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Coal and Conflict in Eastern Ukraine

Master's Thesis

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Declaration

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3. I fully agree to my work being used for study and scientific purposes.

In Prague on
04.01.2022

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References

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Abstract

The goal of this work is to analyze the behavior of actors involved in the ceasefire set by the Minsk II protocols in the Donbas region of Ukraine. The study begins by explaining ceasefires from a theoretical perspective and are proven to be an integral form of state relations. Actors have options in ways to react to ceasefires, and act upon differing impulses when they are presented with a situation set by an existing ceasefire which is in effect. This decision-making process is highly convoluted, but because a ceasefire is often the difference between open conflict and a cessation of violence, it is crucial to understand each possible reaction, so as to give the parties involved the best chance at reducing violence. The Minsk II Protocols, signed on February 12th, 2015, were designed to reduce violence and tensions in the Eastern Donbas region. The legitimacy of the ceasefire was acknowledged, and yet fighting continued after it took effectiveness. This study seeks to show that despite this seemingly incongruent behavior, the decision to violate the ceasefire was rational at the time of the violations themselves. Rationality is described, Sovereignty is defined, and the study attempts to prove that due to the economic situation that could be separatists were confronted with, it was highly unlikely they could maintain sovereignty under the economic conditions inherent to the territory they controlled. The study concludes with a section reviewing conclusions that can be made from the study, a discussion of the further development of the Ukrainian conflict, and possibilities for further academic research on the topic.

Abstrakt

Cílem práce je analyzovat chování aktérů zapojených do Druhé minské dohody - dohody o příměří v ukrajinském Donbasu. Studie nejprve vysvětluje dohody o příměří z teoretického hlediska a ukazuje, že tyto dohody jsou nedílnou součástí zahraničních vztahů. Aktér může na dohodu o příměří zareagovat dvěma způsoby: respektovat ji nebo porušit. První možnost implikuje, že jejich nejlepší zájem je obhajitelný držením statusu quo. Naopak pokud aktér dojde k závěru, že status quo je pro něj nevýhodným, dojde k porušení dohody. Rozhodovací procesy bývají v těchto případech velmi spletité a dohoda o příměří často rozhoduje mezi otevřeným konfliktem a zabráněním násilí. Proto je důležité porozumět potenciální reakci obou stran a snížit tak šance, že dojde k násilí. Druhá minská dohoda byla podepsaná 12. února 2015 za účelem snížení násilí a napětí v oblasti východního Donbasu. Přestože dohoda o příměří byla uznána, boje pokračovaly, jakmile vešla v platnost. Tato práce se

snaží ukázat, že zdánlivě rozporuplné rozhodnutí porušit příměří bylo racionální. Po popsání racionality a definování suverenity se studie snaží prokázat, že vzhledem k ekonomické situaci, které byli separatisté vystaveni, bylo velice nepravděpodobné si tuto suverenitu udržet. Obzvláště přihlédneme-li k tomu, jak moc jsou ekonomické podmínky spjaty s územím, které ovládali. Na konci práce jsou shrnuty závěry o dalším vývoji ukrajinského konfliktu a možnostech akademického výzkumu tématu.

Keywords

Rationality, Ceasefires, Conflict, Economic Power, Gross Regional Product

Klíčová slova

Racionalita, Příměří, Konflikt, Ekonomická síla, Hrubý Regionální Produkt

Title

Coal and Conflict in Eastern Ukraine

Název práce

Uhlí a konflikt na východním Ukrajině

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Introduction

International political relationships exist on a spectrum- from positive peace to total conflict. In a world that is inherently anarchical, there is no guarantee of the long-term promise of peace between two actors (Waltz and Walt 2018). This also means that there is no guarantee that two actors who are in open conflict will remain in the same type of relationship forever. Warfare is one type of politics which exists on this larger spectrum, but even it itself does not present a single type of relationship. Warfare is often referred to with the qualifier's "total", "economic", "hybrid", and many others (Kapusta 2015, p. 2). This variety indicates that there is much to interpret and study within the relationships between actors during conflict itself.

One of the most interesting elements in warfare is the concept and practice of ceasefires. A ceasefire is defined by Clayton et al. as "...an arrangement during armed conflict whereby at least one conflict party commits to cease hostilities from a specific point in time (Clayton et al. 2021, p. 1)." These ceasefires are usually seen as a steppingstone towards a peace agreement. This peace agreement needs time and space to be negotiated between the differing parties, without the relative power of each side changing and thus altering the possible outcome of the negotiations. However, because politics is not separated between "peace" and "war", a ceasefire can be interpreted as a change in interactor relations itself. At the very least, it often helps to reduce the level of violence between two conflicting actors, thus saving the lives of both the soldiers fighting on each side and of civilian populations that are affected by the conflict (Bara et al. 2021, p. 1). In the huge spectrum of relationships between state and non-state actors in an anarchical world, this change is unequivocally valuable and significant.

Ceasefires, however, are subject to much skepticism and other doubts. This is because they are often viewed in academic terms through their ability to bring about a peace agreement, while reality is different (Clayton et al. 2021, p. 343). Two or more parties agree to a ceasefire, it lasts for some period, and then falls apart because one or more parties violate the agreement, and all interested actors then regard it as null and void. Conflict returns to an open state, killing resumes, and hopes for the achievement of peace in place of conflict are dashed.

But this does not mean that this type of inter-actor agreement does not have value. The reduction in violence, even if temporary or limited, can give an opportunity for civilians to

move to safer areas, allows for wounded soldiers to receive better medical attention, and can provide for the possibility of a negotiated peace (Åkebo 2021, p. 370). On the other hand, this time can also allow for actors in conflicts to recoup their losses, to gather strength, resources, and military capacity, and restart the conflict from a stronger position when it suits their interests (Bara et al. 2021). Thus, the value of the ceasefire can be seen in its ability to achieve a step closer to each actor's ultimate goal of a positive peace- a relationship with other actors in the international and intranational systems that includes not only the absence of conflict, but also "...more important socio-economic determinants, such as social justice, economic development, environmental stability and... [life] with dignity, equality and self-respect (Lahiry 2019, p. 77)."

This positive peace is not necessarily achieved linearly. Rather than going from total war to open conflict, then to negotiated ceasefire and then to a peace agreement, many conflicts go back and forth between successful periods of lower violence, than open conflict, than peace, and back to total war (Clayton et al. 2021). The lack of linearity in any conflict, however, does not change the fact that the end goal of each of the actors is their vision of positive peace.

In this conceptualization of ceasefires, "success" or "failure", or whether a single signed ceasefire directly leads to a negotiated peace agreement, is not the method in which its value is being measured. When we assume that actors are rational, then there must exist some value in this type of relationship, or else the actors would not engage in them. Ceasefires are a state of relations that often exists between actors, and thus in itself is worth studying (Clayton et al. 2021, p. 342).

1 Research Problem

Particularly interesting and valuable is identifying why and how ceasefire agreements collapse and return to open conflict. Ceasefires are signed and brought into effect because actors that sign them see a value in doing so (Clayton et al. 2021, p. 349). Whatever is listed in the agreement is legally valuable to them. Often, wording in the ceasefire is vague so as to allow for each actor to interpret then agreement as a spectrum of actions that are tolerable to all signatories (Clayton et al. 2021, p. 345). This can result on disagreements on the implementation of the ceasefire, and often does, and can thus risk further conflict. The fact stands, however, that each party signed the agreement when it was negotiated because tying themselves and their adversaries to the agreed “code of conduct” was the option that they publicly decided to promise to uphold.

Ceasefire agreements, as well are also often very specific. The stated goals of the ceasefire are written down, and in many cases as well defined as possible. Demarcation lines between conflicting parties, specific limitations on types of armaments allow to be used, and even specific times of day that conflict can or cannot occur are all possible contents of ceasefire agreements (Bara et al. 2021). Research shows that the more defined and exact a ceasefire is, the better chance that it has of lasting longer as well as resulting in a peace agreement (Fontana et al. 2020, p. 27).

Both the lack of and the presence of definition and exactness in a ceasefire is helpful to recognizing that ceasefires are only a result of what the interested parties can agree upon. From an interpersonal perspective from those who live under strong and legitimate state control, it is hard to conceptualize two parties realistically agreeing to limit violence between one another, for example to some specific time of day, area, or with limitations on types of violence, and this agreement being upheld. It is important to recognize that international political relationships are truly anarchical. There is no body or force that can universally compel actors to behave in a certain way or respect some rules (Waltz and Walt 2018, p. 159). In interpersonal relations, the state still holds a monopoly on the legitimate use of violence, and thus on judgement on the value of each interpersonal actors’ actions (Weber 2019, p. 72). This simply does not exist in the international sphere.

This “lack of oversight” is something that often leads to doubts about the underlying intentions of each signatory to the ceasefire. In other words, that states and actors have ulterior motives when they sign a ceasefire, and in fact do not intend to follow the provisions

of the agreement at all. There is, of course, truth to this problem. Ulterior motives are a common barrier to making an agreement in the first place, as the other actors do not trust the stated intentions of their counterpart. It is also well documented that ceasefires can be used to rest and gain the ability to move a party's interests forward in the future (Clayton et al. 2021, p. 353).

These motives may exist, but it is still valuable to research and study state behavior from the lenses that we are afforded by science. As researchers, we have limitations as to the kind of data that we can access (Van Evera 1997, p. 29). This may be troop movements recorded by satellite, financial reports from various ministries stating how much actors spend on a conflict, or simply the reported casualty rates from each effected region or actor (Bara et al. 2021). All this information can be researched and analyzed, to the extent which it is available to social scientists. Without specific data, such as recorded or written dialogue behind the scenes of a negotiation, it would be irresponsible and unscientific to speculate about secret intentions behind their negotiating. Doing so without proof or data to analyze would not truly reveal the intentions of any actor, but rather the bias of the researcher.

Furthermore, the choice to study only the provable and recorded actions of participants in a ceasefire agreement provides a unique opportunity to discover the motivation behind seemingly contradictory behavior. While many actions may have taken place without the direct supervision of the OSCE monitors, we cannot know the effect of these actions if we cannot prove that they happened. As scientists who believe that actors in international politics are rational in their behavior, we can look at signing a ceasefire agreement and subsequently, or almost immediately, violating it- as rational actions. Or better said- rational reactions to the situation that a party engaged in conflict is faced with.

2 Methodological Review

There are many explanations as to why ceasefires break down in academic literature.

For one, the leadership may not have total control over the actions of their military on the ground. This may be because of direct insubordination of certain units in the conflict that feel that the goals set by leadership do not represent the goals that they are fighting for (Chayes and Chayes 1993, p. 22).

Violations could also be caused by the confusion of war itself. It is thus important to note that not all violations that occur are intended by leadership or negotiating representatives, and actors do not in fact intend to violate, but make honest mistakes (Haysom and Hottinger 2004, p. 5). Communication can always be poor with persons involved in direct conflict, despite the improvement of communication tools that exist in today's conflict (Kiesling 2001). News of the negotiation may not have reached certain parts of each military force or friendly fire may be mistaken for an enemy advance which must legitimately be countered and repelled. Even though "confusion" may be a convenient excuse for individual units or leadership to claim that violations that occurred were not intended, it is also certain that they can occur without ill intention (Wiehler 2019, p. 28).

