

CHARLES UNIVERSITY

FACULTY OF SOCIAL SCIENCES

Institute of Political Studies

Department of Political Science

Bachelor's Thesis

2024

Adam Kříž

CHARLES UNIVERSITY

FACULTY OF SOCIAL SCIENCES

Institute of Political Studies

Department of Political Science

**Comparison of the military effectiveness of the
Ukrainian Armed Forces and the Armed Forces of the
Russian Federation in the ongoing Russian invasion of
Ukraine**

Bachelor's Thesis

Author of the Thesis: Adam Kříž

Study programme: Political Science and International Relations

Supervisor: RNDr. Jan Kofroň, Ph.D.

Year of the defence: 2024

Declaration

1. I hereby declare that I have compiled this thesis using the listed literature and resources only.
2. I hereby declare that my thesis has not been used to gain any other academic title.
3. I fully agree to my work being used for study and scientific purposes.

In Prague on 19th April 2024

Adam Kříž

References

KŘÍŽ, Adam. Comparison of the military effectiveness of the Ukrainian Armed Forces and the Armed Forces of the Russian Federation in the ongoing Russian invasion of Ukraine. Praha, 2024. 74 pages. Bachelor's thesis (Bc). Charles University, Faculty of Social Sciences, Institute of Political Studies, Department of Political Science. Supervisor RNDr. Jan Kofroň, Ph.D.

Length of the Thesis: 121 064 characters (with spaces)

Abstract

The Russian invasion of Ukraine, which began on February 24, 2022, marks the largest conventional conflict in Europe since World War II. The unexpected and robust resistance by Ukrainians thwarted the Russian Federation's plans for a smooth occupational operation, allowing Ukrainians to defend their country for over two years now. This thesis analyses the military effectiveness of the Ukrainian armed forces and those of the Russian Federation in the ongoing Russian invasion of Ukraine, with the aim of revealing differences in effectiveness during the ongoing conflict. Initially, the thesis presents existing theoretical approaches to military effectiveness, specifically introducing scholars like Stephen Biddle, Caitlin Talmadge, and John Mearsheimer. From these described approaches, variables are derived that are closely observed on both sides of the conflict. These variables serve the thesis in explaining how each side differs in terms of military effectiveness. Based on hypotheses derived from theory, three specific cases are compared to analyse differences in military effectiveness between the sides using the ratio of losses. The final part of the thesis summarizes predictions of performance of both armies and highlights key factors that influence their performance on the battlefield. The research finds that in selected cases, Ukrainian forces exhibit a somewhat higher degree of effectiveness, however, precise numerical data on losses in individual engagements are lacking, which would significantly refine and enable further research in this area.

Abstrakt

Ruská invaze na Ukrajinu započala 24. února 2022 největší konvenční konflikt v Evropě od dob druhé světové války. Nečekaný a tvrdý odpor Ukrajinců zhatil plány Ruské Federace na hladkou okupační operaci a dovolil Ukrajincům bránit svoji zem už více než dva roky. Tato práce analyzuje vojenskou efektivitu ukrajinských ozbrojených sil a ozbrojených sil Ruské federace v probíhající ruské invazi na Ukrajinu za účelem odhalení odlišností v efektivitě během probíhajícího konfliktu. Práce nejprve představuje existující teoretické přístupy k vojenské efektivitě. Konkrétně práce představuje Stephena Biddlea, Caitlin Talmadge nebo Johna Mearsheimera. Z těchto popsáných přístupů vychází proměnné, které jsou detailně pozorovány u obou stran konfliktu. Tyto proměnné slouží práci k vysvětlení, čím se obě strany liší s ohledem na vojenskou efektivitu. Na základě hypotéz odvozených z teorie se srovnávají tři konkrétní případy, aby se analyzovaly rozdíly ve vojenské efektivitě obou stran za pomoci poměru mezi ztrátami. Konečná část práce

shrnuje predikce výkonu obou armád a poukazuje na klíčové faktory, které ovlivňují jejich výkon na bojišti. Ve výzkumu je zjištěno, že u vybraných případů Ukrajinské síly vykazují o něco větší míru efektivity, avšak k závěru shrnující celý konflikt doposud chybí relevantní data. Přesnější číselné údaje o ztrátách v jednotlivých střetnutích by výrazně zpřesnily a umožnily další výzkum v této oblasti.

Keywords

Ukraine, Russia, invasion, military effectiveness, armed forces

Klíčová slova

Ukrajina, Rusko, invaze, vojenská efektivita, vojenské síly

Název práce

Srovnání vojenské efektivity ukrajinských ozbrojených sil a ozbrojených sil Ruské Federace v probíhající ruské invazi na Ukrajinu

Acknowledgement

I would like to express my gratitude to RNDr. Jan Kofroň, Ph.D. for his valuable advice, time, and patience during numerous consultations. His accommodating approach significantly facilitated the creation of this thesis.

Table of Contents

| | |
|--|----|
| Introduction | 10 |
| 1. Theoretical framework | 12 |
| 1.1 Original theoretical approaches | 12 |
| 1.2 Stephen Biddle's Military Power Theory | 15 |
| 1.3 Caitlin Talmadge's Military Effectiveness Theory | 17 |
| 1.3.1 Empirical variables | 20 |
| 1.3.2 Military effectiveness and democratic regimes | 21 |
| 1.4 Hypotheses | 22 |
| 2. Methodology..... | 24 |
| 2.1 Definition of the subjects of comparison..... | 24 |
| 2.2 Variables | 26 |
| 2.3 Structure | 29 |
| 2.4 Data collection..... | 30 |
| 3. Variables affecting the current state of the armed forces of Ukraine and the Russian Federation | 32 |
| 3.1 Organizational practices | 32 |
| 3.1.2 Ukrainian command arrangements and promotion patterns..... | 32 |
| 3.1.3 Russian command arrangements and promotion patterns | 33 |
| 3.1.4 Ukrainian training regimens | 35 |
| 3.1.5 Russian training regimens | 37 |
| 3.1.6 Information management..... | 38 |
| 3.2 Complex Operations | 38 |
| 3.2.1 Ukraine | 39 |
| 3.2.2 Russia | 40 |
| 3.3 Civil-Military Relations and politicization of the military | 43 |

| | |
|--|----|
| 3.3.1 Ukraine | 43 |
| 3.3.2 Russia | 45 |
| 3.4 Perception of the threat of coup and occupation | 47 |
| 3.4.1 Ukraine | 47 |
| 3.4.2 Russia | 49 |
| 3.5 Ukraine's predicted performance | 51 |
| 3.6 Russia's predicted performance..... | 52 |
| 3.7. Variables conclusion..... | 52 |
| 4. Selected cases for comparison of Ukrainian and Russian military effectiveness | 54 |
| 4.1 Battle of Hostomel, 25 February – 1 April 2022 | 54 |
| 4.2 Battle of Bakhmut, July 2022 – June 2023..... | 56 |
| 4.3 Ukrainian counteroffensive, June 2023 – late 2023 | 58 |
| 4.5 Comparison of the military effectiveness of the Ukrainian Armed Forces and the Armed Forces of the Russian Federation | 59 |
| Conclusion | 62 |
| Závěr..... | 64 |
| List of references | 67 |
| List of Appendices..... | 73 |

Introduction

The Russia-Ukraine war, launched by Russia's invasion of Ukraine on 24 February 2022, has become a key geopolitical event around which a number of questions have emerged. The lead-up to the February events dates back to October 2021. The descent of Russian military forces to the Ukrainian border, followed by an escalation between October 2021 and February 2022, created the backdrop for a conflict that few could have imagined. Despite the Russian government's repeated denials of invasion plans, the decision to engage in war was made by President Putin and a group in his inner circle. Diplomatic efforts to prevent the invasion, undertaken by leaders such as Emmanuel Macron and Olaf Scholz, ultimately failed.¹

Putin's speech on 24 February 2022 about a "special military operation" marked the beginning of a large-scale ground invasion. Russia's strategy from the beginning envisaged the creation of several fronts launched from different directions. A northern front from Belarus, a southern front from Crimea, a southeastern front from the Russian-occupied Donbas region, and an eastern front from Russia itself only underscored the complexity of the whole operation. However, unexpected, and fierce resistance from Ukrainian forces, especially in Kiev, Irpin, Hostomel and Bucha, decisively thwarted the original plans for an easy and smooth occupation.² In the period leading to August 2023, the Russo-Ukrainian war saw a complex military and geopolitical development. Beginning in June 2023, Ukrainian forces launched a counter-offensive on several fronts, particularly in the Donetsk region, Zaporozhye oblast, and other strategic locations.

¹ROTH, Andrew and BORGER, Julian. Talks between Macron and Putin fail to produce Ukraine breakthrough. *The Guardian* [online]. 7 February 2022. [Accessed 21 November 2023]. Available from: <https://www.theguardian.com/world/2022/feb/07/macron-warns-dont-expect-miracles-in-talks-with-putin-over-ukraine>

²COLLINS, Liam, Michael KOFMAN and John SPENCER, 2023. The battle of Hostomel airport: A key moment in Russia's defeat in Kyiv. *War on the Rocks* [online] [Accessed 21 November 2023]. Available from: <https://warontherocks.com/2023/08/the-battle-of-hostomel-airport-a-key-moment-in-russias-defeat-in-kyiv/>

My research will therefore aim to provide a test of military effectiveness theory in the largest conventionally fought conflict in Europe since the Second World War. Part of my thesis will be to answer the research question I have set as follows, *'How does the military effectiveness of the Ukrainian armed forces and the armed forces of the Russian Federation differ in the ongoing Russian invasion of Ukraine?'*

So, at the end of my research, I will be able to say to what extent the effectiveness of the two parties differs and identify what leads to the differences. I will focus on a particular approach to military effectiveness from war and security theorist Caitlin Talmadge and war strategist Stephen Biddle. From their theory of military effectiveness, I will lay out several hypotheses that will help me to test the theory using the case of Russian aggression in Ukraine. I will be focusing my research on the first 2 years of the conflict, specifically from February 24, 2022, to February 24, 2024, but by the nature of military effectiveness theory, I will also be looking for factors prior to the actual start of the conflict.

I will first focus on theoretical approaches to military effectiveness and from these I will outline the factors observable on both sides of the conflict. Caitlin Talmadge's theory focuses primarily on the state of the armed forces in terms of promotion, training, and information, i.e., the organizational practices of the military. I will examine these factors in detail and compare the relevant variables for both sides. For the variables, I will also try to determine their degree of influence on military effectiveness. Then, after establishing the hypotheses arising from the examined theoretical approach, I will test the truth of each hypothesis to test the theory in practice.

1. Theoretical framework

In my thesis I aim to analyse the military effectiveness of both sides using Caitlin Talmadge's theory, which will be central to my analysis. The theory of C. Talmadge works with factors such as organizational practices, resource utilization, balancing the threat of coup and occupation. This analysis will also consider other relevant approaches that will contribute to the understanding of military and strategic decisions in this context. In addition to Caitlin Talmadge, I consider it important to mention the theory of Stephen Biddle who views military effectiveness through a different lens. Biddle considers the way in which forces are used and the deployments available to them as factors potentially affecting effectiveness.

1.1 Original theoretical approaches

There are multiple theoretical approaches to military effectiveness that view effectiveness differently and identify other factors affecting military superiority. One of the original approaches is J.J. Mearsheimer's theory, described in *Numbers, Strategy and European Balance*.³

John Mearsheimer's theory on conventional balance emphasizes the importance of assessing the relative strength of opposing forces in a place of conflict. The analysis involves considering factors such as the combat capabilities, mobility, survivability, and firepower of each side, quantified through the concept of 'armoured division equivalent' (ADE) scores.⁴ The primary focus is on the ability of an attacker to achieve a local force advantage of 3:1 or more at the point of breakthrough, which is crucial for success in a blitzkrieg strategy.⁵

The theory also considers the impact of terrain, force-to-space ratio constraints and rates of reinforcement. Terrain with obstacles favours the defender, and force-to-

³ MEARSHEIMER, John J., 1988, Numbers, strategy, and the European balance. *International Security*. Spring 1988. Vol. 12, no. 4, p. 174–185. DOI 10.2307/2539001.

⁴ MEARSHEIMER 1988, p. 175

⁵ Decision-makers who are considering an offensive action are highly unlikely to initiate it if they anticipate getting involved in a prolonged war of attrition. Rather, it is the prospect of achieving a rapid and conclusive triumph that contributes to the breakdown of deterrence.

space ratio constraints limit the attacker's ability to exploit local material superiority. The defender's goal is to match the attacker's concentration at the main point of attack, ensuring a sustainable overall force ratio. Rates of reinforcement into the battle area become pivotal, with the defender aiming to prevent the attacker from wearing down forces to a point of vulnerability.⁶

If a breakthrough occurs, the attacker's ability to achieve a deep strategic penetration depends on the strength of the defender's operational reserves and the flexibility of the command structure. Rapid decision-making and maintaining a high rate of advance are essential for the attacker to capitalize on the breakthrough and prevent effective counter attacks by the defender's reserves.⁷

Another approach that addresses the factors affecting military effectiveness is offered by Stephen P. Rosen in his article *Military Effectiveness: Why Society Matters*.⁸ Unlike Talmadge and the approaches, I will mention, Rosen does not examine purely military practices as potential factors affecting military effectiveness, but rather society and its structures. He also explores the impact of the degree of distance of the military from society and how its isolation can cause the military to be perceived as an alien element.⁹

The theory contends that social structures wield significant influence over individual behaviour within societies and subsequently within organizations, notably the military. It posits, that military entities, while afforded some autonomy, may develop internal structures that diverge from broader societal norms.

The alignment between military organizations and larger societal structures hinges on factors such as size, physical isolation through deployments or warfare, temporal separation due to extended military service and psychological distinctions arising from professional habits. Notably, distinct military branches, shaped by task-related structures influenced by technological imperatives, are expected to exhibit lower

⁶ MEARSHEIMER 1988, p. 179-180

⁷ Ibid.

⁸ ROSEN, Stephen Peter, 1995, *Military effectiveness: Why society matters. International Security*. Spring 1995. Vol. 19, no. 4, p. 5–31. DOI 10.2307/2539118.

⁹ Rosen 1995, p. 5-6

compliance of alignment with general societal norms.¹⁰

The theory extends its purview to the impact of social structures on the generation of military power. Divisiveness within societal structures is posited to diminish the military power achievable from available resources, with implications for civil-military relations. Additionally, it suggests that replicating divisive social structures within the military further influences the magnitude of harnessed military power.

This comprehensive model, universally applicable and conducive to empirical testing, advocates for a comparative approach in understanding strategic behaviours across diverse societies and military configurations. It underscores the imperative of considering social structures in military analyses, departing from unilateral assessments grounded solely in material factors. The theory's relevance is emphasized through historical references, highlighting the necessity of nuanced inquiries for accurate assessments of military capabilities and the formulation of strategic imperatives.

¹⁰ Rosen 1995, p. 15-16

1.2 Stephen Biddle's Military Power Theory

In Stephen Biddle's book, *Military Power: Explaining victory and defeat in modern battle*, a groundbreaking theory emerged to reshape our understanding of the determinants of victory in warfare ¹¹. The crux of Biddle's argument challenges conventional notions that military capabilities and technological superiority alone dictate the outcomes of conflicts. Drawing upon meticulous research, Biddle contends that the variable influencing success in war lies in the strategic deployment and utilization of forces, a concept he terms the "force deployment." ¹²

Biddle posits that the effectiveness of military endeavours cannot be solely attributed to a state's possession of advanced weaponry or its technological prowess. Instead, he directs our attention to the nuanced dynamics of force employment, examining how states strategically deploy their resources during wartime. Through an extensive analysis of case studies ¹³, statistical methods and simulations, Biddle demonstrates the empirical support for his hypothesis. Notably, he challenges the prevailing wisdom that democracies succeed in wars primarily due to their strategic selection of winnable conflicts. Instead, he underscores the importance of understanding the intricacies of how states employ their forces on the battlefield.

