



Designing Conventional Arms Control Agreements

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ABSTRACT

What determines the scope of conventional arms control (CAC) agreements in Europe? The crafting of an agreement can have important implications for the stability and trajectory of future relations while reflecting adversaries' existing political and military relationship. Scholars, while agreeing that CAC agreements are intended to reduce the costs and impact of rivalries, and having articulated how arms control fit into states' broader strategic goals, have not theorized how agreements focus on geographic demilitarization or national arms limitations. This study proposes a theoretical model to understand and predict approaches to CAC agreements based on both the military relationship existing when the agreement is made and the geographic scope of the rivalry; after this, it hypothesizes that the configurations of these two conditions result in different but predictable approaches to the CAC agreement. The predictions are then tested against a dataset of 39 European agreements, made from 1919 to the present. Over 80% of the agreements matched the predicted outcomes, suggesting that the theoretical model may accurately explain a significant feature of CAC agreement design.

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What determines the scope of conventional arms control (CAC) agreements in Europe? Scholars of adversarial conventional arms control (CAC)¹ explain in general terms why states enter CAC agreements, and scholars of specific agreements, rivalries, or historical periods can explain how certain agreements or agreement sets took shape through detailed within-case analyses. But there is notably little theorizing on the forms that CAC agreements have taken, even in the broadest terms; essentially all types of CAC are considered to be greatly similar, since they share the same outcome of cooperation and stabilization. CAC agreements, that is to say, are the product of, and promote, cooperation – but there has been little analysis of the types of CAC cooperation that states agree to.

This article develops a theoretical model to explain variation in the form that conventional arms control agreements take. Specifically, it seeks to understand and predict when states adopt national arms limitations, mutual geographic demilitarization, or discriminatory geographic demilitarization as a function of two independent variables: the political–military relationship between rivals, and the geographic scope of their rivalry. The resulting configurations and predicted outcomes are summarized and visualized in [Figure 1](#).

Previous CAC studies largely ignore the different forms of CAC agreements, treating a narrow agreement to establish a buffer zone of a few meters depth and width identically to an agreement limiting military capabilities across several categories of weapon systems spanning a continent or ocean. Scholars broadly understand CAC as escaping the prisoner's dilemma, and CAC agreements as beneficial to, or as seeking to benefit, military stability between rivals. This study attempts to offer a more detailed CAC theory and contribute to the understanding of international relations through theory derived from empirical data ([Sterling-Folker, 2013](#); [Walt 1998](#); [Waltz 1979](#)).

If there were no rationale behind the formulation of CAC agreements between states, if they were to merely indiscriminately select from some abstract menu of CAC agreement options, no theory could be hypothesized. Of course, such a reality would offend the basic precepts of international relations: detailed case studies of CAC agreements suggest that, in most cases, agreements are the product of extensive study, negotiations, and considerations. Moreover, states regularly *reject* rivals' proposals or demands. This is unsurprising, as the agreements all deal with security and interstate competition; indeed, for Jervis:

Not only is security the most highly valued goal because it is a prerequisite for so many things, but the security area is unforgiving. Small errors can have big consequences, and so the costs of living up to the rules of a regime while others are not are great. Temporarily falling behind others can produce permanent harm.
([Jervis, 1982, p. 359](#))

Thus it would be surprising, given the stakes and the thought put into most CAC agreements, if a theoretical explanation of this study's focus, their geographic scope, were impossible. In drafting a CAC agreement, states have recourse to many options and combinations of approaches, any of which might offer mutual benefits. CAC agreements almost always include discriminatory geographic demilitarization, mutual demilitarization, or national limitations. This study offers a framework to suggest which of these might be included based on the political relationship, largely defined by the military relationship, when the agreement is made.

The theoretical model ([Figure 2](#)) is developed through abductive reasoning, drawing heavily from grounded theory practices, which routinely rest on the use of figures to represent categories or processes ([Bryant & Charmaz 2019](#); [Ligita et al., 2022](#)). Here, the model's predicted outcomes match observed outcomes in 33 out of 39 cases, or 85%, suggesting that the geographic scope of a rivalry and the military and political relationship between states are important determinants of whether CAC agreements incorporate national limitations and geographic demilitarization. In almost every unpredicted exception, agreements included mutual demilitarization rather than discriminatory demilitarization.

Serving to mitigate the many deficiencies of the existing theoretical understanding of CAC, these findings may assist policymakers in deciding the appropriate agreements' future designs – something potentially useful, it should be noted, to cases such as the crafting of CAC agreements

¹ Unless otherwise stated, all references to CAC hereafter refer to *adversarial* CAC.

between Ukraine and Russia as part of any ceasefire or longer-term peace settlement,² or between Russia and the European Union and NATO more broadly (Lippert, 2024a).

CAC DEFINITION AND THEORY

“Adversarial CAC” or cooperative CAC (Kühn, 2020) refers to arms control between rivals, as opposed to arms control agreements with universal humanitarian objectives, such as the Anti-Personnel Landmines Convention, or counterproliferation agreements which seek to prevent the spread of certain military capabilities, such as the 1987 Missile Technology Control Regime (MTCR).³ There are several notable definitions of arms control; Schelling and Halperin (1961, p. 2) define it as “all the forms of military cooperation between *potential enemies* in the interest of reducing the likelihood of war, its scope and violence if it occurs, and the political and economic costs of being prepared for it” (emphasis added). For Larsen (2002, p. 1), it is “any agreement among states to regulate some aspect of their military capability or potential. The agreement may apply to the location, amount, readiness, and types of military forces, weapons, and facilities.”

Despite the extensive literature on CAC, explanatory theory for most aspects of the agreements is lacking. Scholars such as Jervis (1991) and Schelling (1975) state that, writ large, rivals enter into CAC agreements to reduce the threat of conflict and reduce the costs of competition through cooperation, explained in large part by the prisoners’ dilemma (Axelrod & Keohane, 1985). Research provides compelling reasons why states might enter into CAC agreements, or refuse to enter them, but little theory exists about why agreements actually take the shape that they do. Lippert and Becker’s (2025) attempt to demonstrate that CAC agreements generally retain the status quo of the military balance offered insights into how CAC agreements arrived at certain limitation ratios or preserved the existing military balance through measures such as buffer and demilitarization zones. Most importantly, the study suggested that CAC agreements never reverse the military balance.

Compared with theory on nuclear arms control, well understood in terms of strategic stability, the fundamentals of CAC remain notably underexamined. Due to the unpredictability of conventional warfare and its comparatively lower destructive power, CAC does not lend itself to such sweeping theorizing (Graef, 2021). Moreover, large numbers of states have entered a variety of CAC agreements since 1919, at least, while nuclear arms control agreements have largely been limited to the United States and the Soviet Union or Russia since 1945 (excepting states’ agreements not to obtain nuclear weapons). Theorizing nuclear arms control, that is, involves fewer agreements and states. Nuclear arms control has been characterized by a combination of strengthening mutual deterrence, in part through the restraint and limitation of destabilizing capabilities (Cameron, 2022; Jervis 1991; Kokoshin 2011). Adversarial CAC is a subset of broader arms control and disarmament, with both overlaps and differences from other types of arms control. This study, however, has a narrow but perhaps important focus on a particular aspect of adversarial CAC: national limitations and demilitarization.

