

Ukraine: European democracy's affordable arsenal

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Executive summary

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EUROPEAN NATO MEMBERS must raise defence spending by enough to deter through strength an irredentist Russia. This must be done possibly without the United States and when ageing populations demand higher social spending. Raising defence spending to sufficient levels could result in a doubling of current primary deficits to just over 3 percent of GDP on average. This seems likely to be a fiscally unattainable goal for this group of countries.

IN ADDITION TO their quantitative defence spending challenge, European NATO members face the qualitative challenge of significantly increasing their outlays on new modern military equipment, especially drones, to credibly deter Russia. This will require all European NATO members to significantly increase investments in their domestic and regional military-industrial capacities.

WHILE ITS ARMED FORCES are physically defending their country against Russia's onslaught, Ukraine is transforming gradually into a very large, advanced and cost-competitive military equipment and weapons producer. Through the so-called 'Danish Model', individual European Union and NATO members are already actively funding Ukrainian defence production, helping it to help itself against Russia.

MUCH MORE FOCUS should be put on Ukraine's ability, if fully integrated with the military-industrial sector in the rest of Europe, to produce much of the modern military equipment wanted by itself and the rest of Europe. This Policy Brief shows how Ukraine already produces drones and modern howitzers, arguably the two most important weapons in defensive warfare today, at prices well below those achieved by other Western military suppliers.

THE EU, with a fully integrated and funded Ukrainian military-industrial sector, will have the capacity to produce much of the cost-competitive military equipment it will need in future, while continuing to fund its welfare systems. To facilitate this development, the EU must in all defence and military-related matters begin treating Ukraine immediately as a full EU member.



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1 Europe's guns versus butter challenge

The peace-dividend era that started in the early 1990s is over

The reemergence of aggressive expansionist Russian imperialism to the European Union's east and the continuing reorientation of the United States's national security focus towards China makes significant and permanent increases in European defence expenditures inevitable. The peace-dividend era that started in the early 1990s is over. For an ageing continent justly proud of its high social spending levels, this new national security situation represents a permanent fiscal challenge in which existing public expenditures must be reallocated, or new government revenues must be found to pay for more defence spending or to finance the debt to pay for it – or more likely a combination of these, varying over time.

The ultimate scope of Europe's coming rearmament remains to be decided, but President Donald Trump has already increased his public demands from the previous 2 percent of GDP to 5 percent of GDP for NATO members¹. Given that defence spending in the United States itself was estimated by NATO to be 3.38 percent of GDP in 2024, this target appears implausible and excessive. However, NATO Secretary General Mark Rutte has suggested a future defence spending target of 3.7 percent of GDP².

Such an ambition, which would see European defence spending levels exceed those of the US as a share of GDP, would however pose a dramatic fiscal challenge for the majority of EU countries that are also NATO members³. Table 1 estimates the approximate economic costs for these countries to reach the 3.7 percent target tabled by Mark Rutte.

Only one EU and NATO member state – Poland – already spends over 3.7 percent on defence. Among the other 22 countries, the aggregate shortfall is just under 1.7 percent of GDP, or about €275 billion. Belgium, Italy, Luxembourg, Portugal, Slovenia and Spain face the largest relative spending challenges, each needing to increase defence spending by more than 2 percent of GDP to reach a 3.7 percent level – a task complicated in Belgium, Italy and Spain by high government debt levels. Lastly, Table 1 shows how defence spending equal to 3.7 percent of GDP would amount to nearly €600 billion annually for the 23 EU and NATO members.

This would compare to Russian expenditure of an estimated €120 billion in 2024, accounting for roughly one third of all Russian government spending⁴. While the EU NATO members will not approach the total current defence spending levels of the US, Europe as a whole (including non-EU NATO members) spending 3.7 percent of GDP should easily be able to provide a military deterrent to an expansionist Russia with a GDP of less than a tenth⁵ of Europe's. The incoming German government's proposal to change the German constitution to enable higher future defence spending is a strong move towards this outcome⁶.

1 Piero Cingari 'Trump at Davos: NATO 5% push, tariff warnings for Europe', *Euronews*, 23 January 2025, <https://www.euronews.com/business/2025/01/23/trump-at-davos-nato-5-push-tariff-warnings-for-europe>.