The modern-system variable, as elucidated by Biddle, encompasses force deployment and strategic doctrines used in warfare.¹⁴ It serves to mitigate the impact of technology on the battlefield, emphasizing factors such as concentrated firepower, coverage, deep reserves, leadership initiative, and swift movement.

Biddle focuses on the mission of controlling territory in mid-to high-intensity continental warfare. He introduces specific criteria for offensive and defensive military capabilities. Offensive military capability involves efficiently destroying a significant defensive force over a large territory with minimal attacker casualties and in the shortest

¹¹ Biddle does not directly address the concept of military effectiveness.

¹² BIDDLE, Stephen D. Introduction. In: *Military power: Explaining victory and defeat in modern battle*. Princeton (N.J.): Princeton University Press, 2006. p. 2–3.

¹³ Biddle focuses on three operations: Operation MICHAEL-Second Battle of the Somme, March 21-April 9, 1918; Operation GOODWOOD-July 18-20, 1944; Operation DESERT STORM-January 17-February 28, 1991

¹⁴ BIDDLE 2006, p. 2

time possible. Defensive military capability, conversely, centres on preserving a substantial defensive force, inflicting significant attacker casualties, and prolonging engagements.

He then proposes three interconnected criteria for evaluating military capability: the ability to destroy hostile forces while preserving one's own, the ability to take and hold ground, and the time required to achieve these objectives.¹⁵ This framework provides a nuanced understanding of military power, acknowledging that states may prioritize these criteria differently based on their strategic objectives.

In examining the military effectiveness of the Ukrainian Armed Forces and the Armed forces of the Russian Federation in the ongoing Russian invasion of Ukraine, Stephen Biddle's force employment framework offers a valuable analytical tool. Biddle's emphasis on 'force employment' as a determinant of effectiveness at tactical and operational levels directs attention to the distinct methods by which military forces are deployed in combat. Key components of the modern system, such as cover, concealment, dispersion, suppression, small-unit independent manoeuvre and combined arms, become crucial parameters for evaluation. For both sides of the conflict, this framework allows in-depth analysis of their approaches to minimizing soldiers' exposure to modern war's increasing lethality. My thesis aims to discern how effectively each military adopts and implements the modern system, acknowledging that differences in force employment tactics can systematically alter combat power states.

In conclusion, Stephen Biddle's theory of military power represents a pivotal contribution to the field of political science and military studies. By redirecting our focus from traditional determinants of military success to the strategic deployment of forces, Biddle provides a nuanced and empirically supported framework for understanding the intricacies of war outcomes. While the theory does not necessarily introduce entirely novel concepts, it stands as a robust confirmation of the significance of modern-system tactics in shaping the course of conflicts.

¹⁵ BIDDLE 2006, p. 5-6

1.3 Caitlin Talmadge's Military Effectiveness Theory

In the realm of military effectiveness, Stephen Biddle's foundational work identifies 'force employment' as a crucial determinant at tactical and operational levels. This concept, encapsulating the tactics and doctrines governing combat force utilization, underscores how diverse methods of force employment systematically shape combat power.

Biddle advocates for the 'modern system' of force employment, minimizing soldier's exposure to modern war's increased lethality. This involves a complex mix of tactical elements like cover, concealment, dispersion and operational principles like depth and reserves. Though debated, Biddle's framework captures essential aspects of combat effectiveness.¹⁶

Talmadge advances this discourse, building upon Biddle's groundwork. She refines the criteria for battlefield effectiveness, distilling it into two escalating tasks for assessment. Talmadge's theory acts as a superstructure, extending and refining Biddle's framework. This synthesis provides a nuanced lens for evaluating military effectiveness in contemporary conflicts.

Military effectiveness refers to the ability of military forces to achieve their objectives in armed conflict. Effectiveness is determined by a wide range of factors defined in Caitlin Talmadge's *The Dictator's Army: Battlefield Effectiveness in Authoritarian Regimes*¹⁷. This theory provides a framework that allows for the examination of variation in military force effectiveness both within and between authoritarian regimes. The author illustrates the theory's factors using two cases. The first was the North Vietnam War and the South Vietnam War, the second was the Iran-Iraq War

Talmadge identifies four key areas of military activity that shape military effectiveness: the promotion patterns, training regimens, command arrangements and

¹⁶ BIDDLE 2006, p. 5-6

¹⁷ TALMADGE, Caitlin, 2015. *The Dictator's Army Battlefield Effectiveness in Authoritarian Regimes*. B.m.: Cornell University Press. ISBN 9781501701764

information management.¹⁸

The first critical aspect of military effectiveness is *promotion patterns* wherein Talmadge underscores the profound impact of personnel promotions on military capability. This entails the system by which individuals within the military hierarchy advance in rank. In an effective military, promotions are based on merit and competence demonstrated either in combat or during training exercises. This signifies a connection between individual proficiency, success in military activities, and career progression within the military hierarchy. Conversely, less effective armies may witness promotions influenced by extraneous factors like political allegiance, ethnicity, or religion, which are unrelated to combat performance.¹⁹

The second area involves *training regimens* implemented within the military. A highly effective military ensures that its training regime is realistic, thorough, and frequent. Realistic training enables units to hone essential skills before engaging in actual combat. Moreover, the training should occur at various levels, encompassing both small and large units, as well as fostering cooperation among different components of the military. Conversely, less effective armies may lack a rigorous and practical training routine, hindering their ability to adapt to the complexities of real-world conflict.²⁰

Military effectiveness is also profoundly influenced by the system of *command arrangements*. An effective military structure embraces decentralized command, allowing units on the battlefield a degree of autonomy to make immediate decisions in response to dynamic situations. This decentralized structure facilitates rapid decision-making, improvisation, and comprehensive operations. Simultaneously, it mandates that unit commanders possess absolute authority over their respective units to prevent conflicting orders and ensuing chaos. Conversely, less effective armies may exhibit centralized command, slowing down decision-making processes and impeding the flexibility required in fast-paced combat scenarios.²¹

¹⁸ TALMADGE 2015, p. 13

¹⁹ TALMADGE 2015, p. 13-14

²⁰ TALMADGE 2015, p. 14

²¹ TALMADGE 2015, p. 14

The fourth crucial element is *information management*. In an effective military, there exists an institutionalized, extensive, and systematic flow of information across different levels of command and among various units. This exchange of information is indispensable for coordinating complex operations that demand synchronization. Conversely, less effective armies may struggle with limited communication, hindering coordination and impeding timely decision-making. The fear of conveying negative information due to potential repercussions may further exacerbate this issue.²²

Talmadge's theory posits that the selection of military organizational practices²³ is closely tied to the perceived threats faced by a regime, particularly in terms of the compromises between preventing coups and preparing for conventional conflicts. The core argument revolves around the notion that states adopt practices that guard against the most immediate and severe threat to regime stability. Coups, identified as a particularly potent and offense-dominant threat, play a vital role in shaping these decisions.²⁴

While examining the strength and institutionalization of regimes, Talmadge distinguishes between well-institutionalized and weakly institutionalized regimes. Well-institutionalized regimes, whether democratic or authoritarian, are characterized by effective bureaucracies, organized political parties and high degree of popular participation in public affairs. Importantly, they also possess working systems of civilian control over the military, resulting in a low risk of military intervention in politics (coups). On the other hand, weakly institutionalized regimes, particularly personalist or military dictatorships, are identified as more vulnerable to coup risks.²⁵

Within this context, personalist regimes, where a single individual dominates both the military and state apparatus, are considered fragile. Talmadge argues that these regimes, lacking independent decision-making power insulated from ruler's whims, are susceptible to coups. As such, personalist leaders are expected to prioritize coup

²² Ibid.

²³ Talmadge summarily calls the promotion patterns, training regimens, command arrangements and information management organizational practices.

²⁴ TALMADGE 2015, p. 15-16

²⁵ TALMADGE 2015, p. 18

prevention practices in their military organizational choices. Similarly, military dictatorships, characterized by a group of officers making policy and deciding who will rule, raise concerns about military threats to political regime.²⁶

The theory contends that ruling regimes, when faced with a set of choices regarding military organizational practices, will always prioritize protection against coups over protection against other dangers. The reason lies in the immediacy and potency of coup threats, which can lead to a regime's swift downfall and make other threats secondary in comparison. In peacetime, Talmadge argues, regimes may be less sensitive to other threats as they can recover from miscalculations about the dangers these threats pose.²⁷

Additionally, Talmadge emphasizes the significance of a state's civil-military history in understanding its threat environment. States, that have experienced coups or attempted coups in living memory are more likely to push for coup prevention practises. Indicators of severe civil-military conflict, such as societal cleavages between the ruler and the officer corps, traces of questionable loyalty and signs of military insubordination, contribute to regime's concerns about internal overthrow.²⁸

1.3.1 Empirical variables

In Talmadge's exploration of military effectiveness, she employs a comprehensive framework with a focus on two key indicators: tactical proficiency and the ability to conduct complex operations. Distinguishing tactical-operational performance from strategic-political victory, Talmadge avoids the limitations of outcome-based measures and seeks to observe variation within a military.

For the assessment of *basic tactics*, Talmadge poses questions related to soldier's weapon handling, marksmanship, equipment familiarity, terrain utilization and execution of specific tactical tasks such as ambushes, static defence, orderly retreats and planned attritional offensives.

²⁶ TALMADGE 2015, p. 18-21

²⁷ TALMADGE 2015, p. 20

²⁸ TALMADGE 2015, p. 22

In the realm of *complex operation*, she examines a military unit's capability to conduct combined arms operations, participate in interservice operations, engage in division size or larger operations, execute defensive operations like defence in depth, fighting withdrawals and counterattacks, as well as offensive operations such as manoeuvring, conducting small-unit special forces operations and demonstrating a capacity for both low-level initiative and high-level coordination.²⁹

Talmadge adopts a qualitative approach using indicator questions to contextualize and probe for the performance of specific tasks within military units. This method allows for a nuanced evaluation of battlefield effectiveness, facilitating the detection and exploration of intra-military variation. The questions are tailored to apply to diverse military units, ranging from large formations to smaller units, providing flexibility in analysis.

These variables, meticulously tracked by Talmadge, contribute to a comprehensive understanding of battlefield effectiveness, enabling an assessment of her claims regarding military organizational practices and their impact on effectiveness in different threat environments.

1.3.2 Military effectiveness and democratic regimes

Talmadge's theory, with its focus on the choice of military organizational based on perceived threats, offers valuable insights that extend beyond authoritarian or ruling regimes and can be applied to democratic contexts as well. While the original framework primarily addresses the decisions of ruling regimes, its principles can be adapted to analyse the military strategies of democracies, taking into account their unique nature of these political systems.

In democracies, where civilian control over the military is a foundational principle,³⁰ the theory emphasis on institutional strength and civil-military history remains relevant. Well-institutionalized democracies with effective bureaucracies,

²⁹ TALMADGE 2015, p. 33-37

³⁰ FEAVER, Peter D., 1996, The civil-military problematique: Huntington, Janowitz, and the question of civilian control. *Armed Forces & Society*. Winter 1996. Vol. 23, no. 2, p. 149–153. DOI 10.1177/0095327x9602300203.

organized political parties and popular participation in public affairs are likely to exhibit stable civil-military relations. These democracies, similar to their authoritarian counterparts, may prioritize the adoption of military organizational practices tailored to conventional conflicts, given the lower risk of coups.

Conversely, weakly institutionalized democracies facing internal divisions, societal cleavages or signs of military insubordination might perceive a heightened risk of coups. In such cases, there could be a tendency to adopt measures similar to coup prevention practices, even within the democratic framework. While the nature of democratic governance and civilian oversight differs from autocratic regimes, the concern for internal stability and the avoidance of military intervention could military strategies in a manner reminiscent of Talmadge's theory.

I see Talmadge's theory, when applied to democratic regimes, underscoring universal principles of threat assessment and compromises involved in shaping military organizational practices. While the nuances of democratic governance require consideration (as they could be very different), the theory's core premise of aligning military strategies with perceived threats provides a versatile framework for understanding the strategic choices of a wide range of political systems, including democracies. Because of this universality, the theory offers us a unique opportunity to evaluate the military effectiveness of the two cases examined.

By employing Talmadge's framework, my thesis aims to uncover nuances in the military effectiveness of the Ukrainian and Russian armed forces, elucidating their respective strengths and weaknesses in executing tactical and complex operational tasks amid the ongoing conflict in Ukraine.

1.4 Hypotheses

The hypotheses presented in this section are derived from the theoretical approaches I mentioned above.

H1: Higher tactical proficiency, including weapon handling and terrain utilization, leads to increased military effectiveness.

H2: Differences in military effectiveness are caused by the capability to conduct complex operations, such as combined arms actions and inter-service operations.

H3: Differences in military effectiveness are due to variations in organizational practices, including promotion criteria and training rigor.

H4: Internal political threats negatively impact military effectiveness by prioritizing loyalty over competence, thus impairing the army's ability to perform in conventional warfare.

H5: Differences in military effectiveness are caused by the ability to achieve a local force advantage of 3:1 at the point of breakthrough.

Hypotheses H1-H4 confirm Caitlin Talmadge's theory developing Stephen Biddle's original work. Hypothesis H5 supports Mearsheimer's theory.

2. Methodology

The type of my work will be a comparative case study. I will best explain the disparities in military effectiveness between the Ukrainian armed forces and the Russian Federation's armed forces during the current Russian invasion of Ukraine. by answering the following research questions.

1. How does the military effectiveness of the Ukrainian armed forces and the armed forces of the Russian Federation differ in the ongoing Russian invasion of Ukraine?

To explore the implications of these differences, I will pose the following question:

2. What factors are causing this difference in military effectiveness?

For the purposes of paraphrasing, language editing, and overall linguistic adjustments throughout this thesis, digital tools such as Grammarly and ChatGPT-4 will be utilized to ensure clarity, grammatical accuracy, and refinement of the text.

2.1 Definition of the subjects of comparison

In the landscape of contemporary military conflicts, few events rival the significance and gravity of the ongoing Russian invasion of Ukraine. The conflict unfolding in Eastern Europe marks the largest conventional engagement the continent has witnessed since the conclusion of World War II. The comparative analysis of the Russian and Ukrainian armed forces in the context of the ongoing invasion holds immense scholarly value for several compelling reasons. First and foremost, the sheer scale and intensity of the conflict provide a unique opportunity to scrutinize military effectiveness, strategy, and operational capabilities in real-time. As the two forces navigate this high-stakes confrontation, the examination of their perspective approaches to force employment, tactical proficiency and complex operational tasks becomes paramount.

The Ukrainian Armed Forces' (UAF) exhibit a complex structure comprising various components, each playing a specific role in the overall military framework. As of

early 2023, the UAF had approximately 250,000 personnel,³¹ with an additional 37,000 active reserve soldiers in the Territorial Defence Force.³² The TDF, though not a regular force, has proven crucial in supporting UAF operations, particularly in counteroffensives. This is an addition to the 60,000 troops in the National Guard and 53,000 service personnel in the Border Guards.

In the context of the ongoing conflict in Ukraine, Russia has deployed a significant military force, reflecting its substantial numerical and technological advantages. With 900,000 active personnel and an additional 2 million in reserve, Russia's military dwarfs Ukraine's active personnel and reservists. Specifically, in the theatre of operations surrounding Ukraine, Russia has committed around 200,000 personnel, including approximately 60 battle groups.³³

Comparing the Ukrainian Armed Forces (UAF) and the Russian military is particularly feasible for several reasons that reflect the characteristics and context in which both parties operate. Firstly, Ukraine and Russia share a common military history and doctrines developed during the Soviet era, including similar organizational structures, tactics and often weaponry, providing a baseline for comparison. The geopolitical context positions both countries as key actors in the Eastern European region. The ongoing conflict between these two nations makes their comparison directly relevant to analysing current and potential future military operations, strategies, and outcomes.

