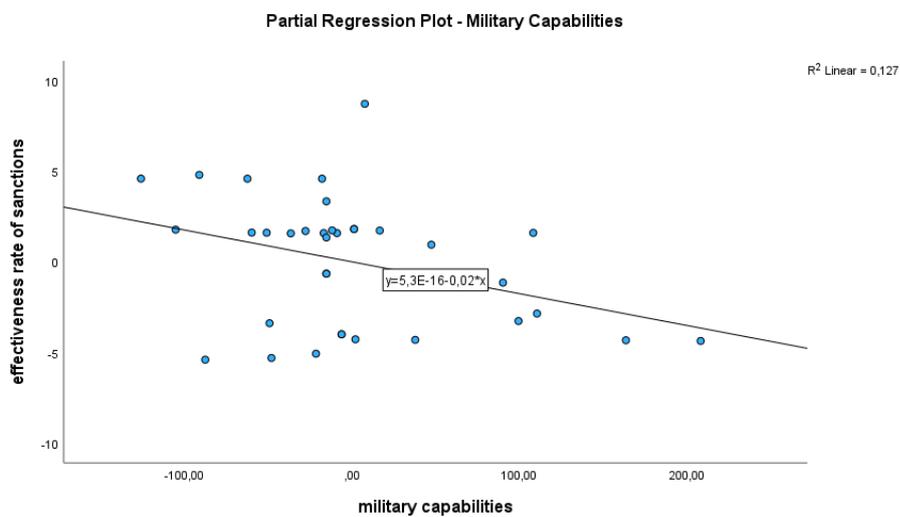
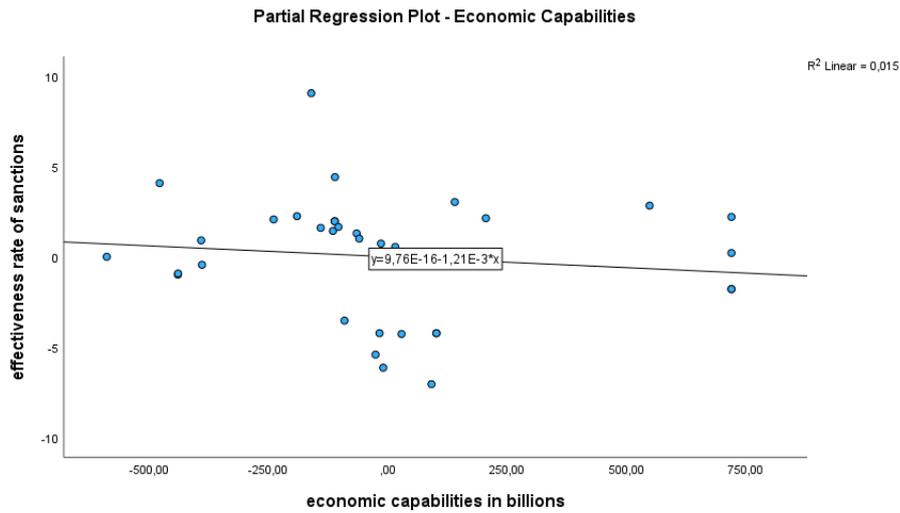
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	12,190	2,977		4,095	<,001		
	cost of sanctions on target	-,149	,245	-,099	-,609	,547	,908	1,102
	economic capabilities in billions	-,001	,002	-,135	-,690	,495	,618	1,618
	military capabilities	-,018	,008	-,427	-2,125	,042	,589	1,699

a. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of multicollinearity is satisfied. The VIF-values are 1,102, 1,618 and 1,699 which is lower than 5.