2 Rutte did not say explicitly how the level of 3.7 percent was reached, but said it was based on NATO internal planning around capability targets, and that NATO's present 2 percent defence spending target "is not nearly enough to stay safe in the years to come". Paula Soler, 'NATO's defence needs more than 3% GDP target, says Rutte', *Euronews*, 13 January 2025, <https://www.euronews.com/my-europe/2025/01/13/boosting-natos-defence-capabilities-means-going-beyond-3-target-says-rutte>.

3 The militarily insignificant neutral members of the EU – the three island nations of Ireland, Cyprus and Malta, plus Austria – would likely also face concerted intra-EU political pressures to increase their defence expenditures. This implicit peer pressure appears, for example, to be pushing Ireland to increase significantly its previously very low level of defence spending. Anthony Neeson 'Ireland Increasing Defense Spending', *Irish Echo*, 24 February 2025, <https://www.irishecho.com/2025/2/ireland-increasing-defense-spending>.

4 Robert Kagan, 'Trump is facing a catastrophic defeat in Ukraine', *The Atlantic*, 7 January 2025, <https://www.theatlantic.com/international/archive/2025/01/trump-putin-ukraine-russia-war/681228/>.

5 The International Monetary Fund estimated Russian GDP in 2024 to be \$2.2 trillion, while that of all European NATO members was just over \$23 trillion.

6 Jeromin Zettelmeyer, 'Can Germany afford to take most defence spending out of its debt brake?' *Analysis*, 10 March 2023, Bruegel.

Table 1: Defence expenditures of EU NATO members, 2024, and increases needed to reach a level of 3.7 percent⁷

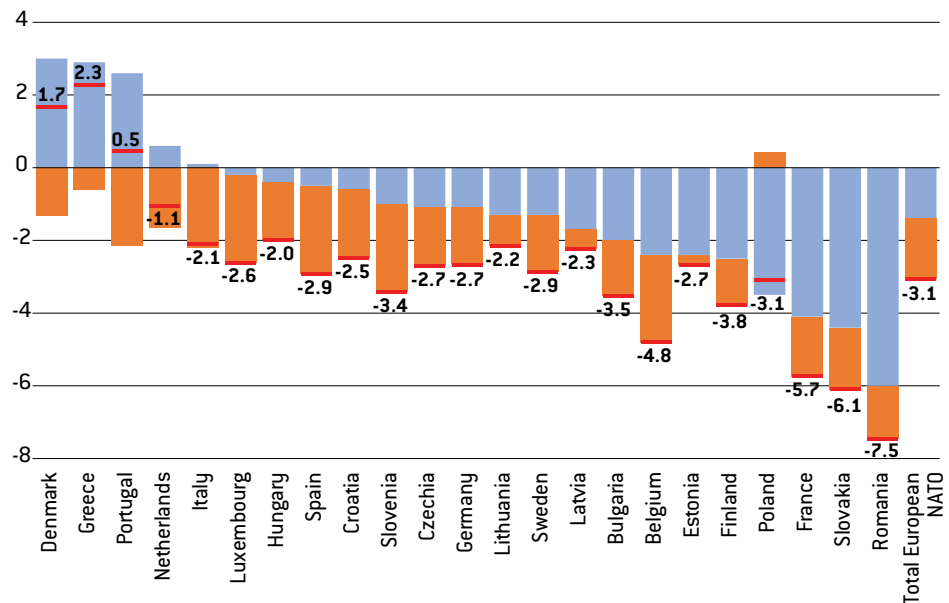
EU NATO member	2024 estimated defence expenditures % of GDP	% of GDP increase to reach 3.7% defence spending	Annual defence spend increase to reach 3.7%, € billions	Implied annual defence spending at 3.7% of 2023 GDP, € billions
Belgium	1.30	2.40	14.3	€ 22.1
Bulgaria	2.18	1.52	1.4	€ 3.5
Croatia	1.81	1.89	1.5	€ 2.9
Czechia	2.10	1.60	5.1	€ 11.7
Denmark	2.37	1.33	5.0	€ 13.9
Estonia	3.43	0.27	0.1	€ 1.4
Finland	2.41	1.29	3.5	€ 10.1
France	2.06	1.64	46.3	€ 104.4
Germany	2.12	1.58	66.1	€ 154.9
Greece	3.08	0.62	1.4	€ 8.3
Hungary	2.11	1.59	3.1	€ 7.3
Italy	1.49	2.21	47.0	€ 78.7
Latvia	3.15	0.55	0.2	€ 1.4
Lithuania	2.85	0.85	0.6	€ 2.7
Luxembourg	1.29	2.41	1.9	€ 2.9
Netherlands	2.05	1.65	17.6	€ 39.5
<i>Poland</i>	<i>4.12</i>	<i>-0.42</i>	<i>N/A</i>	<i>€ 27.7</i>
Portugal	1.55	2.15	5.7	€ 9.9
Romania	2.25	1.45	4.7	€ 12.0
Slovakia	2.00	1.70	2.1	€ 4.5
Slovenia	1.29	2.41	1.5	€ 2.4
Spain	1.28	2.42	36.3	€ 55.4
Sweden	2.14	1.56	8.4	€ 20.0
Total/weighted average	2.02	1.68	274.1	€ 597.9