2.1 Measuring Power

However, these unintentional mistakes do not constitute a rational decision. Ceasefires, even when communication and military hierarchy is maintained as much as possible, can and do still collapse frequently (Clayton et al. 2020). This derives from the state of relation which ceasefires are developed in. Ceasefires are not negotiated between two peaceful well-established neighbors who are currently in a peaceful relationship and have a stable balance of interests between the two of them. Negotiations that result in a ceasefire agreement are created during periods of intense fluctuation which are caused by the ongoing conflict (Sosnowski 2020a, p. 732). Actors involved are constantly gaining or losing territory, gaining, or losing sources of income, and gaining or losing sources of military power, which can be either in recruitment or military hardware (Haysom and Hottinger 2004, p. 4). The objective level of power of each of the actors is thus constantly shifting in a dynamic fashion. Power has been defined in a multitude of ways over the course of human existence, and its definition has changed even during the period of the existence of science as a whole and more specifically sociology. For our purposes, it is best to confine our definition of power to one that reflects the power of actual or aspirational state actors in the sphere of

international relations. State power is "... at its most basic... the capacity of a given force to produce an event that would not otherwise occur (Jessop 2009, p. 11)." In this case, the given force is the state, or actor that seeks to be and to be seen as a state.

Military power in the definition that is defined by capability of the state, focuses on the resources that the state in question holds and can engage. "Military resources (e.g., troops and weapons)... enable a country to destroy enemies; attract allies; and extract concessions and kickbacks from weaker countries by issuing threats of violence and offers of protection (Beckley 2016, p. 11). The military is each actor's key to maintaining their monopoly over the legitimate use of force in this territory. Any challenges to this legitimate use of power reduces the power of the actor in question. Furthermore, this can be inter-state, in which another state seeks to claim legitimate sovereignty of territory controlled by the actor in question and pursues their goal of control through violence (Beckley 2016, p. 13). It can also be intra-state, where a separate group which was previously non-state lays claim to a part or all the territory controlled by the actor in question and seeks to achieve their territorial goal through violence (Sosnowski 2020a, p. 733). The military power of the actor in question is the objective measurement of their ability to counter these threats.

Economic power is the ability of an actor to produce the goods and services that are needed to support its existence and continuation (Petkova et al. 2021, p. 1). The root of this is the ability of population that they have sovereignty over to fulfil its basic needs of food and shelter. It also includes to population's ability to create greater value through participating in the economy of the territory, whether that includes extracting value from the territory they control, such as in the exploitation of natural resources, or creating value through services that they provide to one another or to other populations. This activity as a whole is than "legitimately" taxed by the actor claiming sovereignty, and they can thus fund other part of their essential tools of power (Holcombe 2020, p. 45).

Social power is the acceptance of the population in the territory claimed by the actor of that actor's legitimacy in control of the area (Speidl 2006, p. 2). This adds to social cohesion and helps in maintaining governance and is essential to either stopping or starting intra-state conflicts. Reasons for this can be either shared ideals, ethnicity, legal norms, religion, or nationality. It is important to note that social power, in the sense that it is a tool used by specific actor claiming sovereignty over a region. Social cohesion can exist in a population "claimed" by this actor, but it does not have to necessarily converge on the governing legitimacy of the actor in question (Loshkariov and Sushentsov 2016, p. 6). Michal Foucault

defined power as the level to which an actor is able to shape the moral compass of the population it seeks to control, and when a population reacts positively to this code-setting by the actor in question, then their social power is high (Baumgarten and Ullrich 2012, p. 1). It is important to note that challenges to any the expressions of power listed above do not negate the actor's power entirely. It challenges it, and reduces it, but does not necessarily destroy it completely. The lack of any three of these sources of power certain has the capacity to make an actor incapable of exercising sovereignty. However, the level of the actor's power in each section is rarely (or never) total (Valeriano 2009, p. 181). Thus, the levels of power always exist on a spectrum. An actor's power is only destroyed completely when it ceases to claim legitimacy in front of other actors, as well as over the territory and population that it once sought to have sovereignty over. Total loss of power for one or both of the actors' party to a ceasefire protocol, in the case of many inter-state and intra-state conflicts, is of legitimate concern to one or many involved parties and may inform the reasons the conflict began and doggedly persists.

2.2 Power as Relationships

We assume that the world is anarchical, which, to restate, means that there is no power that is capable or legitimized to be an arbiter for state behavior across the entire globe. This means that states and actors exist not only because their control a certain territory and maintain sovereignty over it, but also because they are recognized as peers by other actors (Visoka et al. 2020, p. 2). Their recognition makes them peers to states, and thus these states will view them through the effect they have on the greater international sphere. This measurement of the relationships themselves is the key to understanding inter-actor relations. Any actor can have an "objectively" high level of power over and in their sovereign territory. Their military capacity may be higher than any army that occupied the territory previously, their economy may have developed new way to produce greater value that ever before in the region, and the population may accept and champion the sovereignty of the actor.

However, if there is another actor whose vision of their "perfect peace" includes them being sovereign over a territory and population already controlled by another legitimated actor, than this conflict of interest may lead to conflict over the territory in question (Adami 2009). Perfect Peace is a term that describes the ideal extent of sovereignty, territory, and level of power that the leadership of each actor sees for themselves (Adami 2009). Their ideal would

be accepted and respected by all other actors in the international and intranational spheres, and there would thus be no desire or reason for conflict to begin. This positive peace is an ideal balance of all the interests in the world and is a theoretical goal to which the anarchical world can strive. This is because the balance that is strived for is constantly in flux depending on who is in charge, the wishes of the public, the economic power of the region, and weakening or strengthening of their own military power or the military power of other actors around them (Haysom and Hottinger 2004). It is this constant uncertainty and changing of the balance of power between interested actors that leads to shifts and changes in the level of conflict between actors.

This change of each actor's definition of their positive peace is inevitable. It is driven not only by changes within the territory itself, but also in response to the changes that take place in other states that could be perceived as a threat or as a potential victim to the actor in question. When a neighboring state begins to see changes in their level of power, for example it is going up, their neighbors may begin to fear that their increase in power will change their desired positive peace, and their newly defined wishes may include territory that is not currently controlled by them. Thus, the original actor in question has not seen a change in their own power, but because of perceived changes in the power of another actor, they have suddenly become weaker and less certain in their position (Davidzon 2020). This also applies to when an actor loses power. They may still maintain full sovereignty over the territory and population they control but could experience a reduction in military capacity due to budget cuts which were predicated by lower economic activity, or economic power. This means they have reduced capacity to defend against other actors, and thus this may change the state of the desired positive peace of other actors in the sphere (Wiehler and Wiehler 2021).

Power is not perceived in absolute terms. Actors do not only compare the gains that they have made against other actors that have controlled the same sovereign territory in the past, or their own record in the controlled area. More important to the potential and outcome of conflicts is an actor's own power in comparison to the power of other actors within the same system. Without the comparison of other states and actors within the international sphere, the power level of any one actor is irrelevant. The most important factor is how developed an actor is in comparison to its peers. This is known as relative power.

3 Relationships in Flux- Ceasefires

Ceasefires themselves do not have a yet- clearly delineated scientific definition. It is generally agreed ceasefires are agreed to represent a state of relationship between two actors that wish to come to "... an arrangement during armed conflict whereby at least one conflict party commits to cease hostilities from a specific point in time (Clayton et al. 2021, p. 1)." Debate lies in how to judge whether one agreement is a ceasefire or not, and Clayton et al. argue that agreements to cease hostilities can be a limiting definition. Ceasefires can also be important way of reducing violence without any guarantees of complete cessation and can have other purposes as well. Bara et al. described the phenomena as the diversity of ceasefires, in that their goal can be "...signaling peaceful intent, building trust, establishing control of forces, reducing human suffering, creating a more favorable environment for negotiations, and preparing security arrangements for the immediate post-peace agreement period (Bara et al. 2021, p. 332)." Ceasefires have not been researched extensively, and the academic collective around Govinda Clayton, Bara, and Wiehler have been studying this area of state behavior extensively over just the last few years.

Changes in relative power are key to understanding and mapping the success and failures of ceasefires. Ceasefires are not peace agreements, and thus do not necessarily rule out the limited use of force or guarantee any peace in the future (Bara et al. 2021). They provide only the guarantees that are promised by both sides, which in many cases can be very limited, and are often violated. This means that from the time that a ceasefire is signed, until it comes into effect, and then even after it has become legally effective, much can and does change between the parties that are signatories to the agreement (Haysom and Hottinger 2004, p. 3). This can be military in question- in terms of different territory being gained or lost, of troop increases or decreases, or the positioning and use of greater or lesser destructive capacity (Haysom and Hottinger 2004, p. 3). This can also be less directly tied to the military part of state relations. Changes in the economic status of any of the parties to a ceasefire can significantly change their own reasoning when looking at a standing ceasefire protocol. Improved economic status can give them more opportunity to maintain the status quo and slowly build their power, and thus their interest in making and explicit peace deal which could limit or change their economic capacity becomes threatening to their interests. Also, the standing status of a ceasefire may have a detrimental effect on the economy of an actor, which could force them to either sue for peace earlier on worse terms than they would have

hoped for, or to return to open conflict to make their position as a sovereign force more tenable (Bara et al. 2021). This effect can be seen in the social power as well- the further a ceasefire stands, the more frustrated the population may be with the status quo and the leadership may feel pressure to change their plans to maintain their social power. It can also have the opposite effect, where the social power wishes for and pushes for a continuation of open conflict because they see potential benefits for themselves, or in fact have defined their social cohesion in opposition to the other parties in the conflict (Åkebo 2021, p. 385).

All these changes are changes to relative power, and the goal of the negotiators is to accommodate all these interests and transform them into policy that the leadership can publicly, in front of their peers and the international world, sign and promise to uphold. This changing nature, however, is so complex and intersectional between the different expressions of power that the status of the preferred “positive peace” changes constantly and extremely quickly. Thus, from the time that the document is signed until it comes into effect, which can range from immediate to after an hour or day, or in days or even weeks, the relative power of each signatory can change significantly and alter the willingness of actors to follow the provisions of the ceasefire protocol. This effect is well known to those who become signatories to a ceasefire agreement, so the design of the ceasefire itself prepares for this inevitability.

The signatories may recognize that both their relative power positions are the best they could possibly hope for, and thus the time between signing and effectiveness either would be negotiated out of existence, or it would not be expected to change the relative power between actors. If there is time between signing the document and its effectiveness, it allows for each actor to attempt to increase their relative power within that time frame while still achieving a ceasefire in the end. All actors involved believe that with this time, they will be able to set their relative power to a level that is acceptable to them with respect to achieving their goals. Each of these approaches are reflected in the wording and the structure of the ceasefire agreement itself. The more defined and immediate it is, the more confident that signatories are that the relative power between them is set in a manner that reflects the ideal which could eventually lead to a peace agreement. The less specific and more delayed effectiveness that an agreement holds, the less confident signatories are that they are going to reach the effective date having reached an acceptable relative power ratio (Clayton et al. 2021, p. 345). Being aware that these shifts in relative power are inevitable, actors prepare themselves for all outcomes that are possible from the ceasefire coming into effect after the period of

continued adjustment of relative power. It is important to note that relative power is dealt with here as what each actor perceives to be true of the other actors. Axelrod notes that "...subjective inter-predations by one side become objective reality for the other side (Axelrod and Keohane 1985, p. 231)." This distinction, while not effecting the outcome of this study, is important because an actor can only base their actions upon what they perceive in real time. This may differ widely from the objective reality that we as scientists can study in historical record.

