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Adversarial conventional arms control in Europe: the quest for peace

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Part II: Research Articles

Part 2 contains the four research articles that compose this dissertation's detailed research, analysis, and findings. These articles cover how states initially conceived CAC agreements, how they have approached implementation and how successful this was, assessed what combination of conditions lead to CAC agreement success and failure, and a case study in CAC regime collapse and its impact on peace and security in Europe. The information about journal submission, acceptance, and publication is provided in a footnote at the beginning of each chapter as well as in the list below, in order of how they appear in the dissertation:

- Lippert, William E., and Jordan Becker. "Conventional Arms Control and Military Balance in Europe." *Contemporary Security Policy*, March 26, 2025, 1–32. https://doi.org/10.1080/13523260.2025.2474873. Note: when this dissertation was drafted, the article's title was "Status Quo Constancy and Conventional Arms Control."
- Lippert, William. "Delegation to Treaty Bodies and International Organizations for Conventional Arms Control Agreements in Europe: A Sum Score Evaluation." *Global Governance: A Review of Multilateralism and International Organizations* 30, no. 1 (2024): 93–122. https://doi.org/10.1163/19426720-03001005.
- Lippert, William. "Conventional Arms Control Agreements in Europe: Conditions of Success and Failure." *Central European Journal of International and Security Studies* 18, no. 3 (September 27, 2024): 5–37. https://doi.org/10.51870/WGUO2938.
- Lippert, William. "How Conventional Arms Control Failures Caused the Russo-Ukraine War." *Defense & Security Analysis*, January 17, 2024, 1–23. https://doi.org/10.1080/14751798.2024.2300889.

Chapter 4: Status Quo Constancy and Conventional Arms Control[313]

The Stronger Party's Rules

Since at least the Peace of Westphalia, inter-state relations have included conventional arms control (CAC) agreements. These agreements took on a more prominent and institutionalized role in Europe following World War One (WW1), serving as a substantial component of the peace treaties. During the interwar years, CAC agreements flourished as states attempted to prevent conflict by stabilizing rivalries and removing immediate causes of conflict. Following World War Two (WW2), CAC continued to serve as a tool for peace and stability and will likely continue to do so in the future. CAC agreements often retain the military-security status quo, whether by codifying existing military balances or by establishing a geographic demilitarized area corresponding to operational realities. In most of the cases analyzed, the strongest states stay strong, the weakest states stay weak, and existing battle lines determine buffer zones. States defeated in major wars in some ways end up weaker than they were just prior to surrender – which is the cost of defeat and the cost of terminating a losing war in which it was clear that a conflict's continuation would result in the losing side's increasing loss of relative military capability. Nonetheless, in some agreements, states have sacrificed their superiority, offering weaker rivals a relative gain or even accepting parity with those rivals. This compels us to ask: Under what conditions do the more powerful states in an adversarial conventional arms control (CAC) agreement accept a reduction in their relative military power?

The question of when and under what circumstances states are willing to conclude a CAC agreement is presently relevant, and will remain so in the foreseeable future. First, differing perceptions of the status quo may partly explain why Russia's separate CAC proposals to the US and the North Atlantic Treaty Organization (NATO) were largely rejected in December 2021, shortly before Russia launched its full-scale invasion of Ukraine.[314] Second,

[313] Chapter 4 of this thesis is an adapted version of the following co-authored article: Lippert, William E., and Jordan Becker. "Conventional Arms Control and Military Balance in Europe." *Contemporary Security Policy*, March 26, 2025, 1–32. https://doi.org/10.1080/13523260.2025.2474873. William Lippert is the first author and Jordan Becker is the second. William Lippert had the lead in the research and drafting of the article, while Jordan Becker provided substantive inputs and edits. This article-chapter was accepted by the journal *Contemporary Security Policy* on 7 February 2025, after the dissertation was submitted to the review committee. The published article is an updated version of the chapter in this dissertation as a result of article submission reviewer feedback.

[314] David R. Cameron, "After U.S. & NATO Reject Russia's Proposals, Outlook for Ukraine Is Grim. But Normandy Format Talks Still Offer a Pathway to Peaceful Resolution of the Crisis.," The MacMillan Center,

the kind of CAC limitations Russia and Ukraine may seek to impose on one another, or limitations imposed on themselves, may be part of their victory goals.[315] Third, a post-conflict agreement is likely to include a CAC component, and what the past suggests is feasible can suggest pathways for involved or interested parties. Fourth, what kind of agreements might be possible in the near future between the European Union (EU)/NATO and Russia may be bracketed by perceptions of the status quo. Fifth, there are or may emerge other rivalries in Europe beyond the broad EU/NATO-Russia rivalry which may require new CAC agreements.

The study focuses on CAC agreements rather than both nuclear and conventional arms control because most arms control agreements focus on one or the other, but not both; only a small number of countries possess nuclear weapons; and conventional rather than nuclear or combined conventional-nuclear warfare has characterized European conflicts. The study's focus is on Europe because of the overlapping and intertwined European institutions concerned with CAC, and the deep history of CAC in Europe that has no comparable experience elsewhere in the world.

Although scholars[316] acknowledge that state parties to CAC agreements (or agreements with CAC components) maintain the status quo, researchers have not analyzed the extent to which CAC agreements retain or alter the status quo at the time of their signing. This study remedies this gap in the literature first by describing the status quo using - depending on the type of agreement - the military balance, a national military capabilities rating, or the battlefield lines (table A7 in appendix A contains information on the status quo prior to the agreement). In this study, a theory was developed through a typological analysis[317] and the creation of a truth table, and then use these to predict whether the most powerful state in a CAC agreement will accept a reduction in relative military power based on three conditions: the extent to which the stronger party perceives the regional geopolitical environment as benign, whether the stronger party views the military balance as unstable, and whether the stronger state faces significant

February 3, 2022, https://macmillan.yale.edu/news/after-us-nato-reject-russias-proposals-outlook-ukraine-grim-normandy-format-talks-still-offer.

[315] William Lippert, "Conventional Arms Control and Ending the Russo-Ukrainian War," War on the Rocks, October 30, 2024, https://warontherocks.com/2024/10/conventional-arms-control-and-ending-the-russo-ukrainian-war/.

[316] Downs, Rocke, and Barsoom, "Is the Good News about Compliance Good News about Cooperation?"; Evangelista, "Cooperation Theory and Disarmament Negotiations in the 1950s"; Suzanne Werner and Amy Yuen, "Making and Keeping Peace," *International Organization* 59, no. 02 (Spring 2005): 261–92, https://doi.org/10.1017/S0020818305050095.

[317] Andrew Bennett, Joseph Lepgold, and Danny Unger, "Burden-Sharing in the Persian Gulf War," *International Organization* 48, no. 1 (1994): 39–75, https://doi.org/10.1017/S0020818300000813; Andrew Bennett, "Qualitative Research: Progess despite Imperfection," *Qualitative and Multi-Method Research*, March 31, 2011, https://doi.org/10.5281/zenodo.933296.

resource constraints in maintaining their superiority. This study proposes and tests the hypothesis which states that resource constraints are a necessary but insufficient condition for altering the status quo in terms of the military balance.

The hypothesis was tested on 29 European CAC agreements from 1918 to the present, scoring the three conditions and the outcomes based on the agreements' text and the agreements' historical background and context. The findings indicated that in four cases, if these three conditions are fulfilled the stronger party will accept a reduction in its relative military power in CAC agreements. The hypothesis also predicted that in two other cases resource shortages would result in a change in the status quo, but not if the geopolitical order was unstable and the military balance was stable. Lastly, the study predicted that in the absence of resource constraints there would not be a change in the status quo.

Of the six agreements in which the study's predictions were not borne out, in three cases (the 1922 Russo-Finnish Helsinki agreement, the 1935 Anglo-German Naval Agreement, and the 2008 Six-Point Peace for Georgia) the hypotheses predicted no change to the status quo, but in fact the stronger party accepted a reduction in its relative power. In these three cases states likely viewed the reduction as having a minimal impact on their overall security due to areas of military capability untouched by the agreements. In three other cases (WW1 peace treaties, the Spitsbergen Treaty, and the East Aegean demilitarization agreements) the study's theory predicted a change in the status quo but there was none. Overall, the status quo was altered in seven out of the 29 cases the study analyzed.

This study offers a theoretical framework to analyze CAC agreements and to predict what future agreements might look like. Scholars of arms control, international agreements, and security should find this study interesting as it not only addresses issues of interstate competition, conflict resolution, and conflict prevention but also offers a unique, theoretical framework to analyze any type of adversarial CAC[318] agreements. Practitioners may find utility in this study's framework to craft future CAC agreements, especially in determining how to address the military balance and its relationship with the status quo. Such a framework could be useful, for instance, in an eventual stabilization of Russia's relationship with the rest of Europe following the Russo-Ukrainian War, which was a war of choice for Russia.

[318] Adversarial CAC refers to an agreement between rival states, either as part of a war termination process, or during peacetime.