### B.1.3 Linearity





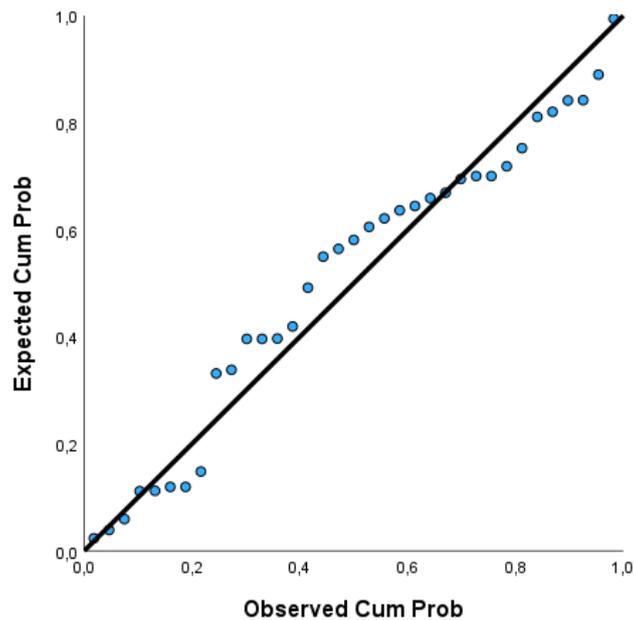
Conclusion: the assumption of linearity is not violated because the points in the graph show linear motions.

#### B.1.4 Heteroskedasticity

To test the assumption of heteroskedasticity, the same graphs as for the assumption of linearity can be used. Conclusion: for all three variables, the variance in the dependent variable remains constant for any value of the independent variable.

### B.1.5 Normal distribution

Realism: Normal P-P Plot of Regression Standardized Residual



Conclusion: the assumption of normal distribution is satisfied, because the points lay in line with the black line of the normal distribution.

### B.1.6 Outliers

#### Residuals Statistics<sup>a</sup>

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,71	9,62	6,49	1,987	35
Std. Predicted Value	-1,899	1,575	,000	1,000	35
Standard Error of Predicted Value	,598	1,852	1,109	,413	35
Adjusted Predicted Value	2,08	9,58	6,51	2,038	35
Residual	-6,951	8,872	,000	3,336	35
Std. Residual	-1,989	2,539	,000	,955	35
Stud. Residual	-2,077	2,587	-,003	1,000	35
Deleted Residual	-7,578	9,211	-,020	3,673	35
Stud. Deleted Residual	-2,202	2,874	-,004	1,039	35
Mahal. Distance	,026	8,579	2,914	2,779	35
Cook's Distance	,000	,251	,025	,045	35
Centered Leverage Value	,001	,252	,086	,082	35

a. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of outliers is satisfied, because none of the cases has a standardized residual higher than 2,58.

**B.1.7 Missing values in independent variable Cost of sanctions**

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11,134	3,026		3,679	,001
	cost of sanctions on target intensity	-,147	,228	-,133	-,645	,526
	economic capabilities in billions	,000	,002	-,036	-,151	,881
	military capabilities	-,015	,009	-,423	-1,701	,103

a. Dependent Variable: effectiveness rate of sanctions

Conclusion: the independent variable ‘Costs of Sanctions’ is modified through filling the missing data with the median value 8. Taking the median will not change the dispersion in the dataset. In addition, this completion of data is possible because the independent variable does not have large outliers and is normally distributed.

When the coefficients in this table are compared with the coefficients from the regression analysis for realism (see A.1.2), the values are quite similar. Therefore, the Comprehensive Model and the realist regression analyses are run with the supplemented independent variable ‘Costs of Sanctions’.

## B.2 Liberalism

### B.2.1 Independent errors

#### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,367 <sup>a</sup>	,135	,065	3,545	2,311

a. Predictors: (Constant), post-colonial ties , multilateral imposed sanctions, economic interdependence

b. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of independent errors was not violated, because the Durbin-Watson value was 2,311. This value is between the 1 and 3, and close to 2.