CAC AGREEMENT DETERMINANTS

As Figure 1 shows, this study rests on the hypothesis that the form of the CAC agreement – specifically, whether they incorporate national limitations and/or discriminatory or mutual geographic demilitarization (dependent variables) – is shaped by two conditions: the political-military relationship between the rivals and the rivalry’s geographic scope (independent variables). The interaction of these two factors is expected to determine the form that CAC agreements take.



Figure 1 The CAC Formula.

2 Since the start of the conflict, various ceasefire and peace proposals have been negotiated or otherwise discussed by experts; see, for example, Newsweek (2024); Reuters (2022, 2023); Schmidt (2023). See also Lippert (2024a) for discussion of how the military situation at the end of the Russo-Ukrainian War will shape any CAC agreements between Russia and Ukraine.

3 Not all arms control literature differentiates between adversarial, counterproliferation, and universal humanitarian arms control despite the substantial difference in the goals of each approach.

The political-military relationship between adversaries is a central aspect of interstate relations as relative power perceptions are fundamental to their interactions (Kaplow & Gartzke, 2021). Adversarial relationships can exist in several relative states: clearly imbalanced; clearly balanced; in conflict; and at peace. Arms control agreements are a bargaining endeavor, with each side making demands and offering concessions. In peacetime, states may or may not agree about one another's relative political-military power, but during war, or immediately afterwards, rivals are much more likely to agree on the relative political-military power: combat will reveal which is stronger, or if the parties are stalemated (Fearon, 1998; Reiter, 2009). More specifically, the stronger party or parties are less likely to surrender military capabilities that reduce their comparative advantage, while parties of comparable military strength are more likely to retain this equality (Lippert & Becker, 2025). This, then, can determine the feasibility of any proposed CAC agreement.

THE GEOGRAPHIC SCOPE OF RIVALRY

Given that CAC agreements, by definition, apply to a geographic area – anything between a narrow topographical feature, the entire national territory, or the globe – geographic scope is important. Blagden (2021), for example, emphasizes that geography is closely tied to notions of military systems and the offense-defense balance; Tir and Diehl (2002) assess how rivalries are influenced by geography – territorial disputes, for example. Taliaferro (2012), similarly, discusses the interaction between the scale and breadth of states' national interests and rivalries from the perspective of geographical issues.

THE FORMAT OF THE CAC AGREEMENT

NATIONAL LIMITATIONS AND GEOGRAPHIC DEMILITARIZATION

This study treats the form of a CAC agreement as the dependent variable, shaped by two explanatory conditions: the political-military relationship between rivals and the geographic scope of a rivalry. In their extensive study of interwar arms-control agreements, Burns and Urquidi (1968b, p. 1) categorize agreements as seeking either geographic demilitarization or arms limitation. Table 1 explains how this study's three categories of agreement types are defined and assessed. "Arms limitation" refers to the quantitative and qualitative limitation of military forces and capabilities such as personnel, equipment, technology, logistics, positioning, training, among others (Lieber, 2000; Lippert, 2024a; Müller & Albert, 2021; Schofield, 2000). Examples include the 1990 Treaty on Conventional Armed Forces in Europe (CFE)'s limitation of NATO and Warsaw Pact forces in five major land force categories⁴ from the Atlantic Ocean to the Ural Mountains, or the imposition by the Allies of significant limitations on the military capabilities of the defeated Central Powers after World War One.

Agreements incorporating national limitations sometimes seek to establish a fixed numerical ratio of forces between adversaries, and are often aimed at moderating or preventing an arms race, reducing threat of a surprise attack, and generally improving diplomatic relations. Often, rival states agree to retain the status quo, based on the current balance and its trajectory (Kreps 2018, p. 137); in a small percentage, the stronger parties accept a reduction to a state of parity. In no case is the military balance inverted (Lippert & Becker, 2025).

Importantly, CAC agreements can establish national limitations on one state or bloc, or apply to all sides. In mutual limitation agreements such as the CFE Treaty, all state parties accept limitations; in other agreements, almost always following a conflict with a clear victor, only the defeated state(s) commits to limitations. In these cases, the victor will not be subject to revenge attacks or attempts to alter the terms, especially those involving loss of territory. The benefit for the defeated state in this type of agreement is that the victors agree to end combat operations, meaning an end to losses, and terms can be negotiated from a bargaining position that remains comparatively favorable (Filson & Werner, 2002; Levy, 1996; Pillar, 1983). National

⁴ The CFE Treaty also adopted a zonal approach to restrictions, with more limits on areas in central Europe compared to areas further away. Though this is a type of demilitarization, it is so geographically broad (continent-wide) and so evidently part of the overall balancing effort that the agreement is categorized as a balancing agreement.

arms limitations are sometimes composed to reduce the likelihood of any potential surprise attack by focusing on offensive weapons (Glaser, 1992; Jervis, 1978) such as tanks, combat aircraft, attack helicopters, or vehicle-borne assault bridges (capabilities included in the 1990 CFE Treaty) or capital ships such as battleships (the focus of the 1922 Washington Naval Treaty). This study does not differentiate between agreements that impose national limitations on a single side or on both: even when limitations are mutual, they are not necessarily equal either in terms of treaty-limited equipment (TLE) reductions or any agreed ratio.

“Geographic demilitarization”, for which scholarly study remains limited (Chillaud, 2006, p. 1), refers to limitations, not intended to impact the overall military capabilities of any state party, placed on a specified geographic area. For Rotkirch (1986, p. 347), demilitarization “means that no fortifications or permanent military structures may exist in the area.”⁵ One reason why geographic demilitarization may receive less attention than national limitation agreements, both in policy formulation and in scholarly research, is that such agreements are “shaped specifically to meet the needs of a particular situation within a certain geographical area, [and] their form is often unique in every instance” (Koivurova & Holiencin 2017, p. 131).

Geographic demilitarization can partially alleviate the security dilemma by physically separating opposing forces. Removing military forces from a contested area reduces the risk of measures intended for defense being misinterpreted as potentially offensive. In this way, geographic demilitarization mitigates security concerns that arise when states feel compelled to fortify areas they fear losing, thereby lowering the likelihood of mutually reinforcing threat perceptions. Examples of peacetime demilitarization agreements include the 1920 Spitsbergen and 1921 Åland Islands agreements prohibiting all military activity on the islands, or the 1923 Lausanne and 1936 Montreux agreements for the Turkish Straits.