In some cases, however, the ideal balance of relative power between the actors is not achieved within the time frame that is set by the agreement. This leads to a series of decisions that each actor can make for themselves.

3.1 Respecting the Ceasefire

The actors in question can choose to respect the ceasefire agreement as it is set between them, and how they have given their signature to agree in the international agreement made to create the ceasefire.

If the set balance of relative power puts them at a distinct disadvantage, then they may choose to accept this new position and negotiate the best terms that are possible in a peace agreement. They may predict that their prospects or relative power may improve in the future while still upholding the ceasefire agreement, and thus chose to wait until this change happens (Wiehler and Wiehler 2021, p. 3). Furthermore, they may be encouraged by the fact that the opposing signatories in the system will lose in relative power over the duration of the ceasefire agreement, and thus over time, their disadvantaged position will become an advantageous one, given that the ceasefire lasts a certain period (Clayton et al. 2021, p. 352). Also, they may just recognize the reality of their situation and decide that their view of ideal relative power has changed because there is no way to improve it. Thus, their best option is to accept the ceasefire that has been presented to them, despite its disadvantaged position, and hope that they will be able to strike a peace deal that maintains their sovereignty (Sosnowski 2020b, p. 604).

The commonality among all the options deciding to uphold the ceasefire from a disadvantaged position is that the leadership gauges that by doing so, they will get the most utility for their position in the situation that they are in.

The other option is to see the possibilities of the state that has an advantage in the set ceasefire. The state would choose to respect the ceasefire for several reasons. First off, by

being in the advantageous position, this means that they have over-achieved on their goal of having relative power in their favor. This means that during any further negotiations, they will be able to set terms and have an intrinsic advantage (Sosnowski 2020b, p. 603). Furthermore, despite the temptations of not holding up the ceasefire and pushing for greater advantages in negotiations, they recognize the danger and disadvantage of restarting open conflict (Sosnowski 2020b, p. 602). Furthermore, by having more relative power and refraining from breaking the ceasefire, they may gain prestige and respect from other signatories to the ceasefire, as well as other actors within the international system. This may help them rebuild and grow their reputation further after it was damaged by the presence of a conflict in the first place.

The commonality among all the options deciding to uphold the ceasefire from an advantageous position is that the leadership gauges that by doing so, they will get the most utility for their position in the situation that they are in.

3.2 Violating the Ceasefire

The advantages gained by choosing to respect a ceasefire are clear. However, in what situations would a signatory choose to abandon a ceasefire?

For an actor that has lower relative power, it may be advantageous to not respect the ceasefire for several reasons. For one, they may calculate that they will not financially be able to maintain the little relative power that they have if the ceasefire continues in the state that it is. Thus, it becomes necessary for them to change that status (Rousseau 2002, p. 399). Furthermore, they may predict that other actors will take advantage of their weaker position and either set negotiating terms that are unacceptable to the actor in question, and thus the disadvantaged actor knows that in order to preserve their sovereignty, they will be forced to initiate conflict in the future (Axelrod and Keohane 1985, p. 232). Also, thus disadvantaged party may predict that other signatories will recognize the disparity in relative power and choose to attack them directly when they are weaker. Thus, they chose to break the ceasefire when they chose as to have a potential military advantage in the inevitable conflict (Clayton et al. 2021, p. 354).

The commonality among all the options deciding to not uphold the ceasefire from a disadvantaged position is that the leadership gauges that by doing so, they will get the most utility for their position in the situation that they are in.

If an actor has higher relative power, it may be advantageous not to respect the ceasefire for several reasons. For one, an unexpected increase in relative power may convince the leadership in their position that they have so much to gain by abandoning the ceasefire that it would hurt their interests not to take advantage of the situation, particularly in situations where potential income is highly determined by immovable natural resources that the potential to control depends on further conflict (Clayton 2016, p. 331). Furthermore, the advantageous side may recognize that if they do not break the ceasefire to solidify or gain upon their advantage, then other actors may see any advantages left as necessary and break the ceasefire to gain them (Rousseau 2002, p. 398). As Rousseau noted, the tendency for states to hyper focus on relative gains may distract them from the fact that they are objectively much stronger than other actors, and thus engage in actions designed to increase relative power even when not necessary. Also, the advantageous side may recognize that their advantage is only momentary- that if the ceasefire lasts for too long a period, they will not be able to fiscally cope with the pressures of the ceasefire, even if they still have a negotiating advantage. Thus, while still having a greater relative power, they do not feel they have enough power to achieve their goals (Axelrod and Keohane 1985, p. 232).

The commonality among all the options deciding to not uphold the ceasefire from an advantageous position is that the leadership gauges that by doing so, they will get the most utility for their position in the situation that they are in. This defense of their own interest- their interest to survive- is indicative of rationality.

4 Arguments Against

Arguments may be made that choosing not to uphold the ceasefire protocols may not directly indicate that the actors see it as advantageous to uphold the “letter of the law” but still see the existence of the ceasefire itself as advantageous (Clayton et al. 2021, p. 350). This may be true, but from a strategic perspective, the decision to violate the ceasefire in the first place is equivalent to accepting that it may fall apart and calculating that risk into their decision-making process. By explicitly not following the provisions, each actor accepts the risk that the return of open conflict may occur, and thus the eventual outcome- whether full conflict happens or not- is irrelevant. The actors accept that risk, and in their own predictions on where the relative power between actors may end up, they calculate that the outcome of the conflict going into an open state is still preferable to maintaining the status quo. Furthermore, there is value as scientists to researching the actions of actors without any preconceived notions about them possessing ulterior motives. Studying the publicly statements, agreements, and actions of signatories to a ceasefire as face value has merit because of its objectivity and ability to avoid bias and use unverified sources.

This leads us to believe that the change in behavior for actors comes from the necessity to preserve the most utility possible for the sovereign region that they lead. Each of the situations in which actors decide to break the ceasefire agreement they signed comes from the fact that one of the three elements of their power is being existentially threatened by the status quo that is set by the ceasefire. The first is that the separatist state in question is the region that I decided to analyze and not the other actors in the conflict. The argument would be that because I have chosen this specific region and the fighting around it, I specifically targeted the separatist region for an analysis that could be carried out on any part of the conflict. This is true. This could be applied to the conflict in other areas of combat that may have affected any aspect of power for the Ukrainian state. There certainly were other regions where conflict was taking place and may have resulted in a positive and essential outcome for the other actors, in particular the annexation of the Crimean Peninsula by the Russian Federation, which severely affected the trade and military capacity of Ukraine (Olekseyuk and Schürenberg-Frosch 2019, p. 1).

However, this argument is a misunderstanding of the goal of this study. This study does not seek to target or stigmatize any actor involved in the conflict in the Donbas, and certainly does not seek to apply definitions of moral value to any of the participants behavior. It seeks

to build a framework in which we can prove that seemingly irrational behavior may in fact be rational, which can be applied to any ceasefire and conflict.

A potential argument against this form of the study may be that other sources of income may be insinuating and supporting the violating actors in this conflict. This is certainly true. From the side of the Ukrainian central government, it is well recorded and publicized that they are receiving military and general financial support from a variety of nations and organizations. The United States has supported the Ukrainian central government through non-lethal and lethal military support, as well developmental aid, to the tune of 1.96 Billion USD between 2014 and 2018 (King 2019, p. 1). The European Union as an collective ally has also supplied Ukraine with essential economic assistance as well as financial assistance for their military, at a rate of roughly 710 Million USD annually since the beginning of the conflict (King 2019, p. 2). The Ukrainian military budget increasing from 3.9 billion USD in 2014 to 5.9 billion in 2020, just the military support from foreign funding sources makes up a fifth of their budget (Trading Economics 2022).

With Ukraine, however, this is not the only reason that the economic situation of the state could be influenced by economic power outside their sovereign territory. The Ukraine-EU economic pact, which the rejection of by the Yanukovich government trigger the conflict as a whole, was signed by the post-revolution government and is a strong point of contention that continues to be a key point of contention with the regions affected by annexation and separatism (Emre Can Yilmaz 2015, p. 2). This agreement includes not only the potential to increase trade between the EU and Ukraine but also the direct support of Ukrainian business initiatives through low-interest loans and direct financial support. The reason that this agreement lead to conflict in the first place is a debate for another study, but the agreement which is now law between the EU and Ukraine has the potential and intention to increase the level of the Ukrainian Economy (European Commission 2014).

On the other side, the separatist state has received an immense amount of support from the Russian federation. The Russian Federation a signatory to both Minsk protocols despite not officially being directly involved in the conflict, and is keenly interested in the survival and success of the separatist state (Trilateral Contact Group 2015). Their diplomatic support for the separatist movement is significant and strong, as can be seen not only by their signatory position on the Mink protocols, but also through the strong lobbying that the Russian Federation has done for the interests of the separatist state on the world scale (Bowen 2019, p. 323). Their diplomatic approach to NATO, the United States, and to the EU has provided

much value to the cause and interests of the separatist state. Even more importantly, the Russian Federation has provided military support. They have denied this accusation. Russian leadership has repeatedly reported that they have ordered no military units into the region and stated that any troops that are ordered there are present because of their “own will” (Freedman 2014, p. 5). Regardless of this assertion, the Russian Federation has been suspected of supplying heavy military equipment to the separatist forces as well as regular troops to fight the Ukrainian forces directly (Piechal 2015, p. 1). In fact, analysts from the OSCE concluded that in the combat around Debaltseve that this study analyzes, regular Russian troops and military equipment made up a majority of the fighting force that was committing violations (Allan 2020, p. 14).

This may, at first glance, seem like a damning argument against the crux of this hypothesis—that the interests of the Russian Federation and Western powers were being played against one another, and that the states that were supposedly directly involved in the conflict were only vectors for the interests of more powerful actors. This is certainly the narrative that many states use to paint this conflict, and also may be the reason why these non-directly involved powers decide to invest so much energy and resources into the conflict (Lewis 2019, p. 4). It is doubtful that each international actor not directly involved in the conflict, whether it be the EU, the Russian Federation, NATO, or the United States, would invest into the conflict if they did not see the potential outcomes as consequential to their vision of the state of international affairs.

This is, however, still a misconstruing of the conflict itself. In a scientific study, there is value in studying the conflict exactly as it presents itself—between the actors that are directly involved in the conflict. Dealing with and calculating for the interests of actors that are not directly involved brings in danger of overestimating their interest, overestimating their influence, and underestimating the interest of the parties involved. This kind of conflict is known as a “Proxy War”, in which a conflict between two lesser powers is fueled and supported by two opposing and stronger great powers because they see the outcome of the conflict as important to their political interests in the world forum (Rauta 2021, p. 4). This view may certainly apply in many cases historically and may even in some extent apply to the conflict which this study is concerned with.

