

WAR IN UKRAINE: CONCLUSIONS FOR THE FUTURE

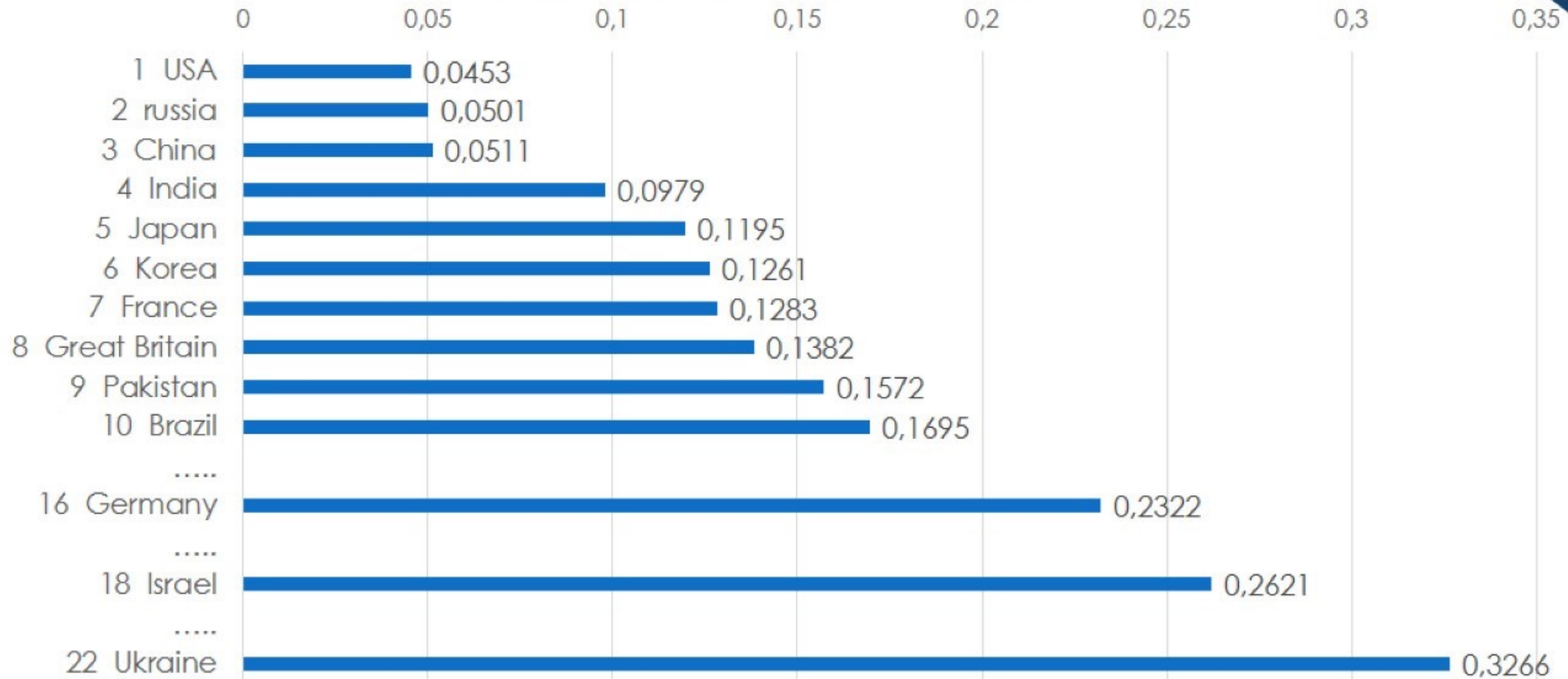
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Possible threats to Ukraine's security over the time horizon until 2030

№	Type of conflict	Probability of occurrence (%)	Time interval of the conflict occurrence (years)
1	Full-scale military aggression within the territory of Ukraine	8.13	2022-2024
2	Full-scale military aggression within the borders of Luhansk and Donetsk regions	20.63	2022-2024
3	Local military aggression within certain regions of Ukraine	35.00	2021-2025
4	Permanent clashes along the military demarcation line	53.75	2021-2026
5	Large-scale hybrid war aimed at destroying the statehood of Ukraine (local military clashes, terrorist attacks, cyber attacks on critical infrastructure facilities and government agencies, etc.)	92.50	2021-2030

World Military Strength Ranking 2022 (Global Firepower - 2022)



Comparative quantitative assessment of the armed forces of Ukraine and russia in 2021

Indicators	Unit of measurement	Ukraine	russia	Ukraine-to-russia ratio (times)
Number of military personnel	people	255 000	1 014 000	3.98
Number of reservists		900 000	2 000 000	2.22
Tanks	pieces	2 430	13 000	5.35
Armored vehicles		11 435	27 100	2.37
Self-propelled guns	pieces	785	6 540	8.33
Towed guns		2 040	4 465	2.19
Multiple rocket launchers		550	3 860	7.02
Fighters	pieces	42	789	18.79
Strike-fighters		25	742	29.68
Attack helicopters		34	538	15.82
Capital ships	pieces	-	80	-
Submarines		-	64	-
Small warships		13	206	15.85
Defense budgets	USD mln	9 600	42 129	4.39