Adversarial CAC Theory

In contrast to other types of CAC which focus on counter-proliferation and humanitarian concerns,[319] adversarial CAC,[320] focuses on stabilizing the relationship between rival states, either as part of a war termination process or during peacetime. Non-adversarial arms control agreements, such as the 1997 anti-personnel landmine treaty or the 2008 Convention on Cluster Munitions are intended to reduce the humanitarian cost of conflict rather than affect adversaries' relative military capabilities as parties include adversaries, neutral, and allied countries alike; although they can have some substantive impact, especially for defensive capabilities.[321]

One United Nations (UN) definition states that conventional arms "include, but are not limited to, armoured combat vehicles (personnel carriers and tanks, for example), combat helicopters, combat aircraft, warships, small arms and light weapons, landmines, cluster munitions, ammunition and artillery,"[322] and exclude chemical, biological, nuclear, and radiological weapons.

Larsen defines arms control as:

> 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. Whatever their scope and terms, however, all plans for arms control have one common factor: they presuppose some form of cooperation or joint action among the participants regarding their military programs.[323]

While Fatton contends that states' primary motivation to enter a CAC agreement is to stabilize a rival relationship by improving "perceptions of others' intentions and the predictability of behaviour,"[324] there may be additional motivations such as reducing defense expenditures, improving diplomatic relations, creating a wedge between adversaries, appeasing allies, or placating domestic audiences.[325]

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[319] Croft, "In Defence of Arms Control."
[320] Hereafter, all references to CAC will be to *adversarial* CAC, unless otherwise stated.
[321] John F. Troxell, "Landmines: Why the Korea Exception Should Be the Rule," *The US Army War College Quarterly: Parameters* 30, no. 1 (Spring 2000): 82–101, https://doi.org/10.55540/0031-1723.1970.
[322] Gillis, "Conventional Arms and the Arms Trade," 71.
[323] Larsen, *Arms Control: Cooperative Security in a Changing Environment*, 1.
[324] Fatton, "The Impotence of Conventional Arms Control," 201.
[325] Bluth, "Arms Control as a Part of Strategy"; Burns and Urquidi, *Disarmament in Perspective: Volume 1, An Analysis of Selected Arms Control and Disarmament Agreements Between the World Wars, 1919-1939*; Susan

State parties must sign and ratify CAC agreements for them to enter into force. Thus, entering into a CAC agreement is a choice that often follows extensive bargaining as states present competing demands and information not just about one another's material military power but also about perceptions of the relative military balance, national power, and the current trajectory, as applicable, of existing conflicts.[326]

Scholars have made minimal efforts to theorize adversarial CAC, especially since the end of the Cold War.[327] Hastedt and Eksterowicz attempted to develop a CAC theory, but this was in the context of the Cold War and thus focused on deterrence, developing interdependency between the blocs, and intra-alliance issues.[328] Recent CAC scholars have focused on policy proposal and analysis, while most theoretical scholarship, which dates back to the Cold War, focuses on dyadic competitions. Some scholars such as Graef[329] and Kühn[330] have recently assessed arms control theory and others such as Egel and Vaynam[331] have recently offered broad overviews, but the focus was on understanding the evolution of North Atlantic Treaty Organization (NATO)-Russia arms control rather than the question of how states address the status quo.

As Freedman noted, there was (in 1991) "little formal theory of conventional arms control,"[332] while Kühn assessed more recently that CAC theory suffers from "terminological fuzziness and theoretical references not backed up by evidence."[333] The incorporation of non-

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Colbourn, *Euromissiles*, The Nuclear Weapons That Nearly Destroyed NATO (Cornell University Press, 2022), https://doi.org/10.1515/9781501766039; Crawford and Vu, "Arms Control as Wedge Strategy"; Fortna, *Peace Time*; Maurer, "The Purposes of Arms Control"; Morgan, "Arms Control: A Theoretical Perspective"; Tanner, United Nations Institute for Disarmament Research, and Graduate Institute of International Studies (Geneva, Switzerland), *From Versailles to Baghdad*.

[326] Fearon, "Bargaining, Enforcement, and International Cooperation"; Brender, "Determinants of International Arms Control Ratification"; Darren Filson and Suzanne Werner, "A Bargaining Model of War and Peace: Anticipating the Onset, Duration, and Outcome of War," *American Journal of Political Science* 46, no. 4 (October 2002): 819, https://doi.org/10.2307/3088436; Paul R. Pillar, *Negotiating Peace: War Termination as a Bargaining Process*, vol. 695 (Princeton University Press, 1983), https://doi.org/10.2307/j.ctt7ztnt0; Dan Reiter, *How Wars End* (Princeton: Princeton University Press, 2009); Bahar Leventoğlu and Branislav L. Slantchev, "The Armed Peace: A Punctuated Equilibrium Theory of War," *American Journal of Political Science* 51, no. 4 (October 2007): 755–71, https://doi.org/10.1111/j.1540-5907.2007.00279.x.

[327] Kühn, *The Rise and Fall of Cooperative Arms Control in Europe*, 2020, 25.

[328] Hastedt and Eksterowicz, "Conventional Arms Control."

[329] Graef, "Beyond Stability."

[330] Kühn, *The Rise and Fall of Cooperative Arms Control in Europe*, 2020.

[331] Naomi Egel and Jane Vaynman, "Reconsidering Arms Control Orthodoxy," War on the Rocks, March 26, 2021, https://warontherocks.com/2021/03/reconsidering-arms-control-orthodoxy/.

[332] Freedman "Arms Control: Thirty Years On," 78. attributed the lack of a formal theory of CAC to CAC's purpose being "diminish the likelihood of *nuclear* war." By formal theory he was referring to concepts common in nuclear arms scholarship such as first-strike stability, crisis stability, and mutually assured destruction. Fundamentally, nuclear arms control is about preventing any use of nuclear weapons due to a high likelihood of global destruction while conventional arms control has no such distinct, rigid goals as the cost is not so high.

[333] Kühn, *The Rise and Fall of Cooperative Arms Control in Europe*, 2020, 28.

adversarial arms control[334] and nuclear arms control[335] often dilutes specific theoretical approaches to CAC, even though elements of both are also applicable. In short, both formal, game theoretical modeling of the causes of CAC agreements and systematic empirical analysis of variation in the willingness of stronger parties to accept reductions in relative power as part of arms control agreements are lacking. This study aims to improve this situation by developing a theory of the causes of this variation in willingness to accept reductions in relative power and conducting an initial empirical test.

CAC and the Status Quo

CAC agreements, with some exceptions included below, fix the status quo regarding conventional arms within the agreement's scope. That is, CAC agreements that cover naval forces might lock in the naval balance status quo, or agreements that establish a buffer zone along a battlefront to at least establish a cessation of hostilities freeze the battlefront in place. But CAC agreements leave areas outside of their scope subject to change and variation without technically or legally violating the agreement.

There are many reasons why CAC agreements lock in the status quo. In agreements where one party is clearly superior, like the Allies at the end of both World Wars, the victors generally compel the defeated state to remain inferior to prevent vengeance or the recapture of lost goods such as territory.[336] States in a position of parity, whether in terms of military balance or battlefield stagnation, may seek to lock in the status quo to prevent future losses and fears of alterations in the relative balance in rivals' favor.

Acceptance of the status quo is almost a necessary condition of a CAC agreement because alterations of the status quo are difficult to obtain through negotiation as opposed to through force, particularly when the recent use of force has clarified the balance of power. Levy notes that the status quo is the baseline of states' decision-making and choices.[337] How negotiating parties perceive the present and likely future trajectory of the military and power

[334] Morgan, "Arms Control: A Theoretical Perspective"; Risse, "External Threats and State Support for Arms Control."
[335] Bull, "Arms Control and World Order"; Linton F. Brooks, "The End of Arms Control?," *Daedalus* 149, no. 2 (April 2020): 84–100, https://doi.org/10.1162/daed_a_01791; Larsen, *Arms Control: Cooperative Security in a Changing Environment*; Miller, *Hard Times for Arms Control What Can Be Done?*
[336] Richard Ned Lebow, *Why Nations Fight: Past and Future Motives for War* (New York: Cambridge University Press, 2010).
[337] Levy, "Loss Aversion, Framing, and Bargaining: The Implications of Prospect Theory for International Conflict."

balance[338] also determines the status quo. Even in peacetime, weaker states might accept the status quo if they see their position otherwise further weakening or face the threat of an attack.[339] CAC agreements during or immediately following conflicts emerge because state parties agreed on what the status quo was, and the conflict's likely trajectory. Today in Ukraine, for example, failure to negotiate a cessation is largely due to both sides believing in their own prospects of victory.[340]

Theoretical Conditions

This study theorizes that the extent to which the three conditions (geopolitical stability, dyadic stability, and resource constraints) are present determines whether the more powerful state or party will retain or alter the status quo in a CAC agreement. This study's research suggests that stronger states have much more bargaining power to determine or demand the broad CAC agreement framework especially related to the military balance. This is because the stronger state can impose pressure on and threaten weaker rivals to accept the status quo or resist a relative decrease in their comparative military strength. Yet not every CAC negotiation or proposal has had a clearly superior rival. In these cases, the status quo is one of relative equality and any agreement should reflect this. When making major policy decisions, states and their leadership must weigh factors like domestic opinion, financial and resource constraints, and, in the case of foreign and defense policy, diplomatic effects and the impact on national security. Indeed, because of their implications for security and even state survival, states are likely to carefully assess costs and benefits before agreeing to a CAC.[341]