Regardless of the influence of outside forces, this conflict in physical reality is still between the state of Ukraine and the self-declared separatist states of Luhansk and Donetsk. The conflict is taking place on their “respective” territories, and the effects felt directly are felt

on the same territory and by the civilian populations of those regions (International Crisis Group 2020, p. 11). In the end, any ceasefire or even peace agreement must be signed by the political representation of these two directly involved actors and will succeed or fail based on their will. According to the Minsk II protocols, their sovereignty over the region will be practically respected by the signatory states and actors, and not as the client of another power (Trilateral Contact Group 2015, p. 1). The stated goals of both actors vying for sovereign control of the region are either to become or maintain their status as a full independent and recognized state, and thus when their signature falls upon an internationally recognized document such as the Minsk II protocol, those stated goals should be recognized and respected as valid.

This does not go to say that influences outside the direct control or outside the sovereign territory of a specific state should not be considered. On the other hand, they provide crucial evidence as to why certain states in different relative power relationships make the decisions that they do. The outside influence of relative power can tip so far in the direction of another actor that a state's leadership may be forced to give up pursuing the interests of their state entirely in order to avoid the loss of the last bit of sovereignty they hold over their territory. Thus, they become a client state to another, greater power. A client state is a state that is entirely dependent for their policy making decisions upon the leadership of another state (Efrat and Bercovitch 2016, p. 15). The state in question thus carries out not the interests of itself, but the leader-state that they are a client to.

This study does just that- it views the actions and situation surrounding them and analyzes if their prior and subsequent behavior can be viewed as rational.

Hypothesis

Signatories to the Minsk II protocols violated the ceasefire agreement when they calculated that by observing the ceasefire, the predicted fall of the state's relative power would threaten their sovereignty.

Operationalization

To test this hypothesis, I will first look at a specific area where fighting was recorded as taking place. Fighting occurred during the month-long period after February 15th, 2015, in the city of Debaltseve. It was controlled by the Ukrainian Central government when the ceasefire came into effect (OSCE 2015). Fighting was taking place prior to the effectivity of

the protocols and when they became effective, the fighting continued for more than two weeks (OSCE 2015). Violations ceased when actors felt their relative power was enough to maintain their sovereignty.

This specific area experienced fighting during this period but fighting continued in other areas across the line of contact during the period in question. The records of the OSCE Special Monitoring Mission have recorded incidents of violations continuously during the conflict. This selection of area goes to demonstrate that the conflict in one certain area increased significantly after the signature of the ceasefire agreement (Suba 2019, p. 19).

Then, the legitimacy of the ceasefire will be proven. The Minsk II protocols being in effect at the time of the violations in question proves that both behaviors were taking place at the same time.

The economic situation of the region as a whole, as two regions controlled entirely by the central government in Kyiv, is reviewed in order to give indications of the economic potential of the area and the economic trends present before the beginning of the conflict

The data of the separatist group is then estimated in the measurement of the gross regional product of the region and is compared to the budget levels in order to seek the effective range of rationality in the decision to break the ceasefire.

5 Proving Base Assumptions

This will be carried out through a series of proofs. The first task is to prove that conflict in the area did take place. If there was no conflict in the area after the ceasefire came into effect, then study whether choosing to violate the agreement would be irrelevant. For rationality to be researched in this situation, there must be two proven facts – the legitimate signature of a ceasefire protocol, the presence of violations after it has taken effectiveness.

5.1 Legitimacy of Signature of Ceasefire

The signatures of the legal document are quite straight forward. Parties who are signatories are continuous in their acknowledged sovereignty over the territory de-facto recognized in the protocols and the “governmental bodies” continued to hold the position that they signed the documents of their own free will during the period immediately after the signing (Trilateral Contact Group 2015). Conflict over the legitimacy of these signatures may occur-actors may argue that their decision to sign was made under duress. This does not refer to military duress that an actor may experience during the conflict, but rather to their misrepresentation at the signature of the document itself, which would nullify the agreement (Sosnowski 2020a, p. 732). To avoid this happening, there is most often a mediator that is present when the protocols are being negotiated and signed. This mediator is impartial and has the task of assisting in the negotiating process, but also vouching for the fact that each actor was there of their own free will and that the signature was legitimate (Trilateral Contact Group 2015).

This observer position is essential and was carried out by the Swiss diplomat and OSCE representative Heidi Tagliavini (Trilateral Contact Group 2015). Tagliavini’s presence and signature of the document let us know in the most accurate way possible that scientifically, we can hold the agreement up as genuine and legal when it was signed.

5.2 Occurrence of Violations

The other side that needs to be proved is the presence of violations of the ceasefire agreement after it has come into effect. In this study, we draw the information primarily from the reporting carried out by the Organization for Security and Cooperation in Europe. In the terms of the Minsk II protocols, the OSCE was instructed to set up and operate a monitoring mission on the line of demarcation agreed upon by the signatory parties in the Donbass

region (Trilateral Contact Group 2015). At the 991st plenary decision meeting of the OSCE, the monitoring mission was founded with their goal being "...to contribute, throughout the country and in co-operation with the concerned OSCE executive structures and relevant actors of the international community (such as the United Nations and the Council of Europe), to reducing tensions and fostering peace, stability and security; and to monitoring and supporting the implementation of all OSCE principles and commitments..." (Permanent Council 2014). This statement was made when the monitoring mission was set up under the Minsk I protocols, but its effectiveness was maintained and reaffirmed in the signing of Minsk II. This reporting was thus legally approved and seen to be legitimate by all parties involved in the conflict.

Each state also releases statements about whether violations were caused by them or by other actors and may even dispute the legitimacy of some of the reporting of the OSCE mission. This may take the form of public statements to the media, parliamentary points in any ongoing relationships between the states in the diplomatic sphere, as well as direct publishing of reports of violations from their own perspective, without the input of the OSCE. These objections all exist, but the legal fact remains that by agreeing to the protocols themselves, the states accepted the legitimacy of the findings of the OSCE. Each actor still legally respects and upholds the protocols, and thus the OSCE reporting is legitimate (Trilateral Contact Group 2015). In order to strengthen the legitimacy of this statement, however, we can also cross reference the OSCE reports with statements by the actors themselves, which most of the time corroborate those violations were taking place. This is particularly valid in the area and case we will study, where all actors directly involved in the fighting publicly admitted to committing violations. They may have blamed other actors for the spiral of violations starting, but their statements corroborate the fact that violations were taking place.

With these seemingly contradictory modes of behavior established, we can begin to look at the question of why this state of being is still a logical decision.

5.3 Rationality

In this study, we also presume that actors are rational. This rationality means that actors will behave in a way that they see best serves their interest in their relations with other actors in the anarchical world. Rationality is one of the most fundamental assumptions in the study of international relations. Weber understood this concept of rationality as one that allows us as

scientists to take the sum of behaviors and relationships that create the world itself and study them in a scientific fashion; not necessarily seeing them as a true reflection of all behavior encompassed in the human experience (Weber 2019, p. 82). This is an important distinction between the two. He is not disqualifying that emotional or “artistic” responses to the world exist but sees rationality as a core basis on which to study the responses of the state.

This acceptance of rationality is rooted in the first iterations of scientific study in the sphere of international relations. Realism is the first theoretical approach that academics and practitioners of state relations used in order to understand behavior and design state responses to questions of state behavior. One of founding principles of this theory is that states are essentially rational, in that they seek primarily to increase their own standing in the international sphere (Weber 2019).

This theoretical branch grew into neo-realism, which was developed further into the twentieth century, both in the build-up to the Second World War and afterwards. This theory, after the liberal approach of the late détente period prior to the first World War, returned the theoretical focus of studies of state relations away from ideals of cooperation between states and back onto the “rational self-interest” that was studied and reported on earlier (Fearon 1995). Scholars such as Kenneth Waltz focused primarily on the anarchical state of world politics and how it forces actors to behave in this sense of rational self-interest. His argument purports that because there is an absence of a fair arbiter over global politics, states have no where to turn when their sovereignty is threatened. In other words, there is no enforcement mechanism for states to be forced to follow rules of behavior towards one another, or as recognized later on, towards the population that they hold legitimate control over (Waltz 2010). Thus, states must defend their own sovereignty and by extension interests, because no one else in the international sphere will do so. In defending this, they can either pursue offensive realism as a policy or defensive realism.

Offensive realism seeks to defend the sovereignty of the state by preventing any other states from the potential harm of damaging their own power. This may come in many forms—through political manipulation, to territorial gains aimed at crippling other actor’s power, to outright invasion and annexation. This seeks to prevent the birth of any other power capable of threatening the power of a single state. Offensive realism as a theory was extensively researched and expanded by John Mearsheimer, who applied this theory to the foreign policy behavior of the United States (Snyder and Mearsheimer 2002).

Defensive realism seeks to maintain the status quo in order to preserve the power that they have. By not provoking action in other actors, defensive realism aims to maintain the status that they have and slowly build their own power without threatening others. It does presume that there is no over-arching power that can save them from the behavior of other states but believes that the best method to defend the power that they have is to do just that- defend themselves and not antagonize other actors.

Hans Morgenthau also had an immense influence on the conceptualization of realist policies, which also presumed rationality. In his work *Politics Among Nations*, Morgenthau emphasized the importance of realist interpretations of rationality, but also the effect that international law had on rationality. This addition of law into the added a layer beyond the physical aspects of the survival of sovereignty. However, he seeks to make the differentiation between the effect of international law and values that a state holds, and the necessary steps that a state must take in order to maintain its sovereignty and, by extension, its existence (Morgenthau 1948).

The study of international relations and state behavior in general has of course advanced and changed over the period of scientific advancement since Weber, Waltz, and Morgenthau formed their theories. Post-positivist thought has opened up the scientific world to a multitude of other ways state behavior is formed. This may be the influence of cultural norms on which decisions may be made, or as to way decisions are framed in the way they are, and actors see different types of responses as rational or irrational. Wendt argued that state make the state of anarchy in international relations what it is because they conceive of their own existence only within this system, and that the system is constructed by them themselves (Wendt 1992).

This level of analysis is very effective in uncovering motivations that may bring actors to a situation in which the use of violence becomes legitimate or perceived as necessary. It can uncover motivations as to why actors may seek conflict with others, and as to why they may see conflict as their only option. However, when actors are confronted with conflict and do perceive a direct threat to their sovereign existence, the realist or neo-realist mode of analysis is the most effective way of discovering the rationality behind state behavior. The core basis of this thesis is that actors behave rationally when they are forced into situations in which their existence is threatened, because without maintaining their existence, any other values they hold or approaches they put forth towards the international sphere would be, for them, irrelevant.

5.4 The Role of Relative Power

What the actors are concentrating their focus on are areas where the recorded fighting is occurring has the potential to cripple the relative power of any of the signatory actors in a way that would destabilize their preferred peace.

For the purpose of this study, I chose to analyze a specific area- the city of Debaltseve. This has been done for several specific reasons. For one, the area under analysis had fighting consistently throughout the conflict. It was an important part of the battle prior to the Minsk I protocols, continued to be an active battlefield throughout the first ceasefire, in the period leading up to the signature of the Minsk II protocols, during the lay-period between signature and effectiveness, and after the ceasefire came into effect (OSCE SMM 2015). This meant a few things for the purpose of my study. For one, it was an active combat zone that the monitoring mission was aware of and thus kept extra watch over the region. The conflict surrounding Debaltseve was significant in both its size, the cost to both the Ukrainian and Separatist military forces, and its symbolic importance in the media sphere, where it was reported on in international media (Luhn and Grytsenko 2015, p. 1).

