



Military-Economic Capabilities of Ukraine During the Transformation

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Abstract: Since the collapse of the Soviet Union and the end of the Cold War, military tensions in Europe have significantly decreased. However, the rapid evolution of weapon systems, warfare formats, and geopolitical trends of regional and global players in the international arena have led to increased demand for arms, rising military expenditures, and military escalations. In response to Russia's armed aggression, Ukraine has begun the process of building up its military power, which, in turn, has caused an economic shock. This article aims to highlight the current trends in militarization and economic growth and analyze the military power and economic indicators of Ukraine, some NATO member states, and Russia. The study's subject is the indicators of several states' military and economic capabilities. The study was conducted using empirical research, analysis and synthesis, and formulation of assumptions. The article examines the problematic issues of Ukraine's economic growth and military capability, focusing on the period leading up to the full-scale war. The study covers a set of fundamental events in Ukraine's historical paradigm. It identifies trends in establishing close diplomatic relations between Ukraine and Western countries. At the same time, the work reveals the importance of transforming the state's military and economic capabilities.

Keywords: military-economic capabilities, Russo-Ukrainian war, military expenditures, economic growth, military power.

Introduction

What Is War?

War has a constant presence in human history, with nearly all nations resorting to military action to resolve external or internal conflicts. The past has been far

from peaceful. Following the end of the Second World War, the world experienced numerous conflicts, resulting in casualties ranging from 12 thousand to 550 thousand per year. Therefore, it is crucial to recognize that war inevitably leads to losses among the population. Figure 1, sourced from Our World in Data,¹ illustrates the statistics of deaths in conflicts at the state level by region, represented in percentage terms.

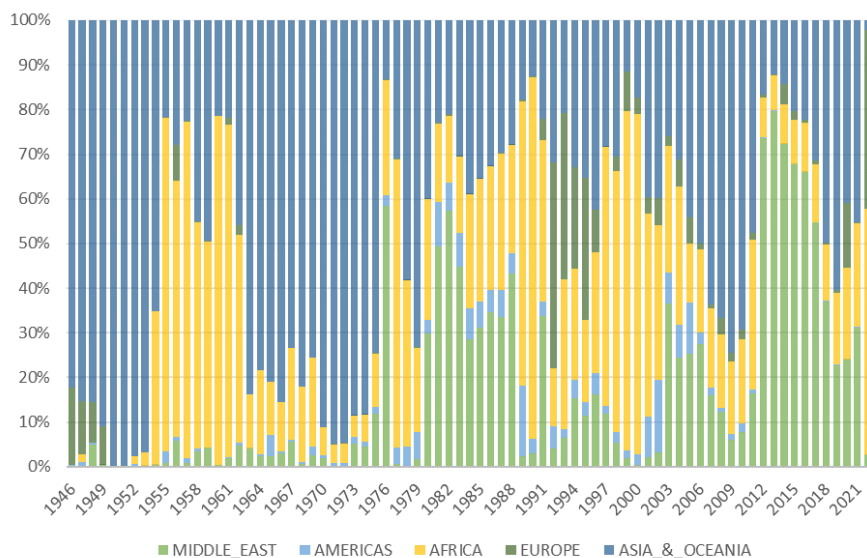


Figure 1: Deaths in Conflicts by Region.²

After the end of the Cold War, the number of armed conflicts worldwide decreased significantly, a trend picked up by many researchers who argued that the occurrence of war was in a downturn.³ Indeed, conflict casualties data show that the highest casualties in Europe occurred in 1946-1949, 1992-1993, and 2022. This period also saw more extensive military campaigns outside Europe: Syria, Iraq, Afghanistan, and Nigeria. This negative trend has not been avoided in Ukraine. However, when considering casualty data, it is evident that the number of deaths in the twenty-first century is much lower than in the previous century.

¹ Bastian Herre et al., "War and Peace," *Our World in Data*, 2024, <https://ourworldindata.org/war-and-peace>.

² "Deaths in Armed Conflicts by Region," *Our World in Data*, <https://ourworldindata.org/grapher/deaths-in-armed-conflicts-by-region>.

³ John Torpey, "Pinker and Progress," *Theory and Society* 47, no. 4 (2018): 511-538, <https://doi.org/10.1007/s11186-018-9320-z>; Joshua S. Goldstein, *Winning the War on War: The Decline of Armed Conflict Worldwide* (Penguin Publishing Group, 2012).

Russia’s military intervention in Ukraine’s internal affairs since 2014 explains its interest in at least negotiating a solution to the conflict, which essentially began as a Ukrainian anti-terrorist operation against separatists of quasi-republics in eastern Ukraine. Secondly, war is politics. The involvement of external troops often means that a conflict resolution is likely to fail, as external supporters will not approve of agreements on the terms of a state defending national interests.

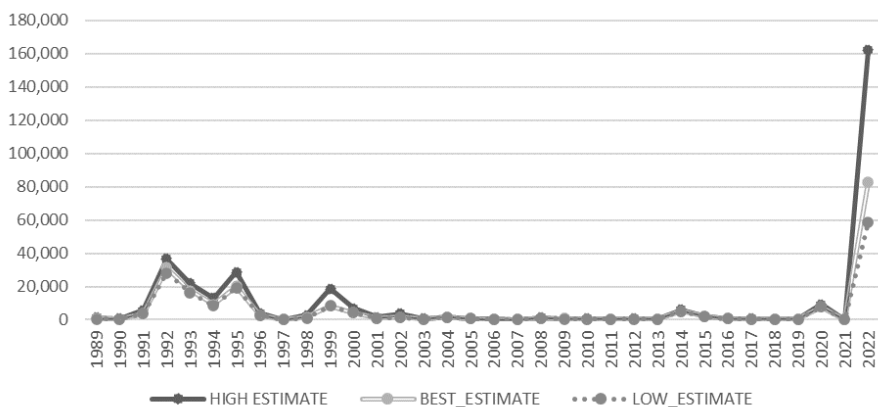


Figure 2: Estimates of Deaths in Conflicts in the European Region.⁴

Figure 2 shows the trend in the number of combat-related casualties between 1989 and 2022 in the European region. In 1991–2000, the most violent conflicts were the war in Transnistria, the war in South Ossetia, the civil war in Georgia, the first and second Chechen Wars, the war in Dagestan, and the Kosovo conflict.⁵