The literature on modern government decision-making, especially foreign policy, is based on rational assessments of costs and benefits.[342] Cost-benefit analysis (CBA) is its own

[338] Downs, Rocke, and Barsoom, "Is the Good News about Compliance Good News about Cooperation?"
[339] Evangelista, "Cooperation Theory and Disarmament Negotiations in the 1950s."
[340] Samuel Charap and Sergey Radchenko, "The Talks That Could Have Ended the War in Ukraine," *Foreign Affairs*, April 16, 2024, https://www.foreignaffairs.com/ukraine/talks-could-have-ended-war-ukraine?utm_campaign=dfn-ebb&utm_medium=email&utm_source=sailthru; Hans-Joachim Schmidt, "How the Russia–Ukraine War Could End, and Its Impact on Conventional Arms Control," *IAI Papers* 23, no. 10 (May 2023), https://doi.org/978-88-9368-290-9.
[341] Robert Jervis, "Security Regimes," *International Organization* 36, no. 2 (Spring 1982): 357–78, https://doi.org/10.1017/S0020818300018981.
[342] David Brulé and Alex Mintz, *Foreign Policy Decision Making: Evolution, Models, and Methods*, vol. 1 (Oxford University Press, 2017), https://doi.org/10.1093/acrefore/9780190846626.013.185; Bård B. Knudsen, "Developing a National Security Policy/Strategy: A Roadmap," *Sicherheit & Frieden* 30, no. 3 (2012): 135–40, https://doi.org/10.5771/0175-274x-2012-3-135; John J. Mearsheimer and Sebastian Rosato, *How States Think: The Rationality of Foreign Policy* (Yale University Press, 2023); Alex Mintz and Karl DeRouen Jr,

field beyond the scope of this study's scope, but quantitative approaches to foreign policy CBA include factoring in financial costs, lives lost and saved if the decision is whether to go to war, and quality of life. The US Congressional Budget Office even offered a detailed CBA of the proposed Conventional Armed Forces in Europe (CFE) Treaty.[343] Thus, the study assumes that states act as rational actors when they consider any type of CAC agreement as denial of an agreement is always a possible, and possibly reasonable, choice. Moreover, the question may not only be whether to conclude an agreement but also the agreement's specific details (such as whether the status quo should be altered). Thus, for example, today there may be a willingness on the part of both Russia and Ukraine to agree to an end to the current conflict – but irreconcilable differences about an agreement's details prevent its conclusion.[344]

These three conditions were chosen after considering other conditions because these three are applicable regardless of the type of CAC agreement (demilitarization or national limitations) and whether the rivals are in a state of war or peace. Other conditions might apply for only some of the agreements: domestic unrest,[345] military elite opinions,[346] the extent to which the head of state or government has full control of government policies,[347] human rights records,[348] intelligence capabilities,[349] wedge strategies,[350] and technological perceptions and innovation in arms acquisition policy (technological imperative).[351] Most of these might be less applicable when conceiving a post-conflict agreement as the victor has full leeway in their demands, with other factors secondary to the imperative of the defeated state accepting an agreement. These conditions may influence specific conditions of the agreement but are unlikely to impact the status quo approach.

Understanding Foreign Policy Decision Making (Cambridge: Cambridge University Press, 2010), https://doi.org/10.1017/CBO9780511757761.

[343] *Budgetary and Military Effects of a Treaty Limiting Conventional Forces in Europe* (Washington, DC: US Congressional Budget Office, 1990).

[344] Kathryn Hedgecock and Robert Person, "Bargaining with Blood: Russia's War in Ukraine" (Brussels School of Governance, Centre for Strategy, Diplomacy and Security, April 6, 2022), https://brussels-school.be/publications/policy-briefs/bargaining-blood-russia%E2%80%99s-war-ukraine.

[345] Colbourn, *Euromissiles*; Matthew Evangelista, *How the United States and the Soviet Union Develop New Military Technologies* (Ithaca, NY: Cornell University Press, 1989), https://doi.org/doi:10.7591/9781501734304.

[346] William A. Schlickenmaier, *Playing the Generals' Game: Superpowers, Self-Limiting, and Strategic Emerging Technologies*, Dissertation (Ann Arbor, MI: ProQuest LLC, 2020).

[347] Böller, "Brakeman or Booster?"

[348] Brender, "Determinants of International Arms Control Ratification."

[349] Abram N. Shulsky, "Intelligence and Arms Control Policy," *Teaching Political Science* 16, no. 2 (Winter 1989): 47–54.

[350] Crawford and Vu, "Arms Control as Wedge Strategy."

[351] Evangelista, *How the United States and the Soviet Union Develop New Military Technologies*.

Condition 1: Geopolitical Order

Most discussions of CAC focus on the relationship between the state parties themselves but ignore the impact of the prevailing geopolitical order. For both concrete reasons and nebulous perceptions, states consider the geopolitical order when considering their approach to CAC generally and when they negotiate and sign CAC agreements specifically.

Concretely, states must consider if their entry into a CAC agreement with a rival will impact the security situation and military balance with other rivals. During the interwar years global disarmament (as CAC was then called) was frustrated in large part due to a complicated patchwork of interstate rivalries. Negotiators in the lone 1932-1934 disarmament conference simply could not find a formula that could stabilize one rivalry without destabilizing another.[352]

A predominant atmosphere or attitude might exist; a "period of peace" in which CAC agreements are viewed with greater promise and states are less concerned about relative losses and trust is institutionalized.[353] Thus, they may be more willing to accept a reduction of their relative military power within a CAC agreement. As Miall notes, arms control is viewed more positively when "new [world] orders" are established.[354] Kupchan similarly notes that in a period of cooperation, states have shifted from short-term agreements to the establishment of a security community wherein "individual gain" is no longer the driving force of an agreement and states adopt longer-term stabilization agreements such as arms control including demilitarization.[355] One characteristic of a period of peace is satisfaction with the geopolitical distribution of power and reduced fear of surprise attack, while dissatisfaction increases the risk of surprise attack.[356]

But when might such an optimistic period exist? Following major European wars, war fatigue may set in which discourages rivalries, destabilizing behavior, and great power

[352] Henderson, "Conference for the Reduction and Limitation of Armaments: Preliminary Report of the Work of the Conference"; Webster, "Piecing Together the Interwar Disarmament Puzzle"; Webster, "The League of Nations, Disarmament and Internationalism."
[353] Hinde, "Trust, Co-Operation, Commitment and International Relationships"; Tobias Wille and Benjamin Martill, "Trust and Calculation in International Negotiations: How Trust Was Lost after Brexit," *International Affairs*, 2023.
[354] "Arms Control and World Order: Report on the Toda Peace Institute International Workshop Held in Vienna, 13-15 October 2019," Policy Brief (Tokyo: Toda Peace Institute, November 2019).
[355] Kupchan, *How Enemies Become Friends*, chap. 5.
[356] Jervis, "Arms Control, Stability, and Causes of War," Winter 1991.

competition.[357] Formal institutions such as the League of Nations and the United Nations were even established to promote peaceful co-existence.[358]

In contrast, states may be generally more reluctant to enter into CAC agreements and more specifically accept changes to the military balance status quo in periods of uncertainty and instability. They may have to account for more potential adversaries and unexpected contingencies; that is, uncertainty of threats and competitors may compel a broader capabilities-based approach to defense planning which might be incompatible with substantial arms reductions.[359]

Bull assessed that states must be aware, "in pursuing arms control, of the existence of other dimensions of world order, and particularly of the role of military force in effecting changes that express emerging principles of international legitimacy."[360] Periods in which states are more sensitive to perceived threats wherein the security dilemma is more acute may be less likely to enter into CAC agreements because of fears of cheating and erosion of relative advantages even if in such periods CAC agreements might be more beneficial [361]. In contrast, a mild or muted security dilemma characterized by optimistic perceptions and predictions of relations will promote cooperation and thus encourage CAC agreements.[362]

Theory and history thus suggest that in periods of optimistic peace, states are more willing to risk altering the status quo, while in periods of distrust, they will not accept a reduction of their relative advantage. Table A1 in Appendix A assesses whether a historical period was characterized by optimism or pessimism.

Condition 2: Military Balance Instability

The study contends that the stronger party is more likely to accept reductions in its military power relative to its counterpart if there is instability in the military balance during a CAC negotiation. The study defines the military balance as how militaries compare to one another.[363]

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[357] Sverre Lodgaard, "Arms Control and World Order," *Journal for Peace and Nuclear Disarmament* 2, no. 1 (June 28, 2019): 1–18, https://doi.org/10.1080/25751654.2019.1631243.
[358] G. John Ikenberry, *After Victory: Institutions, Strategic Restraint, and the Rebuilding of Order After Major Wars*, vol. 116 (Princeton, N.J: Princeton University Press, 2001), http://doi.wiley.com/10.2307/798082; Charles A. Kupchan, "Concerts, Collective Security, and the Future of Europe," *International Security* 16, no. 1 (Summer 1991): 114–61, https://doi.org/10.2307/2539053.
[359] Eric V. Larson, *Force Planning Scenarios, 1945-2016: Their Origins and Use in Defense Strategic Planning* (RAND Corporation, 2019), https://doi.org/10.7249/RR2173.1.
[360] Bull, "Arms Control and World Order," 13.
[361] Lodgaard, "Arms Control and World Order," 15.
[362] Glaser, "The Security Dilemma Revisited," October 1997; Lodgaard, "Arms Control and World Order."
[363] Clint Reach, Vikram Kilambi, and Mark Cozad, *Russian Assessments and Applications of the Correlation of Forces and Means* (RAND Corporation, 2020), https://doi.org/10.7249/RR4235.