This may be interpreted as confirmation bias- that the monitors were in the region and giving it special attention and thus they witnessed and recorded all the violations that they may have not seen in areas not as well canvassed by monitors. This is possible, but the mission itself was approved and recorded in the signatories themselves, who were aware of the functioning and working style of the monitors, as they had been under surveillance even during the Minsk I protocols (OSCE 2014). Furthermore, the OSCE monitoring program has 50 years of experience during its existence, and thus its skill and accuracy can be believed to be higher than an organization with little experience carrying out the work (OSCE 2022). Lastly, independent reporting from the actors themselves indicated that the conflict around this specific region was not only occurring, but of high intensity and of high importance (112.ua 2015).

Debaltseve is an important measure of the occurrence of battle because the fighting that occurred there is particularly poignant, in loss of life and strategic importance. However, the ceasefire that was set at the same time is only one of many over the whole of the conflict (International Crisis Group 2020, p. 3). This ceasefire was worth studying for several reasons. For one, it resulted, after two to three weeks, in a significant reduction in violence in comparison to the levels that existed previous to it (OSCE 2015). As reduction of violence is one of the key goals of any ceasefire, then this ceasefire succeeded where the Minsk I

Protocols had not. Further ceasefires have attempted to reduce violence, but most importantly, levels of violence experienced prior to the Minsk II protocols have not occurred (OSCE 2021).

This significant change in the level of violence indicates the actors' acceptance of the levels of relative power between them. Because violations did occur after the effectiveness of the Minsk II protocols, and eventually reduced the levels of violence once the line of demarcation had reached an acceptable position between the central government and the separatist state, it can be argued that each actor reached a level of relative power closer to their ideal of perfect peace. If it had been farther away from perfect peace, it would have resulted in increased levels of violence in response to an undesired outcome.

6 Applied Equation

The question is if potential income from the state of affairs under the ceasefire is perceived to be less than the necessary expenses of the state during the ceasefire. Then it becomes rational to change the state of the ceasefire.

The question I am asking is the concept that comes from February 15th, 2015. The actor in question had fought prior to the signing of the Minsk II protocols, had fought after the signing, and continued fighting after the ceasefire came into effect. The decisions that they made during different parts of the same conflict are different questions, and what I am researching is the specific moment that on February 15th, 2015 when this actor decided to break the ceasefire agreement they had signed. This immediate decision was influenced by the question of rational behavior. The effects of the surrounding conflict are essential to understanding state behavior, but it does not take away from the fact that this behavior could have an explanation that was rational.

Calculating the income of the region during the ceasefire will rely on the coal exports of the region and what they supplied. During the conflict, exports will still made, and incomes reported, and thus we can estimate what the state income was. This calculation should include state income from other resources. If there is no direct data available, I will compare the coal export value in its percentage against the economy of the region as a whole and maintain that value for when the conflict was taking place.

(Kochura 2012, p. 21) provides an overview of the total exports of the Ukrainian state in coking coal and power coal for the year 2010. Ukraine is an importer and exporter of coal, and plays a middle role between coal producing countries such as Russia, Kazakhstan, the USA, and Australia, and the general East and West European markets (Kochura 2012, p. 19). This gives us an idea of how the Ukrainian state functioned before the beginning of the conflict in the coal market, most important to the region which was being contested.

In the Donbas region, coal production makes up 60 percent of the regional GDP per year. In fact, prior to the conflict, Donbas accounted for a quarter of Ukraine's exports and 15 percent of capital investment (Mamo 2021, p. 2).

Between 2014 and 2018, foreign direct investment has been under one percent of Donbas' GDP. (Mamo 2021, p. 3)

The Donbas region which is controlled by the separatist forces has an extremely high percentage of persons who are in retirement and are not actively part of the officially counted

work force, estimated at 39 percent of the population who are receiving social benefits and depend on them for their primary income (OCHA 2021, p. 42). This creates a strong imbalance between economic productivity and fiscal outflows for the separatist government that are very difficult to manage if they are attempting to be financially independent of other powers, whether it be the central government in Kiev or the central government in the Kremlin.

These two values are capable of being compared between each other.

There are two decisions that were rational when they were made. The first, made by separatist leadership, was on February 12th. They believed that they were capable of gaining and holding territory before the ceasefire came into effect that allowed them the best chance at maintaining sovereignty during the duration of the ceasefire. They said that “we will be able to gain the territory by the 15th that is necessary for us to survive.” The rationality of this argument is the subject of a different study- because it would involve knowing the military capacity of the Separatists on the 12th and the military capacity of the Ukrainians at the same time. It is a different question involving short term military decisions and the willingness of the Russian Federation to directly support the separatist movement

This however did not pan out. They get to the 15th and the protocols come into effect. The separatists do not control the territory that they expected to, and thus have to reevaluate the feasibility of maintaining the ceasefire as standing.

In this study, the financial values, both in expenses and Regional GDP will be represented by the calculations for the Donetsk and Luhansk regions. It is important to note that the territory controlled by the separatist forces does not represent the entirety of these regions. During the period of open conflict, the line of contact between the separatist forces and the Ukrainian central government changed and expanded but always remained within the regions of Donetsk and Luhansk (Piechal 2015, p. 2). The territory that they controlled never grew beyond the borders of these two regions, and thus the data for the two regions themselves prior to the war, during the open conflict, and then the estimations that come after the conflict began are as close as we can expect to achieve within this study. The assumption inherent in this use of data is that the actual budget of regional income of the separatist territory is lower in all three time categories- during peacetime, during open conflict, and the predicted income as a result of the ceasefire which came into effect on February 15th.

I have calculated all values in Ukrainian Hryvnia, as the data was reported by the Ukrainian state in these values. They all represented at actual prices from when they were reported. (State statistic services of Ukraine 2016)

This regional income is described best by the same document of the State Statistic Services of Ukraine, which describes the year long period in which the active conflict in the region began. Because the conflict itself began at the beginning of the fourth month of the year, one fiscal quarter could be expected to function at the same level of the previous year. When the conflict began on April 6th, the economy was duly affected, and the Gross regional Domestic Product was thus affected by the conflict.

The data that analyzed in the row “gross regional product” is from the state statistic services of Ukraine, which is a Ukrainian government agency that reports economic statistics from the state as a whole. The collection of data that I have used to draw this value comes from two different publications by the same state institution in Ukraine. The first was a report was published in 2016 and contains economic data for the separate regions of the country. The specific table used to calculate this value is on page 13 and describes the gross regional domestic product for each region of Ukraine (State statistic services of Ukraine 2016). The second was a similar report published in 2020 that contains the similar data for the years 2004 – 2019 (State statistic services of Ukraine 2020). The calculated value is the sum of the gross regional domestic product for the Donetsk and Luhansk regions.

The documentation provided by the Ukrainian government is an effective source on its own when concerning regional productivity during peacetime. However, from the year 2015 onward, the State statistical services reported statistics only for the parts of the Donetsk and Luhansk regions that they controlled. Thus, we do not know the direct relationship in the reduction of capacity, because economic statistics for the separatist areas are not available. Thus, I have chosen two methods by which to estimate their economic capacity. The first is by territorial acquisition. The Donetsk people’s republic, under the line of demarcation that stabilized after the signature of the Minsk II protocols, controls 7,853 square kilometers of territory.

The regional expenses of the Donetsk and Luhansk people’s republics during open conflict and after the signing of Minsk II are difficult to determine through direct estimation due to the lack of information, as the de-facto governments do not wish to publish budgetary or other fiscal reports due to war-time security concerns (Kasianenko 2021, p. 124). Because of this, the available information is from third party reporting. The Ukrainian government

estimates that Russia puts in 3 billion USD annually into the country, which is spent on their primarily on their defense and civil service budgets. Furthermore, they receive 800 million USD in arrears from the Ukrainian government in the form of pension payments to the retired population of the region, as the pensioners themselves are still considered by the Ukrainian central as Ukrainian citizens (Kolodiychuk 2017, p. 1). The regional production of currency has increased over the period of the war, but many of the most tax-revenue producing industries still pay taxes to the Ukrainian government as well as the separatist ones, reducing their potential for funding the war effort (Carnegie Europe 2018, p. 6). This balance between direct support from the Russian Federation is also supported by the reports from government officials in the breakaway republics which state that their government is funded through Russian financial support between 70 and 82 percent (Kasianenko 2021, p. 124). Thus, the total regional budget of the Donetsk and Luhansk governments is 103,489,162,000 Ukrainian hryvnia per year during the beginning of the conflict.

Regional budgets for the years from 2011-2014 were determined through a study conducted by Sokolovska and Sokolovskyi which used multivariate linear regression to determine the share of the Ukrainian budget expenditure that was applied and used in the region.

The regional income of the separatist regions after the signature of the Minsk II protocols in 2015 is extremely difficult to determine. Because some important parts of industry in the region continue to pay tax to the central government in Ukraine, and more that 40 large industries have been nationalized by the separatist states during the conflict and their productive capacity is not being reported, it is difficult to determine how much the state is capable of producing. Thus, these values have to be estimated and expected. I will choose to estimate this value in two methods. The first, by comparing the populations controlled by the central government before the beginning of the conflict and the population controlled by them after the beginning of the conflict. The second by comparing the territory of controlled by the central government before the conflict and after the beginning of the conflict and continuing into the period after the Minsk II protocol.

The testing of my hypothesis consists of comparing Value #5 and Value #6. If the predicted regional budget is less than the predicted income of the region for the year following the ceasefire coming into effect on February 15th, the decision to continue fighting cannot be viewed as rational from this perspective. If the predicted regional budget is greater than the predicted income of the region for the year following the ceasefire coming into effect on

February 15th, the decision to continue fighting can be viewed as rational from this perspective. Thus:

Verification:

(predicted regional budget for the year following the ceasefire coming into effect on February 15) > (predicted income of the region for the year following the ceasefire coming into effect on February 15)

Falsification:

(predicted regional budget for the year following the ceasefire coming into effect on February 15) < (predicted income of the region for the year following the ceasefire coming into effect on February 15)

In order to calculate these values, it was necessary to estimate the Gross Regional Product and Regional Budgets for the Separatist region. The Donetsk government has stated that they do not wish to release economic data due to security concerns during a time of war, and thus directly reported data is not available. However, the Ukrainian-held parts of the Luhansk and Donetsk regions have consistently reported their Gross Regional Product, and scientists from Kyiv measured the regional budget through an analysis of the total budget of the Ukrainian central government. These values, in combination with the accessible data from the Separatist regions (population size, territory under their control) and the per capita GRP of citizens in the government-controlled areas of Donetsk and Luhansk allow us to estimate what the potential Gross regional product is in the Separatist held regions. Furthermore, reports from the Ukrainian government, the separatist governments, and the Russian Federation give an numerical value to the financial support the separatist government receives from abroad.

Due to this uncertainty, the verification or falsification bipolar view of the hypothesis is not applicable on its own and must be viewed as the inclination towards rationality or the lack thereof.

What we can also look at in order to see the difference made between the fiscal situation for the separatist regions is to look at the deficit as a separate value. The direction of the deficit- either going up or down- indicates that the economy was moving in a direction that could either provide for the existence of a sovereign state in the future, or fail to provide for one.