The year 2014 began with Russia’s illegal annexation of the Autonomous Republic of Crimea and the seizure of administrative control of parts of Donetsk and Luhansk regions by terrorists with Russian support. These two events should be considered the beginning of the Russian-Ukrainian conflict of the 21st century. In Ukraine in 2014, the Uppsala Conflict Data Programme recorded four different conflicts, two of which reached the level of war – Ukraine (Donetsk) and Ukraine (Novorossiya), resulting in the loss of approximately 2,000 and 1,500 lives, respectively. The situation with casualties during the surveyed period is shown in more detail in Figure 3.

⁴ “Deaths in Armed Conflicts by Region.”

⁵ Therése Pettersson and Peter Wallensteen, “Armed Conflicts, 1946–2014,” *Journal of Peace Research* 52, no. 4 (2015): 536-550, <https://doi.org/10.1177/0022343315595927>.

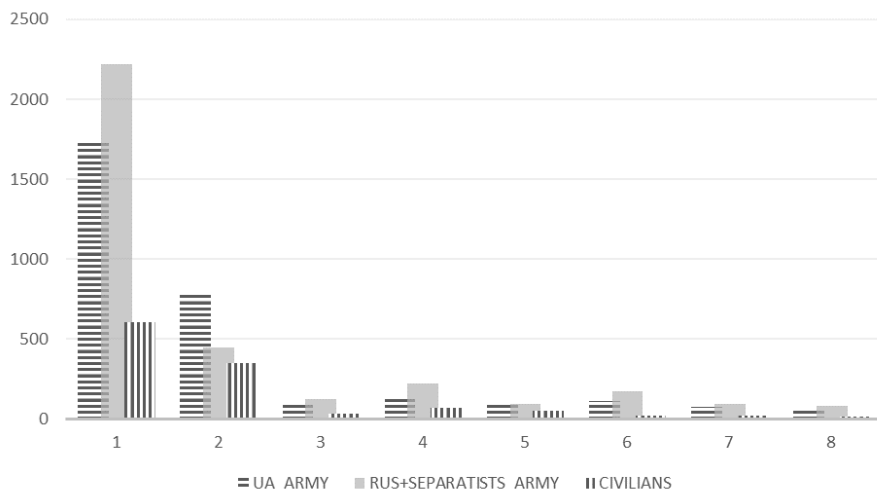


Figure 3: Casualties in the First Stage of the Russian-Ukrainian War (2014-2021).⁶

Why Are Armed Forces Important?

The armed forces play an important role in the processes of state-building, warfare, and prevention of the negative impact of external aggression on the state's internal affairs. In order to resist armed aggression, the armed forces must be equipped with modern weapons and military equipment that require timely renewal, modernization, and disposal. In addition to military capabilities, countries with democratic political systems have a better chance of winning a war than authoritarian regimes.⁷ Having provided the preconditions for sustainable democratic development, it is necessary to take care of the sword and shield that will protect sovereignty and territorial integrity.

The experience of the Russo-Ukrainian war has shown that in the case of repelling armed aggression by a state whose military potential is significantly stronger, relying solely on democratic governance and basic military technologies is insufficient. The Russo-Ukrainian war has determined the growing influence of military power on the progress and outcome of warfare, but national identity and decisiveness can also have a major impact. Thus, in 2023, Ukraine's military power index stood at 0.2516, while Russia's was 0.0714 – a difference of

⁶ Uppsala Conflict Data Program (UCDP), "Number of Deaths," <https://ucdp.uu.se/country/369>.

⁷ Michael C. Desch, "Democracy and Victory: Why Regime Type Hardly Matters," *International Security* 27, no. 2 (2002): 5-47, <https://doi.org/10.1162/016228802760987815>.

3.52 times.⁸ To provide context, in 2022, this difference was even more pronounced at 6.52 times.⁹

In less than a year, Ukraine has managed to almost double its firepower, which is obviously a positive trend in the context of martial law. However, the question arises whether this positive trend is sustainable given the economic conditions.

Why Is the Economy Important?

One could assume that the economy has a positive impact on the development of the national defense sector, but there is considerable evidence of the opposite effect, as well as on the relationship between economic growth and defense expenditures.¹⁰ For example, the Republic of Korea and Taiwan have achieved high economic growth due to high defense expenditures. As long as there are external threats to national security and defense, military spending positively impacts economic growth in a country, at least from a strategic perspective, whereby the ability of a state to defend itself today and in the near term makes it less likely to lose a war. At the same time, the production and consumption of defense goods have positive effects on economic stimulation.

On the other hand, in the absence of an external threat to the state's sovereignty, the production and consumption of military goods, as opposed to social goods, can significantly burden the economy with military expenses, which may be inappropriate. However, this cannot exclude the state's military-industrial complex from producing defense goods for at least two reasons: to meet domestic demand (such as procurement of more technologically advanced weapons and military equipment by the Ministry of Defence) and for export. Thus, producing these goods can generate revenue for the state budget and contribute to the increase of the gross domestic product.

Methods

This study is based on empirical research involving information collection, observing events, analyzing data, formulating hypotheses to explain observed phenomena, and constructing a theory based on these assumptions.