There are differing approaches to assessing the military balance including static or weighted measurements, all of which offer advantages and disadvantages.[364] Although there may be uncertainties and differing perceptions about the military balance when states are comparable, in some situations both parties are comparable and balanced and there exists a state of mutual deterrence,[365] or one state (or bloc) is clearly superior.

States seeking to establish a stable relationship through CAC may consider two factors: the military balance broadly and whether existing technologies and military capabilities offer a decisive offensive advantage. An unstable relationship might exist when states are nearly comparable, but uncertainty about capabilities and conflict outcomes encourages states to compete to obtain a clearer superiority; or a relationship with a clearly superior rival may be unstable if the weaker state seeks to narrow the military balance difference because they fear the stronger state.[366] Unstable rivalries might also exist when there is a perception that geographically concentrated military capabilities offer a surprise attack advantage, often referred to as the offense-defense balance.[367]

CAC can stabilize the military balance in two ways. First, it can reduce the number of "offensive"-capable weapons, reducing the threat of surprise attack.[368] Second, it can establish a force ratio-based equilibrium.[369]

Stability is very much a matter of perception and is not as simple as having an equal (stable) or unequal (unstable) balance of forces. Perceptions, particularly those of the more powerful party, matter as much as the actual military balance. The more powerful state needs to assess whether the weaker state is or will remain content with inferiority. If not, they may have to reduce their superiority (modifying the status quo) to achieve a lasting agreement that they perceive to be more important than the degree of military superiority they enjoy at the time of the agreement.

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[364] William Lippert, "A European Military Balance Organization and Dynamic Conventional Arms Control," *Bulletin of "Carol I" National Defense University* 12, no. 3 (2023): 41–59, https://doi.org/10.53477/2284-9378-23-31; Lippert, "Military Balancing for Future Conventional Arms Control Agreements in Europe."
[365] Haffa, "The Future of Conventional Deterrence"; Christine M. Leah, "Deterrence and Arms Control in a Second Conventional Age," *Comparative Strategy* 34, no. 5 (2015): 401–21, https://doi.org/10.1080/01495933.2015.1089122; Mazarr, Chan, et al., *What Deters and Why*.
[366] David Blagden, "When Does Competition Become Conflict? Technology, Geography, and the Offense–Defense Balance," *Journal of Global Security Studies* 6, no. 4 (2021): 1–23, https://doi.org/10.1093/jogss/ogab007.
[367] Adams, "Attack and Conquer? International Anarchy and the Offense-Defense-Deterrence Balance"; Levy, "The Offensive/Defensive Balance of Military Technology"; Lynn-Jones, "Offense-Defense Theory and Its Critics."
[368] Morgan, "Arms Control: A Theoretical Perspective." This was the CFE Treaty's central purpose, as stated in its preamble.
[369] Stephen D. Biddle, "The European Conventional Balance: A Reinterpretation of the Debate," *Survival* 30, no. 2 (March 1, 1988): 99–121, https://doi.org/10.1080/00396338808442399.

Some state rivalries that lack an overwhelming difference in the military balance, such as naval forces in the interwar period or conventional forces in Europe during the Cold War, may need to determine if the existing balance is sufficiently stable or if a CAC agreement would increase stability.[370] One driver of instability no matter what the relationship and balance is arms racing, which is costly, can result in deteriorating diplomatic relations, and may provoke a state which sees its relative position eroding to attack.

Theory and history thus suggest that, absent other factors, stronger states are willing to alter the status quo by reducing their relative advantage if doing so will increase stability but otherwise they would prefer to keep the military balance as is with reductions resulting in comparable ratios to the status quo.

Condition 3: Resource Constraints

States face competing demands on their resources and finances wherein expenditures in one area such as defense imposes opportunity costs in another such as healthcare or education. Thus, states generally aim to obtain as much security as possible at the lowest cost possible, but arms racing frustrates this goal as defense budgets blossom without a net increase in security due to rivals' matching expenditures and growth. Although opportunity costs and effects of defense expenditures on economic output differ across countries, over time, and according to the type of expenditure concerned, states do not have unlimited resources.

States' willingness and ability to shoulder defense expenditures varies. Some states, such as NATO member Iceland, and other states such as Costa Rica and Panama do not have militaries at all. The average share of Gross Domestic Product (GDP) dedicated to defense (known as military burden) among those (up to 144) states cataloged by the Stockholm International Peace Research Institute (SIPRI), NATO, and the European Defence Agency (EDA) from as long as 1949 to 2023 is 2.75%.[371] NATO allies have aimed to spend 2% of GDP on defense since the 1990s, with defense ministers agreeing to this target at their February 2006

[370] For example during the Cold War, NATO's policy was to obtain a "stable balance of conventional forces at lower levels," NATO, "Brussels Declaration On Conventional Arms Control," NATO, accessed February 8, 2022, http://www.nato.int/cps/en/natohq/official_texts_23337.htm.. Determining whether there is an overwhelming difference in the military balance is subjective for experts and policymakers alike, and the judgment may vary based on circumstance or objective. For CAC and other purposes such as public messaging, states may be more likely to understate their capabilities while overstating those of their adversaries. See, for example, contrasting assessments in the 1980's about the Soviet Union/Warsaw Pact made by the US "Soviet Military Power" (Washington, DC: US Department of Defense, March 1987). or Soviet assessments of NATO/US *Whence the Threat to Peace*, Fourth Edition (Moscow: Military Publishing House, Progress Publishers and Novosti Press Agency Publishing House, 1987).

[371] Jordan Becker et al., "Disaggregated Defense Spending: Introduction to Data," *Journal of Peace Research*, March 7, 2024, 00223433231215785, https://doi.org/10.1177/00223433231215785.

ministerial meeting.[372] Allied Heads of State and Government agreed to this aim at their 2014 Wales Summit, along with aiming to spend 20% of defense budgets on equipment modernization.[373] At the 2023 Vilnius Summit allies made the 2% and 20% guidelines into a "floor, not a ceiling."[374] While both the Wales and the Vilnius pledges on defense spending have affected spending positively,[375] an even greater increase appears to have followed Russia's 2022 attempt to conquer Ukraine.[376] Historically speaking, these aims are rather modest: during WW2 the United States, for example, was spending forty percent of its GDP on defense.[377] This suggests that governments have a loose ceiling on defense spending: while some scholars have argued that countries increasingly sacrifice other programs that contribute to growth and prosperity,[378] the defense economics literature indicates heterogeneity both over time and across countries[379] and across different types of defense expenditure.[380] A common public goal following a conflict or period of intense rivalry is to attain a peace dividend.[381] What a government is able and willing to spend on defense may depend in some part on public

[372] Jordan Becker, "Pledge and Forget? Testing the Effects of NATO's Wales Pledge on Defense Investment," *International Studies Perspectives*, January 23, 2024, ekad027, https://doi.org/10.1093/isp/ekad027; James Appathurai, "NATO Speech: Briefing by NATO Spokesman - MOD - 8 June 2006," June 8, 2006, https://www.nato.int/docu/speech/2006/s060608m.htm.
[373] NATO, "Wales Summit Declaration Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in Wales," NATO, 2014, http://www.nato.int/cps/en/natohq/official_texts_112964.htm.
[374] NATO, "Pre-Summit Press Conference by Secretary General Jens Stoltenberg Ahead of the NATO Summit in Vilnius," NATO, July 7, 2023, https://www.nato.int/cps/en/natohq/opinions_216939.htm.
[375] Becker, "Pledge and Forget?"
[376] NATO, "Defence Expenditures and NATO's 2% Guideline," NATO, April 5, 2024, https://www.nato.int/cps/en/natohq/topics_49198.htm.
[377] Guillaume Vandenbroucke, "Which War Saw the Highest Defense Spending? Depends How It's Measured," St. Louis Federal Reserve, February 4, 2020, https://www.stlouisfed.org/on-the-economy/2020/february/war-highest-defense-spending-measured.
[378] There is little debate about the cost of high defense spending to social and economic prosperity, with the question rather coming down to what the costs are. See, for example, Brito "The Economics of Disarmament, Arms Races and Arms Control.", Mayberry "Demilitarization and Economic Growth: Empirical Evidence in Support of a Peace Dividend," *Journal of Comparative Economics* 51, no. 3 (September 2023): 960–88, https://doi.org/10.1016/j.jce.2023.04.001., and Saeed "The Impact of Military Expenditures on Economic Growth.". However, states which permanently face an existential threat such as Israel and in which the public perceives this threat may sustain a higher than average defense budget.
[379] Paul Dunne and Ron Smith, "Military Expenditure, Investment and Growth," *Defence and Peace Economics* 31, no. 6 (August 17, 2020): 601–14, https://doi.org/10.1080/10242694.2019.1636182.
[380] Jordan Becker and J Paul Dunne, "Military Spending Composition and Economic Growth," *Defence and Peace Economics* 34, no. 3 (April 3, 2023): 259–71, https://doi.org/10.1080/10242694.2021.2003530; Justin George and Todd Sandler, "A Spatial Analysis of NATO Burden Sharing at the Operational Levels," *Kyklos* n/a, no. n/a (2024), https://doi.org/10.1111/kykl.12401.
[381] Malcolm Knight, Norman Loayza, and Delano Villanueva, "The Peace Dividend: Military Spending Cuts and Economic Growth," Working Paper (IMF, May 1995); "The Economic Effects of Reduced Defense Spending" (Washington, DC: Congressional Budget Office (CBO), February 1992).

perceptions (especially in democracies);[382] and in times of a stable peace, the public may pressure states to reduce defense spending – including through arms control.