### B.2.2 Multicollinearity

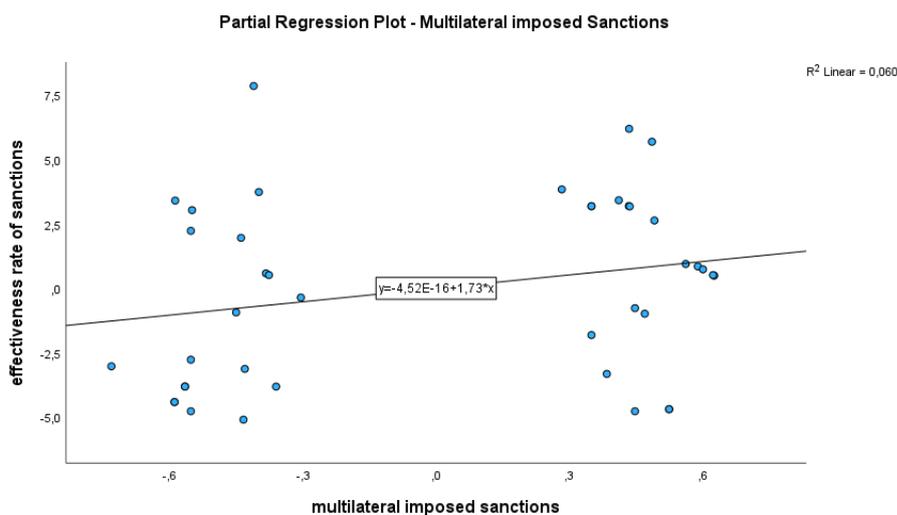
#### Coefficients<sup>a</sup>

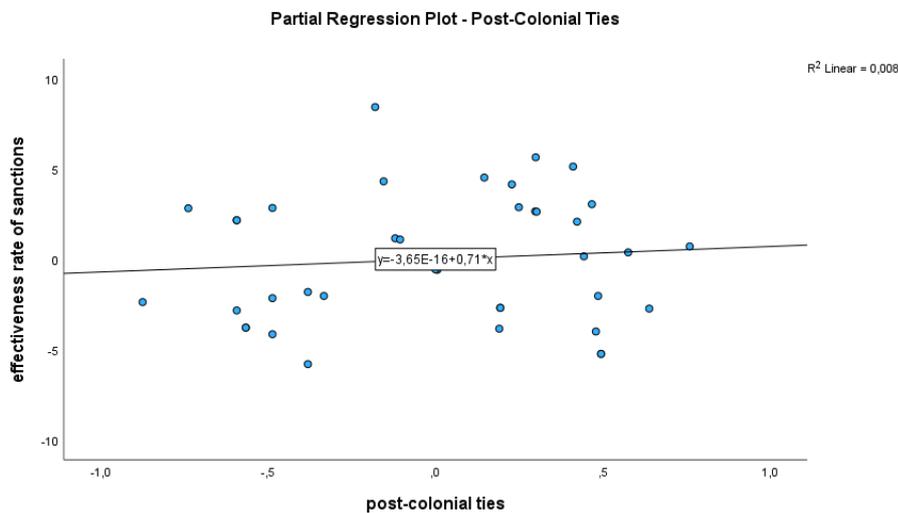
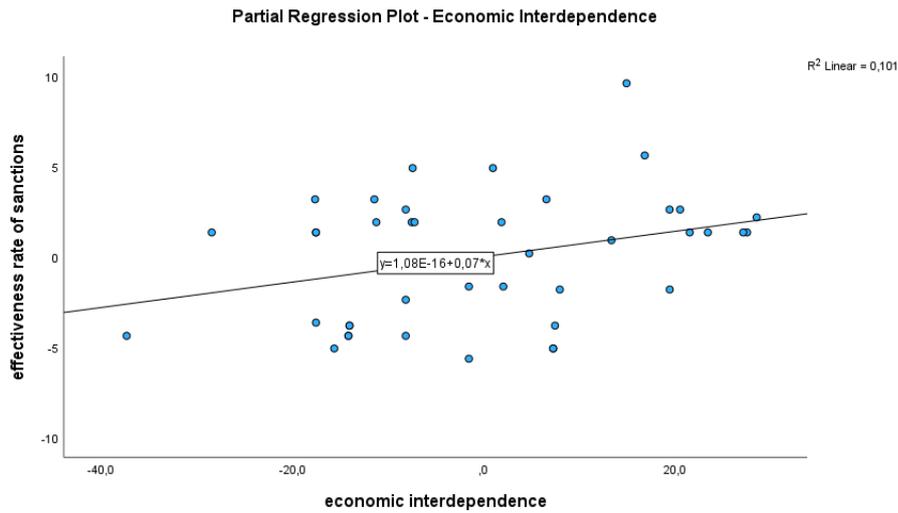
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3,286	1,798		1,827	,076		
	multilateral imposed sanctions	1,732	1,131	,239	1,532	,134	,959	1,043
	economic interdependence	,070	,034	,364	2,044	,048	,739	1,354
	post-colonial ties	,707	1,271	,098	,556	,581	,759	1,318

a. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of multicollinearity is satisfied. The VIF-values are 1,043, 1354 and 1,318 which is lower than 5.

### B.2.3 Linearity





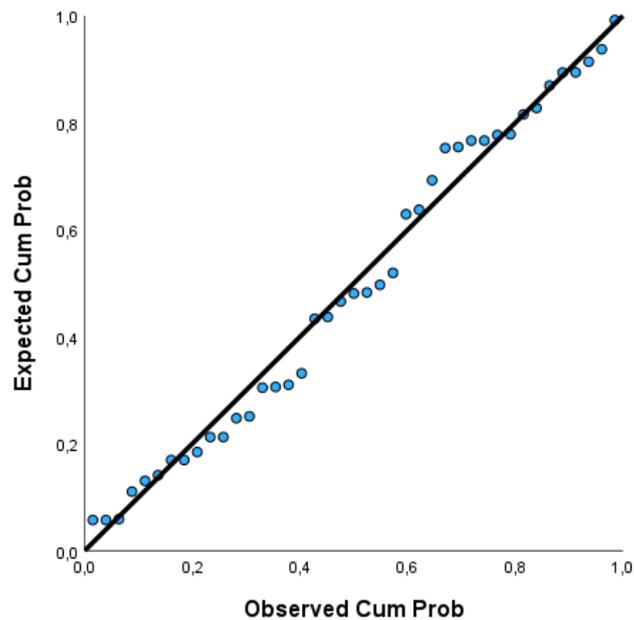
Conclusion: the assumption of linearity is not violated because the points in the graphs show linear motions.

### B.2.4 Heteroskedasticity

To test the assumption of heteroskedasticity, the same graphs as for the assumption of linearity can be used. Conclusion: for all three variables, the variance in the dependent variable remains constant for any value of the independent variables.

## B.2.5 Normal distribution

Liberalism: Normal P-P Plot of Regression Standardized Residual



Conclusion: the assumption of normal distribution is satisfied, because the points lay in line with the black line of the normal distribution.

## B.2.6 Outliers

### Residuals Statistics<sup>a</sup>

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3,76	9,59	6,76	1,347	41
Residual	-5,598	8,562	,000	3,409	41
Std. Predicted Value	-2,226	2,106	,000	1,000	41
Std. Residual	-1,579	2,415	,000	,962	41

a. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of outliers is satisfied, because none of the cases has a standardized residual higher than 2,58.

## B.3 Constructivism

### B.3.1 Independent errors

#### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,665 <sup>a</sup>	,442	,395	3,037	2,228

a. Predictors: (Constant), political regime type of targeted state: democracy or authoritarian, cultural\_power distance

b. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of independent errors was not violated, because the Durbin-Watson value was 2,228. This value is between the 1 and 3, and close to 2.