⁸ "2023 Military Strength Ranking," accessed November 28, 2023, <https://www.globalfirepower.com/countries-listing.php>.

⁹ Mickaël Andrieu, "Global Fire Power Ranking 2022: The List of Countries and Their Fire Power Index," *Kaggle*, accessed November 28, 2023, <https://www.kaggle.com/datasets/mickaelandrieu/global-fire-power-ranking-2022>.

¹⁰ Suleiman Abu-Bader and Aamer S. Abu-Qarn, "Government Expenditures, Military Spending and Economic Growth: Causality Evidence from Egypt, Israel, and Syria," *Journal of Policy Modeling* 25, no. 6-7 (September 2003): 567-583, [https://doi.org/10.1016/S0161-8938\(03\)00057-7](https://doi.org/10.1016/S0161-8938(03)00057-7); N. Gregory Mankiw, David Romer, and David N. Weil, "A Contribution to the Empirics of Economic Growth," *The Quarterly Journal of Economics* 107, no. 2 (May 1992): 407-437, <https://doi.org/10.2307/2118477>.

Findings

The Historical Paradigm: European Region of the XXI Century

For two decades, Europe was a rather peaceful region. Following the collapse of the Soviet Union and the independence of Eastern European countries, many of these nations pursued integration with Western Europe, where Germany, the United Kingdom, France, Italy, and Belgium were leading the way. Russia chose to work closely with Western governments, offering favorable commercial terms for the sale and supply of energy and other goods.

Having built trusting relationships with the founders of the European Union—economically developed countries—Russia's authority has significantly neutralized the international community's adverse reaction to the annexation of Ukrainian territories in 2014. Despite being a country with unusual and marginal cultural paradigms, Russia remained of interest to the Western world, known for its democratic principles, human values, and high standards of socio-economic development.

The XXth Century Ukrainian Issue Before and Within the USSR

Positions on the Ukrainian issue remained ambiguous, with most international actors observing the conflict in Eastern Europe through a distorted lens influenced by bias and historical references manipulated by Russia's propaganda apparatus and agents, not in favor of Ukraine. This trend echoes historical events such as the collapse of the Russian Empire and the formation of the Union of Soviet Socialist Republics.

During this period, Ukrainian attempts to sustain their newly established state were undermined by the Bolsheviks' efforts to subjugate nations. The conclusion of a treaty between the Ukrainian People's Republic and the Polish People's Republic, the alliance of the State of Ukraine with Germany, and the attempts of Ukrainian statesmen to negotiate support from France all indicated that Ukrainian officials were exploring all available options to counter the escalating "Red Threat."

The Bolsheviks can only be 'persuaded' by guns and cannons. They do not understand any other words.

- Symon Petliura, organizer of the Ukrainian Armed Forces, 2nd Head of the Directorate of the Ukrainian People's Republic, 1918.

The words of one of the leaders of the Ukrainian People's Republic (UPR) have become revered by Ukrainians, as historical events tend to repeat themselves. In 1921-1922, the Bolsheviks defeated the UPR army and seized control of the government in Kyiv. A hundred years later, Russian troops again arrived at the gates of Kyiv, but this time, they were defeated and pushed back to the Ukrainian-Russian and Ukrainian-Belarusian borders. The cohesion and decisiveness of the Ukrainian people in confronting the enemy, the availability of primary weapons and equipment in the armed forces, and the support from partners all contributed to defeating Russia's offensive in the northern direction. Ukraine's

success in keeping Russia out of its capital can be attributed to democratization and the gradual build-up of its military and economic capabilities, including with the support of Western partners.

The Impact of the Authoritarian Past of the USSR on Independent Ukraine in 1992-2004

The situation Ukraine faced after the collapse of the Soviet Union was extremely complex. It was nearly impossible to undertake a democratic transition. This was largely due to the entrenched Soviet-style infrastructure and mentality that Ukraine had inherited:

- The lack of experience with democratic governance, except for periods of rule in exile from 1921 to 1991;
- The dominance of Soviet officials in the Ukrainian government, who were firmly determined to maintain their mandates at the cost of anti-democratic measures;
- Ukraine was in no way considered by Western Europe as a prospective member of the European Union ¹¹;
- The gross domestic product per capita in 1996 and 1999 was critically low (USD 872.70 and USD 635.80, respectively).¹²

The development of democratic institutions in Ukraine in the early 1990s faced significant challenges due to the continued dominance of the Communist Party of the Soviet Union. This dominance contributed to Ukraine's lack of democratic history, fragile civil society, weak constitutional rule of law, and international isolation. The period following Ukraine's independence can be characterized as transitional, during which the new sovereign Ukrainian regime remained relatively closed. However, unlike Russia, Belarus, and several other post-Soviet states, the Ukrainian people succeeded in securing the right to freedom of expression and activity.

It is reasonable to assert that democracy in Ukraine started to take root along with the emergence of economic and political competition. Ukrainian presidents have often faced a fairly serious level of political competition, being former allies or even appointees, such as Viktor Yushchenko. Yet, the public's role in state-building has been more impactful.¹³ Therefore, national identity should be considered the most crucial factor in this regard (see Table 1).

¹¹ Jeffrey Kopstein and David A. Reilly, "Geographic Diffusion and the Transformation of the Postcommunist World," *World Politics* 53, no.1 (October 2000): 1-37, <https://doi.org/10.1017/S0043887100009369>.

¹² "World Bank Open Data: Free and Open Access to Global Development Data," *The World Bank*, accessed November 2, 2023, <https://data.worldbank.org>.

¹³ Lucan A. Way, Interview with Mircea Snegur, Chisinau, Moldova, February 8, 2002.