Arms racing may be a significant driver of defense expenditures[383] but when such races – as they often do – result in no net gain, states have an interest in controlling or ending the arms racing through arms control.[384] As Brodie noted, "An international agreement which succeeds in limiting that competition is an important and welcome way of limiting those costs."[385] Arms racing and arms control, however, are not always mutually exclusive. In competitive arms control or cooperative arms racing, states accept that they are going to engage in arms racing but they attempt to do so in a cooperative manner through a combination of transparency and agreements so as not to signal mistaken malign intentions, and to ensure some stability by retaining the status quo.[386] Arms racing might even be stabilizing if the outcome is more rather than less parity[387] and it may prevent conflict.[388] Similarly, arms racing, and controlled arms racing, can be shaped by qualitative aspects. Some agreements, such as the Washington and London naval treaties, accounted for qualitative aspects by specifying gun caliber (although not other capabilities such as radar targeting); while others such as the CFE Treaty counted treaty-limited equipment (TLE) in each category equally regardless of age or capabilities. Qualitative differences in TLE could even be part of an arms control strategy wherein one side agrees to equivalent quantitative limitations but anticipates qualitative superiority.[389]

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[382] Matthew DiGiuseppe et al., "Threats and the Public Constraint on Military Spending," *British Journal of Political Science* 54, no. 3 (July 2024): 649–66, https://doi.org/10.1017/S0007123423000443.
[383] Paul Collier and Anke Hoeffler, *Military Expenditure: Threats, Aid, and Arms Races*, Policy Research Working Papers (The World Bank, 2002), https://doi.org/10.1596/1813-9450-2927.
[384] Toby J. Rider, "Uncertainty, Salient Stakes, and the Causes of Conventional Arms Races," *International Studies Quarterly* 57, no. 3 (September 2013): 580–91, https://doi.org/10.1111/isqu.12058; Toby J Rider, Michael G Findley, and Paul F Diehl, "Just Part of the Game? Arms Races, Rivalry, and War," *Journal of Peace Research* 48, no. 1 (2011): 85–100, https://doi.org/10.1177/0022343310389505.
[385] Bernard Brodie, "On the Objectives of Arms Control," *International Security* 1, no. 1 (Summer 1976): 17–36.
[386] James Cameron, "Soviet-American Strategic Arms Limitation and the Limits of Co-Operative Competition," *Diplomacy & Statecraft* 33, no. 1 (January 2, 2022): 111–32, https://doi.org/10.1080/09592296.2022.2041812; Colin S. Gray, "The Arms Race Phenomenon," *World Politics* 24, no. 1 (October 1971): 39–79, https://doi.org/10.2307/2009706; Brendan Rittenhouse Green, *The Revolution That Failed: Nuclear Competition, Arms Control, and the Cold War*, 1st ed. (Cambridge University Press, 2020), https://doi.org/10.1017/9781108779593; John D Maurer, "Divided Counsels: Competing Approaches to SALT, 1969–1970*," *Diplomatic History* 43, no. 2 (April 1, 2019): 353–77, https://doi.org/10.1093/dh/dhy069.
[387] Gray, "The Arms Race Phenomenon," 61–62.
[388] Bruce Berkowitz, *Calculated Risks : A Century of Arms Control, Why It Has Failed, and How It Can Be Made to Work*, *Calculated Risks : A Century of Arms Control, Why It Has Failed, and How It Can Be Made to Work* (New York, NY: Simon and Schuster, 1987); Gray, "The Arms Race Phenomenon"; C.S. Gray, *House of Cards: Why Arms Control Must Fail* (Cornell: Cornell University Press, 1992), https://books.google.nl/books?id=t8SPAAAAMAAJ.
[389] Gray, "The Arms Race Phenomenon"; Green, *The Revolution That Failed*.

Resource constraints may be a necessary but insufficient cause for altering the status quo in terms of the military balance for many reasons. First, the militarily stronger rival may desire to reduce its defense expenditures but may be unwilling or unable to do so due to domestic constraints without a negotiated agreement.[390] Second, resource constraint-driven unilateral cuts might be difficult to implement if the more powerful state fears that the reduction will harm its security and standing relative to other rivals. As Downs and Rocke note, rivals might exploit a tacit agreement (or no agreement at all).[391] Thus, states are more likely to accept a reduction in their relative military power within an agreement because both transparency measures and fixing rivals' military capabilities at a certain level (at least in some areas) helps alleviate the stronger power's relative military reduction. All states may implement unilateral reductions – or increases – but lacking an agreement the more powerful state can respond to changes without the diplomatic costs of violating an agreement. That is, if the stronger state implements unilateral reductions, it may also unilaterally reverse these if it sees its rivals are seeking to exploit any military balance changes.

The study therefore identifies two circumstances in which governments might seek to reduce defense spending (sometimes in the form of a peace dividend) due to a perception of resource constraints. They may broadly perceive a decrease in threats, even from specific rivals, due to the end of a conflict; or they may perceive improved diplomatic relations (which itself may be the product of previous arms control agreements). Alternatively, states may primarily seek financial savings through CAC, leaving the rivalry largely intact (although possibly hoping for improved relations) but with all parties realizing savings without a net loss of security.

Resource constraints interact with perceptions of geopolitical stability and military balance stability as part of the more powerful state's CBA. In sum, resource constraints would encourage states to accept seemingly unfavorable changes to the status quo because in a benign geopolitical order, states would consider relative decreases in military capability to be less dangerous than in a more hostile order, and alleviating a destabilizing military balance would be an added benefit. Similarly, a more powerful state would be expected to accept a change in the status quo if there is an unstable geopolitical order if doing so would alleviate a destabilizing military balance. In this case, the state would favor immediate (near-term and proximate) stabilization and cost savings over exposure to longer-term, potential threats.

[390] Freedman, "Arms Control: Thirty Years On."
[391] George W. Downs and David M. Rocke, "Tacit Bargaining and Arms Control," *World Politics* 39, no. 3 (April 1987): 297–325, https://doi.org/10.2307/2010222.

In contrast, the lack of resource constraints will always discourage the more powerful states from accepting a diminution of their relative military power because either they feel they need to hedge against geopolitical instability by retaining as much military capability as possible, the stable military balance discourages any changes to the military balance status quo, or simply that the cost to insure against such risks is so low there is no reason not to bear it.

Theory and history thus suggest that absent other countervailing considerations, states will seek to reduce defense expenditures and will be willing to accept a reduction in their relative military superiority through a CAC agreement when faced with substantial resource constraints – even when the other two conditions are absent.

Hypothesis

The study proposes that resource constraints are the primary variable or condition affecting the dependent variable, the willingness of the stronger party to accept reductions in military superiority; although geopolitical or military balance stability/instability also contribute. As more powerful states often have the lead on CAC agreement details and their impact on the military balance, the study hypothesizes the following:

> The stronger state or alliance in a CAC agreement will accept a reduction in its relative military power if a) it faces resource constraints and b) it views the geopolitical order as stable or the military balance with its adversary as unstable. (Model B, C, D, and H).

Table 7 summarizes the conditions and expected outcomes, with an explanation of the expected outcome in table A3 in appendix A.

Table 7: CAC agreement conditions and expected outcome for changing the status quo

	Is the geopolitical order anticipated to remain or be more stable and peaceful ? 1=yes	Does the more powerful state/bloc view the current ratio viewed as dangerously unstable? 1=yes	Can states afford to compete to maintain the ratio? 1=No (they cannot afford because there is a resource shortage)	Status quo change or not (ratio reduction for the stronger party); 1 = ratio change
Model	Geopolitical Order Stable	Balance Stabilization Danger	Resource Shortage	Expected Outcome
A	0	1	1	1
B	0	1	0	0
C	0	0	0	0
D	1	0	0	0
E	1	1	1	1
F	1	0	1	1
G	0	0	1	0
H	1	1	0	0

Source: Authors' research and analysis

Research Design and Methodology

Having established the three conditions that jointly determine the outcome of the status quo changing or remaining the same, the study conducts a typological analysis to test its hypothesis. Using this method, the study seeks to identify complex causal relations of the conditions and the outcomes through detailed case studies of each CAC case in the dataset, following the discussion by Bennett and Elman.[392] The study's hypothesis is based on a typological theoretical approach, which identifies *"*recurring conjunctions of mechanisms and provide[s] hypotheses on the pathways through which they produce effects."[393] Having identified the conditions, Table 7 displays all of the possible combinations of the variables. Based on research and analysis of how governments are most likely to conduct CBA for arms control, the study then predicted which outcome would result from each combination of the three variables.