Losses of the russian armed forces as of 15.06.2022

Personnel, weapons and military equipment (WME)	Unit of measurement	Number
Personnel (killed)	people	32 750
Tanks	pieces	1 440
Armored fighting vehicles	pieces	3 528
Artillery systems	pieces	722
Multiple rocket launchers	pieces	230
Air defense systems	pieces	97
Planes	pieces	213
Helicopters	pieces	179
UAVs	pieces	591
Cruise missiles	pieces	129
Ships / boats	pieces	13
Automotive equipment and tanker trucks	pieces	2 485
Specialized military equipment	pieces	55

Consequences of the war for the world economy (2022 forecast)

- ▶ Slowdown in the world economy (according to the IMF, from 4.4% to 3.6%)
- ▶ Inflation growth (in March-May, there was an increase in prices for: oil - by 1.6 times, natural gas - 2.0 times, wheat - 1.3 times, metal - 1.2 times)
- ▶ Humanitarian disaster with increasing hunger and poverty in the world's poorest countries (Ukraine and Russia provide food for 400 million people)
- ▶ Increase in the non-production expenditure on defense (e.g., in Germany - by EUR100 mln)

Consequences of the war for the Ukrainian economy (2022 forecast)

- ▶ Fall in Ukraine's GDP according to:
 - IMF – 30%;
 - World Bank – 45%;
 - Government of Ukraine – 30-35%;
 - EBRD – 20 %
- ▶ Decrease in incomes of the population - 25-30% per year, 70% of Ukrainians will have incomes below the subsistence level
- ▶ Inflation growth rates – 20-30% per year
- ▶ A significant slowdown in the pace of industrial development: 25-30% of enterprises have already ceased operations, 45% operate at a limited capacity
- ▶ Increasing budget deficit: the monthly budget deficit of USD5 bln

Comparison of the military power of the armed forces of Ukraine and Russia in 1991 and 2021

Personnel and WME	1991	2021
Number of the regular army	1 : 3.13	1 : 3.98
Tanks	1 : 1.39	1 : 5.35
Infantry fighting vehicles / armored personnel carriers	1 : 1.77	1 : 11.38
Artillery (cannon and self-propelled guns, multiple rocket launchers)	1 : 1.63	1 : 11.11
Military planes (combat, transport ones)	1 : 2.3	1 : 18.15
Attack helicopters (combat, transport ones)	1 : 1.85	1 : 13.87

Changes in the number of personnel and WME of Ukraine's Armed Forces in 1991-2021

Year	Number of military personnel (ths people)	WME			
		Tanks (ths pcs)	Armored vehicles (ths pcs)	Planes (pcs)	Ships and boats (pcs)
1991	980	9	11	1 500	N/A
1992	700	N/A	N/A	N/A	113
1994	N/A	4	8.5	1 000	N/A
1995	400	N/A	N/A	N/A	N/A
1997	N/A	N/A	N/A	N/A	32
2001	400	4.2	6.1	932	N/A
2003	390	4.0	5.7	908	29
2007	200	2.9	2.8	534	27
2010	200	2.7	2.3	383	N/A
2014	250	2.4	2.5	220	10
2020	250	N/A	N/A	N/A	18
2021	246	2.1	3.0	120	21

List of some new types of weapons developed in Ukraine

WME	Models of WME (pcs)
Tanks (3 models)	BT Oplot (50), T-84-120 Yatagan (1), T-84U (10)
Infantry fighting vehicles (1 model)	BMPV-64 (2)
Armored personnel carriers (6 models)	BTR-7 (13), BTR-94 (50), BTR-3 (894), BTR-4 (201), BTR Otaman (1), BTR Varan (1)
Self-propelled guns (1 model)	2C22 Bohdana (1)
Multiple rocket launchers (6 models)	Vilkha (50), Verba (50), BM-21UM Berest (1), Bastion-01 (N/A), Bastion-02 (N/A), Bastion-03 (N/A)
Armored vehicles (24 models)	BBM Kozak-2 (245), SBA Varta (200), KRAZ Conquer (77), KRAZ Spartan (36) and others
Short-range ballistic missile system (1 model)	Hrim (30)
Coastal missile system (1 model)	Neptune (1)
Cruise missiles (1 model)	Korshun (N/A), Korshun-2 (N/A)
Anti-tank guided missiles (2 model)	Stugna(N/A), Sarmat / Korsar (N/A)

Comparison of technical and tactical characteristics of anti-ship missiles across the world