Thus:

Verification:

Budget deficit is increase over time after the signing of the Minsk II agreement, or remaining the same.

Falsification:

Budget deficit is decreasing over time after the signing of the Minsk II agreement.

7 Results

The first step in analyzing the results is to look at the fiscal situation of the region prior to the beginning of the conflict. This can give us an indication of trends that existed in the leadup to the conflict itself. The region, as can be seen below in the graph and chart, suffered from a deficit between its gross regional product and its regional budget that was growing larger during the lead up to the war, and then grew quickly when the war began in 2014.

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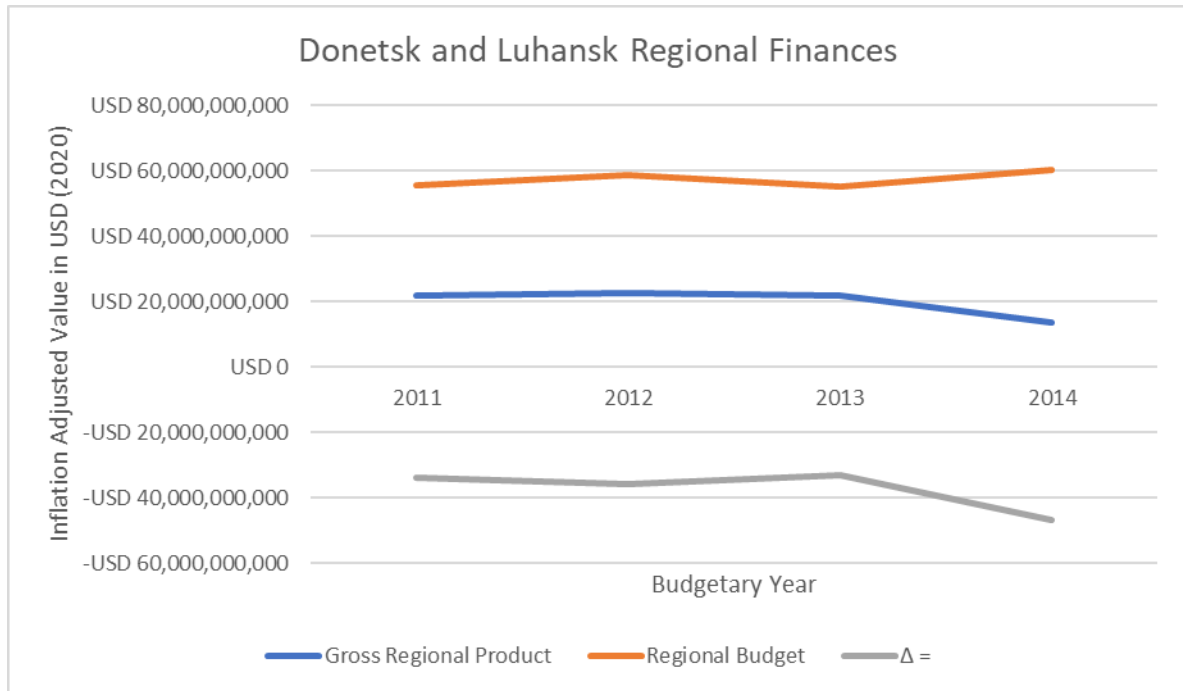
The increasing disparity between the regional budget and gross regional product is important to note, as it indicates that even before the outbreak of war, the region as a whole was not capable of financing itself in peacetime as an independent state. This indicates the irrationality of beginning a separatist movement in the first place- in that the region would not be capable

The higher rate of the regional budget in comparison to the Gross Regional Product is surprising due to several factors. For one, the Donetsk and Luhansk regions are some of the most industrialized and economically critical regions in Ukraine. They provide for 60 percent of Ukraine's coal production and contain major urban centers with a large population. Thus, the discrepancy is surprising. However, in the context of the centralized fiscal system that Ukraine uses for the distribution of national and regional budgets, it may be the case that this region is in fact subsidized by other regions. The trend towards further deficit financing of the local government can be seen in Graph 1.

Table 1

Inflation Adjusted Values in USD (2020)	2011	2012	2013	2014
Gross Regional Product	USD 21,684,448,189	USD 22,680,209,265	USD 21,792,832,076	USD 13,377,788,893
Regional Budget	USD 55,514,889,274	USD 58,430,015,726	USD 55,055,370,496	USD 60,290,143,429
Δ =	-USD 33,830,441,085	-USD 35,749,806,461	-USD 33,262,538,420	-USD 46,912,354,536

Graph 1



This situation is only exacerbated after the completion of the Minsk II protocols. The values listed here on are only an indication of what the parts of the region that were being held by the separatist forces were capable of producing. Finding data describing the gross regional product and the budgetary expenses of the separatist region are very difficult, in that the separatist leadership chooses not to publish their financial situation due to their concerns of state secrecy during wartime.

Beginning in 2017, state representatives began to admit to receiving financial support directly from the Russian Federation, which has been estimated to make up 70 to 82 percent of their total budget (Kasianenko 2021, p. 124). Ukrainian sources put this value at 81,743,340,000 Ukrainian hryvnia (3 billion USD) annually (Kolodiychuk 2017). Furthermore, in payments to pensioners in the separatist held areas, the Ukrainian government supported the state as well to the tune of 21798224000 Ukrainian hryvnia (800 million USD) annually. They thus supported the survival of those that they considered their citizens as well, but inadvertently supported the economy of the separatist state as well.

Determining the gross regional income of the separatist states was thus done through three modes of estimation. Reliable data is available on the gross regional product of the Donetsk and Luhansk regions from the Ukrainian state, which are specifically labeled as being listed

without representing the territories occupied by the separatists (State statistic services of Ukraine 2020). Accessible were also three different statistics- the population size of the separatist region, the territory they controlled, and the gross regional product per capita in the government-controlled region. I used these three different values to estimate the income of the region.

The first estimation was done by analyzing the population controlled by the Central government in the region, the population controlled by the separatist state in the region and comparing it to the total Gross Regional Product produced in the government-controlled area.

There is a consistent budget deficit which is filled by the level of Russian Federal and Ukrainian government support for the economy. This stable difference in value can be seen well in the graph below. Due to the fact that the support both from the Russian Federation and the indirect support from the Ukrainian government was consistent, the only changing factor was the level of income from the state itself in its Gross Regional Product, which did increase over time while the Minsk II protocols continued. This model shows that the regional budget was significantly higher than the regional income, and thus the hypothesis was verified.

The second model involved using the territory controlled but the Ukrainian Central Government and the separatist forces. The Ukrainian government controls the 69% of the territory of the Donetsk and Luhansk regions, and thus in this model the separatist government has even less power than they do in the model that uses population as an estimation.

This represented in a graph is farther apart than the previous is the same ratio, but with lower values.

The third model was to estimated using the per capita Gross Regional Product of the neighboring region in control of the Ukrainian government, and then adjusted for the population that is controlled by the separatist forces.

The average of all these estimations is represented in the following tables and graph. Each of these values presumes that the economic trends that were experienced in the government-controlled region were also experienced in and by the population of the separatist controlled area. This invites much doubt- the security concerns of the separatists may be vastly different than of those areas under government control. However, much of the economies, despite the conflict, maintained contact after the Minsk II agreement. This can be seen through the taxes

that many mines in the separatist area still pay to the central government in Kiev, or the direct financial support that pensioners in the separatist held areas receive from the central government, or the high number of commuters over the line of demarcation that travel for work or family visits (112.ua 2015), (OCHA 2021).

These value for the years 2015-2017 are estimations based on the best possible guess of what the region had to economically offer, and what the sister region controlled by the central government was capable of offering during the same tested period. This makes it difficult to draw a conclusive answer on whether the actions of the separatist state were in fact, due to economic necessity, rational. Without knowing the direct economic information from a reliable sources within the separatist held area, it would be impossible to hold this hypothesis to be binarily verified or falsified. Because a reliable source does not exist, and the government controlling the territory refuses to publish this data, it is difficult to make this determination.

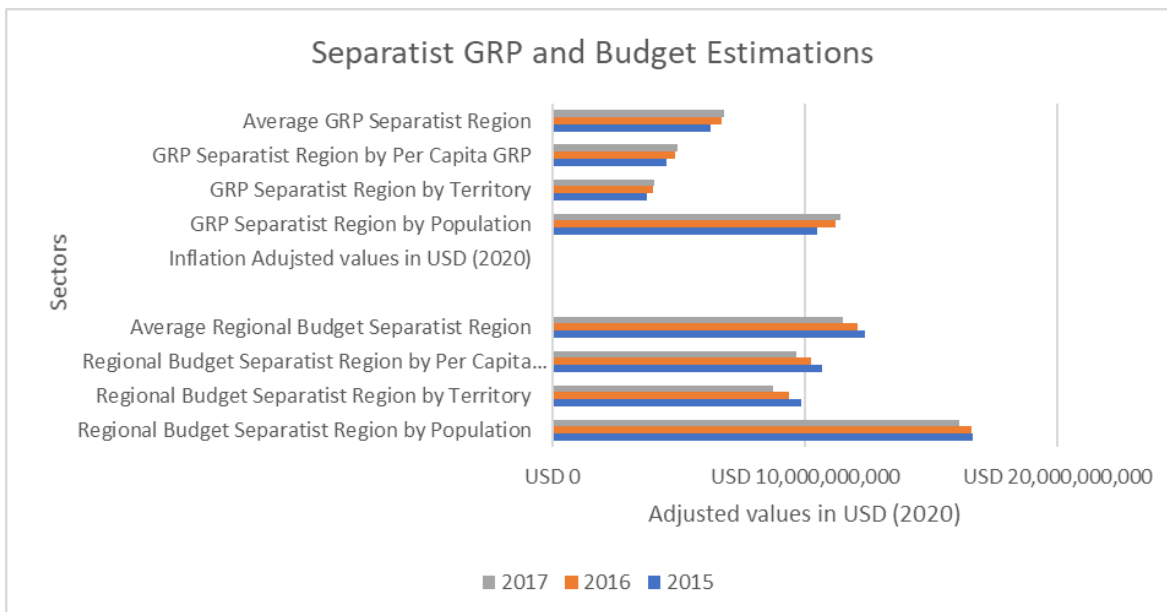
Table 2

Inflation Adujsted values in USD (2020)	2015	2016	2017
GRP Separatist Region by Population	USD 10,503,459,844	USD 11,212,343,392	USD 11,412,702,437
GRP Separatist Region by Territory	USD 3,707,743,068	USD 3,957,980,549	USD 4,028,707,590
GRP Separatist Region by Per Capita GRP	USD 4,512,373,429	USD 4,862,677,548	USD 4,950,666,504
Average GRP Separatist Region	USD 6,241,192,114	USD 6,677,667,163	USD 6,797,358,844

Table 3

Inflation Adujsted values in USD (2020)	2015	2016	2017
Regional Budget Separatist Region by Population	USD 16,653,976,661	USD 16,611,667,845	USD 16,130,811,129
Regional Budget Separatist Region by Territory	USD 9,858,259,884	USD 9,357,305,001	USD 8,746,816,282
Regional Budget Separatist Region by Per Capita GRP	USD 10,662,890,246	USD 10,262,002,000	USD 9,668,775,196
Average Regional Budget Separatist Region	USD 12,391,708,930	USD 12,076,991,615	USD 11,515,467,536

Graph 2



Deficit values in question were also plotted, and due to the consistency on international help remained the same in all estimations during each year, but crucially reduced during the period that was studied.