[392] Bennett and Elman, "Complex Causal Relations and Case Study Methods."
[393] Bennett, "Case Study."

Case Selection

The study identified 29 CAC control agreements in Europe from 1919 to 2015 for this study, with each agreement controlling at least one state's conventional armed forces with a geographic and/or quantitative limitation, restriction, or prohibition of varying specificity. The study excluded nuclear arms control agreements because of the fundamental differences between nuclear and conventional weapons and warfare, such as the massive firepower of nuclear weapons, their near-certainty of effects (compared to the much greater uncertainty of conventional forces' effectiveness), and that nuclear arms control agreements have been limited to the US and Soviet Union/Russia.[394]

This is not to say there is no relationship between nuclear and conventional arms control. First, as in the case of the 1987 Intermediate-range Nuclear Forces (INF) Treaty, conventional and nuclear land-based missiles of the same range were prohibited. Second, considerations of nuclear and conventional capabilities have gone hand-in-hand when applicable, especially when considering conflict scenarios and relative military power.[395] For example, Bluth discusses how in the 1960's and 1970's NATO assessed that the Warsaw Pact had superiority in conventional weapons, while the Warsaw Pact viewed NATO as having tactical nuclear weapon superiority;[396] views that were an important component of the Mutual and Balanced Force Reduction (MBFR) negotiations.[397] Even though US and Soviet leaders merged nuclear and conventional threats and arms control issues in planning and discussions, formal agreements have largely separated the two.

This study's cases focused on the period from 1919 to 2015 because this reflects the period in which CAC was most carefully crafted, most institutionalized, most specific, and most relevant to the present context as many of the states that exist today did not exist prior to WW1 and the most recent CAC agreement in Europe that entered into force was the 2015

[394] Graef, "Beyond Stability," 224–25; Leah and Lowther, "Conventional Arms and Nuclear Peace"; John Stone, "Conventional Deterrence and the Challenge of Credibility," *Contemporary Security Policy* 33, no. 1 (2012): 108–23.
[395] See Cameron "Soviet-American Strategic Arms Limitation and the Limits of Co-Operative Competition." and Colbourn *Euromissiles*. for additional discussions about the overlap between nuclear and conventional warfare strategies and plans and arms control. Luňák et al. "Taking Lyon on the Ninth Day? The 1964 Warsaw Pact Plan for a Nuclear War in Europe and Related Documents" (Washington, D.C. / Zurich: PHP Publications Series, May 2000). offer a detailed assessment of a Warsaw Pact offensive plan to use a combination of conventional and nuclear forces to defeat NATO. Nuclear weapons considerations were absent from agreements predating the nuclear era and agreements between non-nuclear weapons states.
[396] "Arms Control as a Part of Strategy."
[397] NATO Military Committee, "Memo: Balanced East-West Force Reductions" (NATO, August 30, 1968).

Minsk Agreements for Ukraine. This study focused on European agreements for the same reasons –previous agreements in Europe are most relevant to future agreements in Europe. CAC has a much deeper history and institutional role in Europe than in other parts of the world,[398] whether due to substantially less interstate conflict (as in South America) or other reasons that are beyond this article's scope. As Sommerer and Tallberg note, lessons and experiences (of international organizations (IOs) specifically) transfer well between states and institutions within a region, but not between regions around the globe.[399]

This study only includes formally agreed agreements rather than tacit agreements or proposals for many reasons. First, initial proposals may not represent the final agreement with the result that quantitative scoring would at best be speculative.[400] Second, focusing on actual cases decreases subjectivity, as there are a nearly infinite number of potential adversarial CAC agreements when the only requirement is the existence of two rival states at any given time or historical period.[401] This study also thus excludes instances where a state decides to reduce its relative military strength unilaterally (for example, the unilateral Soviet military reductions in Europe announced prior to the CFE agreement.[402] Although understanding cases where a rival has accepted a reduction, or even inversion, of the military balance would offer many insights, it is outside of this study's scope which is focused on the crafting and formalization of CAC agreements.

[398] Zdzislaw Lachowski, "Half-Century of Arms Control: A Tentative Score Sheet," *Polish Quarterly of International Affairs* 19, no. 4 (2010): 40–65; Rotfeld, "1: A Future Arms Control Agenda."
[399] Sommerer and Tallberg, "Diffusion Across International Organizations." The notion of knowledge transfer between IOs is especially relevant to CAC agreements because CAC agreements are often implemented by IOs such as the United Nations (UN) and Organization for Security and Cooperation in Europe (OSCE) William Lippert, "Delegation to Treaty Bodies and International Organizations for Conventional Arms Control Agreements in Europe: A Sum Score Evaluation," *Global Governance: A Review of Multilateralism and International Organizations* 30, no. 1 (2024): 93–122, https://doi.org/10.1163/19426720-03001005.
[400] For example, the Russian proposals to NATO and the US in December 2021 "Russia, U.S., NATO Security Proposals," Arms Control Association, March 2022, https://www.armscontrol.org/act/2022-03/news/russia-us-nato-security-proposals. demanded what might have been an inversion of the status quo, with significantly more restrictions placed on NATO and the US compared to Russia. However, had an agreement been made, there is no certainty what final military balance would have been agreed to.
[401] Moreover, as even this study's dataset shows, the even formal allies sign adversarial CAC agreements due to previous rivalries and conflicts (such as the 1954 Western European Union (WEU) arms control protocol), or recent allies sign agreements in the expectation of future rivalries (such as Japan, the UK, and US – all three WW1 allies – for the Washington Naval Treaty).
[402] James A. Thomson, "Implications of the Gorbachev Force Cuts" (Santa Monica, CA: RAND Corporation, February 1989).

Coding Criteria

This study defined the three typological conditions and outcomes to determine the coding for each agreement, and each coding decision is explained for each agreement in appendix A (tables A4-A7).

Assessing geopolitical stability from the perspective of the most powerful CAC agreement state party is based on a combination of contemporaneous statements and historical analysis. The study also assessed the sub-regional geopolitical perceptions, as these can differ from broader European trends. Table A1 offers a guideline of how the more powerful state(s) was likely to have viewed the period in which the applicable CAC agreement was negotiated and signed, but when necessary, possible, and applicable the study identified specific statements and assessments by states' leaders concerning their view of the geopolitical situation. Table A4 in the appendix explains the geopolitical order assessment for each case.

The study assessed the (in)stability of the military balance by researching contemporaneous statements and historical analysis of each case. In some cases, the more powerful state party/bloc clearly viewed the military balance as destabilizing. In other cases, the study assessed this from a broader analysis of the historical circumstances with an explanation of each case's determination for military balance instability in table A5.

Assessing whether the more powerful state(s) faced resource constraints is based on a combination of contemporaneous statements, historical analysis, and assessments of budgets and spending (for example, a period of high spending following low spending suggests potential resource constraints). Government reports, official statements, and historians often clearly assessed the extent to which states were facing resource constraints and sought to curb defense spending at certain historic periods or when considering certain CAC agreements. Table A6 in appendix A explains each case's determination of parties' desires to limit or reduce defense expenditures due to resource constraints.

To catalog the dependent variable, whether the status quo was retained or altered, the study first considered if the agreement involved specific force quantities, especially when applied to all parties. If so, the study could compare the ratios prior to the agreement and the ratios that the agreement established. Second, for agreements in which there was any uncertainty about the relative balance of power but which lacked quantitative limits for at least some of the state parties, the study used the Correlates of War (COW) database's National

Material Capabilities/Composite Indicator of National Capabilities (CINC).[403] Table A7 in the appendix explains the assessment of whether the study considered the status quo retained or altered for each case.

Findings

Out of the 29 cases in the study's dataset, 22 of these saw no change in the status quo while seven cases reflected a status quo change in the military balance (see Table 8). In none of the seven status quo change cases was there a reversal where a state went from being militarily superior to inferior, though in three cases states forfeited their superiority to accept parity. In five out of the seven cases where there was a change in the military balance status quo, the more powerful state faced resource constraints. The status quo was retained in 19 cases which lacked resource constraints.

[403] Greig and Enterline, "Correlates of War Database, National Material Capabilities (v6.0)."