Source: Bruegel based on NATO (2024) and Eurostat. Note: Poland is the only EU NATO member state currently spending above 3.7 percent of GDP on defence.

Reaching a 3.7 percent defence spending target would be a formidable challenge today for most EU NATO members. In 2024, only five are expected to run a primary surplus, and for the group as a whole, the GDP-weighted average primary deficit is estimated at 1.4 percent of GDP. This implies that an additional 1.7 percent increase in annual defence expenditures on average would more than double the projected 2024 primary deficit and drop it below 3 percent of regional GDP (Figure 1).

⁷ Table 1 does not include major non-EU European NATO members, including Norway and the United Kingdom. British defence spending in 2024 is estimated by NATO to be 2.33 percent of GDP, implying a required 1.4 percentage-point increase to reach 3.7 percent of GDP. This would increase the UK primary deficit from around 2 percent in 2024 to 3.4 percent of GDP. Given Norway's incredible oil and gas wealth, any defence-expenditure decision in Oslo is only constrained by the contemplation of what Norway actually accumulates all its fossil-fuel wealth for. If it is for instance to defend European democracy in Ukraine, Norway could of course spend virtually any amount it chose.

Figure 1: EU NATO members, primary balances 2024 and implied rise in defence spending to reach a 3.7 percent of GDP target



Source: Bruegel based on NATO (2024) and the European Commission's AMECO database. Note: the total given for 'European NATO' includes non-EU European NATO members; see footnote 4.

Only Denmark, Greece and Portugal (mechanically, without assuming any multiplier effects) would have been able in 2024 to spend 3.7 percent of GDP on defence without falling into a primary deficit. The Netherlands and Italy would both have recorded such deficits, while all other European NATO members would have seen theirs increase. In other words, the fiscal challenge of meeting a 3.7 percent defence spending goal will be immense for European NATO members.

Nevertheless, Poland (Figure 1) shows how political choices matter. Poland has scope to reduce its defence spending marginally to 3.7 percent, and it would have a primary deficit of 3.1 percent of GDP, or precisely the primary deficit level European NATO members would have on average if defence spending in 2024 had been 3.7 percent. Poland (one of the EU's fastest-growing economies) shows it can be done, even with high resulting primary deficits.

Following a decision in early March 2025 by EU leaders favouring flexible application of the EU debt framework⁸, it is clear that European fiscal rules will not prove an obstacle for a very large increase in defence spending by EU countries. However, national debt-sustainability concerns and other political priorities might still make the path to a 3.7 percent of GDP spending level very difficult.

The EU's best chance of delivering an independent military deterrent against Russia from its necessarily fiscally cost-conscious rearmament will be to maximise the integration of Ukraine's military-industrial sector into the coming European weapons surge. Ukraine offers world-leading drone technology at rock-bottom prices and the scalability in arms production Europe will need. Some EU countries are already actively supporting the expansion of Ukraine's military industrial sector, and others should follow the example.

In the next section, we examine the composition of EU countries' defence spending and how the EU should not just spend more on defence, but must spend better. In section 3, we assess Ukrainian defence production, before concluding with recommendations in section 4.