Table 1. Incumbent State Capacity (1992–2004).¹⁴

Country	Ukraine	Russia	Belarus
<i>Early/Mid-1990s</i>	<i>1992-95</i>	<i>1992-99</i>	<i>1992-96</i>
Incumbent Capacity			
Experience	moderate	moderate	low
Authoritarian State Power	Low	moderate	moderate
Elite Organisation	Low	moderate	moderate
Strength of Ani-Incumbent National Identity	high	low	low
<i>Late 1990s/Early 2000s</i>	<i>1996-2004</i>	<i>2000-04</i>	<i>1997-2004</i>
Experience	high	high	high
Authoritarian State Power	moderate	high	high
Elite Organisation	moderate	high	moderate
Strength of Ani-Incumbent National Identity	moderate-high	low	Low

The First Breakdown of Authoritarianism

The Ukrainian government grew increasingly authoritarian throughout the 1990s and into the early 21st century. Leonid Kuchma, who took over the presidency from Leonid Kravchuk in 1994, consolidated his control over the parliament and implemented systematic election manipulation and harassment of the opposition. Still, unlike counterparts in Belarus and Russia, Kuchma's regime encountered significant challenges and ultimately collapsed in late 2004. The Orange Revolution marked the most decisive national resistance at that time. Political murders, such as those of Vyacheslav Chornovil and Georgiy Gongadze, further fueled the struggle for democracy. This raises the question: How did the Ukrainian people succeed in toppling an authoritarian regime entrenched in the deeply ingrained practices of Soviet governance and administration?

Some scholars attribute the success of democratization to the international pressure faced by post-Soviet states in Central Europe after the Cold War.¹⁵ However, this pressure only proved effective when met with solid national resistance to authoritarianism, rooted in movements like the Ukrainian Revolution and 20th-century uprisings. The existence of a widespread national identity in Ukraine

¹⁴ Lucan A. Way, "Authoritarian State Building and the Sources of Regime Competitive-ness in the Fourth Wave: The Cases of Belarus, Moldova, Russia, and Ukraine," *World Politics* 57, no. 2 (January 2005): 231-261, <https://doi.org/10.1353/wp.2005.0018>.

¹⁵ Steven Levitsky and Lucan A. Way, "Linkage versus Leverage. Rethinking the International Dimension of Regime Change," *Comparative Politics* 38, no. 4 (July 2006): 379-400, <https://doi.org/10.2307/20434008>.

contributed to forming a powerful social anti-government movement in the early 21st century, undermining the power of authoritarian political leaders and elites.

The Ukrainian people fought for democratic values despite the intimidation of the opposition by authoritarian leaders. Faced with a solid national identity directed against the incumbent, autocrats may find it more challenging to rely on external support, which the public perceives mainly as a threat to national culture or way of life.¹⁶ Thus, in Ukraine, incumbent presidents and presidential candidates have been limited in their ability to rely on support from Russia due to the citizens' solid anti-Russian attitudes.

The Second Breakdown of Authoritarianism

In November 2013, Ukraine was set to sign an Association Agreement with the EU, but the authoritarian leadership and elite opposed this initiative. This stance led to widespread national protests, culminating in the Revolution of Dignity. The period between November 2013 and April 2014 brought a significant increase in national awareness of democratization and Euro-Atlantic integration. The overthrow of the last authoritarian pro-Russian government marked the beginning of a new era of development for Ukraine. This era holds promise for positive change, provided the government prioritizes democratization. However, Ukraine will face new challenges, including combating corruption among officials and addressing issues within its legislative system.¹⁷

Overall, a solid and popular national identity, often demonstrated in opposition to the government, has twice undermined both autocratic and criminal attempts to consolidate the regime. National identity has helped mobilize the opposition while undermining the government's ability to control the state and its access to external resources, particularly those sponsored by Russia. Thus, Ukraine, through its national identity (anti-Soviet, anti-Russian, anti-colonial) and democratic awareness (resisting authoritarian leaders and elites), has repeatedly supported the integration into democratic international alliances and organizations.

Why Did Ukraine Choose a Course Towards NATO and EU Integration?

Ukraine declared its intention to join the North Atlantic Alliance during Leonid Kuchma's presidency in 2002. In May of that year, the National Security and Defence Council adopted Ukraine's NATO strategy, which defined membership as the ultimate goal of Ukraine's Euro-Atlantic policy. Further reaffirmation of Ukraine's Euro-Atlantic aspirations came before the 2008 Bucharest Summit when President Viktor Yushchenko submitted an official application. By 2008, there was a significant increase in support among the Ukrainian population for

¹⁶ Way, "Authoritarian State Building and the Sources of Regime Competitiveness."

¹⁷ European Commission, "Key Findings of the 2023 Report on Ukraine," November 8, 2023, accessed January 11, 2024, https://ec.europa.eu/commission/presscorner/detail/en/QANDA_23_5631

NATO membership compared to 2006 (22.3% vs. 16.3%), accompanied by a decrease in opposition (52.0% vs. 63.2%).¹⁸

The pro-European change of government in Kyiv in 2014, coupled with Russia's annexation of Crimea in March, spurred the growth of a pro-Russian movement in eastern Ukraine. This movement eventually escalated into a series of territorial conflicts, culminating in the Russian-Ukrainian war. The war in Ukraine has pitted the US and EU against Russia and led to a stalemate in diplomatic relations, as evidenced by the sanctions imposed on Russian individuals and organizations. In response to Russia's increased military presence along the Russia-Ukraine border, Ukraine made a significant strategic shift. In December, it announced its decision to abandon its non-aligned status and declared its intention to apply for NATO membership. This move was further reinforced on September 30, 2022, when Ukraine formally applied for fast-track accession to NATO, citing Russia's annexation of the occupied territories as a key reason.