³¹ PRZETACZNIK, Jakub, 2022, Russia's war on ukraine: Military balance of power: Think tank: European parliament. *Think Tank | European Parliament* [online]. March 2022. [Accessed 3 February 2024]. Available from:

[https://www.europarl.europa.eu/thinktank/en/document/EPRS_ATA\(2022\)729292](https://www.europarl.europa.eu/thinktank/en/document/EPRS_ATA(2022)729292)

³² In Ukraine will be formed more than 150 Territorial Defence Battalions, 2022. *Militarnyi* [online], [Accessed 3 February 2024]. Available from: <https://mil.in.ua/en/news/in-ukraine-will-be-formed-more-than-150-territorial-defence-battalions/>

³³ DEWAN, Angela, 2022, Ukraine and Russia's militaries are David and Goliath. *CNN [online]*. 25 February 2022. [Accessed 2 March 2024]. Available from: <https://edition.cnn.com/2022/02/25/europe/russia-ukraine-military-comparison-intl/index.html>

2.2 Variables

In my thesis, military effectiveness serves as the principal dependent variable. Unlike traditional approaches that primarily quantify military power/effectiveness through numerical metrics such as troop numbers, budget allocations, or technological advancements, I will adopt a more nuanced perspective. I will recognize that effectiveness of armed forces cannot be fully encapsulated by numbers alone. Therefore, alongside quantifiable measures, the analysis will incorporate qualitative assessments to capture the multifaceted nature of military effectiveness. This broader evaluation framework allows for a comprehensive comparison of the Russian and Ukrainian armed forces, considering not only their material capabilities but also factors such as strategy, morale, and adaptability to changing battlefield conditions. Taken together, this framework allows me to obtain a wide range of independent variables.

As my dependent variable, I will use Loss Exchange Ratio (LER).³⁴ The LER quantitatively encapsulates the efficiency of military force in combat by comparing the number of casualties it suffers to the number it inflicts on the adversary, calculated as follows:

$$LER = \frac{\text{Casualties suffered by the force}}{\text{Casualties inflicted on the enemy}}$$

This ratio is instrumental in evaluating how the tactical and operational performance of military forces, represented by their LERs, influences broader military outcomes, including victory, defeat, or strategic advantages gained in specific contexts.

In applying Mearsheimer's theory, my thesis will pay special attention to the ability of either force to achieve a local force advantage, particularly the critical 3:1 ratio at potential points of breakthrough, which is essential for the success of offensive strategies such as blitzkrieg.

³⁴ MCNABB COCHRAN, Kathryn and LONG, Stephen B., 2016, Measuring military effectiveness: Calculating casualty loss-exchange ratios for multilateral wars, 1816–1990. *International Interactions*. 20 December 2016. Vol. 43, no. 6, p. 1019–1040. DOI 10.1080/03050629.2017.1273914.

Biddle's theory, which moves beyond conventional metrics of military power to focus on "force employment," provides a crucial framework for understanding the outcomes of warfare. It suggests that success on the battlefield hinges not on technological superiority or the sheer number of forces but on how strategically those forces are deployed and utilized.

In line with Biddle's approach, my thesis will critically analyse the strategic deployment of forces by both the Ukrainian Armed Forces and the Armed Forces of the Russian Federation. This analysis will extend to examining the modern system's components – such as cover, concealment, dispersion, suppression, and the integration of combined arms – in operational tactics. The aim is to discern the effectiveness of each military's employment strategies, considering Biddle's criteria for offensive and defensive capabilities and the overarching mission of controlling territory.

Incorporating the specific questions derived from Caitlin Talmadge's framework into the thesis narrative further refines the analysis of military effectiveness between the Russian and Ukrainian armed forces. This addition enriches the study by providing a structured approach to evaluating the nuanced aspects of military operations, tactics, and organizational practices.

To assess tactical proficiency, the study will address questions that probe the fundamental competencies of military units, including:

How well do units handle and maintain their weapons, and is their marksmanship commendable?

Are soldiers adept at utilizing terrain for cover and concealment, demonstrating strategic use of their environment?

Can units successfully execute basic military manoeuvres such as ambushes, static defences, orderly retreats, and planned attritional offensives?

The analysis then extends to the execution of complex operations, where the armed forces' capabilities are examined through questions such as:

Are units able to conduct combined arms operations and participate effectively in

interservice operations, including division size or large manoeuvres?

Within the realm of defensive operations, can units execute a defence in depth, manage fighting withdrawals, and perform counterattacks?

For offensive operations, do units demonstrate the ability to manoeuvre effectively and conduct small-unit special forces operations?

Furthermore, the thesis explores the threat environment and military organizational practices by delving into the political and historical context that shapes military strategies and operations. The question is as follows:

Does the political regime type, history of coups, or social cleavages influence military practices?

Specifically, for military organizational practices, the study investigates aspects such as:

What criteria are prioritized for promotions within the military, and how does this influence tactical and operational effectiveness?

How rigorous and realistic is the military training, and does it evolve to meet new operational challenges?

What command arrangements are in place, and how do they affect operational flexibility and decision-making on the battlefield?

To better organize the number of variables, we can divide them into two groups according to the type of influence of the armed forces: *direct and indirect influencing factors*.

Indirect factors include the broader political and historical context that shapes military strategies and practices, such as regime type, history of coups, and social cleavages. External threats and policy goals also indirectly influence military effectiveness by guiding strategic planning and operational priorities. Organizational practices within the military, including promotion criteria, training rigor, and adaptability to operational challenges, affect the quality of leadership and preparedness.

Direct factors influencing military functioning and capability encompass quantifiable metrics such as troop numbers, budget allocations, and technological advancements, alongside strategic deployment practices including operational tactics (e.g., cover, concealment, dispersion), and tactical proficiency (e.g., weapon handling, execution of military manoeuvres, combined arms operations). These directly affect the military's effectiveness through immediate impacts on material capabilities, strategic utilization of forces, and operational execution.

By meticulously addressing these questions, the thesis aims to provide a comprehensive analysis that not only evaluates the material capabilities of the Russian and Ukrainian armed forces but also deeply understands the qualitative factors – such as training rigor, command structure, and adaptability to strategic challenge – that collectively determine military effectiveness.

I will further discuss the variables and their observation in my case studies in Section 3.

2.3 Structure

In the following section of the thesis, I will focus on selected variables potentially affecting the military effectiveness of both involved parties. Specifically, I will concentrate on Organizational Practices, Complex Operations, Civil-Military Relations, and the politicization of the military. After thorough observation of these variables, I will attempt to predict the performance of both armies in direct conflict and determine in which variables both sides differ the most.

Then, I will introduce three encounters from the ongoing conflict and describe their course in terms of effectiveness and ineffectiveness indicators. These three encounters will be chosen primarily based on the availability of sources and will be selected to cover the beginning, the course, and the most current developments of the ongoing invasion. If possible, I will try to evaluate effectiveness based on the Loss Exchange Ratio (LER) or at least describe the characteristics determining the distinct levels of effectiveness of the Ukrainian and Russian armed forces.

All three selected cases had a major impact in some way on developments on the

battlefield. The Battle of Hostomel in the early days of the war did not allow Russian forces to gain the huge advantage of capturing an airfield in close proximity to the Ukrainian capital. The Battle of Bakhmut, in turn, fundamentally delayed the Russian advance in the eastern part of Ukraine and prevented the Russians from easily advancing to Kramatorsk or Sloviansk³⁵ In the last case, the Ukrainian counter-offensive, by its scale, was then able to push the Russians closer to the Russian border, thus liberating a significant part of the occupied territories and, above all, separating Crimea from the Donetsk region.

2.4 Data collection

For the thesis on military effectiveness, data collection will involve a rigorous approach centred around primary sources and scholarly articles from reputable think tanks specializing in war conflicts and military analysis. Given the contemporary nature of the Ukrainian-Russian conflict, reliance on traditional book sources is limited. Instead, the research will significantly benefit from the insights and analyses provided by leading think tanks such as the RAND Corporation and the Institute for the Study of War. These institutions offer in-depth, research-based perspectives on military strategies, tactics, and outcomes, which are essential for understanding the multifaceted aspects of military effectiveness in the context of modern warfare.

Furthermore, to capture the dynamic and evolving nature of the conflict, real-time information regarding the battles and their progression will be meticulously gathered from reputable media outlets and news agencies. Sources such as CNN, Czech Television, The New York Times, Reuters, BBC, The Guardian, and Texas National Security Review will be utilized to obtain up-to-date reports on military engagements, strategic shifts, and geopolitical developments influencing the course of the conflict. This blend of analytical insights from think tanks and real-time reporting from established news platforms will provide me a comprehensive dataset, enabling a detailed examination of military effectiveness, strategic deployments, and operational outcomes in the conflict between

³⁵ DRUMMOND, Michael, 2023, Ukraine War: Why is Bakhmut so important to Russia and a “thorn in the side of Putin”? *Sky News* [online]. 22 May 2023. [Accessed 13 April 2024]. Available from: <https://news.sky.com/story/ukraine-war-why-is-bakhmut-so-important-to-russia-and-a-thorn-in-the-side-of-putin-12779619>

Ukraine and Russia.

Acknowledging the methodology for data collection, it's important to note, that obtaining casualty numbers in the discussed battles is unfeasible due to the ongoing nature of the conflict and the freshness of information. Despite this, it will be possible to use approximate values from reliable source for analysis.

Continuing with details on the temporal focus of my research, the thesis will examine data starting from February 2014, when Russia occupied Crimea. This event marked beginning of significant reforms in the Ukrainian military, including the establishment of the National Guard of Ukraine. This period is critical for understanding the transformations within the Ukrainian armed forces and their implications for military effectiveness, providing a comprehensive view of the developments in military capabilities, strategies, and operational practices in response to the evolving conflict dynamics. Several years of warfare in the separatist regions will naturally provide insights into the functioning of the Russian army as well.

The cases examined will be selected after February 2022, following the escalation of the largest armed conflict in Europe since World War II. This timeframe allows for an in-depth analysis of both Ukrainian and Russian military strategies, operational adjustments, and the overall impact of sustained conflict on military effectiveness.

3. Variables affecting the current state of the armed forces of Ukraine and the Russian Federation

Before comparing the two armies' clashes and focusing on the dependent variables in the form of casualty ratios, I will attempt to review the two countries' approaches to their armed forces. Their historical context and detailed insight into their current state will allow me to augment my dependent variable with alternative qualitative variables.

Thus, at the end of this chapter, I will attempt to summarize and predict the strengths and weaknesses of both sides that affect their performance on the battlefield.

3.1 Organizational practices

Caitlin Talmadge defines organizational practices in the military context as comprising four essential behaviours: promotion patterns, training regimens, command arrangements, and information management. These behaviours are integral to shaping a military's combat capability, influencing human capital development, skill enhancement, decision-making efficiency, and operational coordination.³⁶

3.1.2 Ukrainian command arrangements and promotion patterns

The UAF's command structure is centralized, with efforts to adopt NATO principles while retaining Soviet-style traits. Challenges persist in training officers for staff positions, impacting unit-level capability. The lack of a fully developed professional non-commissioned officer (NCO) corps has increased the importance of developing such a corps to enhance training and command capabilities.³⁷

The Ukrainian military's evolution post-2014 signifies a departure from inherited Soviet military doctrines towards a structure that prioritizes meritocracy and aligns more closely with Western military standards. This shift, fundamentally driven by the exigencies of conflict rather than external training programs alone, highlights Ukraine's

³⁶ Talmadge 2015, p. 13-17

³⁷ BOWEN, Andrew S., 2022. Ukrainian Armed Forces. *Congressional Research Service* [online] [Accessed 3 February 2024]. Available from: <https://web.archive.org/web/20211130091427/https://crsreports.congress.gov/product/pdf/IF/IF11862>. p. 1

proactive stance in redefining its military identity and capabilities in the face of Russian aggression. The post-conflict military landscape in Ukraine saw a notable shift towards promoting individuals based on battlefield competence and leadership, marking a significant cultural change from the nepotism and corruption that characterized its Soviet predecessor.³⁸

The Ukrainian military reform underscored a strategic pivot towards decentralizing decision-making processes and empowering junior leaders. This initiative aimed to cultivate a more agile and responsive military force capable of addressing the multifaceted challenges of modern warfare.³⁹ Such structural adjustments stand in stark contrast to the centralized decision-making ethos prevalent within the Russian military, suggesting a strategic advantage for Ukraine in terms of operational flexibility and rapid response capabilities.

While the infusion of more than \$2.5 billion in Western military aid since 2014⁴⁰ has undoubtedly strengthened Ukraine's defence capabilities, the internal motivation to reform the Ukrainian military cannot be underestimated. This assistance, including high-tech weaponry and training, has served as a complement rather than the primary driver of Ukraine's military transformation and has highlighted the resilience and initiative of the Ukrainian armed forces in the face of existential threats.

3.1.3 Russian command arrangements and promotion patterns

The Russian military has historically relied on a conscription system, with a notable emphasis on officer-led training and command rather than a strong non-commissioned officer (NCO) corps. This system traces back to post-World War II Soviet military practices, which were characterized by a vast conscripted force capable of

³⁸ SANDERS, Deborah, 2023, Ukraine's third wave of military reform 2016–2022 – building a military able to defend Ukraine against the Russian invasion. *Defense & Security Analysis*. 4 June 2023. Vol. 39, no. 3, p. 312–328. DOI 10.1080/14751798.2023.2201017.

³⁹ BONENBERGER, Adrian, 2022, Ukraine's military pulled itself out of the ruins of 2014. *Foreign Policy* [online]. 9 May 2022. [Accessed 15 March 2024]. Available from: <https://foreignpolicy.com/2022/05/09/ukraine-military-2014-russia-us-training/>

⁴⁰ Ukraine has received \$2.5 billion until 2021 to support the development of the country's armed forces, including Humvees, patrol boats, radar systems and Javelin anti-tank missiles.

engaging in large-scale manoeuvres reminiscent of the latter stages of the war. However, the rapid modernization of the Soviet military in the 1960s and 1970s, coupled with the complexities of advanced military equipment, highlighted the inefficiencies of relying predominantly on officers for tasks that would typically be handled by NCOs in Western militaries. The Soviet response was to create "warrant officer" positions, tasked with technical and some small unit leadership roles, although these individuals were generally not regarded with the same esteem as their officer counterparts and had limited career progression opportunities.

The transition from the Soviet to the Russian Federation military maintained the conscription model but introduced contract service as a means to professionalize the enlisted ranks. This hybrid system, however, continued to place primary training and leadership responsibilities on officers. A significant issue within this structure was the practice of *dedovschina*, or hazing, among conscripts, which not only undermined unit cohesion but also posed national security concerns as it deterred potential conscripts from service.

Despite these challenges, efforts toward professionalizing the enlisted ranks have evolved, particularly through the introduction of contract NCOs intended to serve with greater technical proficiency and responsibility. Yet, Russian military leadership has expressed mixed feelings about completely transitioning to a professional enlisted force, balancing the desire for a more capable and specialized force against the need for a large, conscripted reserve for mobilization.