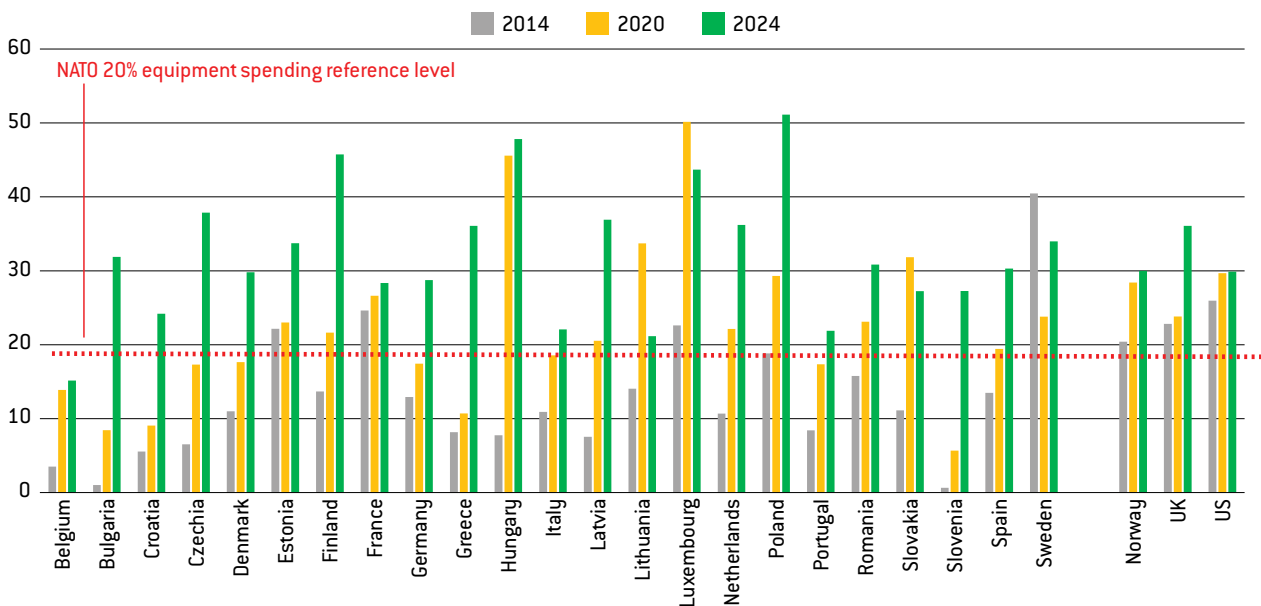
⁸ Technically, activation of the national escape clause under the Stability and Growth Pact (SGP). See Council Conclusions of 6 March 2025, <https://www.consilium.europa.eu/media/tzkadtec/20250306-european-council-conclusions-en.pdf>. This temporary measure may also lead to a general reform of the SGP, aimed at permanently exempting defence spending from its deficit rules.

2 Europe's defence-spending quality challenge

Even rapidly increasing European defence expenditure with just more money may not result in a corresponding increase in actual military deterrence against Russia. NATO (2024) defined defence expenditure as essentially defence ministries budgets, adding relevant military training expenditures on 'other forces' including border forces/officials, national police forces, gendarmerie, carabinieri and coast guards. The pension costs of retired military personnel are also included, as are the costs of peacekeeping and humanitarian operations and military related infrastructure.

Consequently, personnel costs are typically the largest component of overall defence expenditures, while military infrastructure distributed across bases and garrisons in many localities in a given NATO member (taking on a functional character of regional development aid through the defence budget) often also accounts for a large part of total expenditure. Consequently, spending on weapons, other equipment and related military research and development has often accounted for a relatively limited share of European NATO members' total defence expenditures. Until recently, few European NATO members met the NATO reference level of a 20 percent share of total defence expenditure going towards equipment and military R&D (Figure 2).

Figure 2: Selected NATO members, spending on military equipment as a share of total defence expenditure



Source: Bruegel based on NATO (2024). Note: 2024 values are estimated.

Figure 2 illustrates that while in 2024 all European NATO members – bar Belgium – were estimated to have exceeded NATO's 20 percent equipment purchase reference level, the earlier inability to do so highlights the political difficulty in sustaining such high shares of defence spending on equipment.

In the coming years, European NATO members will need to invest more to replace the military equipment donated to Ukraine since 2022, and in general to renew and expand military forces that often rely on increasingly obsolete equipment. This need is amplified by the ongoing drone-driven revolution in peer-to-peer warfare unfolding in Ukraine (eg Watling

and Reynolds, 2025). The speed of development of new drone-based weapons systems that dominate fighting today underscores the need for European NATO members to also invest heavily in developing and producing at scale an entirely new category of weapons.