### B.3.2 Multicollinearity

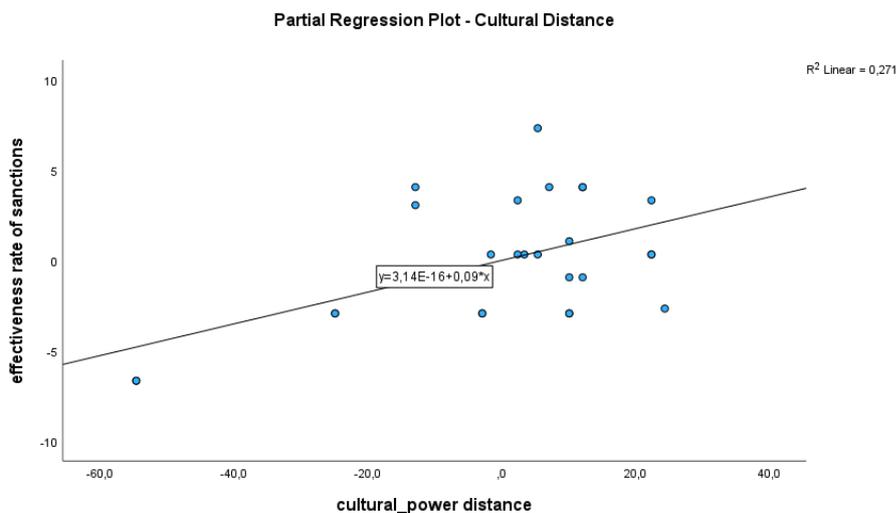
#### Coefficients<sup>a</sup>

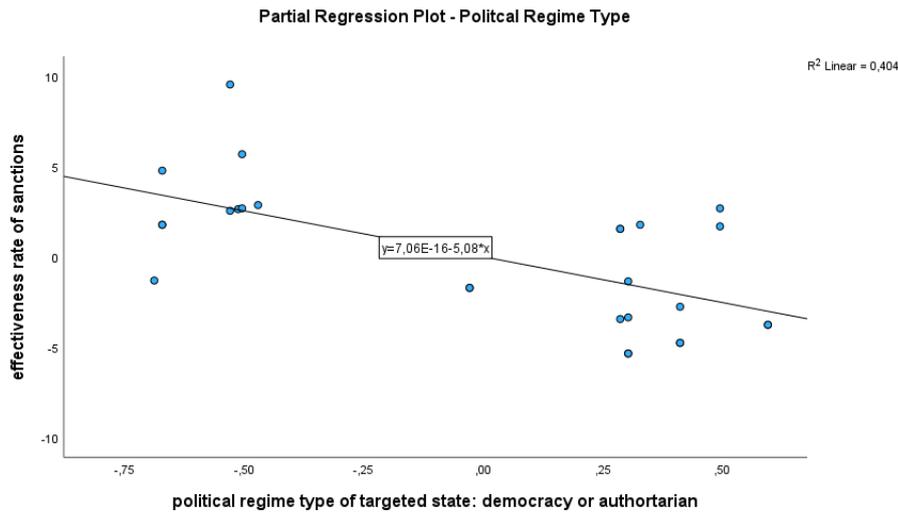
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	6,893	1,059		6,508	<,001		
	cultural_power distance	,088	,029	,487	2,985	,006	,872	1,146
	political regime type of targeted state: democracy or authoritarian	-5,076	1,260	-,658	-4,030	<,001	,872	1,146

a. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of multicollinearity is satisfied. The VIF-values are 1,146 which is lower than 5.