Russian contract sergeants, or "enlisted professionals," primarily occupy technically demanding "trigger puller" positions, with little interaction between contract servicemen and conscripts. This delineation underscores a distinct approach to military professionalism, where technical expertise and specialized training are prioritized over broad-based leadership development commonly found in Western NCO corps.⁴¹

⁴¹ BARTLES, Charles K., 2019, Russian Armed Forces Enlisted Professionals. *Army University Press* [online]. 11 March 2019. [Accessed 16 March 2024]. Available from: <https://www.armyupress.army.mil/Journals/NCO-Journal/Archives/2019/March/Russian-ncos/>

The Russian military's top-heavy command structure, characterized by a high degree of centralized decision-making, is highlighted as a significant limitation on the modern battlefield. General Mark Milley and Defence Secretary Lloyd Austin both point to Russia's struggles in integrating various aspects of military operations, attributing these difficulties to a lack of lower-level leadership which is crucial for adapting to dynamic combat situations and executing combined arms manoeuvres effectively.⁴²

3.1.4 Ukrainian training regimens

In the face of ongoing conflict with Russia, Ukraine has received substantial military training support from Western allies, notably France, the European Union (EU), the United States and the United Kingdom. France's commitment to training 7,000 Ukrainian soldiers, as part of the EU's military assistance mission, exemplifies the concerted effort to bolster Ukraine's defence capabilities. Originally targeting 15,000 soldiers, the EU mission has ambitiously expanded its objective to train 35,000 by the end of 2023 with contribution from almost all EU member states and Norway. The U.S. and U.K. have also played significant roles, training approximately 18,000 and 30,000 Ukrainian soldiers,⁴³ respectively, emphasizing the global commitment to Ukraine's military preparedness.⁴⁴

The training encompasses a wide range of combat skills and specialized military knowledge, including battlefield first aid, mine clearance, and advanced offensive and defensive tactics. In France, Ukrainian soldiers undergo rigorous physical and tactical training designed to simulate the harsh realities of warfare. This includes the use of animal remains to prepare them psychologically for the bloodshed of real combat, reflecting a

⁴² KENNEY, Caitlin M., 2022, NCOs: America has them, China wants them, Russia is struggling without them. *Defense One* [online]. 6 May 2022. [Accessed 16 March 2024]. Available from: <https://www.defenseone.com/policy/2022/05/ncos-america-has-them-china-wants-them-russia-struggling-without-them/366586/>

⁴³ The United Kingdom has trained 30,000 Ukrainian troops since the summer of 2022. However, since 2014 that number has reached over 60,000 according to Minister of Defence James Heappey.

⁴⁴ LEICESTER, John, 2023, Combat training programs held by allies for Ukrainian soldiers hit major milestones. *PBS* [online]. 13 November 2023. [Accessed 16 March 2024]. Available from: <https://www.pbs.org/newshour/world/combat-training-programs-held-by-allies-for-ukrainian-soldiers-hit-major-milestones>

comprehensive approach to warfare readiness that balances tactical acumen with the mental resilience needed on the battlefield.⁴⁵

We can therefore say that the training of the Ukrainian Armed Forces (UAF) has become increasingly realistic and practical, reflecting the urgent need for combat-ready forces capable of countering Russian aggression. This shift towards realism in training is a direct response to the experiences and lessons learned from the ongoing conflict.

One of the key aspects of the UAF's enhanced training regimen is the focus on small unit tactics, which are crucial for the dispersed combat operations that have characterized the conflict in Eastern Ukraine. Training exercises often simulate actual combat scenarios, including urban warfare and guerrilla tactics, to ensure that soldiers are prepared for the types of engagements they are likely to encounter.⁴⁶

Furthermore, the use of advanced technologies and equipment, such as drones for reconnaissance and coordination of artillery fire, has been integrated into training programs.⁴⁷ This not only improves the tactical capabilities of the UAF but also familiarizes soldiers with the equipment and techniques that have proven effective in the current conflict.

Another significant element of the UAF's training is the development of fortifications and defensive positions along the line of contact. Soldiers are trained in the construction and maintenance of these structures, which are vital for sustaining defensive operations. This includes learning how to utilize the terrain and existing infrastructure to create effective defensive lines that can withstand enemy assaults and as Mr Boháč confirmed, the Ukrainians are able to use the terrain very effectively.⁴⁸

⁴⁵ Ibid.

⁴⁶ DICKINSON, Peter, 2022, Is Ukraine's reformed military ready to repel a new Russian invasion? *Atlantic Council* [online]. 24 January 2022. [Accessed 17 March 2024]. Available from: <https://www.atlanticcouncil.org/blogs/ukrainealert/is-ukraines-reformed-military-ready-to-repel-a-new-russian-invasion/>

⁴⁷ Viz. Rozhovor s V. Boháčem

⁴⁸ Ibid.

3.1.5 Russian training regimens

Based on the extensive analysis of Russian military's training system from CNA,⁴⁹ it's evident that Russia has made concerted efforts to reform and enhance its training regimen for its armed forces. This reform process was accelerated after the Russian-Georgian war, highlighting deficiencies, and prompting a reassessment of training priorities. The General Staff of the Armed Forces of Russia which oversees operational training standards, has focused on increasing the frequency and intensity of training exercises, including live-fire exercises, and has reintroduced surprise inspections to gauge readiness more accurately.⁵⁰

The Russian training of individuals encompasses a wide spectrum, from conscripts, who receive the least training, to officers, who undergo comprehensive tactical and command training. Russia employs a mixed manpower system, where conscripts, despite receiving basic training, mainly serve in non-combat roles due their short service period. Contract soldiers, on the other hand, receive more intensive training and are more likely to be assigned to combat roles. Officers receive extensive education and training, emphasizing battlefield tactics and command responsibilities.⁵¹

When it comes to training collectively, Russians focus on live-fire exercises, joint exercises between various branches, and the construction of new infrastructure like the Mulino Complex.⁵² However, the system shows signs of procedural rigidity and lacks standardization, partly because units are responsible for their own training, leading to variability in quality and effectiveness.⁵³

⁴⁹ CONNELL, Michael, LENNOX, Brooke and SCHWARTZ, Paul, 2023, Training in the Russian Armed Forces. *CNA* [online]. 27 September 2023. [Accessed 17 March 2024]. Available from: <https://www.cna.org/reports/2023/09/training-in-the-russian-armed-forces>

⁵⁰ CONNELL 2023, p. 14

⁵¹ CONNELL 2023, p. 19-24

⁵² The Mulino training complex, officially known as the Combat Training Centre of the Western Military District, is a modern training facility located in the Nizhny Novgorod region. It represents a significant investment in modernizing the training infrastructure of the Russian Armed Forces. The complex is designed to simulate realistic combat conditions and features advanced equipment for training purposes.

⁵³ CONNELL 2023, p. 57-58

I believe I am able to outline key issues in both individual and collective training. High turnover rates among conscripts and contract soldiers pose challenges, necessitating constant recruitment and training efforts.⁵⁴ Tactical training often struggles to mimic actual combat conditions, with exercises being excessively scripted. Despite the huge exercises since 2016 and 2017, according to which the Russians were preparing for the invasion, we can talk about a certain underestimation of the realism of the exercises.⁵⁵

In conclusion, while the Russian Armed Forces have made notable strides in enhancing their training programs and infrastructure, persistent issues remain. These include the high turnover of personnel, the decentralized nature of training, and the challenge of realistically simulating combat conditions. These factors collectively impact the effectiveness of Russian's military training, potentially influencing its operational capabilities.

3.1.6 Information management

Both parties involved in the conflict have restricted the flow of information, making it difficult to ascertain the accuracy and completeness of the data available. Such restrictions not only include limitations on the dissemination of strategic military information but also extend to the management and reporting of on-ground situations, which are crucial for understanding the broader implications of information management policies as defined by Talmadge.⁵⁶

Therefore, in the absence of reliable data and given the significant challenges in verifying the information that is available, it is methodologically appropriate to refrain from analysing the information management strategies within the context of the Ukraine-Russia conflict.

3.2 Complex Operations

Caitlin Talmadge defines "complex operations" as those requiring cohesive,

⁵⁴ CONELL 2023, p. 20-21

⁵⁵ Interview with David MIREJOVSKÝ, Prague 8th March 2024.

⁵⁶ TALMADGE 2015, p. 17

tactically proficient military units to engage in operations that demand significant low-level initiative and high-level coordination among different parts of the military. Within the context of modern conventional interstate land warfare, a hallmark of such operations is combined arms action.⁵⁷

3.2.1 Ukraine

The evolution of Ukraine's military strategy, particularly in its adoption and integration of long-range strikes, reflects a substantial alignment with the principles of complex operations. Ukraine's strategic response to the threat posed by Russian aggression has been characterized by multi-faceted approach, and the application of advanced joint strike planning and execution doctrines. These developments are crucial as Ukraine transitions into a strategically defensive posture, which is anticipated to facilitate the reconstruction of its military forces through training, equipment standardization, and the potential mobilization of new troop formation.⁵⁸

Ukraine's approach to complex military operations also emphasizes the critical role of reconnaissance and surveillance, joint strike planning, and the employment of diverse strike systems. The integration of these components within Ukraine's military strategy showcases an advanced understanding of operational depth and strategic application of military force. This is further evidenced by Ukraine's use of open-source intelligence (OSINT) and human intelligence (HUMINT) operations, which enhance target acquisition and the overall effectiveness of strike operations.⁵⁹

A critical aspect of these includes the integration and coordination of various components of the armed forces, echoing Talmadge's emphasis on the importance of cohesive, tactically proficient units that can effectively coordinate different army elements. For instance, Ukraine's strategic utilization of its infantry, armoured vehicles and artillery showcases its ability to conduct combined arms operations⁶⁰ – a hallmark of

⁵⁷ TALMADGE 2015, p. 6-7

⁵⁸ RYAN, Mick, 2024, More Ukrainian strategic strikes. *More Ukrainian Strategic Strikes - by Mick Ryan* [online]. 21 January 2024. [Accessed 18 March 2024]. Available from: <https://mickryan.substack.com/p/more-ukrainian-strategic-strikes>

⁵⁹ Ibid.

⁶⁰ JONES, Seth G., PALMER, Alexander and JR., Joseph S. Bermudez, 2023, Ukraine's

complex military operations as I mentioned earlier.⁶¹ Seth G. Jones et al. highlighted specific instances where Ukrainian forces demonstrated initiative and rapid response capabilities, critical attributes Talmadge associates with successful complex operations. Moreover, the size of units engaging in these operations ranged from small squads to larger formations, suggesting a scalability in operational complexity that aligns with Talmadge's observation that larger units face higher coordination demands.

Although we have verified that Ukraine is capable of conducting combined arms, this does not bring increased effectiveness to the whole army, as there are still strong differences in the capabilities of the different components of the UAF as Mr. Boháč confirmed.⁶²

3.2.2 Russia

Reflecting on Talmadge's concept of complex operations I will assess Russia's execution of such operations in the Ukraine conflict. Lieutenant Colonel Amos C. Fox, U.S. Army provides incisive critique of the Russian military's reliance on the Battalion Tactical Group (BTG) structure and its consequent failures in a large-scale conflict environment.

One of the central arguments presented by Lt. Col. Fox is that the Russian military's reliance on the BTG, a structure more suited to small-scale conflicts and counterinsurgency operations, has proven to be a fundamental flaw in the context of a large-scale, state-on-state conflict. The BTG, designed as a quick-fix solution to personnel shortages and intended for localized engagements, lacks the necessary cohesion and combined arms capability essential for effective operations in a vast and contested operational theatre like Ukraine.⁶³

offensive operations: Shifting the Offense-Defense Balance. *CSIS* [online]. 9 June 2023. [Accessed 19 March 2024]. Available from: <https://www.csis.org/analysis/ukraines-offensive-operations-shifting-offense-defense-balance>

⁶¹ TALMADGE 2015, p. 6

⁶² Interview with Vojtěch BOHÁČ, Prague 12th March 2024.

⁶³ FOX, LTC Amos C., 2023, Reflections on Russia's 2022 invasion of Ukraine: Combined arms warfare, the Battalion Tactical Group and wars in a Fishbowl. *AUSA* [online]. 1 December 2023. [Accessed 19 March 2024]. Available from: <https://www.ausa.org/publications/reflections-russias-2022-invasion-ukraine-combined-arms-warfare-battalion-tactical>

Fox details how the Russian military's operational approach, heavily reliant on the BTG, failed to adapt to the demands of a large-scale conventional conflict. This misalignment between organizational structure and operational environment significantly hampered Russia's military effectiveness, as demonstrated by their inability to achieve objectives such as air superiority, the encirclement of key Ukrainian cities, and the sustenance of prolonged offensive operations.

Moreover, Fox discusses the concept of "wars in a fishbowl" versus "wars in a pond," illustrating how success in small, localized conflicts (fishbowls) does not necessarily translate into effectiveness in larger theatres of war (ponds). The performance of Russian BTGs in the Donbas region during 2014-2015, while adequate for that specific context, did not scale up to the broader and more complex operational environment of the 2022 Ukraine invasion. This mismatch highlights the critical importance of adaptable force structures and doctrines that are responsive to the scale and nature of the conflict.⁶⁴

Another contribution to understanding the non-functionality of Russian combined arms is added by Justin Bronk in his report *Russian Combat Air Strengths and Limitations: Lessons from Ukraine*.⁶⁵

His report reveals that one of the defining characteristics of the 2022 Russian invasion of Ukraine was the Russian Aerospace Forces' (VKS) failure to achieve and leverage air superiority over Ukrainian forces. This outcome, contrary to the expectations of Western and Ukrainian military analysts, prompted a reassessment of the VKS's capabilities and the potential threat it poses. It highlights the VKS's inability to execute suppression and destruction of enemy air defences (SEAD/DEAD)⁶⁶ operations effectively and to project fixed wing or rotary strike sorties over Ukraine, underscoring a significant shortfall in conducting complex operations as defined by Talmadge.⁶⁷

Russia's operational approach in Ukraine demonstrates a notable deviation from

⁶⁴ FOX 2023, p. 4-8

⁶⁵ BRONK, Justin, 2023, Russian combat air strengths and Limitations. *CNA* [online]. 17 April 2023. [Accessed 19 March 2024]. Available from: <https://www.cna.org/reports/2023/05/russian-combat-air-strengths-and-limitations>

⁶⁶ SEAD/DEAD means suppression/destruction of enemy air defence.

⁶⁷ Ibid.

the ability to perform complex operations involving cohesive, tactically proficient units effectively coordinating across different military domains. This deviation not only highlights Russia's strategic and operational miscalculations but also emphasizes the critical role of adaptable, integrated forces in modern warfare.

Russian force design, characterized by the reliance on battalion tactical groups (BTGs) and a partial mobilization force model, was predicated on assumptions of quick victory and limited engagement. This approach has proven inadequate in the face of a protracted conflict, revealing a significant underestimation of the need for infantry support and a sustainable force capable of enduring lengthy combat operations. The reliance on BTGs, while theoretically offering flexibility, has in practice resulted in overstretched units with padded readiness levels, further exacerbated by a systemic overstatement of capabilities within the Russian military hierarchy. This structural misalignment, combined with inadequate infantry numbers and a heavy emphasis on artillery and support units over manoeuvre elements, has critically hindered Russian operational effectiveness in the urban and complex terrains of Ukraine.⁶⁸

Kofman and Lee further evolves inadequate infantry numbers: *Based on captured documents published by Ukraine, and credible personnel rosters that appear to have been disclosed via hacks, it appears Russia decided to change its table of organization for motorized rifle units by reducing the number of personnel. Instead of 539 or 461 personnel for motorized rifle battalions, the new table of organization for motorized rifle battalions appears to be approximately 345. However, even with this reduced T/O, many Russian battalions appear to only be at 2/3 or 3/4 strength, often having only 230 to 280 soldiers. The new authorized strength for a motorized rifle company seems to be approximately 75 to 76, instead of 101 or 113 as before, and just 22 for platoons. Previous motorized rifle platoons had 30 or 32 personnel with three eight or nine-man squads and a platoon headquarters.*⁶⁹

⁶⁸ KOFMAN, Michael and LEE, Rob, 2022, Not built for purpose: The Russian military's ill-fated force design. *War on the Rocks* [online]. 2 June 2022. [Accessed 25 March 2024]. Available from: <https://warontherocks.com/2022/06/not-built-for-purpose-the-russian-militarys-ill-fated-force-design/>

⁶⁹ Ibid.