Geographic demilitarization also takes the form of the establishment of buffer zones in times of both war and peace (Burns & Urquidi, 1968a). Chillaud (2006, p. 6) states that buffer zones are “designed to reduce the risk of or minimize territorial disputes by preventing direct contact between hostile armies.” This includes separating forces to reduce the likelihood of a major incident leading to a broader conflict – sometimes with international peacekeeping forces placed between rivals to increase the diplomatic costs of attacking, to provide breathing room for diplomacy, and to reduce the likelihood of a successful surprise attack.

Both forms of demilitarization agreements continue to be established, proposed, and implemented. Shortly before Russia invaded Ukraine, Moscow proposed a set of demilitarization agreements to the United States and NATO (Russian Foreign Ministry, 2021). In 2015, Ukraine, Russia, and Ukrainian separatists signed the Minsk agreements, which included the establishment of a buffer zone between warring parties.

The two demilitarization approaches above involved all sides accepting a prohibition of military forces within a geographic area. There exists another demilitarization approach, however, considered one-sided and discriminatory, in which a state is prohibited from having certain military capabilities within an area on their own territory without an equivalent type of prohibition imposed on the adversary. Examples of these might include the 1920 Russian-Finnish agreement in which Finland accepted limitations on its forces in its Arctic Ocean coastal region, or the 1999 Kumanovo Agreement which ended the Kosovo conflict and established a demilitarized buffer zone within then-Yugoslavia that only applied to Yugoslav forces.

Geographic demilitarization agreements can address very specific sources of dispute between rivals, but in most cases they do little to resolve broader differences and competition when compared to agreements incorporating national limitations. National limitation agreements such as the CFE Treaty (Hogg 2004; Montgomery 2006) can have a significant impact in alleviating specific security dilemmas, improving diplomatic relations (Mazarr et al., 2021), and even ending rivalries⁶ – but they may be much more difficult to establish because of their effects on states’ security (Jervis, 1982).

5 Neutralization, a concept closely linked to demilitarization, designates the general prohibition of any kind of military activity (Koivurova & Holiencin, 2017; Rotkirch, 1986). For the purposes of this article, the two terms are included together under geographic demilitarization.

6 One of the most successful CAC agreements in history was the 1904 Franco-British *entente cordiale*, which demilitarized certain areas of North Africa, ending colonial competition and key in establishing the alliance between the countries a decade later (Douglas Johnson et al., 2004).

THE GEOGRAPHIC SCOPE OF THE SECURITY AGREEMENT

No body of theory exists to aid our understanding of whether rivals will choose a geographic demilitarization or a national limitation approach when drafting a CAC agreement. But we might intuit there to be some relation between the dispute's geographic scope and the scope of the eventual agreement.

If peacetime disputes are limited to a narrow geographic area that might offer only one side an advantage without an agreement being struck, but advantages to both sides if an agreement is made, then the parties might turn to geographic demilitarization. States in conflict may agree to a ceasefire focused on geographic demilitarization if their conflict and military capabilities are confined to a limited geographic area (usually a common land border or a relatively straight line of contact).

Rivals are also more likely to pursue relatively mutual rather than discriminatory geographic demilitarization when a specific issue presents itself – the unique dilemmas posed during the interwar period by Spitsbergen, Åland, and the Turkish Straits, for example, or when a conflict or dispute is confined to a relatively small area. Mutual geographic demilitarization agreements, which are imposed relatively equally on all sides, are more likely to occur in a situation in which there is no overwhelming imbalance in the military relationship. In contrast, a party enjoying significant military superiority might be much more reluctant to accept a geographic limitation on their own forces and more interested in imposing a limitation on their adversary. Equally, a state facing a clearly superior foe might be more likely to accept a geographic limitation on their own territory without a corresponding sacrifice on the part of their rival – and possibly with the implicit threat that failure to comply might result in conflict. In this situation, the outcome is discriminatory geographic demilitarization.

National limitations may occur when states have a broad geographic competition extending across a continent, hemisphere, or even globally. This approach is more important for stressed rivalries, including the cessation of hostilities, as a geographic demilitarization approach is less likely to address any causes underlying the rivalry. However, rivals may struggle to enter into a national limitations agreement if other significant and threatening rivals exist outside of the agreement; a CAC agreement could result in a net decrease in military capability relative to a rival outside of the agreement.

As national limitations impose substantial limits on states' military capabilities, states are unlikely to accept them without an equivalent limitation on the part of their adversaries in the absence of conflict. Both cost-benefit analysis (Delaney Edge, 2021; Hausken, 2016; Hu et al., 2019; Rizzo, 1997) and bargaining (Fearon, 1998; Freedman, 1991; Jervis, 1978; Pillar, 1983; Schelling, 1975) suggest that a state would not so significantly increase its vulnerability to an adversary unless there were no other reasonable option – which occurs when a state is defeated in a conflict. Sometimes conflict is necessary to reveal a state's bargaining power (Reiter, 2009): a defeated state, that is, will accept national limitations that it would not otherwise accept if it had not lost.

CONDITION/APPROACH	DEFINITION	EXAMPLES
National limitations	Quantified, specific limitations of a military capability across an entire state's inventory and territory.	Prohibition of submarines; numerical limit on tanks, combat aircraft, artillery, battleships, and other equipment.
Mutual demilitarization	A situation where all parties agree to limit military capabilities in a certain location, with generally equal effect for all parties.	Buffer zones along both sides of a border or line of contact, limitation of military capabilities on a contested land mass such as an island or waterway.
Discriminatory demilitarization	A situation where only one side is obligated to respect limitations on military capabilities in a certain geographic area.	Limitation on the number of soldiers along only one side of a border; prohibition on one state from operating naval vessels in a specified area; prohibition on only one party from erecting fortifications.

Table 1 CAC Approach Definitions.

THEORIZING CAC AGREEMENT CONTENT

This study uses *abduction* – a “crucial pathway for conceptual innovation in the social sciences [resting on] the construction of theoretical ideas on the basis of empirical data” (Timmermans

& Tavory 2012, p. 167) – to create a theoretical model that explains and predicts whether states choose mutual geographic demilitarization (D1), discriminatory geographic demilitarization (D2), or national limitations (NL) in CAC agreements. For Timmermans and Tavory:

Abductive analysis is a qualitative data analysis approach aimed at generating creative and novel theoretical insights through a dialectic of cultivated theoretical sensitivity and methodological heuristics. Abductive analysis emphasizes that rather than setting all preconceived theoretical ideas aside during the research project, researchers should enter the field with the deepest and broadest theoretical base possible and develop their theoretical repertoires throughout the research process. (Timmermans & Tavory, 2012, p. 180)

Seeking to develop a novel theory of conventional arms control grounded in empirical analysis, this study closely follows the abductive approach outlined by Timmermans and Tavory, drawing on a dataset of 39 CAC agreements. While following grounded theory’s general framework, coding and theorizing from empirical data, it departs from the method in several important ways. First, it does not look at a sample of cases from a larger population: the dataset is composed of all known, relevant cases; second, the study does not *formally* involve continuous stages of data collection and theorizing in a back-and-forth manner: all relevant cases were identified prior to the comprehensive theorization.⁷ The basis of grounded theory is that theory development and data collection are closely intertwined in a “constant comparative method” (Glaser & Strauss, 1967, chap. 7). While the development of the theory was not methodically pursued through the collection of cases, the interaction of the processes of theory development and research led to an empirically valid theory (Eisenhardt, 1989; Mustonen-Ollila et al., 2020).