Table 8: Condition combinations and outcome for each agreement

Case	Geopolitical Order Stable	Balance Stabilization Danger	Resource Shortage	Expected Outcome	Actual Outcome
B	0	1	0	0	
Anglo-German*	0	1	0	0	1
C	0	0	0	0	
Montreux	0	0	0	0	0
Second London Naval Treaty	0	0	0	0	0
Moscow1940	0	0	0	0	0
Georgia 2008	0	0	0	0	1
Minsk	0	0	0	0	0
E	1	1	1	1	
WashNavTreaty	1	1	1	1	1
INF	1	1	1	1	1
CFE	1	1	1	1	1
Belfast	1	1	1	1	1
D	1	0	0	0	
Åland	1	0	0	0	0
Lausanne1923	1	0	0	0	0
Tangiers	1	0	0	0	0
Thrace	1	0	0	0	0
First London Naval Treaty	1	0	0	0	0
Dodecanese	1	0	0	0	0
WW2	1	0	0	0	0
WEU	1	0	0	0	0
Cyprus	1	0	0	0	0
Germany1990	1	0	0	0	0
Transdniestria	1	0	0	0	0
Balkans	1	0	0	0	0
Kosovo	1	0	0	0	0
A/CFE	1	0	0	0	0
F	1	0	1	1	
WW1	1	0	1	1	0
Spitsbergen	1	0	1	1	0
Aegean	1	0	1	1	0
G	0	0	1	0	
Helsinki1922	0	0	1	0	1
Finnish-Russia1920 (Tartu)	0	0	1	0	0

Source: Authors' research and analysis

This study poses the question: Under what conditions do the more powerful states in an adversarial conventional arms control (CAC) agreement accept a reduction in their relative military power? The study developed a theory to answer this question based on the three independent variables: the larger power's perceptions of geopolitical stability, the larger power's perceptions of military balance stability, and resource constraints under which the larger power is operating. Research suggests that states will accept an alteration to the status quo in the following condition combinations (C):

C_1:[404] When the stronger actor perceives the wider geopolitical order to be stable, perceives the current dyadic balance of military power to be unstable, and fears a resource shortage; (Model E)
C_2: When there is a perception of global disorder, an unstable rivalry, and no resource shortage; (Model B)
C_3: When the world order is unstable, the military balance is stable, and there are resource constraints. (Model G)

This study's model C_1 successfully predicts a change in the status quo as all four cases with these conditions resulted in a status quo change. In three of the four cases (Washington Naval, INF, and CFE treaties) the superior party (United Kingdom (UK), Soviet Union, and Warsaw Pact, respectively) abandoned their superior standing for parity (at least in the TLE categories). The Washington Naval Treaty established parity between the US and the UK – which may have been possible in part due to their WW1 alliance though at the same time both states were aware that they might have competing interests in the future and thus often assessed military questions through a rivalry lens.[405] The Soviet Union signed the INF Treaty when it had a superiority in INF-category missiles, but feared an arms race as well as a first strike against Moscow by the weapons (Washington, DC, was not similarly vulnerable) – and thus agreed (among other reasons) to a global prohibition on the weapons.[406] Under the CFE Treaty, the Warsaw Pact removed and/or destroyed far more TLE than NATO, resulting in each bloc having an equal number of TLE-category weapon systems – an interesting outcome in light of

[404] C=Combination
[405] Thomas F. Lynch III and Frank Hoffman, "Chapter 2: Past Eras of Great Power Competition," in *Strategic Assessment 2020: Into a New Era of Great Power Competition* (Washington, DC: NDU Press, 2020), 30–35.
[406] Colbourn, *Euromissiles*; Lynn E. Davis, "Lessons of the INF Treaty," *Foreign Affairs* 66, no. 4 (Spring 1988): 720–34.

several decades of disagreement over the issue during the MBFR negotiations in which Moscow had pressed for equal reductions rather than equal forces.[407]

The study revealed several unexpected findings. First, the combination of a stable geopolitical order, lack of military balance instability, and the presence of resource constraints was not enough to compel a change in the status quo in three cases where a change was expected. This could be due to states viewing the maintenance of stability (both geopolitical and military balance) as more important than savings, with the notion being that a formal change in the military balance could become destabilizing. However, this is only speculative as such a CBA was never clearly articulated in the cases. In general, accepting a change could have several benefits such as increasing rivals' willingness to accept and abide by agreements and improving diplomatic relations overall. In the case of the post-WW1 agreements, the major Allied powers had intended to formalize their reductions in future CAC agreements through the League of Nations and the forthcoming disarmament conference – thus they were committed to formally reducing their superiority, but just not within the peace treaties. In the case of the 1920 Spitsbergen agreement, the UK (which had the most powerful navy in the North Atlantic region) accepted the archipelago's continued demilitarization as well as its formal transfer to Norwegian sovereignty. The likely reason that it did not accept any alteration to the status quo concerning its own naval supremacy was the nature of the problem and the agreement. Spitsbergen had not been contested militarily, having been an international "no-man's" land and mainly exploited for commercial purposes.[408] Granting the island to Norway while keeping it demilitarized retained the island's status quo and did not require any alterations to any states' military capabilities.

Lastly, the set of agreements that laid out the demilitarization of the East Aegean Sea's Greek and Turkish islands did not impact national capabilities – which might have been more relevant in any case to controlling land forces, given the existence of a common land border – but also that possession was less of an issue than perceived threats. The demilitarization agreements mutually reduced threats sufficiently that Turkey in particular did not need to offer further constraints or reductions to stabilize the relationship.

Three other cases contradicted the predicted outcome, where the prediction was for the retention of the status quo, but the agreements formalized an alteration. The 1922 Helsinki Treaty between Soviet Russia and Finland (C_3) established a buffer zone along their border

[407] Bluth, "Arms Control as a Part of Strategy."
[408] Burns and Urquidi, *Disarmament in Perspective: Volume 2, Demilitarization of Frontiers, Islands and Straits*.

north of Lake Lagoda, imposing equal restrictions on both states. Thus, Soviet Russia accepted limitations when they otherwise might not have, given their military superiority. The model predicted that the combination of conditions would not have resulted in a status quo change because Soviet Russia had broad concerns about the geopolitical situation, especially regionally (due to conflicts and tensions along its western borders) even if they faced resource constraints due to the Russian civil war and foreign invasions. One reason that Russia might have accepted the reduction in its military position was that it was a minor degradation as the buffer zone itself did not severely impact either its national or even northwest military capability. Russia's acceptance of a return to the status quo under the 2008 Six-Point Peace Plan was a substantial change in the status quo as defined by the battlefield conditions at the time. The agreement compelled Russia to withdraw forces to pre-conflict lines, which included withdrawing from several mid-sized cities, and the reduction of their forces to pre-conflict levels.[409] Yet their battlefield superiority was uncontested; little prevented Russia from driving on to Tbilisi, Georgia, and occupying the entire country. Georgia simply lacked the forces, equipment, and strategic depth to replicate what Ukraine would later due in 2022.[410] Thus, given the conditions of an unstable global order, non-destabilizing military balance, and no major resource constraints, the study predicted that Russia would have retained the status quo (as occurred with three other agreements with this set of conditions). Russia's acceptance of a cessation of hostilities relatively generous to Georgia especially as Russia held Georgia responsible for its outbreak[411] is surprising at many levels, and more time and information are necessary to fully understand the Kremlin's decision.

The Anglo-German Naval Agreement saw the UK accept a significant reduction of their naval superiority as measured by gross tonnage from 100:14 to 100:35 (UK:Germany) despite global instability and a lack of major resource constraints (as this combination, despite the existent military balance instability, suggests retaining the status quo) (C_2). There are several

[409] David L. Phillips, "Implementation Review: Six-Point Ceasefire Agreement Between Russia and Georgia" (National Committee on American Foreign Policy and Institute for the Study of Human Rights (ISHR), August 2011).
[410] M. Galeotti and J. Shumate, *Russia's Five-Day War: The Invasion of Georgia, August 2008*, Elite Series (Bloomsbury USA, 2023); Michael Kofman, "The August War, Ten Years On: A Retrospective on the Russo-Georgian War," War on the Rocks, August 17, 2018, https://warontherocks.com/2018/08/the-august-war-ten-years-on-a-retrospective-on-the-russo-georgian-war/; Riho Ühtegi, "The 2008 Russia-Georgia War Five Years Later," ICDS, August 8, 2013, https://icds.ee/en/the-2008-russia-georgia-war-five-years-later/.
[411] The immediate cause was determined to be Georgia's shelling of Russian peacekeepers in South Ossetia, but the deeper causes were both sides' fault Ahto Lobjakas, "EU Report On 2008 War Tilts Against Georgia," *Radio Free Europe/Radio Liberty*, September 30, 2009, sec. Features, https://www.rferl.org/a/EU_Report_On_2008_War_Tilts_Against_Georgia/1840447.html; "Independent International Fact-Finding Mission on the Conflict in Georgia Report - Volume 1," September 2009..

historical explanations for this, including the UK's goal of promoting naval arms control throughout Europe and improving diplomatic relations with Germany. The UK may have accepted a reduction of its naval superiority vis-à-vis Germany in part because its land forces could threaten Germany more easily than the inverse, and France offered (they believed) a supplemental deterrence – especially land-based– to Germany.

Model E predicted that the combination of geopolitical stability, military balance instability, and resource constraints would result in a change in the military balance status quo, and this prediction was affirmed in the four relevant cases. For the 1998 Belfast agreement meant to end violence in Northern Ireland, London reduced British military in Ireland due to its lack of fear of Ireland's relative increase in military capability, given Ireland's exceptionally small military and that the rivalry was a political rather than a military rivalry.[412] Though Dublin was generally critical of British military actions in Northern Ireland (and maintains a reunification policy), the dispute was more of a law enforcement challenge as Ireland was lenient towards Republican-nationalist militants.[413]

Moscow may have accepted the elimination of their offensive advantages in the CFE and INF treaties, partly because their remaining strategic nuclear weapons arsenal offered a robust deterrence. The CFE Treaty, as its preamble states, sought to eliminate both sides' "capability for launching surprise attack and for initiating large-scale offensive action,"[414] which might have suggested at least two phenomena. First, that qualitative differences in offensive capabilities might have made the military balance disparities less than they appear from a simple quantitative tabulation. NATO AirLand battle, which was a NATO shift towards offensive capabilities with a rear area concept of operations, posed a new threat to Warsaw Pact forces.[415] Second, the CFE Treaty re-emphasized the notion of controlling offensive capabilities while retaining defensive capabilities.

