

Ukraine War - Kill ratios: Who is winning? #23



First published Jun 2023

Kill ratios

1. **Key observation is that for confirmed equipment losses of all kinds Ukraine has managed to destroy 2.9 times more equipment than Russia**
2. **2.9 is despite UKR having a much smaller less equipped army lacking many modern weapons**
3. **Ukraine has not published their own personnel losses but they have published their estimates of Russian losses that are 218k killed and 654k wounded as of Jun. 15, 2023**
4. **The best estimate for Ukraine personnel losses is therefore to assume they are proportional with the confirmed materiel kill ratio so 75k killed and 224k wounded Ukrainians as of Jun. 15, 2022**
5. **Long-term for Ukraine to win it needs to maintain a kill ratio for personnel well above the 3.55 Russian/Ukrainian population ratio**

Population and GDP in 2021/22

Country	Russia	Ukraine	Ratio R/U	USA	EU
Population mill.	145.60	41.00	3.55	334.23	342.89
GDP billion USD	1,775.80	200.09	8.88	23,315.00	14,563.00

Source/attribution: <https://tradingeconomics.com/>

Losses Ukraine & Russia from Feb. 24, 2022 to Jun. 15, 2023

# Type of loss	Russian stock on Feb. 2022	Russian losses confirmed	Russian losses unconfirmed	Ukraine stock on Feb. 2022	Ukraine losses confirmed	Kill ratios RUS/UKR confirmed
1 Tanks	3,300	2,043	3,955	850	533	3.8
1.2 of which captured		544			139	3.9
2 Armored fighting vehicles		885			285	3.1
3 Infantry fighting vehicles		2,402			571	4.2
4 Armored personnel carriers		316			274	1.2
5 Other APCs (MRAPs)		43			86	0.5
6 Infantry mobility vehicles		191			322	0.6
7 Command and com vehicles		243			15	16.2
8 Total armored vehicles (2 to 7)	13,758	4,080	7,667		1,553	2.6
9 Engineering vehicles special equipm.		310	519		65	4.8
10 Anti-tank vehicles		38			21	1.8
11 Artillery support vehicles		103			23	4.5
12 Towed artillery		232			127	1.8
13 Self propelled artillery		415			167	2.5
14 Multiple rocket launchers		208			45	4.6
15 Total artillery (10 to 14)	5,689	996	3,793		383	2.6
16 Anti-aircraft guns		17			4	4.3
17 Self propelled anti-aircraft guns		24			6	4.0
18 Surface-To-Air Missile Systems		117			113	1.0
19 Radars		32			63	0.5
20 Jammers and deception systems		41			3	13.7
21 Total anti-aircraft (16 to 20)		231	364		189	1.2
22 Aircraft	1,379	82	314		68	1.2
23 Helicopters	961	90	301		31	2.9
24 Combat Unmanned Aerial Vehicles		10			23	0.4
25 Reconnaissance UAVs		236			121	2.0
26 Total UAVs (24 to 25)		246	3,333		144	1.7
27 Naval ships	519	12	18		26	0.5
28 Trucks, Vehicles and Jeeps		2,570	6,506		653	3.9
29 Total equipment losses		10,660	26,770		3,645	2.9
30 of which destroyed		7,059			2,383	3.0
31 of which damaged		372			232	1.6
32 of which abandoned		405			126	3.2
33 of which captured		2,822			906	3.1
34 Killed personnel			217,910		74,511	2.9
35 Wounded personnel 3*killed			653,730		223,532	2.9

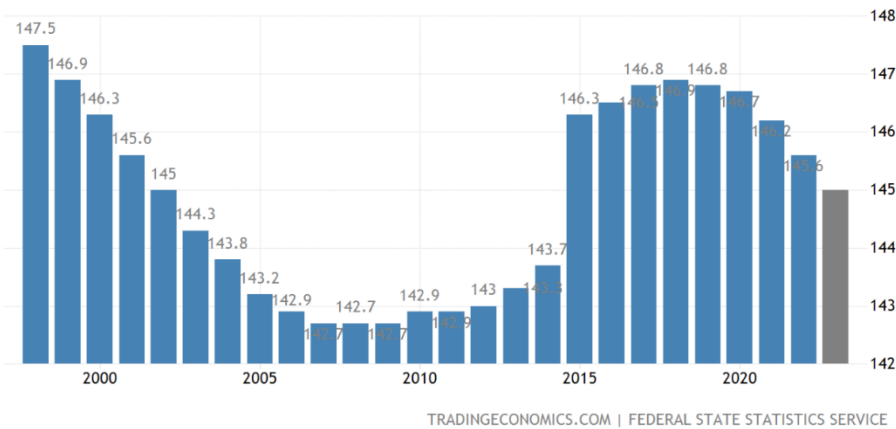
Sources: Follow link below video to download spreadsheet containing clickable sources