This study’s theoretical model is presented as a flowchart (see Figure 2). The outcomes of this flowchart are types of CAC agreement, categorized by the political/military relationship defining them. Further explained in Table 2, there are four of these categories: *superior/inferior peace* (SIP) – a peacetime situation in which one party is clearly (and mutually recognized to be) superior; *superior/inferior conflict* (SIC) – a conflict termination situation in which one party is clearly (and mutually recognized to be) superior; *parity conflict* (PC) – the resolution of conflict with a state of parity between the antagonists; and *parity peace* (PP) – a state of parity between rivals who are not at war.

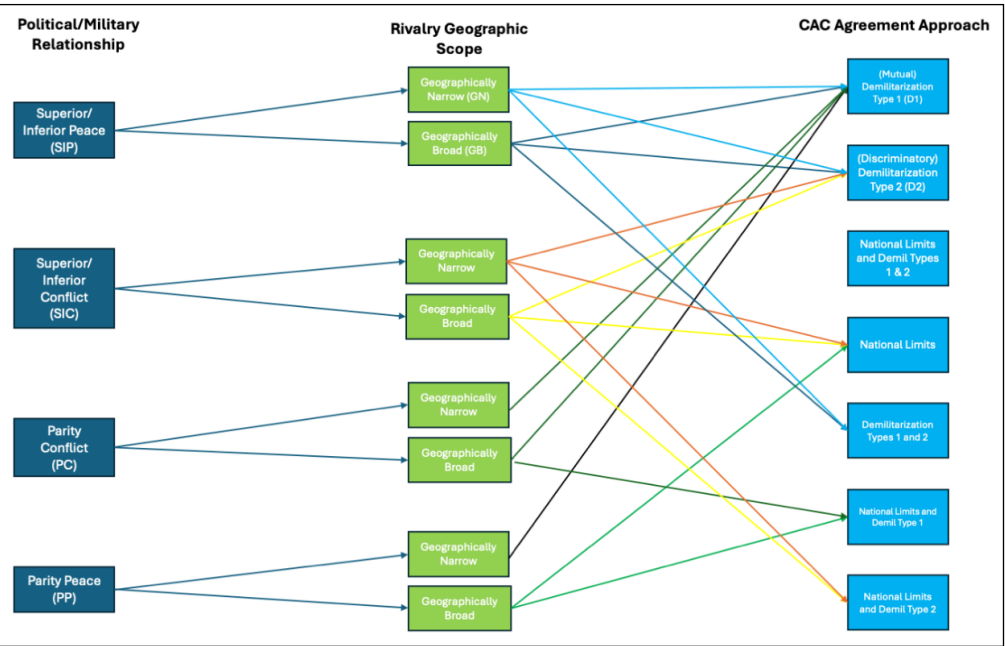


Figure 2 A flowchart of the theoretical model used in the article.

⁷ The CAC dataset used here was not pre-made from any previous study or any otherwise published or commercially available dataset. Rather, in the process of researching and during theory development additional, relevant agreements were identified.

POLITICAL/MILITARY RELATIONSHIP	EXPLANATION	EXAMPLE
Superior/inferior peace (SIP)	All sides agree that one party is militarily superior and the other militarily inferior. The agreement is made when the parties are at peace.	1920 Finnish-Russian Dorpat/Tartu Treaty.
Superior/ Inferior Conflict (SIC)	Both sides agree that one party is militarily superior and the other militarily inferior. The agreement is made when the parties are in armed conflict with one another, or have recently been in conflict (i.e., the agreement is closely linked to terminating the conflict.	World War One and World War Two peace treaties.
Parity Conflict (PC)	Both sides agree that neither is clearly superior, and the conflict is more-or-less stalemated. There is no certainty that one side or the other will prevail, to include uncertainty of foreign intervention which increases the uncertainty of any given conflict.	1964/1974 Cyprus ceasefires; 2015 Minsk Agreements.
Parity Peace (PP)	No side is decisively more powerful across their military capabilities (not just in the area of the treaty's TLE), and either every side recognizes parity or one party is not universally recognized as superior. The sides are at peace.	1920 Spitsbergen Treaty; 1923/1928 Tangiers Treaty; 1990 CFE Treaty.

Table 2 Explanation of the Political/Military Relationship.

These relationships are the conditions that determine each party's bargaining position, in particular, the extent to which they are willing to push for or accept a discriminatory agreement. When there was uncertainty about whether states were in a state of peacetime parity or superior/inferior relationship (in conflict, this relationship is clearer), the Correlates of War National Material Capabilities dataset (Greig & Enterline, 2021) was consulted. It affords a single, quantitative score for states' military and industrial capabilities from 1816 to the present.

Each determination of the political/military relationship is then assessed for the geographic scope of the rivalry or the issue. While this determination is subjective, narrow geographic rivalries (GN) generally involve immediate land borders between rivals and relatively small and specific geographic areas. In contrast, geographically broad rivalries (GB) encompass areas beyond rivals' mutual borders, and often span Europe, areas immediately beyond Europe, or even the world. Some of the agreements involved very singular geographic dilemmas that were the product of usually unexpected and rapidly changing geopolitical situations beyond a given rivalry. These cases were coded as geographically narrow. The geographic scope's coding for each agreement is explained in Appendix Table B.

Taken together, this study hypothesizes that different configurations of rivals' military relationship and their rivalry's geographic scope result in different but predictable approaches to agreement on a CAC. Importantly, the conditions do not automatically result in a single approach; rather, certain approaches are much more likely than others. Although space does not permit an explanation of each of the 18 pathways presented in the theoretical model (Figure 2), three theoretical generalizations can be made. First, a peacetime superior/inferior (SIP) relationship will not include national limits (NL), because the inferior party will not accept singular limitations: both sides have insufficient coercive power to compel one-sided limitations. Second, a conflict termination superior/inferior (SIC) relationship will not result in mutual demilitarization (D1) as the superior side has no interest in offering concessions to reduce its military position; and third, peacetime parity (PP) and conflict parity (PC) do not result in discriminatory demilitarization (D2) because neither side has sufficient coercive power.

METHODOLOGY

To test the theoretical model, this study analyzes and compares 39 formal, legally binding international CAC agreements, agreement sets, or cases, placing it within the category of a medium-*n* study. Whereas within-case analysis is typically associated with small-*n* research emphasizing qualitative depth, and large-*n* studies are better suited to cross-case analyses relying on quantitative methods, this study adopts a mixed-methods approach that integrates both. This design balances in-depth case analysis with systematic comparison across cases, an approach well suited to a number of cases that is too large for purely qualitative analysis and for which the data necessary for large-*n* quantitative analysis are not consistently available (Collier, 2013).