Demographic changes across Europe resulting in smaller cohorts of military-age people⁹ will invariably make recruitment efforts more difficult. The principal qualitative defence spending challenge for European NATO members will thus be to finance ongoing heavy investment in the right new lethal military equipment. Deterrence of Russia through large Cold-War-style mobilisation-based armies¹⁰ will not be feasible. Europe though does have the advantage of already possessing a nuclear deterrent in France and the United Kingdom¹¹, which with updates to decision-making institutions could be out at the service of all of Europe.

Europe's increased future reliance on newly-equipped, less manpower-intensive military forces poses major military-industrial challenges – as also illustrated by the severe difficulties faced by EU members since 2022 in providing timely military assistance to Ukraine at the promised scale. Europe is not unique in this regard; the US also faces an urgent need to refurbish its military industrial capacity to modern peer-to-peer warfare, though arguably decades of inadequate military equipment purchases have left Europe in a worse situation (Wolff *et al*, 2024).

There is an urgent need for additional military R&D, production integration, procurement coordination and standardisation in the European defence industry to ensure that Europe's defence industrial sector is not just viable and productive, but able to deliver the weapons needed to deter Russia and other adversaries (Draghi, 2024). The political importance granted to this issue in the EU has been shown by EU-level initiatives the European Defence Industrial Strategy (EDIS) and the European Defence Industry Programme¹², and was underlined by the conclusions of the March 2025 European Council meeting¹³.

3 Ukraine as Europe's arsenal

Fortuitously for the EU, a new major European defence industrial player is emerging: Ukraine, once home to large parts of the Soviet Union's advanced weapons production. Driven by the urgency of compensating for depleted Soviet-era weapons stockpiles, inadequate Western military aid and the need to sidestep often shackling Western restrictions on striking targets deep inside Russia, Ukraine has had to rapidly expand its domestic weapons industry. It has done so at astonishing speed, relying extensively on new entrepreneurial military producers, noticeably in drone production. Russia continues to rely heavily on weapons production by large state-owned companies (Stepanenko, 2024), and so the Russia-Ukraine conflict is also a contest between different military production systems.

Ukraine has since late 2023 through its Brave1 initiative provided extensive funding and

9 The deliberate decision by Ukraine, despite acute manpower shortages, to not mobilise men under the age of 25, but instead to rely overwhelmingly on older soldiers, reflects an acute awareness of this manpower issue. Instead, Ukraine has recently begun to offer 18 to 25 year olds voluntary military contracts on attractive terms.

10 Europe is currently in a weak military position, but as Russia is a dramatically weaker economy and military opponent than the Soviet Union was in any prolonged standoff or arms race, it would be excessive for Europe to pursue overall military rearmament to 'get back' to Cold-War levels.

11 This is in contrast with Asian democracies, which do not possess nuclear weapons, but are entirely dependent on the US nuclear umbrella in any standoff with China.

12 See European Commission, 'EDIS | Our common defence industrial strategy', undated, https://defence-industry-space.ec.europa.eu/eu-defence-industry/edis-our-common-defence-industrial-strategy_en, and 'EDIP | The Future of Defence', undated, https://defence-industry-space.ec.europa.eu/eu-defence-industry/edip-future-defence_en.

13 See footnote 8.

Ukrainian production costs for FPV drones are astonishingly low by Western standards

logistical support for Ukrainian defence-production related startup companies¹⁴. In 2024, Ukraine produced domestically 96 percent of the drones used by its forces in the war – over 1.5 million – and will in 2025 aim to increase domestic production to 4 million small first-person view (FPV) and kamikaze drones¹⁵. In addition, the domestic production of 30,000 long-range strike drones is planned, alongside up to 3,000 long-range drone-missiles and cruise missiles¹⁶. These include, for instance, the domestically designed and produced Peklo missile-drone, a low-cost hybrid alternative to Western cruise missiles with a range of up to 700 kilometres and a speed of up to 700 km/hour.