Taking a closer look at the 136th Separate Guards Motorized Rifle Brigade, predominantly staffed by contract servicemen, demonstrates a staffing level around 80-85%. All battalions predominantly consist of contract personnel, with the 1st Motorized Rifle Battalion at 100% contract, the 2nd Motorized Rifle Battalion at 60%, and the 3rd Motorized Rifle Battalion also entirely contract-based. The Tank Battalion is similarly structured with 97% contract personnel, and the MLRS⁷⁰ and Self-Propelled Artillery Battalions report 100% and 87% contract staffing, respectively.⁷¹

3.3 Civil-Military Relations and politicization of the military

Civil-Military Relations and the politicization of the military concern how military organizations intersect with political processes, potentially affecting their efficiency. Politicization can lead military decisions to be influenced by political rather than strategic considerations, impacting promotions, strategy, and ultimately battlefield effectiveness. This phenomenon is especially relevant in authoritarian regimes, where the military's loyalty to the regime often takes precedence over professional military criteria. Such prioritization can safeguard the regime against coups but may compromise the military's operational capabilities.⁷² For the purposes of my thesis, I will try to describe the main differences or similarities between the two sides as accurately as possible.

3.3.1 Ukraine

The phenomenon of military politicization emerges as a critical factor influencing the strategic and operational framework of Ukraine's defence mechanisms. This politicization is most notably exemplified through the alteration of military leadership for reasons that appear to be anchored more in political expediency than in military necessity or competence. The replacement of the Commander-in-Chief of the Armed Forces, Valery Zaluzhnyi – a figure of significant public trust and respect within both the military establishment and among Ukraine's Western allies – with Oleksandr Syrskyi, signals a potential prioritization of political loyalty over military strategic interests. This move, widely interpreted as an attempt by President Zelensky to neutralize a potential political rival, underscores the complex entanglement of military leadership within the broader

⁷⁰ Multiple Launch Rocket System

⁷¹ Ibid.

⁷² TALMADGE 2015, p. 30-32

political ambitions of the state's leadership.

Furthermore, the introduction and implementation of new mobilization laws, marked by measures that could potentially exacerbate public discontent – such as the reduction of the conscription age and the imposition of restrictions on potential draftees – reflect a tension between the exigencies of military mobilization and the political ramifications of such actions on public sentiment.⁷³

These legislative efforts, while aimed at strengthening Ukraine's military capability amid a challenging conflict, also highlight the delicate balance between securing military personnel and navigating the socio-political landscape of public opinion and resilience.

The perception of internal divisions, the potential erosion of military morale, and the broadcasting of these vulnerabilities to both allies and adversaries alike may undermine the strategic posture of Ukraine's military efforts. Moreover, these developments occur against a backdrop of increasing military pressure from Russian forces, underscoring the critical nature of effective military leadership and strategic coherence in times of conflict.⁷⁴

When it comes to civil-military relations Oleksandr Ihnatenko elucidates the theoretical underpinnings of civil-military relations, referencing the work of Morris Janowitz and the transition from conscript to full-volunteer armies. This transition, influenced by technological, political, and social changes, inherently impacts the representativeness and perceived values within the military institution. The concept of the citizen-soldier army, as advocated by Janowitz, posits a model where the military serves as a cross-section of society, ensuring broader societal trust and limited military

⁷³ MELKOZEROVA, Veronika, 2023, Zelenskyy wants more details before authorizing half a million new troops. *POLITICO* [online]. 20 December 2023. [Accessed 25 March 2024]. Available from: <https://www.politico.eu/article/volodymyr-zelenskyy-details-authorize-new-troops-war-economy/>

⁷⁴ TURSA, Andrius, 2024, Ukraine: Growing military challenges test public and political unity. *Teneo* [online]. 9 February 2024. [Accessed 25 March 2024]. Available from: <https://www.teneo.com/insights/articles/ukraine-growing-military-challenges-test-public-and-political-unity/>

autonomy, a principle that resonates with the current Ukrainian context.

The synthesis of Ihnatenko's analysis with empirical observations from the ongoing conflict reveals a dynamic where the Ukrainian Armed Forces and civilian sectors exhibit a remarkable degree of integration and mutual support.⁷⁵

3.3.2 Russia

Historically, the Russian military has maintained a pivotal role in domestic and foreign affairs, enjoying a degree of autonomy in its operations and defence sector development. This autonomy has been compromised by the war in Ukraine, as seen in the FSB's interference with military doctrine and President Putin's personal involvement in operational decisions and personnel changes. Such interventions, along with public criticisms from military figures and private sector actors, have politicized military activities, weakening the traditional shield of political protection that the military once enjoyed under Putin's leadership.⁷⁶

The politicization of the Russian armed forces is highlighted by the unprecedented mutiny of the Wagner mercenary army, which notably went unpunished despite serious transgressions, including the killing of Russian pilots.⁷⁷ This incident, coupled with the suspension of General Ivan Popov for voicing concerns over military challenges, and the subsequent dismissal or sidelining of several generals suspected of disloyalty, exemplifies the internal strife plaguing Russia's military leadership.⁷⁸ These developments suggest a

⁷⁵ IHNATENKO, Oleksandr, 2022, Civil-military relations in Ukraine. *Свідомі* [online]. 25 August 2022. [Accessed 25 March 2024]. Available from: https://svidomi.in.ua/en/page/04_09_2022_030331

⁷⁶ SHAMIEV, Kirill, 2023, Suspensions, detentions, and mutinies: The growing gulf in Russia's Civil-Military Relations. *Carnegie Endowment for International Peace* [online]. 26 July 2023. [Accessed 26 March 2024]. Available from: <https://carnegieendowment.org/politika/90266>

⁷⁷ TAYLOR, Jerome and JOHN, Tara, 2023, Wagner insurrection plunges Russia into uncertainty. here's what you need to know. *CNN* [online]. 24 June 2023. [Accessed 26 March 2024]. Available from: <https://edition.cnn.com/2023/06/23/europe/wagner-prigozhin-criminal-case-explainer-intl/index.html>

⁷⁸ BAILEY, Riley, MAPPEs, Grace, WOLKOV, Nicole, EVANS, Angelica, STEPANENKO, Kateryna, HARWARD, Christina and CLARK, Mason, 2023, Russian Offensive Campaign Assessment, July 13, 2023. *Institute for the Study of War* [online].

prioritization of loyalty over competence, a strategy that, while aiming to secure control, may inadvertently erode the foundational unity and efficacy of the military.

Based on Anna Borshchevskaya's examination, we are able to understand the relationship between political narratives and military efficiency in Russia. Borshchevskaya elucidates how Putin's regime has meticulously crafted and propagated a national ideology steeped in security, militarization, and a selective glorification of Soviet history, which has been instrumental in reasserting Russia's global stature and consolidating domestic control.⁷⁹

Borshchevskaya meticulously details the comprehensive military reforms initiated in the aftermath of the Russo-Georgian War in 2008, which exposed the Russian military's glaring deficiencies. These reforms, described as unparalleled since World War II, aimed at overhauling the armed forces to address issues of corruption, inefficiency, and outdated infrastructure. The reforms encompassed modernizing military equipment, enhancing organizational structures, and fostering innovation and flexibility among field commanders. The marked improvements in military discipline and operational capabilities were vividly demonstrated in the annexations of Crimea and the military intervention in Syria, signalling a significant leap in Russia's military effectiveness.

Furthermore, the thesis delves into the crucial role of the Russian Orthodox Church in amplifying state-sanctioned militarization narratives, thereby intertwining religious orthodoxy with nationalistic fervour. This symbiosis between the church and the state has not only facilitated the dissemination of militarized propaganda but also solidified the military's revered status within the Russian societal fabric.⁸⁰ This series of actions has clearly improved the civil-military relationship and contributed to trust in the Russian Federation's military.

13 July 2023. [Accessed 26 March 2024]. Available from: <https://www.understandingwar.org/backgroundunder/russian-offensive-campaign-assessment-july-13-2023>

⁷⁹ BORSHCHEVSKAYA, Anna, 2020, The role of the military in Russian politics and foreign policy over the past 20 years. *Orbis*. May 2020. Vol. 64, no. 3, p. 434–446. DOI 10.1016/j.orbis.2020.05.006.

⁸⁰ *Ibid.*

3.4 Perception of the threat of coup and occupation

Talmadge proposes that the adoption of specific military organizational practices is critically shaped by the dominant proximate threat to the ruling regime. Essentially, regimes facing high coup threats may adopt practices that undermine their military's conventional warfare capabilities to secure their rule. These "coup-proofing" measures can impair battlefield effectiveness as they prevent the adoption of practices vital for conventional combat success, such as merit-based promotions and rigorous training. Conversely, when external threats are deemed more significant, regimes might prioritize military effectiveness in conventional warfare, even if this increases coup risks.

3.4.1 Ukraine

The 2014 revolution in Ukraine, often referred to as the "Revolution of Dignity," marked a significant turning point in the country's political and social landscape, propelling it towards a closer alignment with the West and laying the foundation for a deep-rooted transformation towards democracy. The immediate outcome of this upheaval was the ousting of Viktor Yanukovich, a president with strong ties to Russia, who had plundered the nation's wealth and opted to sever closer economic relations with the EU in favour of Russia's sphere of influence. This pivotal moment was not merely a political coup; it was a profound societal shift where, for the first time, a vast number of Ukrainians learned to trust one another, signifying a collective aspiration for dignity, transparency, and a move away from the corruption that had plagued their governance.⁸¹

In the wake of the revolution, Ukraine embarked on an ambitious path of reforms that reshaped its civil society, governance structure, and national identity. These reforms ranged from constitutional changes that balanced political power, to the overhaul of financial and law enforcement institutions, significantly curbing the endemic corruption that had siphoned billions from the state. Despite the challenges and imperfections of the transition, including persistent corruption and the slow pace of change, the revolution's achievements underscore a clear departure from fearing a coup d'état or regressing to authoritarian rule. Instead, Ukraine's journey since 2014 illustrates a resilient

⁸¹ What did Ukraine's revolution in 2014 achieve?, 2022. *The Economist* [online], [Accessed 26 March 2024]. Available from: <https://www.economist.com/the-economist-explains/2022/02/16/what-did-ukraines-revolution-in-2014-achieve>

commitment to reform, democracy, and the aspiration to align more closely with democratic norms and institutions.⁸²

Based on the detailed analysis presented in the report by Andriy Zagorodnyuk, Alina Frolova, Hans Petter Midttun, and Oleksii Pavliuchyk, it is evident that Ukraine's preparations and reforms within its armed forces are primarily aimed at countering the threat of occupation, particularly in the context of potential Russian aggression, rather than preparing for a coup.⁸³

The subsequent defence sector reforms, influenced significantly by strategic collaborations with international advisors and the implementation of NATO standards, have led to notable advancements in the UAF's operational capabilities and readiness. These reforms have been guided by key strategic documents, including the Strategic Defence Bulletin and the NATO-Ukraine Annual National Program, underscoring a commitment to aligning Ukraine's military strategy and capabilities with Euro-Atlantic principles.⁸⁴

One of the report's salient points highlights the tangible achievements in bolstering Ukraine's defensive lines, evidenced by the construction of fortified structures across various terrains to deter Russian advances. This effort, coupled with enhanced civil-military relations and societal support, has fortified Ukraine's resilience against external threats. However, the analysis also acknowledges persistent challenges and vulnerabilities within Ukraine's defence sector, including funding constraints, gaps in critical operational capabilities, and the slow adaptation of military doctrines to contemporary warfare contexts.⁸⁵

⁸² Ibid.

⁸³ ZAGORODNYUK, Andriy, FROLOVA, Alina, MIDTUNN, Hans Petter and PAVLIUCHYK, Oleksii, 2021a, Is Ukraine's reformed military ready to repel a new Russian invasion? *Atlantic Council* [online]. 23 December 2021. [Accessed 26 March 2024]. Available from: <https://www.atlanticcouncil.org/blogs/ukrainealert/is-ukraines-reformed-military-ready-to-repel-a-new-russian-invasion/>

⁸⁴ Ibid.

⁸⁵ Ibid.

3.4.2 Russia

The effectiveness of Russia's military operations in Ukraine has been significantly influenced by President Vladimir Putin's approach to maintaining regime security, specifically through coup-proofing strategies. Such strategies, while aimed at ensuring the stability of Putin's rule, have inadvertently impacted the military's performance on the battlefield. The primary method of coup-proofing employed by Putin involves counterbalancing the military with the introduction of parallel forces, such as private military companies (PMCs) like the Wagner Group, and other security entities within the state. This approach fosters competition among various security factions for resources and the leader's favour, which, while promoting loyalty and deterring potential coups, fragments the security sector and complicates coordination efforts.⁸⁶

Mercenaries, alongside established military, and security forces, create a complex web of rivalry and distrust that undermines the unity and effectiveness of Russian military efforts in Ukraine. The competition for resources and recognition has led to public disputes between figures like the late Yevgeny Prigozhin of the Wagner Group and senior military officials, highlighting the challenges of maintaining a cohesive war effort under such a fragmented command structure. Furthermore, the prioritization of loyalty over merit in military and security appointments has compromised the professionalism and competency of the forces, affecting their operational capabilities.⁸⁷

The presence of military counterintelligence agents embedded within the armed forces further exemplifies the depth of coup-proofing measures. These agents ensure loyalty and monitor for signs of dissent, acting as a direct link between the military and the Kremlin. Moreover, the restructuring of internal security forces into entities like the National Guard, tasked primarily with domestic control, exemplifies a strategic division of military and security responsibilities designed to minimize the threat of a unified

⁸⁶ GALE, Alexander E., 2023, How Putin's coup-proofing measures have undermined Russia's war effort in Ukraine. *Modern Diplomacy* [online]. 29 September 2023. [Accessed 27 March 2024]. Available from: <https://moderndiplomacy.eu/2023/09/29/how-putins-coup-proofing-measures-have-undermined-russias-war-effort-in-ukraine/>

⁸⁷ Ibid.

military coup.⁸⁸

Furthermore, the prioritization of loyalty over meritocracy, a common feature of coup-proofing, and the resultant internal competition among military and security factions have had detrimental effects on the military's operational capabilities in Ukraine. The absence of a unified command and the presence of competing interests within the security sector have led to inefficiencies, miscommunications, and a dilution of military effectiveness. These internal divisions have been starkly revealed in the challenges faced by Russian forces in Ukraine, where the lack of cohesion and unity of effort has hampered military operations.⁸⁹

Based on a recent article by Ivan Gomza examining Russia's Coup-Proofed Army in 2022-2023,⁹⁰ we can pinpoint four main pieces of evidence suggesting the ineffectiveness of Russia's armed forces.

The regime's substantial increase in military spending, including notable salary hikes across all ranks with a distinct emphasis on senior officers, exemplifies a deliberate strategy to ensure military loyalty through economic means. Beyond standard compensation, high-ranking officials and those within the defence ministry have been afforded opportunities to engage in profitable dealings and corrupt practices, further entrenching their loyalty to the regime but at the cost of professional integrity and meritocracy within the military structure.⁹¹

Another proof for me is the word counterbalancing. The establishment of internal security organizations, such as the Rosgvardiya, serves as a clear instance of counterbalancing the military's power. By creating parallel forces directly loyal to Putin, the regime dilutes the military's influence and potential threat, thereby securing the

⁸⁸ CASEY, Adam E., 2022, Putin has coup-proofed his regime. *Foreign Policy* [online]. 23 March 2022. [Accessed 27 March 2024]. Available from: <https://foreignpolicy.com/2022/03/23/putin-coup-russian-regime/>

⁸⁹ Ibid.