The European integration path chosen by Ukraine has long been perceived as exceptionally challenging, especially for a post-Soviet state. Implementing European legislation, living standards, norms, and practices demands significant efforts from the Ukrainian government and society. However, the prospect of free trade, judicial reform, public administration improvements, and anti-corruption measures marks a departure from the post-Soviet mindset entrenched in outdated paradigms. In contrast to the trade and economic unions established by Russia, which often lack rigorous standards and accountability, integration into the European Union necessitates unwavering adherence to strict criteria, including implementing the essential nine steps. EU accession rules are based on the enforcement of requirements. However, for a democratic society, such requirements are critical and indicate a high level of education and maturity of the state.

Why Did Ukraine Not Lose the War?

Tagarev, Roslycky, and Fluri argue that Putin's miscalculations and the united response of Ukrainian society and the West will likely turn the Russo-Ukrainian war into Putin's last war. Meanwhile, the ongoing war has already impacted the international security environment and perceptions of societal and military readiness, capabilities, and operations. Moreover, the war experience will continue to do so for the foreseeable future. Therefore, learning and implementing lessons is an ongoing, long-term process.¹⁹

Questions naturally arise regarding Ukraine's readiness for war, particularly concerning the measures taken to prevent and predict the consequences of war

¹⁸ "Attitudes of Citizens to the Main Directions of Ukraine's Foreign Policy," Analytical Note (National Institute for Strategic Studies, March 25, 2010), <http://niss.gov.ua/doslidzhennya/mizhnarodni-vidnosini/stavlennya-gromadyan-do-osnovnikh-napryamiv-zovnishnoi-politiki>.

¹⁹ Todor Tagarev, Lada Roslycky, and Philipp Fluri, "Putin's Last War: Narratives, Counter-narratives, and Early Lessons Learned," *Connections: The Quarterly Journal* 21, no. 3 (2022): 5-8, <https://doi.org/10.11610/Connections.21.3.00>.

for the country’s society and economy. While intelligence agencies may possess sufficient competencies, the decision on using such capabilities and their relevance is made by the Supreme Commander-in-Chief and the expert committee of the National Security and Defense Council. Fluri and Polyakov have previously highlighted concerns regarding corruption within certain branches of the security services and the inconsistency of their administrative policies.²⁰

It can be argued that one of the reasons for the current military and economic crisis in Ukraine is a reflection of the systematic and consistent negligence of officials in decision-making processes and the high level of corruption. Over the past decade, Ukraine has only scored 8 points in terms of anti-corruption efforts, indicating persistent weaknesses in this area.²¹ However, there has been a noticeable positive trend in anti-corruption efforts since the Russo-Ukrainian war, particularly following the overthrow of the corrupt pro-Russian government led by Mykola Azarov during Viktor Yanukovich’s presidency (see Figure 4). The authoritarian and pro-Russian governance during that period literally “stifled” national identity and democracy.

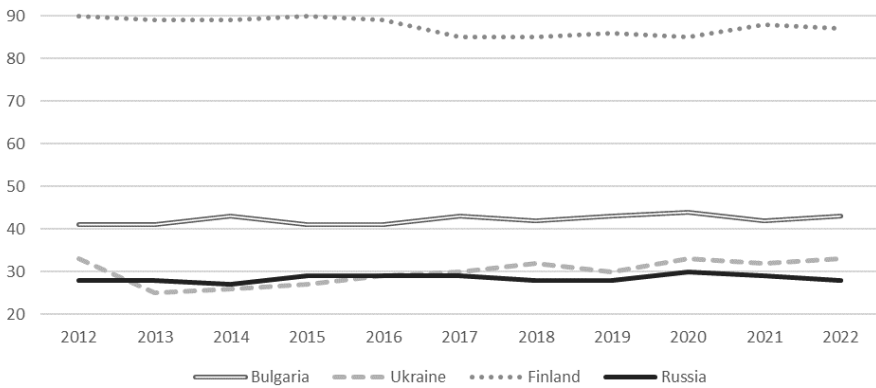


Figure 4: Corruption Perception (2012-2022).²²

²⁰ Philipp Fluri and Leonid Polyakov, “Intelligence and Security Services Reform and Oversight in Ukraine – An Interim Report.,” *Connections: The Quarterly Journal* 20, no. 1 (2021): 51-59, <https://doi.org/10.11610/Connections.20.1.03>.

²¹ “World Corruption Perceptions Index – 2022,” *Transparency International – Ukraine*, October 11, 2023, <https://cpi.ti-ukraine.org/en/>.

²² “World Corruption Perceptions Index – 2022.”

Analysis of the Main Indicators of Military and Economic Capabilities of Ukraine, Certain NATO Member States, and Russia

After the end of the Cold War, NATO's continuous reformatting of its approaches to conducting military operations with mobile battlegroups (as part of expeditionary forces) has decreased territorial defense capabilities.²³ The United Kingdom, France, Germany, Italy, and other European Union countries have upgraded to modern weapons and military equipment. However, such measures have not deterred Russia's imperial ambitions for consistent military expansion. Figure 5 demonstrates the transformation of Western European countries and the United Kingdom to the latest generations of weapons and military equipment, along with the simultaneous reduction and disposal of outdated models.