One advantage of this mixed-methods approach is that, similar to grounded theory, hypothesis testing can proceed iteratively. Evidence from cross-case hypothesis testing can generate new insights and guide subsequent within-case analysis (Campbell, 1975; Mahoney, 2004). Moreover, combining cross-case and within-case analyses strengthens confidence that an observed association reflects causation (Mahoney, 2004, p. 90). Further, the study's mixed-method methodology is appropriate in dealing with

a finite set of cases, chosen against a backdrop of theoretical interests [and in aiming] to determine the causal sequences and patterns producing outcomes of interest in those specific cases. Generalization is certainly a goal, but that generalization is sought by piecing together finite sets of cases, not by sampling and inference to a larger universe. (Goldstone 2003, p. 43).

The theoretical model was tested by assessing each agreement for the political/military relationship (Appendix Table A); determining the geographic scope as either narrow or broad (Appendix Table B); and determining the CAC agreement approach based on the agreement text as containing discriminatory demilitarization, mutual demilitarization, or national limitations (Appendix Table C). While every effort was made to be as accurate as possible, the data categorizations of certain cases required subjective judgments, and, as with any typological approach requiring the categorization of concepts, not every case fits clearly into a category (Smith, 2002). The explanations for each agreement's coding are provided in the supplemental material appendices.

DATASET

A comprehensive review of peace treaties, ceasefires, peacetime security agreements, and nuclear weapons-focused arms control agreements between rivals from 1918 to the present resulted in a dataset of 39 CAC agreements (see Table 3). This dataset consolidates interrelated agreements, including sets of armistices and peace agreements between the Allies and individual Axis states made during and following World War Two. Protocols, amendments, and other elaborations of individual treaties are treated as a single agreement, except for the 1999 Adapted CFE Treaty which was a substantially different agreement than the 1990 CFE Treaty and required separate ratification by state parties. The reviewed agreements were characterized as formal agreements between prior, current, or potential rivals, included observable and verifiable specific limitations on conventional military, capabilities, and focused on Europe.

Europe is the focus of this study because of the dense overlap of arms control institutions and shared regional history (Lachowski, 2010; Rotfeld, 2001; Sommerer & Tallberg, 2019). This is especially important to any future agreements in Europe arising from the Russo-Ukraine War. Most nuclear weapons agreements are excluded because of the specific practical and theoretical aspects of nuclear warfare and arms control (Leah & Lowther, 2017; Stone, 2012). Nuclear weapons arms control is based on the notion that each side has sufficient nuclear capability to destroy an adversary in response to any nuclear strike – strategic stability through what has been termed “mutually assured destruction” (Acton, 2013; Kokoshin, 2011). As the Soviet Union and the United States declared in 1985, “a nuclear war cannot be won and must never be fought” (Ronald Reagan Presidential Library and Museum, 1985). In general, one cannot make such a statement about conventional war, although conventional and nuclear war and arms control are not entirely separate. In the same statement, the United States and Soviet Union agreed that a conventional war could have devastating consequences and must be prevented – in part because of the risk that a conventional war could easily and quickly escalate into a nuclear war (Posen, 1982). Moreover, although US/NATO-Soviet-Warsaw Pact arms control agreements have not formally mixed nuclear and conventional weapons as a large, single “package deal”, nuclear and conventional forces were discussed together during the Mutual and Balanced Force Reduction (MBFR) negotiations, with the United States even proposing a withdrawal of some nuclear capabilities against the withdrawal of a Soviet tank army. Nonetheless, conventional nuclear and conventional forces are largely separated in formal arms control agreements.

Nuclear forces are also excluded from this study as they cannot, in general, be subject to substantive geographic limitations: any agreement excluding nuclear weapons from even

the most limited geographic area would be purposeless given their potential thousands of kilometres range. And, much more than *adversarial* CAC, nuclear arms control embodies a normative element (Williamson, Jr., 2003) both because a strategic nuclear war is contrary to the interests of the greater international community and on account of the normative goal of global nuclear disarmament incorporated in the 1968 Nuclear Non-Proliferation Treaty (NPT).

The 1987 Intermediate and Shorter-Range Nuclear Forces Treaty (INF) is included because both nuclear and conventional land-based missiles of the designated range were prohibited. The dataset largely excludes agreements focused on humanitarian and proliferation concerns which do not substantially impact the relationship between rivals; in this, the study differs from work conducted by Morgan (2012) and Brodie (1976), among others, which does not differentiate between these two areas and adversarial arms control agreements.

Table 3 CAC Agreement
Predicted and Actual Form.

Note. Highlighted rows
emphasize when the predict
approach differed from that of
the final agreement.