⁹⁰ GOMZA, Ivan, 2023, Roger that: Russia's coup-proofed army and its combat effectiveness, 2022–2023. *The Journal of Slavic Military Studies*. 2 October 2023. Vol. 36, no. 4, p. 435–473. DOI 10.1080/13518046.2023.2293371.

⁹¹ Ibid.

regime but also fragmenting military cohesion and unity of effort.⁹²

Putin's coup-proofing measurements are further proved by the practice of regularly rotating and purging officers deemed politically unreliable reflects a deep-seated regime insecurity. This approach prevents the consolidation of power within the military ranks but also disrupts the continuity of command and erodes operational effectiveness of the military.⁹³

This is further compounded by the micromanagement of military operations. Direct oversight and micromanagement of military operations by Putin and his inner circle highlight a mistrust in the military's command structure. This interference undermines the autonomy and strategic planning capabilities of military professionals, leading to operational inefficiencies and a lack of coherent military strategy, as observed in the initial stages of the conflict in Ukraine.⁹⁴

3.5 Ukraine's predicted performance

The Ukrainian Armed Forces (UAF) have undergone significant reforms and restructuring, emphasizing decentralization, meritocracy, and NATO alignment in their command arrangements, promotion patterns, and training regimens, which can all be assumed as potentially positively influencing military effectiveness. The focus on empowering junior leaders and developing a professional non-commissioned officer (NCO) corps reflects a strategic advantage in operational flexibility and rapid response capabilities. Moreover, the substantial training support from Western allies has not only enhanced the UAF's combat skills but has also integrated advanced technologies and tactics, crucial for countering Russian aggression effectively.

Predictively, in a direct conflict, the UAF would likely exhibit high levels of initiative, adaptability, and tactical proficiency, particularly in small unit operations and complex operations involving combined arms action. I expect these capabilities to enable effective target acquisition and execution of joint strike operations, underpinning a robust defensive posture against Russian advances.

⁹² Ibid.

⁹³ Ibid.

⁹⁴ Ibid.

3.6 Russia's predicted performance

Conversely, the Russian military's reliance on conscription, a top-heavy command structure, and a system that has historically prioritized officer-led training over a robust NCO corps, suggests operational limitations, especially in complex, high-intensity conflict environments. While efforts to professionalize and enhance training regimens have been noted and discussed earlier, challenges such as procedural rigidity, high personnel turnover, and difficulty in realistically simulating combat conditions persist. These factors, alongside the reported struggles in integrating various military operations and achieving air superiority in the context of Ukraine, indicate potential vulnerabilities in executing complex operations effectively.

The most significant element that could potentially influence negatively the military effectiveness of Russian forces is the coup-proofing phenomenon. This strategy, focused on securing the regime by prioritizing political loyalty and establishing parallel forces, creates a fragmented command structure and undermines the meritocracy within the military. From my perspective, these measures not only compromise command integrity but also hinder the Russian military's ability to conduct operations effectively, a limitation starkly evident in the conflict with Ukraine. Consequently, coup-proofing emerges as a pivotal barrier to the operational efficacy of the Russian Federation's armed forces in direct confrontations.

The Russian military's performance might be hampered by these systemic issues, particularly the lack of lower-level leadership and adaptability in dynamic combat situations. The reliance on Battalion Tactical Groups (BTGs) and the observed deficiencies in combined arms operations could limit operational effectiveness, especially in large-scale engagements requiring cohesive, tactically proficient units.

3.7. Variables conclusion

For the best summary, I will use a table that includes my observed variables. In the predicted advantage table, I will then add either a weak or strong advantage for Russia, Ukraine, or comparable.

Figure 1:

| Variable | Predicted advantage |
|---|------------------------------|
| Command arrangements and promotion patterns | Ukraine |
| Training regimens | Ukraine |
| Complex operations | Ukraine |
| Civil-military relations and politicization of the military | Strong advantage for Ukraine |
| Perception of the threat of coup and occupation | Strong advantage for Ukraine |

In a direct conflict, it is reasonable to anticipate that the Ukrainian Armed Forces would outperform the Russian military in aspects of tactical innovation, operational flexibility, and the effective execution of complex operations. Ukraine's emphasis on meritocracy, professional development, and the strategic use of intelligence and advanced technologies would provide significant operational advantages. Conversely, the Russian Federation's operational challenges, including command rigidity and difficulties in complex operations, would likely constrain its battlefield effectiveness, particularly in a conflict characterized by high-intensity, manoeuvre warfare, and the need for rapid adaptability.

I do not discount the potential impact of external factors such as international support, economic sanctions, or political developments, which could also significantly influence the outcome of a direct conflict between Ukraine and the Russian Federation.

4. Selected cases for comparison of Ukrainian and Russian military effectiveness

The following three encounters occurred in the first two years of the ongoing invasion of Ukraine and were chosen to cover the beginning of the conflict, its progression, and its most current developments. This represents a very small sample due to limited or non-existent sources. However, the course of these three encounters significantly aids in understanding the differences in military effectiveness between the two armies.

4.1 Battle of Hostomel, 25 February – 1 April 2022

In the early stages of the conflict between Russia and Ukraine, the Battle of Hostomel emerged as a pivotal confrontation, underscoring the strategic calculus and tactical ambitions on both sides. Initiated on February 24, 2022, Russian forces targeted Hostomel Airport, near Kyiv, aiming to secure a critical foothold for further military operations towards the Ukrainian capital. This operation began with a concentrated aerial offensive, deploying approximately 30 Kamov Ka-52 "Alligator" helicopters and Sukhoi Su-25 "Frogfoot" jet fighters to neutralize the airport's defences through missile strikes and cannon fire. Despite their efforts, Ukrainian defence, comprising National Guard units and special forces, managed to down between five to seven Russian helicopters, including a Ka-52 "Alligator" observed crashing into the Dnieper River.⁹⁵

Following the aerial phase, Russian airborne troops, notably from the 31st Guards Air Assault Brigade, were airlifted into the fray via Mi-8 "Hip" helicopters, signalling the escalation of Russian commitment to capturing the airfield. The Ukrainian counter-response, spearheaded by the National Guard's 4th Rapid Reaction Brigade and supported by aerial assets, effectively nullified the Russian paratroopers' advance. The engagement led to the death of a key Russian figure, Major General Andrei Sukhovetsky, further demoralizing the Russian offensive effort.⁹⁶

⁹⁵ MCGREGOR, Andrew, 2022, Russian Airborne Disaster at Hostomel Airport. *Aberfoyle International Security* [online]. 8 March 2022. [Accessed 30 March 2024]. Available from: <https://www.aberfoylesecurity.com/?p=4812>

⁹⁶ Ibid.

Russian official sources, in an attempt to portray the conflict in a certain light, reported approximately 200 casualties among Ukrainian "nationalists" during the initial assault on the airport. However, the Ukrainians, using shoulder-fired missiles, managed to down Russian aircraft, leading to the estimated loss of up to 300 Russian paratroopers. This figure has been confirmed by senior American and Ukrainian officials, as well as documented in a captured Russian logbook.⁹⁷ Adding to this, a minimum of 70 Russian soldiers are confirmed to have been killed during the direct assault on the airport – a number verified by former prisoners of war who witnessed the aftermath firsthand, being forced to gather and relocate the bodies of the fallen to a facility within the airport.⁹⁸

I will refrain placing undue emphasis on casualty numbers, instead I will focus on the broader implications of military effectiveness, as outlined by Caitlin Talmadge. The Battle of Hostomel revealed critical deficiencies in the Russian military's execution of combined arms operations, essential for achieving synergistic effects on the battlefield. Conversely, the Ukrainian defence demonstrated strategic adaptability and resilience, employing retreat and counterattack tactics that disrupted Russian operational momentum and showcased the Ukrainian military's capacity to regroup and exploit weaknesses of the aggressor.

Therefore, the Battle of Hostomel serves as a stark demonstration of the complexities of military effectiveness, where operational coordination determines the outcomes of engagements. From my perspective, the failure of Russian forces to secure Hostomel underscores the paramount importance of combined arms proficiency, command and control efficacy, and the strategic value of defensive manoeuvres in modern warfare. For all intents and purposes, this was an extremely challenging operation

⁹⁷ SCHWIRTZ, Michael, TROIANOVSKI, Anton, AL-HLOU, Yousur, FROLIAK, Masha, ENTOUS, Adam and GIBBONS-NEFF, Thomas, 2022, Putin's war: The inside story of a catastrophe. *The New York Times* [online]. 17 December 2022. [Accessed 30 March 2024]. Available from: <https://www.nytimes.com/interactive/2022/12/16/world/europe/russia-putin-war-failures-ukraine.html>

⁹⁸ TOROP, Oksana and KHOMENKO, Svyatoslav, 2024, The fight for hostomel airfield. how the gates to Kyiv stayed locked. *The Best of BBC News Russian - in English* [online]. 29 February 2024. [Accessed 30 March 2024]. Available from: <https://bbcrussian.substack.com/p/ukraine-war-the-fight-for-hostomel-airfield>

and a look at history, specifically Crete 1941,⁹⁹ suggests that failure in such a situation does not automatically imply incompetence on either side.

4.2 Battle of Bakhmut, July 2022 – June 2023

The Battle of Bakhmut has been one of the most intense and prolonged conflicts in the ongoing war in Ukraine. This battle, which escalated significantly since summer in 2022, has involved fierce and continuous fighting for control of the city located in the Donetsk region. The significance of Bakhmut has been debated, with some suggesting its strategic importance is out of proportion to its size and location, while others view it as a critical defensive hub for Ukrainian forces in the region.¹⁰⁰

The Battle for Bakhmut highlighted significant aspects of military operations on both sides. Russia's attempt to seize Bakhmut demonstrated its capacity for large-scale offensive operations but also exposed limitations in operational planning and coordination, particularly in executing complex manoeuvres like encirclement.¹⁰¹ The heavy reliance on attritional tactics, especially by Wagner mercenaries,¹⁰² led to substantial losses without achieving strategic objectives, underlining inefficiencies in offensive and defensive operations.

Conversely, Ukrainian forces effectively executed defensive strategies, including fighting withdrawals and counterattacks, showcasing adept, high-level coordination. Despite the high cost, the defence of Bakhmut drained Russian resources and personnel,

⁹⁹ BATEMAN, Jessica, 2022, How crete changed the course of World War Two. *BBC News* [online]. 28 February 2022. [Accessed 13 April 2024]. Available from: <https://www.bbc.com/travel/article/20180814-how-crete-changed-the-course-of-world-war-ii>

¹⁰⁰ KROPÁČOVÁ, Renata, 2023, Vojenský expert: Strategický Význam Bachmutu je sporný. Pomáhá Ale Ukrajincům Vyčerpávat Ruské Síly. *iROZHLAS* [online]. 28 March 2023. [Accessed 30 March 2024]. Available from: https://www.irozhlas.cz/zpravy-svet/bachmut-strategicky-vyznam-boje-rusko-expert-unob_2303282010_krp

¹⁰¹ STEPANENKO, Kateryna, 2023, The Kremlin's pyrrhic victory in Bakhmut: A retrospective on the battle for bakhmut. *Institute for the Study of War* [online]. 24 May 2023. [Accessed 1 April 2024]. Available from: <https://www.understandingwar.org/backgrounder/kremlin%E2%80%99s-pyrrhic-victory-bakhmut-retrospective-battle-bakhmut>

¹⁰² Despite their unique organizational practices differing from the regular Russian army, I will fully consider the involvement of the Wagner Group.

reflecting the strategic utility of well-conducted defensive operations in degrading the opponent's combat effectiveness.¹⁰³ Despite all the efforts of the Ukrainian forces, it must be added that they eventually had to withdraw from Bakhmut and the destroyed city is still behind the front line on the Russian side.

In the intensely fought battle of Bakhmut, recent estimates suggest Russian forces incurred between 32,000 to 43,000 fatalities and approximately 95,000 wounded. Ukrainian casualties in these confrontations are assessed to be about 15–20 percent of the Russian figures.¹⁰⁴ I further refined these estimates through the application of a 1:4 ratio by Gady and Kofman, which suggested that for every four Russian fatalities, one Ukrainian soldier was lost.¹⁰⁵ These two estimates give us a range of 15-25% Ukrainian losses compared to Russian ones. Specifically, we come to the numbers 4,800-8,000 for 32,000 and 6,450-10,750 for 43,000 Russian losses.

Reports on the exact numbers and units of Russian and Ukrainian forces in the Battle of Bakhmut are very limited. The Wagner Group, until May 2023, was a key component of Russia's offensive, employing 35,000 mercenaries, supplemented by 50,000 from Russian prisons. Rochan Consulting, represented by Konrad Muzyka, reported 30,000 Ukrainian defenders in early 2023,¹⁰⁶ a figure Prigozhin later claimed increased to 80,000.¹⁰⁷ By June, Prigozhin indicated a significant withdrawal of Wagner forces, and the Ukrainian military's assessment from the end of June reported 50,300

¹⁰³ STEPANENKO 2023

¹⁰⁴ MERKX, Gilbert W., 2023, Russia's war in Ukraine: Two decisive factors. *Journal of Advanced Military Studies*. 31 August 2023. Vol. 14, no. 2, p. 13–33. DOI 10.21140/mcu.20231402001.

¹⁰⁵ GADY, Franz-Stefan and KOFMAN, Michael, 2024, Making attrition work: A viable theory of victory for Ukraine. *International Institute for Strategic Studies* [online]. 9 February 2024. [Accessed 1 April 2024]. Available from: <https://www.iiss.org/online-analysis/survival-online/2024/01/making-attrition-work-a-viable-theory-of-victory-for-ukraine/>

¹⁰⁶ RATHBONE, John Paul, 2023, Russian forces may have scored rare success in battle near Bakhmut. *Financial Times* [online]. 10 January 2023. [Accessed 1 April 2024]. Available from: <https://www.ft.com/content/fe6212f5-bb66-4bf5-a64d-f4001f3ab>

¹⁰⁷ STARR, Michael, 2023, Russia diverting troops to Bakhmut from other Donetsk battles -uk intel. *The Jerusalem Post | JPost.com* [online]. 18 April 2023. [Accessed 1 April 2024]. Available from: <https://www.jpost.com/international/article-739566>

opposing troops without Wagner presence.¹⁰⁸

4.3 Ukrainian counteroffensive, June 2023 – late 2023

The Ukrainian military demonstrated proficiency in conducting combined arms operations and engaging in inter-service operations, showcasing their ability to conduct complex operations involving multiple branches of the armed forces. The counteroffensive saw Ukrainian forces engaging in division-size or larger operations, illustrating their organizational capability to mobilize, coordinate, and deploy significant troop formations effectively.¹⁰⁹ Advances in the western Zaporizhia Oblast exemplify effective execution of manoeuvre warfare, disrupting Russian defensive lines and reclaiming contested territories, indicating marginal yet strategic gains in certain sectors.¹¹⁰

Despite these successes, the counteroffensive faced significant hurdles that foiled its overall objectives. The deeply entrenched and fortified positions of Russian forces and a substantial personnel strength presented great defensive challenges. We can say for sure that Ukrainian attempts at large-scale manoeuvre warfare, while successful in some areas, did not translate into substantial territorial control or undermine the strategic advantage of Russian forces significantly. Russian counterbattery fire and artillery munitions, despite reported shortages, effectively diminished the operational effectiveness of Ukrainian artillery, indicating the challenges of sustaining offensive momentum against a well-prepared adversary.¹¹¹

¹⁰⁸ BAILEY, Riley, MAPPES, Grace, STEPANENKO, Kateryna, EVANS, Angelica, BARROS, George and KAGAN, Frederick W., 2023, Russian Offensive Campaign Assessment, June 30, 2023. *Institute for the Study of War* [online]. 30 June 2023. [Accessed 1 April 2024]. Available from: <https://www.understandingwar.org/backgrounder/russian-offensive-campaign-assessment-june-30-2023>

¹⁰⁹ According to U.S. Defence Department officials Ukraine had 150,000 troops committed to the operation.