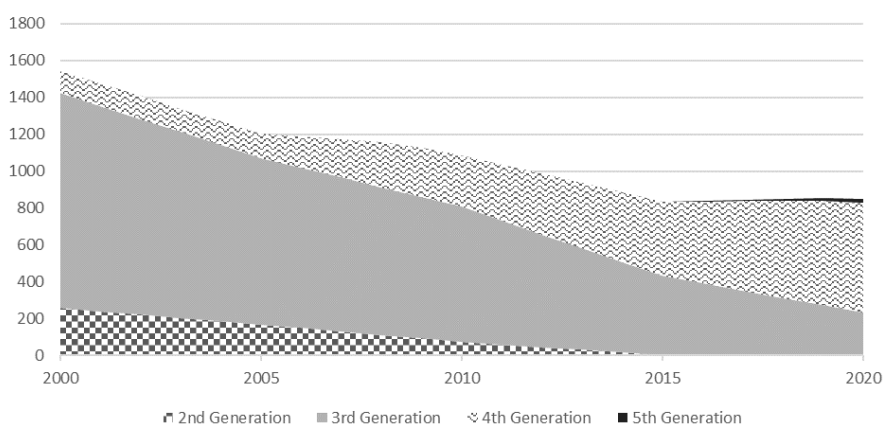


Figure 5: Air and Naval Forces of Germany, France, Italy, and the United Kingdom by Generation (2000-2020).²⁴

Central and Eastern European countries still had considerable Soviet-made military equipment. The decrease in European territorial defense capabilities, maintenance of aging military equipment, and disarmament likely facilitated Russia's confident policy of military expansion to the West. Other factors include Russia's rejection of the Ukrainians' choice of Euro-Atlantic integration. The prospect of such integration would imply positive trends in economic growth and social well-being.

According to the World Bank, Ukraine's economic growth was negative from 2014 to 2015, but the economy grew in the following years, driven by national security and defense expenditures. It is helpful to compare the growth figures

²³ Jolyon Howorth, *Security and Defence Policy in the European Union*, The European Union Series 61 (London: Palgrave Macmillan, 2014).

²⁴ *The Military Balance 2021* (London: International Institute for Strategic Studies, 2021).

with Bulgaria's, as both countries have similar growth trends. However, Ukraine faced two "black swan" events from 2013 to 2022, resulting in negative economic growth: -10.1% in 2014 and -29.1% in 2022. In contrast, Bulgaria's economic growth has been generally stable. Figure 6 illustrates this comparison using data from the World Bank.²⁵

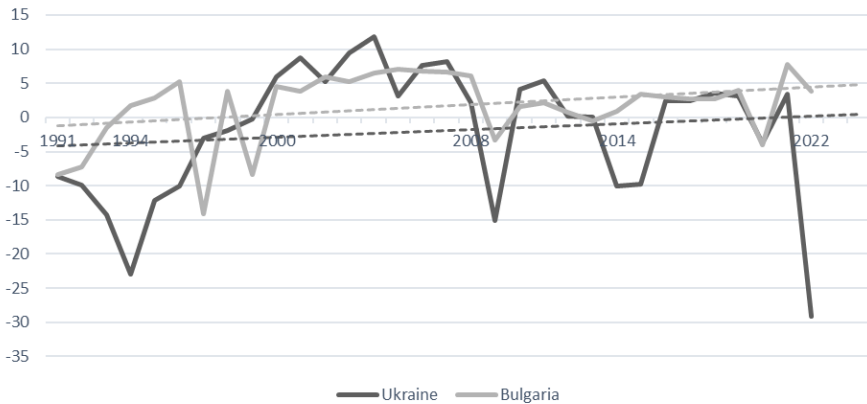


Figure 6: Economic Growth Trends (GDP, Annual %).

Analyzing the upward and downward trends in Ukraine's GDP, there is no doubt about the reasons for the negative indicators. The first example is the global financial crisis of 2007-2009, which caused a recession and changes in market and economic dynamics. About a decade after the end of the financial crisis, the COVID-19 crisis emerged, further depressing the financial market and resulting in negative economic growth (recession). Before recovering from the pandemic, Russia invaded Ukraine, marking the beginning of the second phase of the Russo-Ukrainian war. It is worth recalling that the first stage began with Russia's illegal annexation of the Autonomous Republic of Crimea and support for terrorists in the quasi-republics in eastern Ukraine. Later, the Russian military also took part in military operations against Ukraine.²⁶

Prospects for resolving the Russo-Ukrainian conflict in the early years needed strengthening. Even during the eight years before the full-scale Russian invasion, no positive progress was made in de-occupying the territories captured by the separatists and Russia, except for the compromises that the Ukrainian government had

²⁵ "World Bank Open Data."

²⁶ Stockholm International Peace Research Institute (SIPRI), *SIPRI Yearbook 2015: Armaments, Disarmament and International Security* (SIPRI, 2015), accessed January 9, 2024, <https://www.sipri.org/yearbook/2015>; SIPRI, *SIPRI Yearbook 2016: Armaments, Disarmament and International Security* (SIPRI, 2016), accessed January 9, 2024, <https://www.sipri.org/yearbook/2016>.

to make to preserve human and industrial capital in the eastern and southern regions. Countering Russian expansion proved to be very costly for the Ukrainian side. This can be partially attributed to Russia's extensive preparation for war, marked by a significant increase in military expenditures from 1993 to 2022. Russia's increased military spending, as a percentage of GDP, has led to militarization and exerted pressure on the economy.



Figure 7: Military Expenditures in Ukraine and Russia from 1993 to 2022 (in Billion U.S. Dollars).²⁷

Taking into account the growing militarization in Russia, tensions between it and NATO countries were growing. In addition to building up its military capabilities, Russia directly or indirectly interfered in the internal politics of Western countries.²⁸ James Sherr of the Royal Institute of International Affairs, Chatham House, identifies the main factor behind Russia's influence on the domestic politics of Western countries – the Russian government's soft power, characterized by the ability to influence the behavior of others to achieve the desired result, as well as the ability to get what is needed through attractiveness. The main tools for implementing such a policy are hidden penetration methods, blackmail and corruption, and new forms of power – the supply of energy resources.²⁹

²⁷ "World Bank Open Data."