AGREEMENT	YEAR	PREDICTED PATHWAY	ACTUAL	PREDICTED? (YES/NO)
Germany (Versailles)	1919	SIC; GB; D2, NL, D2/NL	NL, D2	Yes
Austria (St-Germain-en-Laye)	1919	SIC; GB; D2, NL, D2/NL	NL	Yes
Bulgaria (Neuilly-sur-Seine)	1919	SIC; GB; D2, NL, D2/NL	NL	Yes
Hungary (Trianon)	1920	SIC; GB; D2, NL, D2/NL	NL, D1	No
The Svalbard (Spitsbergen) Treaty	1920	PP; GN; D1	D1	Yes
Dorpat/Tartu Russo-Finnish Helsinki Agreement	1920	SIP; GN; D1, D2, D1/2	D1, D2	Yes
Åland Island Convention	1921	PP; GN; D1	D1	Yes
Washington Naval Treaty	1922	PP; GB; NL; NL/D1	NL, D1	Yes
Russia-Finland Frontier Convention (Helsinki)	1922	SIP; GN; D1, D2, D1/2	D1	Yes
Lausanne Convention for the Straits	1923	PP; GN; D1	D1	Yes
Statute of the Tangiers Zone	1923/1928	PP; GN; D1	D1	Yes
Thrace Convention	1923	PC; GN; D1	D1	Yes
First London Naval Treaty	1930	PP; GB; NL; NL/D1	NL	Yes
Anglo-German Naval Treaty	1935	PP; GB; NL; NL/D1	NL	Yes
Second London Naval Treaty	1936	PP; GB; NL; NL/D1	NL	Yes
Montreux Convention of the Straits	1936	PP; GN; D1	D1	Yes
The Moscow Treaty (Finland and Russia) of 1940	1940	SIC; GN; D2, NL, NL/D2	D2	Yes
Franco-Italian Armistice	1940	SIC; GB; D2, NL, D2/NL	NL, D2	Yes
Franco-German Armistice	1940	SIC; GB; D2, NL, D2/NL	NL	Yes
Italy (including Dodecanese)	1943–1947	SIC; GB; D2, NL, D2/NL	NL, D1, D2	No
Romania	1944–1947	SIC; GB; D2, NL, D2/NL	NL	Yes
Finland	1944–1948	SIC; GB; D2, NL, D2/NL	NL, D1	No
Hungary	1945–1947	SIC; GB; D2, NL, D2/NL	NL	Yes
Bulgaria	1944–1947	SIC; GB; D2, NL, D2/NL	NL, D2	Yes
Western European Union/Agency for the Control of Armaments	1954	SIC; GB; D2, NL, D2/NL	NL	Yes
Austria State Treaty	1955	SIC; GB; D2, NL, D2/NL	NL	Yes
Cyprus (UN Security Zone Establishment)	1964/1974	PC; GN; D1	D1	Yes
Intermediate-Range Nuclear Forces (INF) Treaty	1987	PP; GB; NL; NL/D1	NL	Yes
Final Settlement with Germany	1990	SIC; GB; D2, NL, D2/NL PP; GN; D1	NL, D1	Yes
Conventional Armed Forces in Europe (CFE) Treaty	1990	PP; GB; NL; NL/D1	NL, D1	Yes
Moldova/Transdnistria	1992	PC; GN; D1	D1	Yes
Bishkek Protocol (Armenia-Azerbaijan)	1994	SIC; GN; D2, NL, NL/D2	D1	No
Sub-Regional Arms Control (Balkans)	1996	PC; GN; D1	NL	No
Belfast Agreement	1998	PC; GN; D1	D1	Yes
Adapted CFE Treaty	1999	PP; GB; NL; NL/D1	NL, D1	Yes
Kumanovo/Kosovo	1999	SIC; GN; D2, NL, NL/D2	D2	Yes
Georgia Six-Point Peace Plan	2008	SIC; GN; D2, NL, NL/D2	D1	No
Minsk Agreements	2015	PC; GN; D1	D1	Yes
Azerbaijan-Armenia Ceasefire	2020	SIC; GN; D2, NL, NL/D2	D1	No

This study's hypothesis that approaches to the formulation of CAC agreements can be predicted by the military relationship and the geographic scope of the rivalry is supported by the empirical data, with 32 out of 39 (over 80%) of the agreements conforming to one of the predicted CAC approaches. Seventeen out of the eighteen agreements categorized as having a narrow geographic rivalry only incorporated geographic demilitarization, while all twenty-one agreements characterized by a broad rivalry incorporated national limitations, with nine of these also including either or both types of geographic demilitarization. Although there is no fixed percentage in international relations theory that establishes empirical adequacy with certainty, qualitative comparative analysis (QCA) uses a general rule of thumb for consistency of 75% for a sufficient condition (Schneider & Wagemann 2012, p. 129). Table 3 presents each agreement's predicted pathway, predicted outcome, and actual outcome. The discussion below is divided into the political-military relationship category for ease of reading.

SUPERIOR/INFERIOR PEACETIME CASES

There were only two cases that involved a superior/inferior peacetime (SIP) relationship, both involving the Soviet Union and Finland, and both categorized as involving a narrow geographic rivalry. Both conformed to the predicted CAC agreement of 1920, which involved mutual geographic demilitarization in and around Lake Ladoga and discriminatory geographic limitations that applied to Finnish forces in the Arctic coast region. The agreement of 1922 established a mutual buffer zone along part of their land border.

SUPERIOR/INFERIOR CONFLICT CASES

Nineteen agreements fell in the category of a superior/inferior conflict-termination relationship, with six of these not meeting their predicted outcomes. Five of these SIC agreements were characterized by a narrow rivalry, fourteen by a broad rivalry.⁸ Fifteen of the nineteen SIC agreements were related to the two World Wars,⁹ and of these, three did not have the expected outcomes. The expected outcomes predominantly included the imposition of national limitations on the defeated states, while two agreements (the 1940 Finnish-Russian Peace Treaty and the 1999 Kumanovo/Kosovo Yugoslav-NATO agreement) only involved discriminatory demilitarization (D2).

There may be several reasons for the lack of national limitations for Finland. Finland's surprisingly effective defense against the Soviet attack (Trotter, 2002), for example, indicates that the Soviet Union might have struggled to entirely defeat and subdue it without unacceptable losses, and were thus perhaps unable to create the conditions and to obtain the bargaining power to compel the country to accept national limitations. This omission would not be repeated when the USSR won the Continuation War and Finland agreed to national limitations in the 1947 Treaty of Peace with the Allies. Although national limitations were not specified in the 1999 NATO-Yugoslavia agreement ending the conflict in Kosovo, then-Yugoslavia was already bound by national limitations through the recently signed 1996 Agreement on Sub-Regional Arms Control which controlled five categories of conventional arms amongst Bosnia-Herzegovina, Croatia, and Yugoslavia. It is not difficult to imagine that not only did NATO negotiators not see a need to alter that agreement, but changing Yugoslavia's national limitations might have had complicated knock-on effects with the other two signatories' national limitations.

The six agreements that did not meet their predicted outcome incorporated mutual demilitarization (D1). Almost all of these unexpected mutual demilitarizations are due to particular historical, political, and geopolitical situations which do not indicate any prevailing contradiction to the theoretical model. The 1920 Peace Agreement between the Allies and the

⁸ Among the World War II peace agreements, only the 1940 Finnish-Russian agreement that ended the Winter War is categorized as geographically narrow, as the conflict was only between the two states and was focused on their common borders. In contrast, all World War II-related peace agreements with the Axis states (including Finland after the Continuation War) were considered as geographically broad because the conflict stretched across the continent and was between alliances rather than bilateral. Moreover, each state's forces operated, or could have operated, far beyond their national borders in support of their alliance.

⁹ The geographic relationship was considered broad for all states in the world wars because of the wars' overall scope to include the broad geographic areas in which national forces fought, even if certain states had narrow geographic goals.

defeated Hungary included a demilitarized area within the newly established Czechoslovakia, aligned with the Allies, to reduce tensions and potential conflict between the two countries (Bencsik, 2021; Vondracek 1937, chap. 3). This demilitarization can also be explained by the complicated geopolitics of Eastern Europe and the newly established states with the breakup of the Austro-Hungarian Empire.

The demilitarization of the Dodecanese Islands as part of the Treaty of Peace of 1947 between the Allies and Italy was primarily due to the islands' history and the competing territorial claims of Greece and Turkey (Dyke, 2005; Papuççular, 2022; Seydi 2010). The 1947 Allied-Italy Treaty of Peace is also interesting in that it is the only agreement that incorporates all three approaches: both types of demilitarization and national limitations, a configuration excluded from the theoretical model.