¹¹⁰ MAPPES, Grace, EVANS, Angelica, WOLKOV, Nicole, HARWARD, Christina, HIRD, Karolina and KAGAN, Frederick W., 2023, Russian Offensive Campaign Assessment, September 5, 2023. *Institute for the Study of War* [online]. 5 September 2023. [Accessed 3 April 2024]. Available from: <https://www.understandingwar.org/backgrounder/russian-offensive-campaign-assessment-september-5-2023>

¹¹¹ Ibid.

However, it is essential to recognize the resilience and tactical flexibility demonstrated by Ukrainian forces. Their ability to make tactical decisions in response to dynamic battlefield conditions, while maintaining strategic objectives through cohesive command and control mechanisms, reflects a balanced approach to warfare.¹¹²

Given the challenges in acquiring any casualty data I will not quantify the impacts of the Ukrainian counteroffensive but will instead qualitatively assess its effectiveness. I will focus on operational achievements and strategic implementations, which will provide an understanding of the campaign's effectiveness, despite the absence of detailed casualty figures.

4.5 Comparison of the military effectiveness of the Ukrainian Armed Forces and the Armed Forces of the Russian Federation

Firstly, I will evaluate the efficiency by calculating in the table.

Figure 2:

| Battle | Casualties | | LER Ratio | Ratio of dead to total number of soldiers in the battle. | | | |
|------------------------------|--------------------|--------------------------|-----------|--|------------------------|---|-----------|
| | Ukraine | Russia | | Ukrainians | Ratio | Russia | Ratio |
| <i>Hostomel 2022</i> | 200 ¹¹³ | 370 ¹¹⁴ | 1:1.85 | / | / | / | / |
| <i>Bakhmut 7/2022-6/2023</i> | 32 000 – 43 000 | 4,800-8,000/6,450-10,750 | 1:4 - 6.7 | 4,800 – 10,750 from 30,000 – 80 000 ¹¹⁵ | 16 – 36 % and 6 – 13 % | 32 000-43 000 from 127 000 – 138 000 ¹¹⁶ | 25 - 34 % |

¹¹² Ibid.

¹¹³ This figure cannot be independently verified.

¹¹⁴ At minimum.

¹¹⁵ This figure cannot be independently verified.

¹¹⁶ At minimum.

In conclusion, the comparative analysis of Ukrainian and Russian military effectiveness across the selected battles of Hostomel, Bakhmut, and the Ukrainian counteroffensive illustrates stark contrasts in strategic execution, tactical proficiency, and operational adaptability. I will not prioritize casualty figures due to the difficulties in obtaining accurate data during ongoing conflicts. Instead, I will concentrate on qualitative assessments of military effectiveness, emphasizing organizational practices and adaptability, to provide a more comprehensive understanding of the forces involved in the battles I observed. What I consider crucial is the fact that in no case did numerical superiority bring a demonstrable advantage associated with greater military effectiveness.

The Battle of Hostomel highlighted the critical deficiencies in the Russian military's execution of combined arms operations, showcasing the Ukrainian forces' strategic adaptability and resilience, which disrupted Russian operational momentum and demonstrated their capacity to exploit the aggressor's weaknesses effectively. This clash underscored the importance of combined arms proficiency, command and control efficacy, and the strategic value of defensive manoeuvres in modern warfare. These are all areas where Ukrainian forces outperformed their Russian counterparts.

The battle of Bakhmut further highlighted the shortcomings of Russian operational planning and coordination, especially when conducting complex manoeuvres such as encirclement. Conversely, Ukrainian forces demonstrated proficient high-level coordination and effective execution of defensive strategies, thus exhausting Russian resources and personnel and underscoring the strategic utility of well-conducted defensive operations in reducing the combat effectiveness of the adversary. The disparity in casualties, with Ukrainian casualties reaching 15-25% of Russian casualties, underscores the effectiveness and resilience of Ukrainian defensive tactics against a numerically superior adversary. However, I consider it important to point out again that the limits of the Ukrainian forces caused the forced withdrawal from Bakhmut.

The Ukrainian counter-offensive has demonstrated and confirmed that the Ukrainian Army is proficient in conducting combined and inter-unit operations, demonstrating its ability to effectively engage in division-sized or larger operations. Although Ukrainian forces faced significant hurdles, including deeply entrenched and fortified Russian positions, they demonstrated tactical flexibility and strategic success in

some sectors, even if they did not achieve substantial territorial control. However, once the Russian side deprived Ukraine of the ability to conduct combined arms with its counterbattery fire, Ukrainian forces lost much of their effectiveness. This, in my view, best highlights the main essence of military effectiveness in the particular conflict between Russia and Ukraine. It is also the key to any shifting of the front, of which both sides are aware and have successfully prevented each other from doing so.

The observed aspects of military effectiveness in relation to the hypotheses can be summarized in a simple table.

Figure 3:

| Hypotheses | Verified or not verified |
|-------------------|---------------------------------|
| H1 (Talmadge) | Partially verified |
| H2 (Talmadge) | Verified |
| H3 (Talmadge) | Verified |
| H4 (Talmadge) | Verified |
| H5 (Mearsheimer) | Not verified |

Conclusion

In this work, I focused on comparing the military effectiveness of two opposing sides in Ukraine, specifically the Ukrainian Armed Forces and the Russians during the first two years of Russian aggression. Based on my observation of both armies, I can partially answer the first research question: *"How does the military effectiveness of the Ukrainian armed forces and the armed forces of the Russian Federation differ in the ongoing Russian invasion of Ukraine?"* Therefore, the answer to the first research question is: the military effectiveness of the Ukrainian army was comparatively higher in the conflict studied. However, I am aware of the very small sample size and due to unverifiable numerical data from the course of battles, I am unable to numerically express the difference in military effectiveness between the Ukrainian and Russian Federation armed forces unequivocally.

Nevertheless, the course of battles clearly showed signs of military effectiveness on the Ukrainian side and strong signs of ineffectiveness on the Russian side. Demonstrated ability to perform concealment, dispersion, small-unit independent manoeuvres, and combined arms operations unequivocally indicates a higher effectiveness of the Ukrainian army. A very important element was also the ability to make quick and decisive retreats both at Bakhmut and during the subsequent counteroffensive. On the other hand, the Russians were unable to achieve their objective at Hostomel, despite numerical superiority and attempts at combined arms operations, and their units were scattered.

The theoretical framework of Caitlin Talmadge enabled me to conduct an in-depth qualitative analysis of both sides, create predictions based on it, and also answer the supplementary question of what causes the differences between the two armies. The hypothesis H1 was partially confirmed, that is, the differences in military effectiveness are due to the level of tactical proficiency of units, including weapon handling and terrain use. Hypotheses H3 and H4 are confirmed, meaning that differences in military effectiveness are caused due to variations in organizational practices, including promotion criteria and training rigor, and that internal political threats negatively impact military effectiveness by prioritizing loyalty over competence. Hypothesis H2 (Differences in military effectiveness are caused by the capability to conduct complex

operations, such as combined arms actions and inter-service operations) was confirmed and simultaneously counterfactually verified. Hypothesis H5 was not confirmed at all because the Russian Federation has had a numerical advantage from the beginning and still, cannot achieve most of its goals. On the other hand, we can't say for sure if, when and where they achieved a 3:1 advantage at one particular point.

The research most strongly confirms the theory of Caitlin Talmadge, building on the work of Stephen Biddle. For further research, it would certainly be interesting to focus on the psychological aspect of both sides. During my research and reading dozens of reports, I came to believe that the effectiveness of the Ukrainian side is significantly aided by a psychological advantage over the opponent. The will to defend one's homeland, relatives, and nation is a variable that cannot be categorized among the elements I observed, but without a doubt, it also shapes Ukrainian effectiveness. It is important to mention the lack of motivation on Russia's part to be effective. In the Insider podcast dated March 18, 2024, Dr. Karel Svoboda spoke about the phenomenon of 'quality of losses.' If I were to interpret his words, there is a big difference if Ukraine loses a unit of Western-trained soldiers, or the Russian side loses dozens of recruited prisoners with virtually no training. In this case, Russia has a huge advantage in human resources, and their losses do not affect Putin's firmly entrenched regime.

The lower effectiveness of the Russian side and the significantly limited or exhausted Ukrainian resources, maintained by huge support from the West, together influence the freezing of battle lines, as we currently see. In writing my thesis, I concluded that Ukrainian forces are indeed somewhat more effective, however, the numerical advantage in equipment and human resources, supported by the Russian Federation's war economy, essentially balances out Ukrainian effectiveness in any further progress in one direction or another.

It is extremely difficult to predict how the conflict in Ukraine will develop. Instead, I will try to outline what Ukraine needs to do to ensure that its situation does not deteriorate significantly. Firstly, it's essential for Ukraine to secure ongoing military aid and economic assistance to sustain its defence capabilities and civilian infrastructure. By this I mean working on diplomatic engagements to ensure international support. Secondly, Ukraine should focus on strengthening internal governance and societal

morale, promoting realistic peace initiatives that might include difficult compromises, and pursuing international legal actions to maintain pressure on Russia. In short, maintaining or increasing Ukraine's technical and personnel capacities must inevitably be reflected in a direct confrontation with the enemy.

Unfortunately, my bachelor's thesis was not able to examine more confrontations and the effectiveness between different units of both sides. For research, it would definitely be interesting to examine the effectiveness of units across armies and see if their effectiveness differs or not. Further research and access to more numerical data would help us better express and understand the difference in the effectiveness of the Ukrainian Armed Forces and the Armed Forces of the Russian Federation.

Závěr

V této práci jsem se zaměřil na porovnání vojenské efektivity dvou protichůdných stran na Ukrajině, konkrétně Ukrajinských ozbrojených sil a Rusů během prvních dvou let ruské agresivity. Na základě mých pozorování obou armád mohu částečně odpovědět na první výzkumnou otázku: „Jak se liší vojenská efektivita Ukrajinských ozbrojených sil a ozbrojených sil Ruské federace během probíhající ruské invaze na Ukrajinu?“ Odpověď na první výzkumnou otázku tedy zní: vojenská efektivita Ukrajinské armády byla ve studovaném konfliktu srovnatelně vyšší. Avšak jsem si vědom velmi malého vzorku a kvůli nepotvrzeným číselným údajům z průběhu bitev nemohu jednoznačně číselně vyjádřit rozdíl ve vojenské efektivitě mezi Ukrajinskými a ozbrojenými silami Ruské federace.

Přesto průběh bitev jasně ukázal známky vojenské efektivity na ukrajinské straně a silné známky neefektivity na ruské straně. Prokázaná schopnost maskování, rozptýlení, nezávislých manévřů malých jednotek a kombinovaných operací jednoznačně ukazuje na vyšší efektivitu Ukrajinské armády. Velmi důležitým prvkem byla také schopnost rychlých a rozhodných ústupů jak u Bakhmutu, tak během následné protiofenzívy. Na druhou stranu Rusové nedokázali dosáhnout svého cíle u Hostomelu, navzdory numerické převaze a pokusům o kombinované operace, a jejich jednotky byly roztrženy.

Teoretický rámec Caitlin Talmadge mi umožnil provést hlubokou kvalitativní analýzu

obou stran, vytvořit na jejím základě předpovědi a také odpovědět na doplňující otázku, co způsobuje rozdíly mezi oběma armádami. Hypotéza H1 byla částečně potvrzena, tj. rozdíly ve vojenské efektivitě jsou způsobeny úrovní taktické zručnosti jednotek, včetně zacházení se zbraněmi a využití terénu. Hypotézy H3 a H4 jsou potvrzeny, což znamená, že rozdíly ve vojenské efektivitě jsou způsobeny variacemi v organizačních praktikách, včetně kritérií pro povýšení a přísnosti výcviku, a že vnitřní politické hrozby negativně ovlivňují vojenskou efektivitu tím, že upřednostňují loajalitu před kompetencí. Hypotéza H2 (Rozdíly ve vojenské efektivitě jsou způsobeny schopností provádět složité operace, jako jsou kombinované akce a meziodvětvové operace) byla potvrzena a zároveň protikladně ověřena. Hypotéza H5 nebyla vůbec potvrzena, protože Ruská federace měla od začátku numerickou převahu, a přesto nedokáže dosáhnout většiny svých cílů. Na druhou stranu nemůžeme s jistotou říct, jestli, kdy a kde dosáhli v jednom konkrétním bodě převahy 3:1.

Výzkum nejsilněji potvrzuje teorii Caitlin Talmadge, která navazuje na práci Stephena Biddlea. Pro další výzkum by bylo určitě zajímavé zaměřit se na psychologický aspekt obou stran. Během mého výzkumu a čtení desítek zpráv jsem dospěl k přesvědčení, že efektivitu ukrajinské strany výrazně podporuje psychologická převaha nad protivníkem. Vůle bránit vlast, příbuzné a národ je proměnná, kterou nelze zařadit mezi prvky, které jsem pozoroval, ale bezpochyby také formuje ukrajinskou efektivitu. Důležité je zmínit nedostatek motivace na straně Ruska k efektivitě. V podcastu Insider ze dne 18. března 2024 Mgr. Karel Svoboda Ph.D. hovořil o fenoménu 'kvality ztrát'. Kdybych měl interpretovat jeho slova, je velký rozdíl, zda Ukrajina přijde o jednotku západně vycvičených vojáků, nebo ruská strana přijde o desítky naverbovaných vězňů s téměř žádným výcvikem. V tomto případě má Rusko obrovskou výhodu v lidských zdrojích a jejich ztráty neovlivňují pevně zavedený režim Putina.

Nižší efektivita ruské strany a značně omezené nebo vyčerpané ukrajinské zdroje, udržované obrovskou podporou ze Západu, společně ovlivňují zamrznutí bojových linií, jak je aktuálně vidíme. Při psaní mé bakalářské práce jsem dospěl k závěru, že ukrajinské síly jsou skutečně poněkud efektivnější, nicméně numerická převaha v technických a lidských zdrojích, podporovaná válečnou ekonomikou Ruské federace, v podstatě vyrovnává ukrajinskou efektivitu při jakémkoli dalším pokroku v jednom směru nebo

druhém.

Je extrémně těžké předpovědět, jak se bude konflikt na Ukrajině vyvíjet. Místo toho se pokusím nastínit, co musí Ukrajina udělat, aby se její situace výrazně nezhoršila. Zaprvé je nezbytné, aby Ukrajina zajistila pokračující vojenskou pomoc a ekonomickou podporu, aby udržela své obranné schopnosti a civilní infrastrukturu. Tím myslím práci na diplomatických vztazích, aby zajistila mezinárodní podporu. Za druhé by se Ukrajina měla zaměřit na posílení vnitřní správy a morálky společnosti, podporovat realistické mírové iniciativy, které mohou zahrnovat obtížné kompromisy, a usilovat o mezinárodní právní kroky, aby udržela tlak na Rusko. Stručně řečeno, udržování nebo zvyšování technických a personálních kapacit Ukrajiny se musí nevyhnutelně projevit v přímé konfrontaci s nepřítelem.