Ukrainian production costs for FPV drones are currently estimated at around \$500/unit¹⁷. This is an astonishingly low cost by Western standards: implied production costs related to a January 2025 initiative of the Drone Capability Coalition (comprising the UK, Denmark, Netherlands, Latvia and Sweden) to ship 30,000 FPV drones to Ukraine are €1800/unit (total budget of about €54 million)¹⁸, though it is unclear whether this contract will see drones actually arrive at the front at this price point. While care should be taken in directly comparing the capabilities of Ukrainian FPV drones and Western produced drones, €1800 per Western drone would be a paradigm shift compared to alternative US-produced drones (presumably without any Chinese components in them). US costs are estimated to range from the low to high tens of thousands of dollars, while the Pentagon Inspector General in late 2024 estimated the unit cost of US Switchblade 300 drones supplied to Ukraine was \$78,369. In short, Ukraine remains the cost competitive FPV drone producer (Inspector General, 2024).

Ukraine's scale-up of drone production and other aspects of weapons production at very low cost is partly a function of technological innovation and partly a function of Ukraine's embrace of the use of commercially available parts in weapons manufacturing. Integrating far cheaper, adequate and commercially available parts and materials is a key competence with far-reaching cost-cutting potential in Ukrainian wartime arms manufacturing. It contrasts with the frequent cost-type development and procurement contracts that peacetime NATO governments enter into when procuring new weapons.

Under these deals, governments agree to pay 'permissible costs' for new weapons programmes, and as such absorb part of the development and production risk associated with cost overruns and, especially, the risk of delayed weapons development. Poorly designed cost-type contracts can provide arms manufacturers with financial incentives to develop very good, but perhaps excessively costly weapons, not always developed according to the expected timetable¹⁹. This is a luxury Ukraine at war demonstratively does not have, and one that cash-constrained EU governments with welfare states to finance might also not have in the future.

Individual NATO members have begun to support Ukraine's domestic arms production

14 See <https://brave1.gov.ua/>.

15 Abby Fenbert, 'Ukrainian drones made up over 96% of UAVs military used in 2024, defense minister says', *The Kyiv Independent*, 28 December 2024, <https://kyivindependent.com/ukrainian-drones-made-up-over-96-of-uavs-military-used-in-2024-defense-minister-says>; Olena Harmash, 'Ukraine ramps up arms production, can produce 4 million drones a year, Zelenskiy says', *Reuters*, 2 October 2024, <https://www.reuters.com/world/europe/ukraine-ramps-up-arms-production-can-produce-4-million-drones-year-zelenskiy-2024-10-02/>.

16 Olena Mukhina, 'Ukraine aims to set record in drone production in 2025, says Zelenskiy', *Euromaidan Press*, 9 January 2025, <https://euromaidanpress.com/2025/01/09/ukraine-aims-to-set-record-in-drone-production-in-2025-says-zelenskiy/>.

17 David Hambling, 'Coalition Sends 30,000 Kamikaze Drones To Ukraine', *Forbes*, 10 January 2025, <https://www.forbes.com/sites/davidhambling/2025/01/10/coalition-sends-30000-kamikaze-drones-to-ukraine/>.

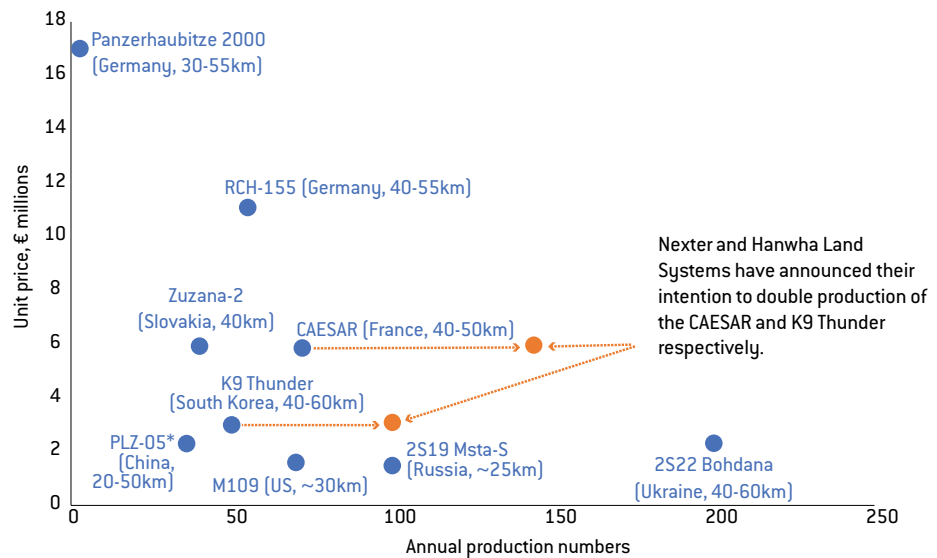
18 See UK government press release of 9 January 2025, '30,000 new drones for Ukraine in boost to European security', <https://www.gov.uk/government/news/30000-new-drones-for-ukraine-in-boost-to-european-security>.