Model	Manufacturing country	Year	Max range (km)	Max speed (Mach)	Length (m)	Diameter (m)	Weight (kg)	Warhead weight (kg)	Guidance system
Neptune	Ukraine	2020	280	0.9	5.05	0.38	870	150	Inertial navigation system (INS), GPS, active radar homing (ARH)
Harpoon	USA	1980	280	0.9	3.84	0.34	667	225	INS, ARH/IR
Naval Strike Missile	Norway	2007	185	0.95	3.95	0.32	410	125	INS, GPS, IR
Sea Eagle	Great Britain	1985	110	0.95	4.1	0.4	600	230	INS, ARH
RBS-15	Sweden	1985	250	0.95	4.33	0.5	800	200	INS, GPS, ARH
ASM-1	Japan	1980	65	0.9	4	0.35	600	150	INS, ARH
X-35	russia	1995	300	0.85	4.4	0.42	600	145	INS, ARH/IR
X-22	russia	1968	600	3.5-4.6	11.67	0.92	5 780	1 000	INS, ARH
P-800 Oniks	russia	2002	120, 300, 500	2.6	8	0.67	3 000	300	INS, ARH
AS.34 Kormoran	Germany	1976	30	0.9	4.4	0.34	660	160	INS, ARH

Conclusions

- ▶ russia, being a country with geopolitical ambitions, will always present a threat to Ukraine, so the national security of our country must be built with consideration for the military and economic strength of the aggressor country
- ▶ to confront such a country as russia, the armed forces of Ukraine must have proportional in quantity and the best in quality WME as those used by services and branches of the armed forces existing in russia or have asymmetric strategies and tactics, and corresponding types of WME
- ▶ to conduct a large-scale war with russia, Ukraine must have sufficient state stocks of WME and ammunition
- ▶ the defense-industrial complex of Ukraine, instead of producing the latest weapons, during the years of independence was engaged in the sale of stockpiles of weapons inherited after the distribution of the legacy of the former Soviet Union
- ▶ Ukraine has managed to stop the invader that outperforms it both in terms of military power and economic potential, due to the following factors:
 - ▶ russia is conducting the war to a greater extent using the 2nd generation strategies with the 6th generation elements, while Ukraine – the 4th generation;
 - ▶ Ukraine has significant military and financial support from most countries of the world;
 - ▶ the courage of the Ukrainians, the experience the Ukrainian soldiers gained since 2014, the professionalism of the leadership of the Armed Forces of Ukraine has made it possible to resist the aggressor country

Delphi analysis of the Ukrainian military-industrial complex clusters necessary for asymmetric deterrence against an external aggression over the time horizon until 2030

№	Military-industrial complex clusters	Assessment of the priority of the contribution to Ukraine's security	Time interval of cluster growth (years)
1	Ukraine's missile program, precision weapons, anti-ship missile systems	6.79	2021-2025
2	Systems of electronic warfare, electronic reconnaissance, air defense	6.58	2021-2030
3	Unmanned aerial, land and sea vehicles (reconnaissance and strike drones)	6.50	2021-2030
4	Unified automated system for managing the national security, technologies for automated military command and control	6.25	2021-2030
5	Space reconnaissance facilities (satellite constellation)	6.00	2021-2030
6	Precision anti-tank defense systems, precision small arms	5.75	2021-2025
7	Mosquito fleet of small warships	5.50	2021-2030
8	Mobile armored vehicles for general purposes	3.50	2021-2025
9	Transport aircraft and attack helicopters	3.50	2021-2025
10	Production of gunpowder, ammunition, cartridges, shells	3.50	2021-2025

Assessment of the ways to provide Ukraine's Armed Forces with the main types of WME

Types of WME	Ways of provision				
	Production (modernization) at enterprises of the Ukrainian military-industrial complex	Participation in cooperative projects for WME development	Deployment of domestic production, incl. under license	Purchase of weapons abroad, incl. offset and leasing	Search for alternative ways to compensate the need for WME, incl. unconventional or asymmetric ones
Armored fighting vehicles	0.4915	0.1099	0.2505	0.0703	0.0775
Self-propelled guns	0.4377	0.1962	0.2239	0.0827	0.0592
Multiple rocket launchers	0.175	0.1263	0.1284	0.2702	0.2909
Small arms, RPGs, etc.	0.1698	0.2433	0.2353	0.3196	0.0517
Missiles, ammunition	0.1961	0.2068	0.1663	0.3919	0.0386
Precision weapons (ground-based)	0.523	0.1250	0.2530	0.0678	0.0309
Precision weapons (air-based)	0.3541	0.3387	0.1949	0.0714	0.0407
Air defense systems	0.0719	0.2855	0.3639	0.2022	0.0763
Combat aircraft	0.4371	0.1816	0.0956	0.1784	0.1071
Attack helicopters	0.2046	0.2804	0.0970	0.1947	0.2230
UAVs	0.1609	0.2317	0.1444	0.3923	0.0705
Warships	0.0718	0.5303	0.0752	0.2118	0.1106

Proposals

- ▶ In order to oppose Russia, Ukraine must enter into at least one military and economic alliance with other countries in Europe and the world.
- ▶ Ukraine must have a strong diversified defense-industrial complex, which will produce its own competitive WME independently and jointly with other European and world countries or under licenses from foreign manufacturers.
- ▶ Ukraine's Armed Forces must have such a structure of their services and branches that would allow them to withstand threats from the Russian armed forces or asymmetric types of WME that would make it possible to conduct the 2nd, 3rd and 6th generation war.

**THANK YOU FOR YOUR
ATTENTION!**