Bohužel moje bakalářská práce nebyla schopna prozkoumat více střetů a efektivitu mezi různými jednotkami obou stran. Pro výzkum by určitě bylo zajímavé zkoumat efektivitu jednotek napříč armádami a zjistit, zda se jejich efektivita liší či nikoli. Další výzkum a přístup k více číselným údajům by nám pomohli lépe vyjádřit a pochopit rozdíl v efektivitě Ukrajinských ozbrojených sil a ozbrojených sil Ruské federace.

List of references

BAILEY, Riley, MAPPES, Grace, STEPANENKO, Kateryna, EVANS, Angelica, BARROS, George and KAGAN, Frederick W., 2023, Russian Offensive Campaign Assessment, June 30, 2023. Institute for the Study of War [online]. 30 June 2023. [Accessed 1 April 2024]. Available from:

<https://www.understandingwar.org/backgrounder/russian-offensive-campaign-assessment-june-30-2023>

BAILEY, Riley, MAPPES, Grace, WOLKOV, Nicole, EVANS, Angelica, STEPANENKO, Kateryna, HARWARD, Christina and CLARK, Mason, 2023, Russian Offensive Campaign Assessment, July 13, 2023. Institute for the Study of War [online]. 13 July 2023. [Accessed 26 March 2024]. Available from:

<https://www.understandingwar.org/backgrounder/russian-offensive-campaign-assessment-july-13-2023>

BARTLES, Charles K., 2019, Russian Armed Forces Enlisted Professionals. Army University Press [online]. 11 March 2019. [Accessed 16 March 2024]. Available from:

[https://www.armyupress.army.mil/Journals/NCO-](https://www.armyupress.army.mil/Journals/NCO-Journal/Archives/2019/March/Russian-ncos/)

BATEMAN, Jessica, 2022, How crete changed the course of World War Two. BBC News [online]. 28 February 2022. [Accessed 13 April 2024]. Available from:

<https://www.bbc.com/travel/article/20180814-how-crete-changed-the-course-of-world-war-ii>

BIDDLE, Stephen D. Military power: Explaining victory and defeat in modern battle. Princeton (N.J.): Princeton University Press, 2006. ISBN 0691128022

BONENBERGER, Adrian, 2022, Ukraine's military pulled itself out of the ruins of 2014. Foreign Policy [online]. 9 May 2022. [Accessed 15 March 2024]. Available from:

<https://foreignpolicy.com/2022/05/09/ukraine-military-2014-russia-us-training/>

BORSHCHEVSKAYA, Anna, 2020, The role of the military in Russian politics and foreign policy over the past 20 years. Orbis. May 2020. Vol. 64, no. 3, p. 434–446.

DOI 10.1016/j.orbis.2020.05.006.

BOWEN, Andrew S., 2022. Ukrainian Armed Forces. Congressional Research Service [online] [Accessed 3 February 2024]. Available from: <https://web.archive.org/web/20211130091427/https://crsreports.congress.gov/product/pdf/IF/IF11862>. p. 1

BRONK, Justin, 2023, Russian combat air strengths and Limitations. CNA [online]. 17 April 2023. [Accessed 19 March 2024]. Available from: <https://www.cna.org/reports/2023/05/russian-combat-air-strengths-and-limitations>

CASEY, Adam E., 2022, Putin has coup-proofed his regime. Foreign Policy [online]. 23 March 2022. [Accessed 27 March 2024]. Available from: <https://foreignpolicy.com/2022/03/23/putin-coup-russian-regime/>

COLLINS, Liam, Michael KOFMAN and John SPENCER, 2023. The battle of Hostomel airport: A key moment in Russia's defeat in Kyiv. War on the Rocks [online] [Accessed 21 November 2023]. Available from: <https://warontherocks.com/2023/08/the-battle-of-hostomel-airport-a-key-moment-in-russias-defeat-in-kyiv/>

CONNELL, Michael, LENNOX, Brooke and SCHWARTZ, Paul, 2023, Training in the Russian Armed Forces. CNA [online]. 27 September 2023. [Accessed 17 March 2024]. Available from: <https://www.cna.org/reports/2023/09/training-in-the-russian-armed-forces>

DEWAN, Angela, 2022, Ukraine and Russia's militaries are David and Goliath. CNN [online]. 25 February 2022. [Accessed 2 March 2024]. Available from: <https://edition.cnn.com/2022/02/25/europe/russia-ukraine-military-comparison-intl/index.html>

DICKINSON, Peter, 2022, Is Ukraine's reformed military ready to repel a new Russian invasion? Atlantic Council [online]. 24 January 2022. [Accessed 17 March 2024]. Available from: <https://www.atlanticcouncil.org/blogs/ukrainealert/is-ukraines-reformed-military-ready-to-repel-a-new-russian-invasion/>

DRUMMOND, Michael, 2023, Ukraine War: Why is Bakhmut so important to Russia

and a “thorn in the side of Putin”? Sky News [online]. 22 May 2023. [Accessed 13 April 2024]. Available from: <https://news.sky.com/story/ukraine-war-why-is-bakhmut-so-important-to-russia-and-a-thorn-in-the-side-of-putin-12779619>

FEAVER, Peter D., 1996, The civil-military problematique: Huntington, Janowitz, and the question of civilian control. *Armed Forces & Society*. Winter 1996. Vol. 23, no. 2, p. 149–153. DOI 10.1177/0095327x9602300203.

FOX, LTC Amos C., 2023, Reflections on Russia’s 2022 invasion of ukraine: Combined arms warfare, the Battalion Tactical Group and wars in a Fishbowl. AUSA [online]. 1 December 2023. [Accessed 19 March 2024]. Available from: <https://www.ausa.org/publications/reflections-russias-2022-invasion-ukraine-combined-arms-warfare-battalion-tactical>

GADY, Franz-Stefan and KOFMAN, Michael, 2024, Making attrition work: A viable theory of victory for Ukraine. International Institute for Strategic Studies [online]. 9 February 2024. [Accessed 1 April 2024]. Available from: <https://www.iiss.org/online-analysis/survival-online/2024/01/making-attrition-work-a-viable-theory-of-victory-for-ukraine/>

GALE, Alexander E., 2023, How Putin’s coup-proofing measures have undermined Russia’s war effort in Ukraine. *Modern Diplomacy* [online]. 29 September 2023. [Accessed 27 March 2024]. Available from: <https://moderndiplomacy.eu/2023/09/29/how-putins-coup-proofing-measures-have-undermined-russias-war-effort-in-ukraine/>

GOMZA, Ivan, 2023, Roger that: Russia’s coup-proofed army and its combat effectiveness, 2022–2023. *The Journal of Slavic Military Studies*. 2 October 2023. Vol. 36, no. 4, p. 435–473. DOI 10.1080/13518046.2023.2293371.

IHNATENKO, Oleksandr, 2022, Civil-military relations in Ukraine. *Свідомі* [online]. 25 August 2022. [Accessed 25 March 2024]. Available from: https://svidomi.in.ua/en/page/04_09_2022_030331

In Ukraine will be formed more than 150 Territorial Defence Battalions, 2022. *Militarnyi*

[online], [Accessed 3 February 2024]. Available from: <https://mil.in.ua/en/news/in-ukraine-will-be-formed-more-than-150-territorial-defence-battalions/>

JONES, Seth G., PALMER, Alexander and JR., Joseph S. Bermudez, 2023, Ukraine's offensive operations: Shifting the Offense-Defense Balance. CSIS [online]. 9 June 2023. [Accessed 19 March 2024]. Available from: <https://www.csis.org/analysis/ukraines-offensive-operations-shifting-offense-defense-balance>

KENNEY, Caitlin M., 2022, NCOs: America has them, China wants them, Russia is struggling without them. Defense One [online]. 6 May 2022. [Accessed 16 March 2024]. Available from: <https://www.defenseone.com/policy/2022/05/ncos-america-has-them-china-wants-them-russia-struggling-without-them/366586/>

KOFMAN, Michael and LEE, Rob, 2022, Not built for purpose: The Russian military's ill-fated force design. War on the Rocks [online]. 2 June 2022. [Accessed 25 March 2024]. Available from: <https://warontherocks.com/2022/06/not-built-for-purpose-the-russian-militarys-ill-fated-force-design/>

KROPÁČOVÁ, Renata, 2023, Vojenský expert: Strategický Význam Bachmutu je sporný. Pomáhá Ale Ukrajincům Vyčerpávat Ruské Síly. iROZHLAS [online]. 28 March 2023. [Accessed 30 March 2024]. Available from: https://www.irozhlas.cz/zpravy-svet/bachmut-strategicky-vyznam-boje-rusko-expert-unob_2303282010_krp

LEICESTER, John, 2023, Combat training programs held by allies for Ukrainian soldiers hit major milestones. PBS [online]. 13 November 2023. [Accessed 16 March 2024]. Available from: <https://www.pbs.org/newshour/world/combat-training-programs-held-by-allies-for-ukrainian-soldiers-hit-major-milestones>

MAPPE, Grace, EVANS, Angelica, WOLKOV, Nicole, HARWARD, Christina, HIRD, Karolina and KAGAN, Frederick W., 2023, Russian Offensive Campaign Assessment, September 5, 2023. Institute for the Study of War [online]. 5 September 2023. [Accessed 3 April 2024]. Available from: <https://www.understandingwar.org/backgrounder/russian-offensive-campaign-assessment-september-5-2023>

MCGREGOR, Andrew, 2022, Russian Airborne Disaster at Hostomel Airport. *Aberfoyle International Security* [online]. 8 March 2022. [Accessed 30 March 2024]. Available from: <https://www.aberfoylesecurity.com/?p=4812>

MCNABB COCHRAN, Kathryn and LONG, Stephen B., 2016, Measuring military effectiveness: Calculating casualty loss-exchange ratios for multilateral wars, 1816–1990. *International Interactions*. 20 December 2016. Vol. 43, no. 6, p. 1019–1040. DOI 10.1080/03050629.2017.1273914.

MEARSHEIMER, John J., 1988, Numbers, strategy, and the European balance. *International Security*. Spring 1988. Vol. 12, no. 4, p. 174–185. DOI 10.2307/2539001.

MELKOZEROVA, Veronika, 2023, Zelenskyy wants more details before authorizing half a million new troops. *POLITICO* [online]. 20 December 2023. [Accessed 25 March 2024]. Available from: <https://www.politico.eu/article/volodymyr-zelenskyy-details-authorize-new-troops-war-economy/>

MERKX, Gilbert W., 2023, Russia's war in Ukraine: Two decisive factors. *Journal of Advanced Military Studies*. 31 August 2023. Vol. 14, no. 2, p. 13–33. DOI 10.21140/mcu.20231402001.

PRZETACZNIK, Jakub, 2022, Russia's war on Ukraine: Military balance of power: Think tank: European parliament. *Think Tank | European Parliament* [online]. March 2022. [Accessed 3 February 2024]. Available from: [https://www.europarl.europa.eu/thinktank/en/document/EPRS_ATA\(2022\)729292](https://www.europarl.europa.eu/thinktank/en/document/EPRS_ATA(2022)729292)

RATHBONE, John Paul, 2023, Russian forces may have scored rare success in battle near Bakhmut. *Financial Times* [online]. 10 January 2023. [Accessed 1 April 2024]. Available from: <https://www.ft.com/content/fe6212f5-bb66-4bf5-a64d-f4001f3ab>

ROSEN, Stephen Peter, 1995, Military effectiveness: Why society matters. *International Security*. Spring 1995. Vol. 19, no. 4, p. 5–31. DOI 10.2307/2539118.

ROTH, Andrew and BORGER, Julian. Talks between Macron and Putin fail to produce Ukraine breakthrough. *The Guardian* [online]. 7 February 2022. [Accessed 21 November 2023]. Available from:

<https://www.theguardian.com/world/2022/feb/07/macron-warns-dont-expect-miracles-in-talks-with-putin-over-ukraine>

RYAN, Mick, 2024, More Ukrainian strategic strikes. More Ukrainian Strategic Strikes - by Mick Ryan [online]. 21 January 2024. [Accessed 18 March 2024]. Available from: <https://mickryan.substack.com/p/more-ukrainian-strategic-strikes>

SANDERS, Deborah, 2023, Ukraine's third wave of military reform 2016–2022 – building a military able to defend Ukraine against the Russian invasion. Defense & Security Analysis. 4 June 2023. Vol. 39, no. 3, p. 312–328. DOI 10.1080/14751798.2023.2201017.

SCHWIRTZ, Michael, TROIANOVSKI, Anton, AL-HLOU, Yousur, FROLIAK, Masha, ENTOUS, Adam and GIBBONS-NEFF, Thomas, 2022, Putin's war: The inside story of a catastrophe. The New York Times [online]. 17 December 2022. [Accessed 30 March 2024]. Available from: <https://www.nytimes.com/interactive/2022/12/16/world/europe/russia-putin-war-failures-ukraine.html>

SHAMIEV, Kirill, 2023, Suspensions, detentions, and mutinies: The growing gulf in Russia's Civil-Military Relations. Carnegie Endowment for International Peace [online]. 26 July 2023. [Accessed 26 March 2024]. Available from: <https://carnegieendowment.org/politika/90266>

STARR, Michael, 2023, Russia diverting troops to Bakhmut from other Donetsk battles -uk intel. The Jerusalem Post | JPost.com [online]. 18 April 2023. [Accessed 1 April 2024]. Available from: <https://www.jpost.com/international/article-739566>

STEPANENKO, Kateryna, 2023, The Kremlin's pyrrhic victory in Bakhmut: A retrospective on the battle for Bakhmut. Institute for the Study of War [online]. 24 May 2023. [Accessed 1 April 2024]. Available from: <https://www.understandingwar.org/backgrounder/kremlin%E2%80%99s-pyrrhic-victory-bakhmut-retrospective-battle-bakhmut>

TALMADGE, Caitlin, 2015. The Dictator's Army Battlefield Effectiveness in Authoritarian Regimes. B.m.: Cornell University Press. ISBN 9781501701764

TAYLOR, Jerome and JOHN, Tara, 2023, Wagner insurrection plunges Russia into uncertainty. here's what you need to know. CNN [online]. 24 June 2023. [Accessed 26 March 2024]. Available from: <https://edition.cnn.com/2023/06/23/europe/wagner-prigozhin-criminal-case-explainer-intl/index.html>

TOROP, Oksana and KHOMENKO, Svyatoslav, 2024, The fight for hostomel airfield. how the gates to Kyiv stayed locked. The Best of BBC News Russian - in English [online]. 29 February 2024. [Accessed 30 March 2024]. Available from: <https://bbcrussian.substack.com/p/ukraine-war-the-fight-for-hostomel-airfield>

TURSA, Andrius, 2024, Ukraine: Growing military challenges test public and political unity. Teneo [online]. 9 February 2024. [Accessed 25 March 2024]. Available from: <https://www.teneo.com/insights/articles/ukraine-growing-military-challenges-test-public-and-political-unity/>

What did Ukraine's revolution in 2014 achieve?, 2022. The Economist [online], [Accessed 26 March 2024]. Available from: <https://www.economist.com/the-economist-explains/2022/02/16/what-did-ukraines-revolution-in-2014-achieve>

ZAGORODNYUK, Andriy, FROLOVA, Alina, MIDTUNN, Hans Petter and PAVLIUCHYK, Oleksii, 2021a, Is Ukraine's reformed military ready to repel a new Russian invasion? Atlantic Council [online]. 23 December 2021. [Accessed 26 March 2024]. Available from: <https://www.atlanticcouncil.org/blogs/ukrainealert/is-ukraines-reformed-military-ready-to-repel-a-new-russian-invasion/>

List of Appendices

Appendix no. 1: Interview with David MĚŘEJOVSKÝ, Prague 8th March 2024. (interview)

Appendix no. 2: : Interview with Vojtěch BOHÁČ, Prague 12th March 2024. (interview)