19 Some research from the United States however (GAO, 2020) finds that the choice between cost-type and fixed-price development and procurement contracts does not affect project cost or scheduling outcomes.

directly. Denmark, Norway, Sweden, Lithuania and Iceland and the EU²⁰ have on a bilateral basis in line with the so-called ‘Danish Model’²¹ earmarked Western financial assistance (including from proceeds from frozen Russian assets) for the procurement of weapons produced in Ukraine for the Ukrainian armed forces. This model, implemented initially to produce Ukrainian 155mm Bohdana 2S22 howitzers, ensures fast equipment delivery, low-cost production and training and maintenance capacity close to the frontlines.

Bohdana 2S22 production has already been scaled up in Ukraine through Danish Model donations to approximately 16 per month, or almost 200 units annually, at a unit price of about €2.3 million (Clavilier and Gjerstad, 2025). This makes the Bohdana 2S22 both the cheapest modern long-range, self-propelled howitzer produced today among Western nations. It is price competitive with even less-sophisticated shorter-range Russian 2S19 Msta-S weapons systems. While current production numbers for the Chinese PLZ-05 (broadly equivalent to the Bohdana in range) are not known, it is noteworthy that the Bohdana unit price is comparable with Chinese weapons, and older, less-sophisticated and shorter-range self-propelled howitzers from both Russia and the United States. Replicating the insights from Mejino-Lopez and Wolff (2024), Figure 3 shows estimated price, range and production runs in 2024 of comparable self-propelled howitzers²².

Figure 3: Prices per unit, annual production and range of self-propelled howitzers, 2024



Source: Bruegel based on [Weaponssystem.net](https://www.weaponssystem.net); Illia Kabachynskyi ‘CAESAR, K9, Panzerhaubitze 2000: What Do the World’s Top Artillery Systems Cost?’ *United24Media*, 25 November 2024, <https://united24media.com/war-in-ukraine/caesar-k9-panzerhaubitze-2000-what-do-the-worlds-top-artillery-systems-cost-3994>. * Current annual production numbers for the PLZ-05 used only in the PLA are not public. Data refers to average annual production from 2005-2013.

- 20 Kateryna Hodunova, ‘Denmark, Norway to buy \$183 million in arms for Kyiv from Ukrainian manufacturers in 2025’, *The Kyiv Independent*, 9 January 2025, <https://kyivindependent.com/denmark-norway-expected-to-purchase-weapons-worth-183-million-from-ukrainian-manufacturers-in-2025/>.
- 21 See Ministry of Defence of Ukraine news of 9 January 2025, ‘Results of the ‘Danish Model’ of support for Ukraine’s defense industry in 2024: The Armed Forces of Ukraine received weapons valued at nearly €538 million’, <https://mod.gov.ua/en/news/results-of-the-danish-model-of-support-for-ukraine-s-defense-industry-in-2024-the-armed-forces-of-ukraine-received-weapons-valued-at-nearly-538-million>.
- 22 France’s Nexter and South Korea’s Hanwha Land Systems (Figure 3) have announced dramatic increases in production numbers for the CAESAR and K9 Thunder respectively. This is likely to lower costs for these systems. Ukraine’s 2S22 Bohdana though is likely to remain the cheapest offering, achieved though Ukraine’s low cost base and the high production numbers for the Bohdana, secured partly through direct funding from EU members through the Danish model.

Through the Danish Model and other initiatives, a number of European NATO members are thus already actively supporting financially the expansion of Ukraine's military-industrial capacity. A similar development has taken place at the corporate level, with a number of Europe's leading defence producers, including KNDS and Rheinmetall, setting up maintenance and increasingly also weapons-production facilities inside Ukraine²³. France's Thales, meanwhile, has established a joint venture with Ukraine's Ukroboronprom to develop and produce air defence, radar systems, electronic warfare, tactical communications and electro-optical systems²⁴. And Germany's Diehl Defence intends to begin air defence systems projects in Ukraine²⁵. The expansion of Ukraine's military-industrial sector and its integration with that of the rest of Europe is in other words ongoing and is actively supported by European governments.