The 1994 and 2020 agreements between Armenia and Azerbaijan (in the first conflict, Armenia was superior; Azerbaijan in the second) likely ended with mutual demilitarization in the form of a buffer zone due to Russian intervention and the commitment of peacekeepers. Lastly, demilitarization in the form of withdrawal to pre-conflict lines without an established buffer zone, the outcome ending the 2008 Russo-Georgian conflict, was likely due to a combination of intervention on the part of the European Union and Russia both achieving its primary military goals and desiring to develop a new security architecture in Europe without fully severing positive relations with the West (Layton 2014).

All of the agreements made in narrow geographic rivalry SIC cases incorporated demilitarization without national limitations. All of the agreements made in geographically broad SIC cases incorporated national limitations; some further incorporated demilitarization.

PARITY CONFLICT CASES

Six agreements were categorized as being made in a parity conflict (PC) context; four of these matched their predicted outcome of mutual demilitarization and one did not. All were characterized by a narrow geographic rivalry. Two of these agreements require discussion due to their complicated nature. First, the Thracian border agreement, which demilitarized parts of the Turkish-Greek-Bulgarian borders, is categorized as a parity conflict – although the agreement is the outcome of World War One, which saw Turkey and Bulgaria defeated, and the Turkish-Greek War, which Turkey won. Further complicating the categorization is the role of the major Allied states in the conflicts. The PC categorization is selected in part because no other category fits; further, no side was going to decisively defeat and occupy the other, and the shifting alliances created relatively balanced relationships. The end of the Turkish-Greek War did not, for example, see Greeks singularly deported from Turkish territory (compared to the removal and relocation of Germans from former German territory after World War Two); rather, the two sides exchanged populations (Hirschon, 2003).

The second agreement requiring explanation is the 1999 Belfast Agreement. The two accords constituting the greater agreement were made between the United Kingdom and Ireland, and between those two governments and the greater part of Northern Ireland's political parties (CitizensInformation.Ie, 2022). The Belfast Agreement is included because the conflict and disputes in Northern Ireland are rooted in the historic rivalry between Ireland and the UK going back several centuries (Féron, 2014). The agreement (including subsequent, related agreements such as the 2003 Joint Declaration by the British and Irish Governments and the 2003 Agreement between the Government of Ireland and the Government of the United Kingdom of Great Britain and Northern Ireland establishing the Independent Monitoring Commission) require the reduction of British military forces in Northern Ireland,¹⁰ and the establishment of two international organizations for implementation.¹¹ In the context of the conflict in Northern Ireland, the reduction of British forces in parallel with the disarming of both Unionist and Republican militant groups mean the demilitarization must be categorized as mutual (D1).

¹⁰ The 1998 Belfast Agreement called for the removal of British security installations and a reduction in the numbers and role of the UK armed forces in Northern Ireland. The 2003 UK-Irish Joint Declaration was more specific, calling for a reduction of military personnel to 5,000, removal of military forces from police stations, and closure of specified military and security sites.

¹¹ Establishment of IO's to implement CAC agreements is a common and important feature of these agreements (Lippert, 2024b).

The only parity conflict agreement that did not meet its predicted outcome was the 1996 Sub-Regional Arms Control Agreement for the Balkans, which set national limitations such as buffer zones along borders instead of a mutual demilitarization. The agreement is linked to the 1995 Dayton Peace Agreement which had mandated a detailed arms control agreement to establish numerical balance and stability, with the understanding that the establishment of such a stable military balance, based on the lowest level of armaments, was essential to the prevention of the further conflict ([The General Framework Agreement for Peace in Bosnia and Herzegovina \[Dayton Peace Agreement\], 1995, pt. Annex 1B](#)).

PARITY PEACE

Thirteen agreements were categorized as occurring when rivals had a parity peace (PP) relationship and all of these met their predicted CAC agreement format. Seven of the rivalries that established a PP-condition CAC agreement were characterized as geographically broad and five as geographically narrow. Discriminatory demilitarization, which should not occur according to the predictions associated with a parity peace relationship, did not form a part of any of these twelve agreements. A parity peace relationship characterized by a narrow geographic rivalry was predicted to result in a mutual demilitarization (D1) – and this is indeed the case with the five applicable cases. Parity peace relationships with broad geographic rivalries predict national limitations with or without geographic demilitarization – and this was upheld in the seven applicable cases. Two of these cases included mutual demilitarization.

In the case of the Washington Naval Treaty, various Pacific islands were declared demilitarized or otherwise restricted from further fortification. The CFE Treaty's demilitarization came in the form of a concentric zonal system with the highest limitations at the center and other limitations focused on the "flanks" ([Wilcox, 2020](#)). Further, the United States and the Soviet Union did not commit to national limitations in the treaty; rather, the limitations applied to their forces within a certain part of Europe.¹²

THE SPECIAL CASE OF GERMANY

This study's hypothesis is further upheld by the 1990 Final Settlement with Germany, which was part of Germany's reunification at the end of the Cold War. This case was categorized as both a superior/inferior conflict and a parity peace. The SIC categorization is related to the major World War Two allies – the United States, the United Kingdom, France, and the Soviet Union – making peace with a defeated state (Germany),¹³ while the PP categorization reflects the state of balanced rivalry without open combat between NATO and the Warsaw Pact. Thus, the theoretical model incorporates two pathways based on SIC and PP with different potential outcomes. The actual agreement outcome meets the two separate predictions. In line with World War Two having been a broad rivalry between Germany and the Allies, Germany accepted national limitations on its military (with additional limitations linked to the then-anticipated CFE Treaty), we find the predicted theoretical pathway. At the same time, with Germany remaining in NATO, there was uncertainty about how to deal with Eastern Germany. The puzzle here was not a broad challenge, but a narrow geographic question posed by the withdrawal of Soviet forces (in some ways similar to interwar dilemmas that arose from changing borders and the birth of new nations). As the theoretical model predicted, the parity peace situation between NATO and the Warsaw Pact over a narrow geographic issue (East Germany) resulted in mutual demilitarization (D1), in which both sides agreed not to have forces in the area in question.

This study's theoretical model has mostly been upheld, with 33 out of 39, or 85%, of the agreements matching their predicted outcome. Four of the six cases with an unpredicted outcome involved the establishment of mutual demilitarization instead of predicted national limits and/or discriminatory demilitarization. In one case (the 1947 Treaty of Peace with Italy), both mutual and discriminatory demilitarization occurred. The case in which prediction did not accord with the actual agreement was the establishment of national limitations in the Balkans in the 1996 Sub-Regional Arms Control Agreement. There may be various reasons

¹² From a pure equipment and personnel perspective, the Warsaw Pact was superior to NATO (SIP). However, qualitative differences, large nuclear weapon stockpiles, and other factors decreased the extent to which either side perceived a clear military imbalance.

¹³ The reunification of Germany, even after 50 years of peace and stable democracy in Western Germany, reignited historical concerns ([Trachtenberg, 1991; Volkery, 2009](#)).

why this approach was selected instead of a buffer zone approach, but these are beyond this study's scope. Lastly, four out of the six agreements with an unpredicted outcome involved third-party intervention, suggesting that this may significantly impact how CAC agreements are formulated – but since there were also significant third-party interventions associated with other agreements that met the predicted outcome, this relationship may not be strong.