²⁸ Magdalena Grono, "Mirror Images: The Standoff between Moscow and Western Capitals," International Crisis Group, May 4, 2018, <https://www.crisisgroup.org/europe-central-asia/western-europemediterranean/mirror-images-standoff-between-moscow-and-western-capitals>.

²⁹ James Sherr, *Hard Diplomacy and Soft Coercion: Russia's Influence Abroad* (Brookings Institution Press, 2013).

Considering these and other forms of influence, levels of militarization, and military power combined with authoritarian rule, the “Red Threat,” once defeated during the Cold War, was reborn. In 2010, preparing for a full-scale war, Russia launched an ambitious plan to modernize its armed forces.³⁰ Russia’s military expenditures peaked in 2016. Such significant expenditures allowed the Russian Federation to put on the balance sheet of the Armed Forces, among others, an aerial ballistic missile with the ability to carry a nuclear charge—the X-47M2 “Kinzhal” (NATO’s designation “AS-24 Killjoy”)—and to significantly increase the capabilities of fifth-generation weapons, for example, the Su-57 multi-role fighter (NATO code “Felon”).

After 2016, inflation of 2.8% is commonly cited as the reason for Russia’s decrease in military expenditures.³¹ However, the World Bank data shows that the average inflation rate in the world was equal to the same indicator.³² Therefore, the further decline in Russia’s military expenditures from 5.4% of GDP in 2016 to 3.7% in 2018 can be explained by the end of the development of the latest generation of weapons and military equipment. To illustrate, in 2021, the military budget increased to \$ 65.9 billion (4.1% of GDP), accounting for almost 64% of the sub-region’s total expenditures (the total military budgets of Ukraine, Latvia, Estonia, Lithuania, and Poland were \$ 5.9, \$ 0.8, \$ 0.78, \$ 1.3, and \$ 15.1 billion, respectively, and totaled \$ 23.88 billion). In 2022, Russia increased its military expenditures by \$ 20.5 billion, which is half of Ukraine’s total military expenditures in 2022 and exceeds Poland’s by \$ 3.9 billion in the same year. There are also speculations about the Kremlin’s shadow defense economy during Vladimir Putin’s rule. The actual military expenditures may be much higher than the officially reported data.³³

³⁰ Julian Cooper, “Russian Military Expenditure in 2016 and 2017, Arms Procurement and Prospects for 2018 and Beyond,” *Changing Character of War Centre* (University of Oxford), 2018.

³¹ Julian Cooper, “Russian Military Expenditure in 2017 and 2018, Arms Procurement and Prospects for 2019 and Beyond,” *Changing Character of War Centre* (University of Oxford), 2019, www.ccw.ox.ac.uk/blog/2019/2/11/russian-military-expenditure-in-2017-and-2018-arms-procurement-and-prospects-for-2019-and-beyond-by-julian-cooper-8c3hp.

³² “World Bank Open Data.”

³³ Bettina Renz, “Russian Military Reform: Prospects and Problems,” *The RUSI Journal* 155, no. 1 (2010): 58-62, <https://doi.org/10.1080/03071841003683476>; Julian Cooper, “The Russian Budgetary Process and Defence: Finding the ‘Golden Mean,’” *Post-Communist Economies* 29, no. 4 (2017): 476-90, <https://doi.org/10.1080/14631377.2017.1333793>; Tania Yazbeck, “The Russian Economy and Resources Available for Military Reform and Equipment Modernization,” TM 2010-192 (Defence R&D Canada, Centre for Operational Research and Analysis, September 2010), https://cradpdf.drdc-rddc.gc.ca/PDFS/unc103/p534204_A1b.pdf; Vasily Zatsepin, “Russian Military Expenditure: What’s Behind the Curtain?” *The Economics of Peace and Security Journal* 2, no. 1 (2007): 51-61, <https://doi.org/10.15355/2.1.51>.

Correlation Between Ukraine's Military and Economic Capabilities

In 2014, total defense expenditures in Ukraine amounted to \$3 billion, representing only a 4% increase compared to 2013. However, the expenditures of the Ministry of Defense of Ukraine, as a part of defense spending, increased by 1.8 times compared to 2013. Despite this increase, the gap in military expenditures between Ukraine and Russia remained significant, with Russia outspending Ukraine by 28.2 times. Therefore, it is difficult to argue that Ukraine had at least some advantage in its ability to use military force. For quite an extended period, defense expenditures were not a priority for Ukraine, which caused a lot of disapproving criticism from military experts and Ukrainian society.

The critical moment in transforming the approach to defense capability came in 2022 with the onset of the full-scale Russian invasion. That year, Ukraine's military expenditures amounted to \$44 billion, with the difference compared to Russia being 1.96 times. However, economic growth plummeted to a critically low level (-29.1%). This decline can be attributed partly to the outflow of human and physical capital due to mass emigration (exceeding 7 million), the destruction of industrial and critical infrastructure, and the allocation of over 40% of budget expenditures to defense.

Table 2. Statistical Data of the State Budget and the Budget of the Ministry of Defence of Ukraine.³⁴

Year	GDP (current UAH) in billions	Military expenditures (current UAH) in billions	Military expenditures (as % of GDP)
2021	5459574	121468	2.22
2020	4194102	118012	2.81
2019	3974564	103013	2.59
2018	3558706	86582	2.43
2017	2982920	68819	2.31
2016	2383182	59427	2.49
2015	1979458	45827	2.32
2014	1566728	15151	0.97
2013	1454931	15315	1.05
2012	1408889	16387	1.16

³⁴ Ministry of Finance, "GDP per Capita in Ukraine," accessed October 10, 2023, <https://index.minfin.com.ua/ua/economy/gdp/>; Ministry of Defence of Ukraine, "Implementation of the State Budget by the Ministry of Defence of Ukraine," accessed October 10, 2023, <https://www.mil.gov.ua/diyalnist/byudzhnet-ta-vikonannya-czilovix-program/vikonannya-ministerstvom-oboroni-ukraini-derzhavnogo-byudzhnetu/>.