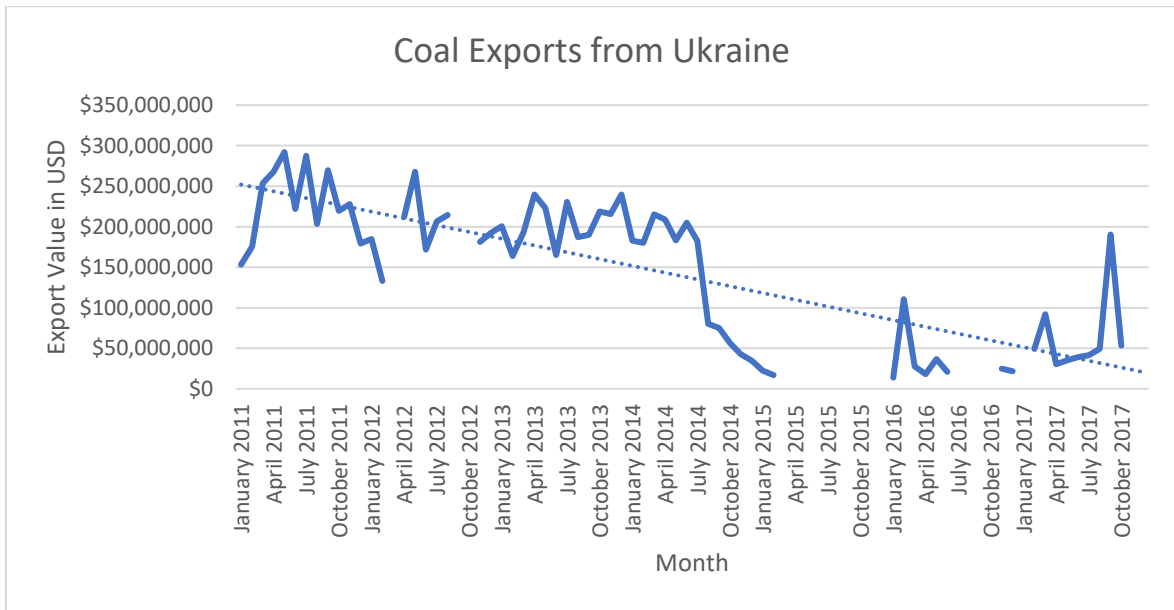
Table 4

Inflation Adujsted values in USD (2020)	2015	2016	2017
Deficit by Population	-USD 6,150,516,816	-USD 5,399,324,453	-USD 4,718,108,692
Deficit by Territory	-USD 6,150,516,816	-USD 5,399,324,453	-USD 4,718,108,692
Deficit by Per Capita GRP	-USD 6,150,516,816	-USD 5,399,324,453	-USD 4,718,108,692
Averaged deficit	-USD 6,150,516,816	-USD 5,399,324,453	-USD 4,718,108,692

This estimated data can be supplemented by information on the most important part of the Donbas economy- coal production. The regions of Donetsk and Luhansk made up, in the past, 60 percent of all coal production in Ukraine (Kochura 2012, p. 3). This represents around 3.9 percent of annual Ukrainian GDP, so it is a significant sector of the industrialized economy, and very important to the regions of Donetsk and Luhansk (Kyrchaniv 2015, p. 1). The UN trade commission reported monthly data for most of the months from 2011 to 2017, and the data included production statistics for the Donetsk and Luhansk regions, even

the territory held by the separatist forces (UN Commission on Trade 2022). Thus, it can give us an indication of the production levels of coal in Ukraine as a whole, of which the Donetsk and Luhansk regions represent 60 percent (Rizun and Ryzhkova 2016, p. 3). The missing data points represent months that were not reported.

Graph 3



(UN Commission on Trade 2022)

8 Discussion of Results

This data set reveals several things about the case for rational behavior in defense of their sovereignty. As is clearly visible in the Table and Graph 1, the deficit, which is represented by the Delta Symbol, was increasing slightly during the pre-war period, then went back down, and then quickly grew by almost one third during the initial phase of the conflict (State statistic services of Ukraine 2020). This indicates several things. First, the region was becoming not yet consistently moving in the direct of financial intendance. Low inflation and economic growth were helping the deficit remain roughly in the same space, but he occurrence of the war significantly affected the balance of the budget. The budget of the region went up significantly during war time, and income lowered. Thirdly and most importantly, the region was never financially capable of sovereignty, even when it was a legislative whole. The stable production value of coal may have maintained their income, but it could not make up for the increase in spending in the region. Thus, the expectation that a smaller, breakaway region would be capable of financing themselves is very unlikely.

The three methods of estimating the potential Gross Regional Product each indicated that there was a significant fall off in income, both due the reduced economic power that was available to the state, as well as due to the disruption the conflict caused to production. The fall off, however, was accompanied by a reduction in the budgetary costs of the region, so the differentiation, while great, is still not effectively different from the deficit that existed during peacetime when the whole region was under Ukrainian control.

It is important to note that the increase in this measurement, while an estimation of costs due to the lack of direct information about the economy of the region, still consistently shows that the economic productivity of the region has no capacity to finance the necessary costs of a sovereign state.

The trend of increased productivity is visible in each possible model, as well as the averaged model. This shows that the economy can recover in time. However, with the continuing influx of non-domestic funding making the budget larger than is possible for the separatist states themselves to invest in, the separatists are not forced to reduce their costs and thus help them to reach a balanced budget, which would allow them to act independently and sovereignly.

However, because we see that the region prior to the outbreak of war was not solvent, in that the produced more value than they spent, the argument that this region has the prospect of

becoming an independent state on its own is unlikely. Thus, the reality that the separatist state is not able to finance themselves goes to show that their reasoning to create the sovereign state from the beginning of the conflict was flawed in the first place.

Crucially however, we can see that the budget deficit between the years 2015 and 2017 in the separatist area is reducing at a significant rate when adjusted for inflation. This is a clear falsification of the second qualifying hypothesis and indicates that at some unknown point in the future, if the trend continues, it would be possible to balance the budgets and achieve greater sovereignty over the region. This does come as a surprise, because the fall in coal production is an important indicator of the lack of opportunity for the Separatist state to finance themselves. Without this income, the region loses the industry that makes up 60 percent of their GRP, which is reflected in the lower GRP number estimates for the separatist region. This reduction in income is obviously reflected in the budget expenses, but the importance of the support the region receives from abroad is crucial. Without the international support, there would be little possibility to survive financially. Budget increases are experienced through 2015-17, but the level of international support remained the same, meaning that the separatist state is functioning at a budget that is lower than what allows them to maintain their sovereignty.

The fact that the coal industry did recover to some level, and helped to support the region is also important to note that the true levels of international support are of course not limited to direct financial assistance, but also, particularly in the case of the separatist states, in the form of military support. This investment makes up a significant proportion of the budget of the state, which the opposing side- the central government of Ukraine, shows in their fiscal reports. Accepting that the direct military intervention of the Russian Federation supported the separatist cause in the most crucial moments in the fight directly after the effectiveness of the Minsk II protocols, than an added value to the regional budget of the state is warranted (Luhn and Grytsenko 2015, p. 2). However, because the actions of direct Russian military intervention are not reported on directly by the OSCE monitors, and the full extent of their military support of the region is not reported, it is only further speculation to estimate the value of the military support to the region.

Once the crux of February 15th, 2015, was reached, and all signatories to the Minsk II protocols had spent a year engaged in open conflict, the decision was made to sign the protocols, and when they came into effect, the separatist forces had the opportunity and option to choose to respect the ceasefire in order to pursue peace through negotiation. In

none of the modeled situations was the income of the separatist regions greater than their spending, despite the rise in economic productivity over time. Furthermore, the economic indicators from the largest industry of the region- coal production- follow a similar economic path during the period that was studied. But the fact that the deficit in spending when adjusted for inflation was reducing does go to show that there was increasing economic independence in the area. Thus, the rationality of the separatist actors in breaking the ceasefire in February of 2015 is supported as likely according to the predicted data. Furthermore, the second test of the hypothesis was shown to be that the Separatist state, while choosing to violate the ceasefire agreement, was growing closer towards fiscal sovereignty. Only the further developments of the Coal Industry in particular, and the Donetsk and Luhansk economic development themselves can tell when this would have the potential to happen. Thus, this return to violence- whether it be immediately after the Minsk II protocols or further in the future- can be viewed as inevitable until time in which the separatist state reaches fiscal independence.

Conclusion

The conflict in Eastern Ukraine is essential to the question of European security. A state with positive relations with the European Union, ambitions to join NATO, and most importantly, shares a land border with multiple EU and NATO member states has experienced separatism as a direct result of the decisions of the central government. The way in which conflict takes place in the Donbas region will inform further conflicts which will inevitably happen in the future. The way in which this conflict continues- whether it will remain a frozen conflict, will resolve and result in a federalized Ukrainian state, will result in the annexation of the region by the Russian Federation, or will result in further total conflict, remains to be seen. This study gives an important method of analysis of the situation which shows that actors likely behavior in a manner which is rational. States seek to preserve their sovereignty over their claimed territory, and exercise power when this sovereignty is threatened. Thus, by identifying when rational behavior dictates that an actor must change the status of the ceasefire can help identify when conflict will continue to occur after a period of conflict.

The conclusions to be drawn by this study can be suspect to doubt due to the fact that the values are estimated. The party to the conflict that was questioned in this study did not publish independently any economic data, precisely for the reason that they did not want to give any “computational” or strategic advantage to their opponents in the conflict (Katchanovski 2018, p. 3). This refusal to share data with other actors in the international sphere should be taken seriously as a sign that this data is important. By using estimation of what the potential income and budgets of a party in a conflict experience, we can better predict their actions, and most importantly, better suit ceasefire and peace agreements to the actual needs of each party, rather than their aspirational ones.

It is also important to note that while the estimation of values may seem a coarse method of finding data to study, it is also the way in which states in conflict predict their potential income and budgets into the future. In February of 2015, when the leadership of the separatist forces decided to continue fighting after the effective date of the ceasefire, they also had to make a choice based on economic, military, and social predictions into the future. Their calculations about their predicted future income were even less exact than those that we can infer from the economic data from the government-controlled areas of Donetsk and Luhansk. This mode of study, looking at ceasefires as an important part of inter-actor relations, allows us to see the way that leadership in conflicts has to make their decisions. Their information

may be of better quality, as they have data that they would not publish to the world, and thus their opponents. Their estimations of future Gross Regional Product, and to a lesser extent Regional Budgets, is just that- an estimation. Scientific study can provide us with a window into the decision-making process.

In the future, the mode of calculating and viewing when rational behavior could lead to further violence should lead to further scientific research into the area. Ceasefires are still an under researched area- Bara and Clayton have made this clear (Bara et al. 2021, p. 1). Yet it is this mode of international relations that the most potential and direct effect on the reduction of violence, and thus can save civilian and military lives. The more we understand ceasefires, the better we become at designing them- and consistently moving towards a more “perfect peace”.