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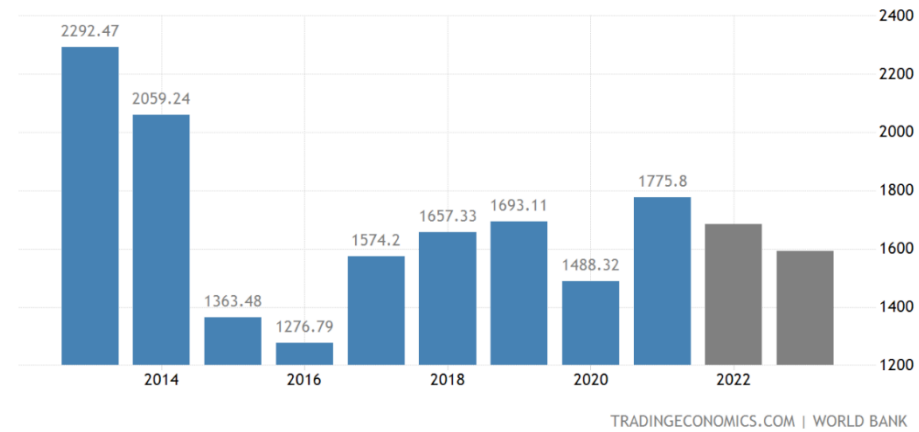
Population/GDP

Russia population millions



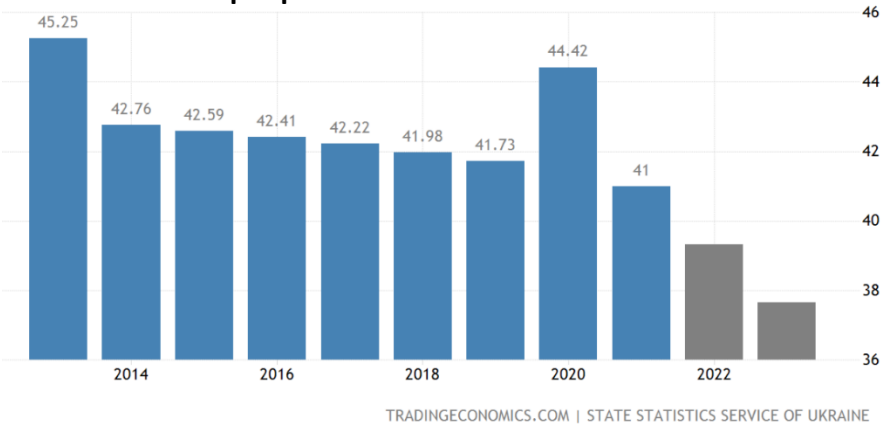
Source/attribution: <https://tradingeconomics.com/russia/population>

Russia GDP billion USD



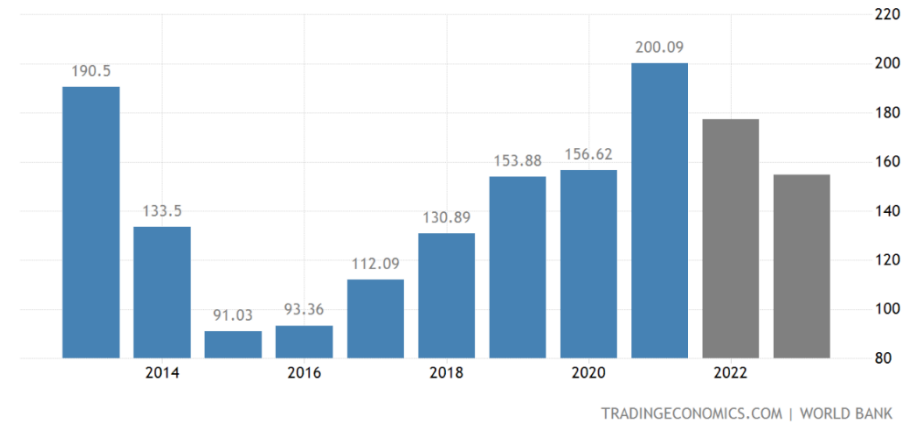
Source/attribution: <https://tradingeconomics.com/russia/gdp>

Ukraine population millions - Ratio: 3.55



Source/attribution: <https://tradingeconomics.com/ukraine/population>

Ukraine GDP billion USD - Ratio: 8.88



Source/attribution: <https://tradingeconomics.com/ukraine/gdp>



What governs the kill rate?

- 1. Equipment quality:** Obviously better weapons increases the kill rate
 - This implies NATO should prioritize sending its most effective weapons to Ukraine not the old stuff
 - So Leopard 2 tanks newest edition not Leopard 1 and F35 jets not Russian Migs, etc
- 2. Equipment quantity:** Also kill rate increase with larger size of army
 - More of all kinds of weapons so a bigger army can be equipped
 - If not enough of the best weapons NATO could send the old stuff as well
- 3. Personnel quality and quantity:** NATO should use all of its training resources to train as many Ukrainians as possible
 - Ukraine population is 41 million so likely 6 million men and women will be fit for military service
 - 5k here and there is not enough. NATO should train 100k new Ukrainian soldiers every month (100k*5Yrs)
- 4. Willingness to fight and kill the enemy** doing whatever it takes to be effective without restrictions of any kind



Sources/attribution for previous slides

- Sources for kill rate data: GoTo www.hmexperience.dk look up video #23 and download excel spreadsheet with data and clickable links to sources
- Main source for confirmed Russian material losses: <https://www.oryxspioenkop.com/2022/02/attack-on-europe-documenting-equipment.html>
- Main source for confirmed Ukrainian material losses: <https://www.oryxspioenkop.com/2022/02/attack-on-europe-documenting-ukrainian.html>
- Other key source for unconfirmed Russian losses: <https://www.minusrus.com/en>
- 405,000 dead US soldiers for all of WW2: https://en.wikipedia.org/wiki/United_States_military_casualties_of_war
- 14 million Russians died in WW2 both soldiers and civilians: https://en.wikipedia.org/wiki/World_War_II_casualties#Soviet_Union