IMPLICATIONS FOR THE RUSSO-UKRAINIAN WAR

This study's theoretical model is both explanatory and predictive. In attempting to explain how states have crafted CAC agreements' approach to national limitations or demilitarization (of both or either type), the theory functions predictively. Two CAC agreement issues may arise in the near future, and this study offers a framework of how the agreements are likely to be finalized. Any final agreement, importantly, may not reflect initial proposals or demands. The Russo-Ukrainian War involves two interconnected rivalries: that of EU/NATO and Russia, and the narrower Russian-Ukrainian antagonism.

For the application of the predictive model, there is, unfortunately, insufficient information on the extent to which this rivalry is characterized by superiority/inferiority or parity: clear information on both losses and remaining resources for all parties are required for the net assessment to be made. The application of this study's theoretical model to historical agreements allows the net or comparative military relationship to be clarified. Based on current information and the lack of significant, permanent, and rapid progress made by Russia or Ukraine in recent years, however, it is reasonable to assess that both parties believe the conflict may be sustained for some years to come, thanks to both the regeneration of force and materiel and the combat losses they have inflicted. For the most part, that is, it seems that while both sides can replace losses at close to the rate of loss, they are unable to accrue combat strength sufficient to overwhelm the other side: an indication of a parity conflict relationship. Their rivalry is largely limited to Ukraine itself: Ukraine is not attempting to contest Russian power throughout Europe or more broadly, and it does not have substantial interests beyond its borders for Russia to contest. Thus, the rivalry's geographic scope is narrow. These two conditions suggest that a mutual demilitarization (D1) would be the most likely outcome of any agreement – and would not include discriminatory demilitarization (D2) or national limitations.

The broader EU/NATO-Russia rivalry is more complicated as the two parties are engaged in a proxy war. However, as Russia is still “in the fight”, and nothing presently suggests either side to be clearly superior (at least, not enough for any mutual consensus), the military relationship should be coded as parity peace (PP) – albeit EU/NATO are not actively in combat, so relevant information is not easily available. Clearly, the rivalry is broad, stretching across Europe and beyond. These conditions suggest that any future CAC agreement would be characterized by national limitations or national limitations *and* mutual demilitarization (D2). The CFE Treaty is a model of the type of agreement that the two sides might accept, although this may require internal restrictions within Russia, which it has historically been greatly reluctant to accede to. There are a number of possible mutual geographic demilitarization options, including a buffer zone along the border – which Russia proposed to NATO in December, 2021 ([Russian Foreign Ministry, 2021](#)) – or some form of demilitarization in the Baltic Sea ([Lippert, 2025](#)).

CONCLUSION

No two rivalries are the same, no two wars are the same – and, of course, no two CAC agreements are the same. Although *adversarial* CAC agreements share the same objective of stabilizing rivalries to prevent or end conflict, they are all, as Burns and Urquidi ([1968b, p. 1](#)) stated in reference to the dozen or so CAC agreements made during the interwar years, “varied”. In the same passage, Urquidi and Burns also determined that any generalized historical lessons in these agreements beyond the most obvious “are, unfortunately, conditioned by uniqueness which inhibit generalization” ([Burns & Urquidi 1968b, p. 1](#)). Nevertheless, this study has attempted to generalize what is so difficult to generalize, using abductive reasoning founded on grounded theory to develop a theoretical model articulated by a flowchart. To choose national limitations, mutual geographic demilitarization, or discriminatory demilitarization, it is assumed, is not to pick a random choice out of a hat: it is a product of both the rivalry's political conditions, especially the military relationship, and its geographical scope. Certain approaches

are much more likely to be included and others excluded according to specific conditions defining rivalry, peace, and combat.

An empirical analysis of 39 CAC agreements from 1918 to the present suggest that when conflicts end with a clear and mutually agreed victor, the defeated side is likely to accept discriminatory geographic demilitarization and national limitations on its forces.

National limitations are more likely when the rivalry is geographically broad, while discriminatory or mutual geographic demilitarization is more likely when the rivalry is geographically narrow. Peacetime agreements characterized by a relationship in which one of the antagonists is clearly superior incorporate either type of geographic demilitarization, but no national limitations. Relatively equal military relationships are characterized by national limitations and occasionally mutual geographic demilitarization when the rivalry is geographically broad, and mutual geographic demilitarization and no national limitations when the rivalry is geographically narrow. Parity in the military relationship related to conflict termination results in mutual geographic demilitarization but no discriminatory demilitarization and, except in one case, no national limitations.

This study's theoretical model on the CAC agreement approach was upheld in 33 out of 39 cases (85%). No broad, clear statement can be made about the six exceptions, as similar cases did not deviate from their predicted CAC agreement approach.

This study has only briefly mentioned the offense-defense balance (ODB), which generally impacts some CAC agreements, and may have some bearing on whether geographic demilitarization or national limitation approaches are chosen. In brief, the ODB suggests that certain weapons systems, doctrines, and technological periods make it more favorable for a combatant state, military, and/or large tactical unit to engage in offensive operations or defenders can defend with relatively less resources compared to the attacker (Garfinkel & Dafoe, 2019; Goldfischer, 2020; Lieber, 2000; Lynn-Jones 1995). Some CAC agreements have explicitly sought to reduce offensive capability while preserving defensive capability in the case of national limitations; others have sought to remove both following a conflict with a decisive victor to prevent a defeated or weaker state from attacking, and to ensure the victor or stronger state retains the capacity to successfully attack should they feel they need to do so. Future research may seek to understand how the ODB factors into CAC agreements in general, and geographic demilitarization versus national limitations in particular.

Lastly, this medium-*n* study has used a dataset of 39 CAC agreements, a much larger dataset than many empirical, adversarial CAC studies – but this does not mean that the study successfully identified every CAC agreement in Europe. Additional studies would add more datapoints for analysis; looking beyond Europe or expanding the period under study might offer contrary, complementary, or additional insights.

CAC agreements are, first and foremost, mutual agreements that require some amount of bargaining and negotiation. This study suggests which approach may be appropriate for which antagonists and situation, and may save practitioners some time and energy in how they craft and propose agreements; moreover, scholars may now have a more nuanced understanding of CAC as part of international security. Ultimately, CAC is about maintaining or establishing peace between rival actors, some locked into longstanding antagonism, others engaged in active hostilities when agreements were made. In the period of Europe's most intense armed conflict since 1945, with the potential for wider continental escalation, understanding CAC is essential.

ADDITIONAL FILE

The additional file for this article can be found as follows:

- **Supplemental Material.** Appendix Tables A to C. DOI: <https://doi.org/10.31374/sjms.352.s1>

COMPETING INTERESTS

The author has no competing interests to declare.

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