Summary

This thesis covers the concept of rationality of behavior in ceasefires. The goal of this work is to analyze the behavior of actors involved in the ceasefire set by the Minsk II protocols in the Donbas region of Ukraine. The study begins by explaining ceasefires from a theoretical perspective and are proven to be an integral form of state relations. Actors have options in ways to react to ceasefires, and act upon differing impulses when they are presented with a situation set by an existing ceasefire which is in effect. This decision-making process is highly convoluted, but because a ceasefire is often the difference between open conflict and a cessation of violence, it is crucial to understand each possible reaction, so as to give the parties involved the best chance at reducing violence. The Minsk II Protocols, signed on February 12th, 2015, were designed to reduce violence and tensions in the Eastern Donbas region. The legitimacy of the ceasefire was acknowledged, and yet fighting continued after it took effectiveness. This study seeks to show that despite this seemingly incongruent behavior, the decision to violate the ceasefire was rational at the time of the violations themselves. Rationality is described, Sovereignty is defined, and the study attempts to prove that due to the economic situation that could be separatists were confronted with, it was highly unlikely they could maintain sovereignty under the economic conditions inherent to the territory they controlled.

The study concludes with a section reviewing conclusions that can be made from the study, a discussion of the further development of the Ukrainian conflict, and possibilities for further academic research on the topic. It is made clear that the two modes of analysis that continuing to fight was rational. Measuring in which the difference between GRP and budget showed that the income from the state never reached the required budget, and thus it was rational to change the ceasefire status quo. Furthermore, the lowering of the deficit showed that over time, the separatist state was growing closer to maintaining sovereignty, but it is not clear as to when this would happen, or if the leaders of the breakaway region would be capable of using that knowledge in their decision to follow the ceasefire or to choose to violate it.

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Master's Thesis Summary

This thesis covers the concept of rationality of behavior in ceasefires. The goal of this work is to analyze the behavior of actors involved in the ceasefire set by the Minsk II protocols in the Donbas region of Ukraine. The study begins by explaining ceasefires from a theoretical perspective and are proven to be an integral form of state relations. Actors have options in ways to react to ceasefires, and act upon differing impulses when they are presented with a situation set by an existing ceasefire which is in effect. This decision-making process is highly convoluted, but because a ceasefire is often the difference between open conflict and a cessation of violence, it is crucial to understand each possible reaction, so as to give the parties involved the best chance at reducing violence. The Minsk II Protocols, signed on February 12th, 2015, were designed to reduce violence and tensions in the Eastern Donbas region. The legitimacy of the ceasefire was acknowledged, and yet fighting continued after it took effectiveness. This study seeks to show that despite this seemingly incongruent behavior, the decision to violate the ceasefire was rational at the time of the violations themselves. Rationality is described, Sovereignty is defined, and the study attempts to prove that due to the economic situation that could be separatists were confronted with, it was highly unlikely they could maintain sovereignty under the economic conditions inherent to the territory they controlled.

The study concludes with a section reviewing conclusions that can be made from the study, a discussion of the further development of the Ukrainian conflict, and possibilities for further academic research on the topic. It is made clear that the two modes of analysis that continuing to fight was rational. Measuring in which the difference between GRP and budget showed that the income from the state never reached the required budget, and thus it was rational to change the ceasefire status quo. Furthermore, the lowering of the deficit showed that over time, the separatist state was growing closer to maintaining sovereignty, but it is not clear as to when this would happen, or if the leaders of the breakaway region would be capable of using that knowledge in their decision to follow the ceasefire or to choose to violate it.

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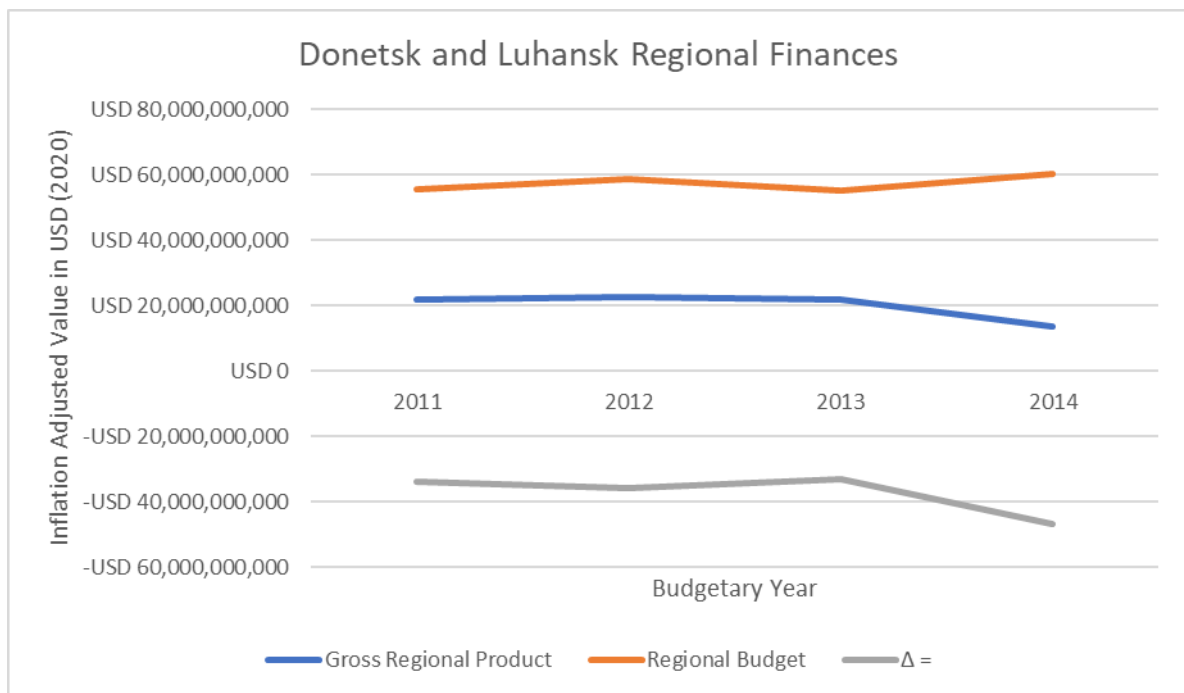
Appendix no. 6: Budget Deficits in Separatist Held Area [Table 4]

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Appendix no. 1: Pre-War fiscal statistics [Table 1]

Inflation Adjusted Values in USD (2020)	2011	2012	2013	2014
Gross Regional Product	USD 21,684,448,189	USD 22,680,209,265	USD 21,792,832,076	USD 13,377,788,893
Regional Budget	USD 55,514,889,274	USD 58,430,015,726	USD 55,055,370,496	USD 60,290,143,429
Δ =	-USD 33,830,441,085	-USD 35,749,806,461	-USD 33,262,538,420	-USD 46,912,354,536

Appendix no. 2: Graph of Appendix 1 [Graph 1]



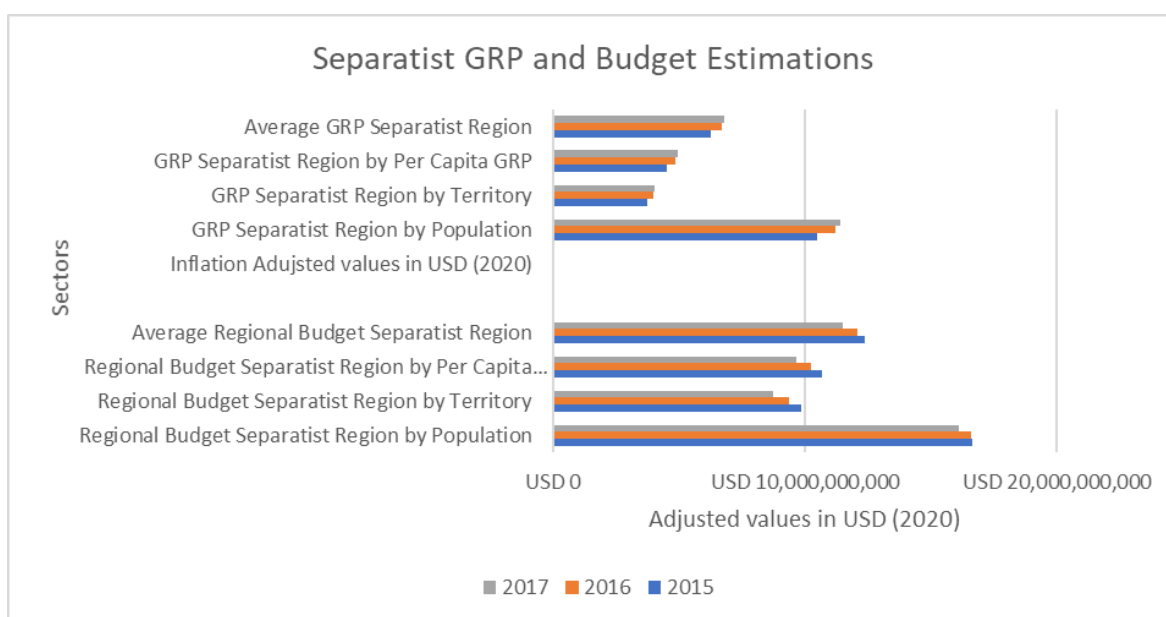
Appendix no. 3: Predicted values in separatist held area [Table 2]

Inflation Adjusted values in USD (2020)	2015	2016	2017
GRP Separatist Region by Population	USD 10,503,459,844	USD 11,212,343,392	USD 11,412,702,437
GRP Separatist Region by Territory	USD 3,707,743,068	USD 3,957,980,549	USD 4,028,707,590
GRP Separatist Region by Per Capita GRP	USD 4,512,373,429	USD 4,862,677,548	USD 4,950,666,504
Average GRP Separatist Region	USD 6,241,192,114	USD 6,677,667,163	USD 6,797,358,844

Appendix no. 4: Predicted Values in separatist held area [Table 3]

Inflation Adujsted values in USD (2020)	2015	2016	2017
Regional Budget Separatist Region by Population	USD 16,653,976,661	USD 16,611,667,845	USD 16,130,811,129
Regional Budget Separatist Region by Territory	USD 9,858,259,884	USD 9,357,305,001	USD 8,746,816,282
Regional Budget Separatist Region by Per Capita GRP	USD 10,662,890,246	USD 10,262,002,000	USD 9,668,775,196
Average Regional Budget Separatist Region	USD 12,391,708,930	USD 12,076,991,615	USD 11,515,467,536

Appendix no. 5: Graph of Tables 2 and 3 [Graph 2]



Appendix no. 6: Budget Deficits in Separatist Held Area [Table 4]

Inflation Adujsted values in USD (2020)	2015	2016	2017
Deficit by Population	-USD 6,150,516,816	-USD 5,399,324,453	-USD 4,718,108,692
Deficit by Territory	-USD 6,150,516,816	-USD 5,399,324,453	-USD 4,718,108,692
Deficit by Per Capita GRP	-USD 6,150,516,816	-USD 5,399,324,453	-USD 4,718,108,692
Averaged deficit	-USD 6,150,516,816	-USD 5,399,324,453	-USD 4,718,108,692

Appendix no. 7: Coal production in Ukraine [Graph 3]