### B.3.3 Linearity





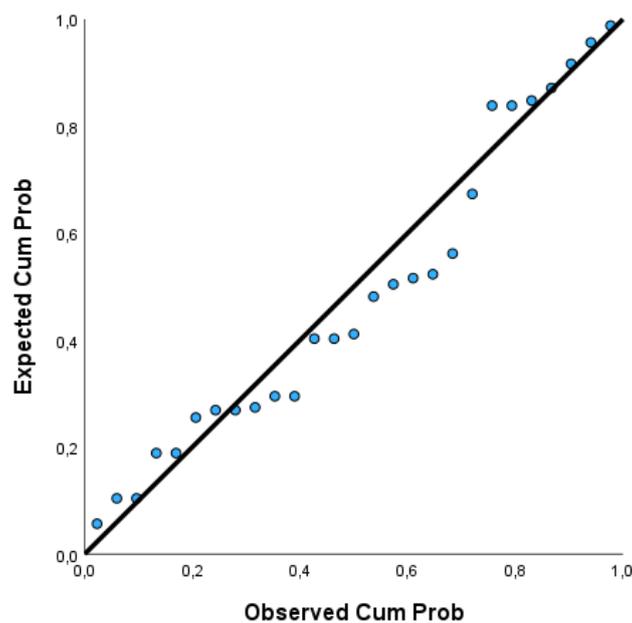
Conclusion: the assumption of linearity is not violated because the points in the graphs show linear motions.

### B.3.4 Heteroskedasticity

To test the assumption of heteroskedasticity, the same graphs as for the assumption of linearity can be used. Conclusion: for all three variables, the variance in the dependent variable remains constant for any value of the independent variables.

### B.3.5 Normal distribution

**Constructivism: Normal P-P Plot of Regression Standardized Residual**



Conclusion: the assumption of normal distribution is satisfied, because the points lay in line with the black line of the normal distribution.

### B.3.6 Outliers

#### Residuals Statistics<sup>a</sup>

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,75	10,81	6,59	2,595	27
Residual	-4,812	6,857	,000	2,918	27
Std. Predicted Value	-1,481	1,626	,000	1,000	27
Std. Residual	-1,584	2,258	,000	,961	27

a. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of outliers is satisfied, because none of the cases has a standardized residual higher than 2,58.

## B.4 Comprehensive model

### B.4.1 Independent errors

#### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,860 <sup>a</sup>	,739	,623	2,398	2,104

a. Predictors: (Constant), political regime type of targeted state: democracy or authoritarian, cost of sanctions on target , multilateral imposed sanctions, economic capabilities in billions, economic interdependence, military capabilities, post-colonial ties , cultural\_power distance

b. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of independent errors was not violated, because the Durbin-Watson value was 2,104. This value is between the 1 and 3, and close to 2.

### B.4.2 Multicollinearity

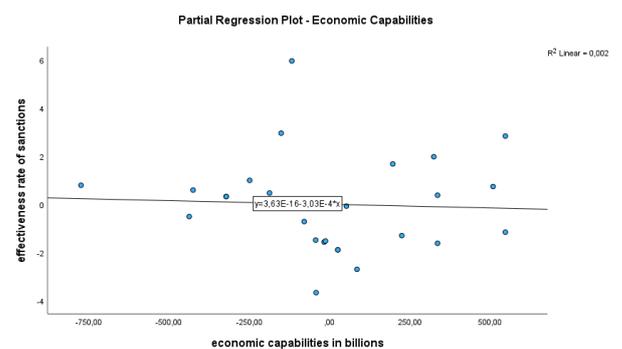
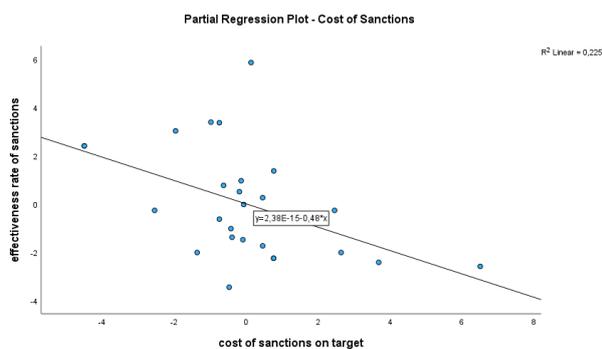
#### Coefficients<sup>a</sup>