Two conditional combinations lacked any examples, and the study can only speculate why this is the case. The lack of an agreement characterized by an unstable geopolitical order, unstable military balance, and resource constraints is more likely the reflection of the medium

[412] The 1998 Belfast/Good Friday agreement is included in this dataset because it set non-specific reductions to the UK military in Northern Ireland, created two international commissions to ensure compliance, involved several states – especially the US – as a mediator, and was signed by two states (UK and Ireland). This is the only agreement in the dataset which involves a primarily internal conflict.
[413] Jennifer Dowling, "Pulling the Brakes on Political Violence: How Internal Brakes Limited Violent Escalation from the Provisional IRA in Pre- and Post-Good Friday Northern Ireland," *Terrorism and Political Violence*, May 2, 2023, 1–17, https://doi.org/10.1080/09546553.2023.2198608.
[414] "Treaty On Conventional Armed Forces In Europe."
[415] Goldfischer, "1. The Meaning of Offense and Defense," 34; Hamm and Pohlman, "Military Doctrine—the Missing Link of Conventional Arms Control"; Rohn, *Conventional Forces in Europe*, 59.

rather than a large number of agreements. The other combination for which there is no agreement is a perception of geopolitical stability, an unstable military balance, and no resource constraints. There are not any theoretical reasons why these combinations are not possible.

Conclusion

This study attempted to determine when rival states in Europe, especially the more militarily powerful ones, decided to sacrifice some of their relative military capability when they entered – and sometimes drove – conventional arms control agreements from 1919 to 2015. Not only do CAC agreements tend to lock in the status quo, but states also generally show reluctance to forfeit their relative military advantages with rivals due to the high stakes of security and their survival concerns. Yet, somewhat puzzlingly, some adversarial CAC agreements have involved a reduction in military advantages by more powerful parties to the agreement, and to understand this the study hypothesized that in the presence of certain conditions, states would be willing to reduce their relative military advantage. The three conditions the study considered for the multicausal outcome of status quo change were whether the stronger party to the agreement views the military balance as stable, whether that party views global or regional geopolitics as stable, and whether the stronger state faces significant resource constraints in maintaining their relative superiority.

The study mostly upheld this study's hypothesis that the stronger state or alliance in a CAC agreement will accept a reduction in its relative military power if a) it faces resource constraints and b) it views the geopolitical order as stable or the military balance with its adversary as unstable.

None of the CAC agreements in this study inverted the status quo ante; in other words, no agreement made a strong state weaker than a previously weaker state. In seven cases, more powerful states accepted a reduction in their power relative to the less powerful parties to the agreement. The reasons for the change are particular to each agreement and relationship but may emphasize in part that states may be willing to accept a change in the status quo when other considerations such as the desire to improve diplomatic relations and preserve (or establish) peace outweigh concerns about relative military power.

This study can serve as a guide when parties consider whether the military balance status quo might be altered, and who may determine such an alteration. This is especially relevant to any future Russo-Ukraine ceasefire or peace agreement because this study

emphasizes the role that the stronger (victorious) state has in determining an agreement's content and if that state is more likely or not to accept a reduction in their relative military capability.

This study adds to the research on arms control and armed conflict by quantitatively assessing the military balance between rival states that have entered into CAC agreements – a feat not previously accomplished for a study of this many cases. Additionally, it offers a model framework for how states conduct CBA when crafting and negotiating CAC agreements. Lastly, it offers insights into how states view and prioritize their military position, especially when it is superior, against other considerations such as resource constraints, improving diplomatic relations especially when related to the military balance, and how broader world views figure into their calculations and decisions.

This typological exercise is an initial test and offers some paths to more convincing causal tests for future research. First, the study selected three typological conditions based on an understanding of CAC agreements in Europe – but the study's choices do not close the door to different or additional conditions. One approach might be to assess the status quo relative to internal and externally-driven conditions, as Bennett et al. did in assessing national military commitments to the 1991 Gulf War coalition.[416] This in itself raises the question of whether internal or external drivers of defense acquisition policy are paramount, and the impact of this dynamic on arms control agreements and policy.[417]

Second, this study did not address CAC agreements' performance. Does changing the status quo increase agreements' longevity and effectiveness? Similarly, while CAC agreements lock in a certain stability through limits on personnel, equipment, fortifications, geographic prohibitions, and other restrictions, no CAC agreement can effectively limit every military capability. Unforeseen military capabilities and technologies may develop after agreements are signed, or existing capabilities omitted by agreements may grow (or decrease). Some examples of the former might be how stealth aircraft and precision-guided munitions (PGMs) were left out of the CFE Treaty because their effectiveness was not widely understood at the time; and naval forces were left out of the CFE Treaty by NATO's insistence. Today, several major military capabilities have yet to be subject to limitations, such as cyberweapons and drones – the latter of which has proven to be pivotal in Ukraine (mostly by offering both sides a decisive

[416] Bennett, Lepgold, and Unger, "Burden-Sharing in the Persian Gulf War."
[417] Evangelista, *How the United States and the Soviet Union Develop New Military Technologies*; Schlickenmaier, *Playing the Generals' Game: Superpowers, Self-Limiting, and Strategic Emerging Technologies*.

defensive advantage).[418] One thus might ask to what extent does the military balance shifts even when states are compliant with CAC agreements.

Regime type may be an important contributor to what form CAC agreements assume, especially from the military balance status quo perspective. Filson and Werner assess, for example, the relationship between regime type and war termination. More broadly, a study could assess if there is a relationship between regime type and all adversarial CAC agreements' retention of the status quo.[419]

Future research might also go beyond where this study has arrived empirically by operationalizing the three key independent variables quantitatively and testing their effects on stronger parties' willingness to accept CAC agreements that reduce their relative power. For instance, reductions in relative power can be quantitatively operationalized using newly available measures of material military power,[420] while fiscal constraints can be measured using debt and deficit figures, supranational fiscal constraints,[421] or fiscal space.[422] A qualitative comparative analysis (QCA) approach could offer additional insights about the combination of conditions and the outcome (change or retention of the status quo), and additional or different conditions could be considered. QCA[423] and Coincidence Analysis (CNA)[424] have both proven useful in security scholarship and have been effectively combined with different techniques of qualitative and quantitative analysis to address empirically challenging topics.[425]

CAC agreements are an important feature of interstate relations between rivals in Europe. They are characterized by variety and aim to either establish or preserve peace. Amidst

[418] Stacie L. Pettyjohn, "Drones Are Transforming the Battlefield in Ukraine But in an Evolutionary Fashion," War on the Rocks, March 5, 2024, https://warontherocks.com/2024/03/drones-are-transforming-the-battlefield-in-ukraine-but-in-an-evolutionary-fashion/.
[419] Darren Filson and Suzanne Werner, "Bargaining and Fighting: The Impact of Regime Type on War Onset, Duration, and Outcomes," *American Journal of Political Science* 48, no. 2 (April 2004): 296–313.
[420] Mark Souva, "Material Military Power: A Country-Year Measure of Military Power, 1865–2019," *Journal of Peace Research* 60, no. 6 (November 1, 2023): 1002–9, https://doi.org/10.1177/00223433221112970.
[421] Jordan Becker, "Accidental Rivals? EU Fiscal Rules, NATO, and Transatlantic Burden-Sharing," *Journal of Peace Research* 56, no. 5 (September 1, 2019): 697–713, https://doi.org/10.1177/0022343319829690.
[422] Edward Hunter Christie, "The Demand for Military Expenditure in Europe: The Role of Fiscal Space in the Context of a Resurgent Russia," *Defence and Peace Economics* 30, no. 1 (January 2, 2019): 72–84, https://doi.org/10.1080/10242694.2017.1373542.
[423] Haesebrouck and Thomann, "Introduction"; Ide and Mello, "QCA in International Relations."
[424] Tim Haesebrouck, "The Populist Radical Right and Military Intervention: A Coincidence Analysis of Military Deployment Votes," *International Interactions* 49, no. 3 (May 4, 2023): 345–71, https://doi.org/10.1080/03050629.2023.2184815; Tim Haesebrouck, "EU Member State Support to Ukraine," *Foreign Policy Analysis* 20, no. 2 (April 1, 2024): orae005, https://doi.org/10.1093/fpa/orae005.
[425] Jordan Becker, Paul Poast, and Tim Haesebrouck, "Setting Targets: Abatement Cost, Vulnerability, and the Agreement of NATO's Wales Pledge on Defense Investment," *Journal of Peace Research*, November 3, 2024, 00223433241267798, https://doi.org/10.1177/00223433241267798.

Europe's largest and most destructive war since 1945, increasing awareness and understanding of CAC agreements may both help end the current conflict and prevent another.