The situation differed somewhat on the eve of the full-scale Russian invasion as both military expenditures and gross domestic product gradually increased. An analysis of the dynamics of economic growth and the development of Ukraine’s military capabilities from 2012 to 2021, primarily driven by increased military expenditures and supported significantly by financial and material assistance from partners, will demonstrate a correlation.

Firstly, it is essential to establish the relationship between two variables: gross domestic product (GDP) and expenditures of the Ministry of Defense of Ukraine. GDP serves as the primary indicator of the state’s economic growth, while Ministry of Defense expenditures are the primary determinant of national security. Linear regression was used to analyze this relationship. A higher absolute value of the correlation coefficient indicates a stronger relationship between the two variables. However, it is essential to understand that correlation is not causation, i.e., the existence of a relationship between two variables does not indicate a causal relationship between them. Table 2 shows the gross domestic product and the budget of the Ministry of Defense of Ukraine.

The relationship is estimated using a linear model with ordinary least squares. Figure 8 shows the scatter plot and the adjusted regression line: the horizontal axis is the independent variable, and the vertical axis is the dependent variable. We have determined that the independent variable is the budget of the Ministry of Defense of Ukraine, and the dependent variable is the gross domestic product (hereinafter – GDP). Therefore, it is necessary to see whether there is a correlation between these two variables, namely the level of dependence of GDP on military expenditures.

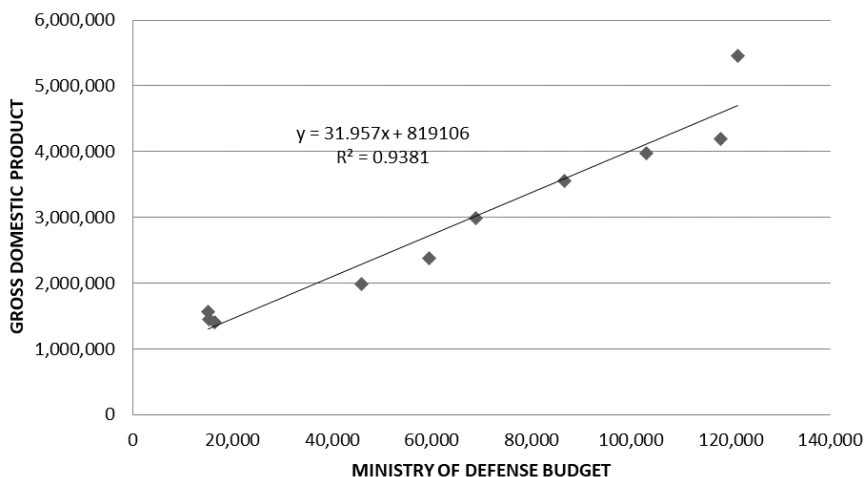


Figure 8: Adjusted Regression Line of the Relationship between GDP and the Budget of the Ministry of Defense of Ukraine.

According to the adjusted regression line, 93.81 % of the variation in GDP is explained by military expenditures. Only 6.19 % of GDP variation is explained by factors not included in the model. The result is that there is a high level of correlation between GDP and military expenditures. Military expenditures have a positive impact on economic growth. However, there may be other influencing factors, so it is still challenging to determine the causal relationship.

Conclusion

In contrast to Russia (and many ex-Soviet states), Ukraine encompasses large regions where a strong anti-imperial, anti-Soviet, and ultimately anti-Russian identity has developed over many centuries. According to Keith Darden, this difference is associated with a higher level of literacy in society.³⁵ However, at the time of independence, there were regions in Ukraine where Soviet identity and a desire for Russification countered attempts at democratization, free trade, and partnership with the Euro-Atlantic community. These orientations played into Russia's hands during the aggressive military campaigns of 2014-2015 and continuing into 2022.

The ongoing war stands as the most significant conflict in Europe since World War II, causing serious concerns and shocks in the global economy. When considering why Ukraine did not succumb to Russia in the war, it is crucial to highlight the favorable for Ukraine differences between the two countries: democratization, national identity, decisiveness, Euro-Atlantic integration, and support from Western partners. These factors enabled Ukraine to withstand the economic and social shocks resulting from Russia's military and information-psychological campaigns.

The differences in Russia's favor are a much higher level of military capabilities and slightly higher economic growth. However, these advantages will be offset entirely when Ukraine wins the war, accelerates its recovery from economic shocks, and integrates into democratic Western institutions. The increased cooperation between Ukraine, the EU, and NATO has already positively influenced the transformation of approaches to managing defense resources and developing military and economic capabilities. These new approaches have reshaped the planning, programming, budgeting, and budget implementation processes of the Ministry of Defense of Ukraine. Finally, referring to the terminological and conceptual framework of Nassim Taleb, it is worth noting that the fragility of Ukraine's authoritarian potential has strengthened the anti-fragility of national identity.³⁶ As a result, the processes of state-building and governance have been democratized, and cooperation with Western partners has been strengthened.

³⁵ Keith Darden and Anna Maria Grzymała-Busse, "The Great Divide: Literacy, Nationalism, and the Communist Collapse," *World Politics* 59, no. 1 (2006): 83-115, <https://doi.org/10.1353/wp.2007.0015>.

³⁶ Nassim Nicholas Taleb, *Antifragile. Things That Gain from Disorder* (NY: Random House, 2012).

Disclaimer

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