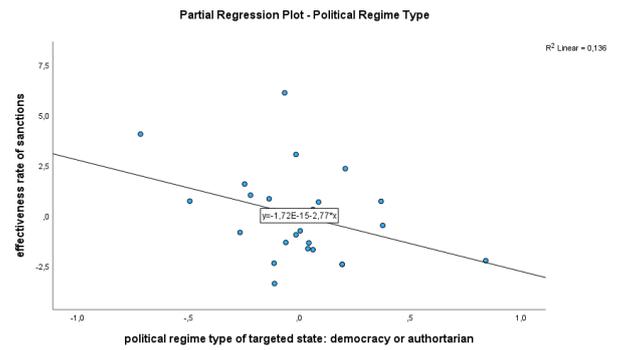
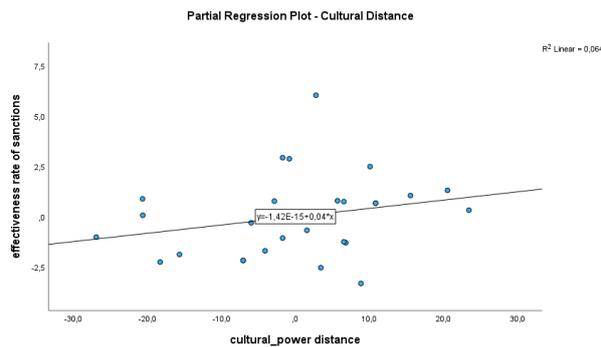
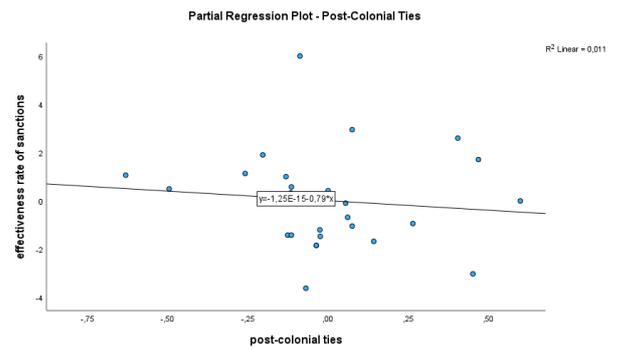
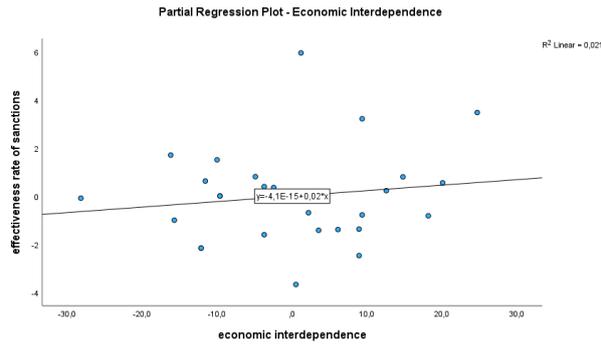
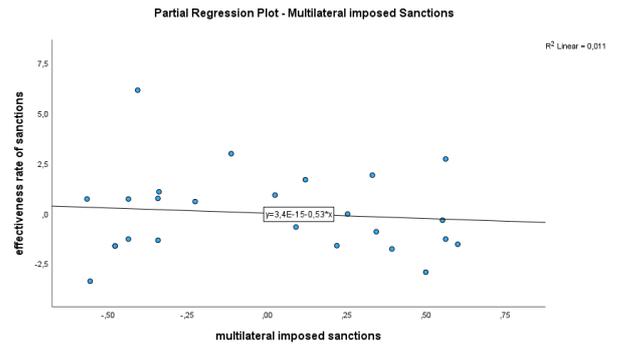
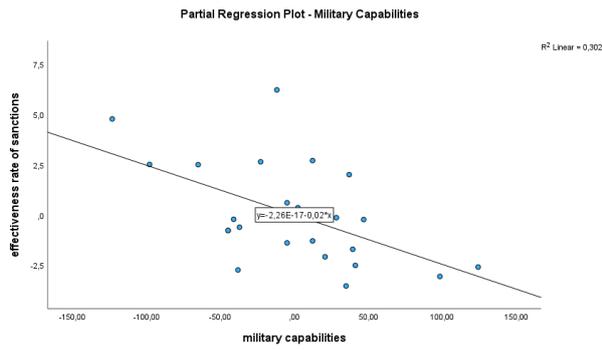
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	16,908	3,517		4,808	<,001		
	cost of sanctions on target	-,485	,212	-,323	-2,286	,035	,728	1,374
	economic capabilities in billions	,000	,001	-,037	-,204	,841	,452	2,214
	military capabilities	-,025	,009	-,586	-2,788	,012	,328	3,045
	multilateral imposed sanctions	-,526	1,178	-,069	-,446	,661	,615	1,627
	economic interdependence	,023	,037	,110	,616	,546	,456	2,191
	post-colonial ties	-,793	1,736	-,094	-,457	,653	,339	2,951
	cultural_power distance	,041	,037	,229	1,107	,283	,339	2,951
	political regime type of targeted state: democracy or authoritarian	-2,772	1,643	-,359	-1,687	,109	,319	3,131

a. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of multicollinearity is satisfied. The VIF-values are below 5.

### B.3.3 Linearity





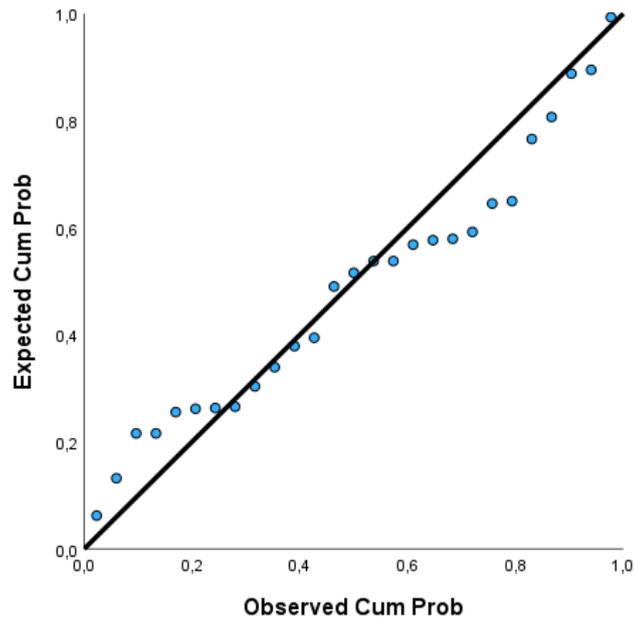
Conclusion: the assumption of linearity is not violated because the points in the graph show linear motions.

#### B.4.4 Heteroskedasticity

To test the assumption of heteroskedasticity, the same graphs as for the assumption of linearity can be used. Conclusion: for all three variables, the variance in the dependent variable remains constant for any value of the independent variable.

### B.4.5 Normal distribution

Complete model: Normal P-P Plot of Regression Standardized Residual



Conclusion: the assumption of normal distribution is satisfied, because the points lay in line with the black line of the normal distribution.

### B.4.6 Outliers

#### Residuals Statistics<sup>a</sup>

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1,08	12,69	6,59	3,357	27
Residual	-3,688	5,930	,000	1,995	27
Std. Predicted Value	-1,642	1,816	,000	1,000	27
Std. Residual	-1,538	2,473	,000	,832	27

a. Dependent Variable: effectiveness rate of sanctions

Conclusion: the assumption of outliers is satisfied, because none of the cases has a standardized residual higher than 2,58.