While the ultimate outcome of the war in Ukraine cannot be foreseen, it is clear that in any post-war scenario in which Ukraine survives as a wholly independent state in control of most of its 1991 territory, it will likely remain Europe's biggest weapons producer. This is a direct function of the likely scale of Ukraine's post-war standing army (certain to be the EU's largest, because of the proximity to Russia), which will need a sizable domestic military-industrial supply. But it could also be directly derived from Ukraine's ongoing integration and ultimately full entry into the EU, should that proceed, and then its status as the EU's most cost-competitive location for the production of much, if not most, of Europe's critically needed military equipment.

Ukraine is and will remain a considerably poorer country than any EU member, even if high economic growth rates can be expected during a period of post-war reconstruction and full EU accession (Darvas *et al*, 2024). Thus, Ukraine has – and will continue to have for a prolonged period – considerably lower investment and wage costs (Figures 4 and 5) than any EU member. In arms production, post-war Ukraine will in other words have both scale and low costs, plus unrivalled recent military experience and what seems likely to be among the most innovative domestic military industries in the world.

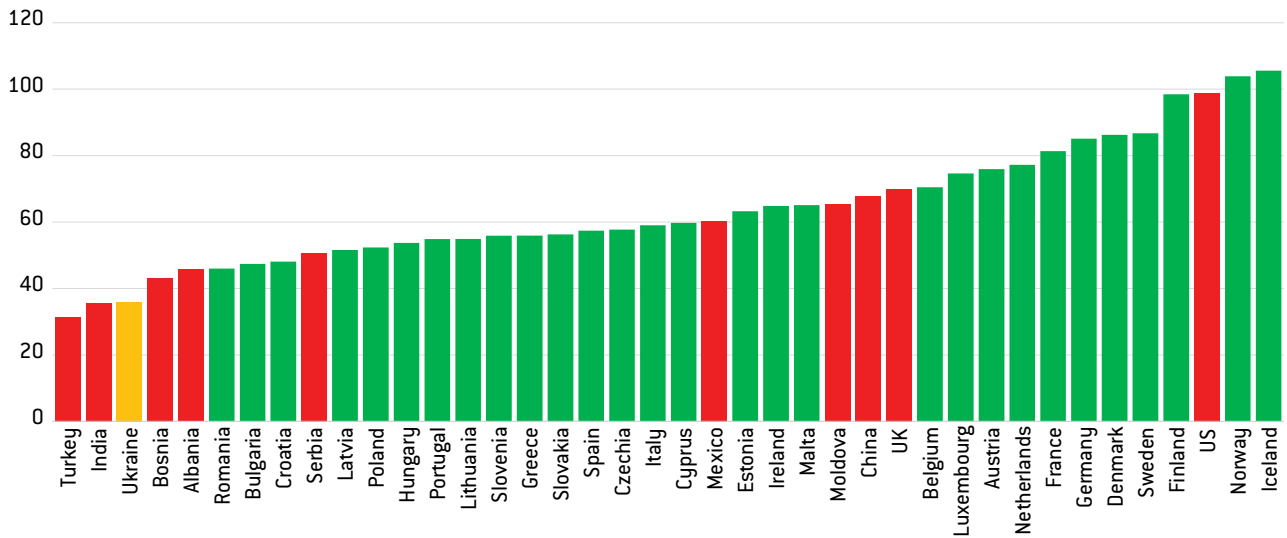
At a corporate level, post-war Ukraine is consequently likely to prove a very attractive investment location for European defence contractors.

23 See KNDS press release of 1 October 2024, 'Ukrainian Subsidiary of Armaments Group KNDS Opened', <https://www.knds.com/newsroom/press-releases/detail/ukrainian-subsidiary-of-armaments-group-knds-opened/>, and Rheinmetall news of 20 July 2023, 'Rheinmetall: A powerful partner at Ukraine's side', <https://www.rheinmetall.com/en/media/stories/2023/rheinmetall-a-powerful-partner-at-ukraine-side>.

24 Defence Industry Europe, 'Ukrainian Defense Industry (UDI) and Thales to establish joint venture', 15 February 2025, <https://defence-industry.eu/ukrainian-defense-industry-udi-and-thales-to-establish-joint-venture/>.

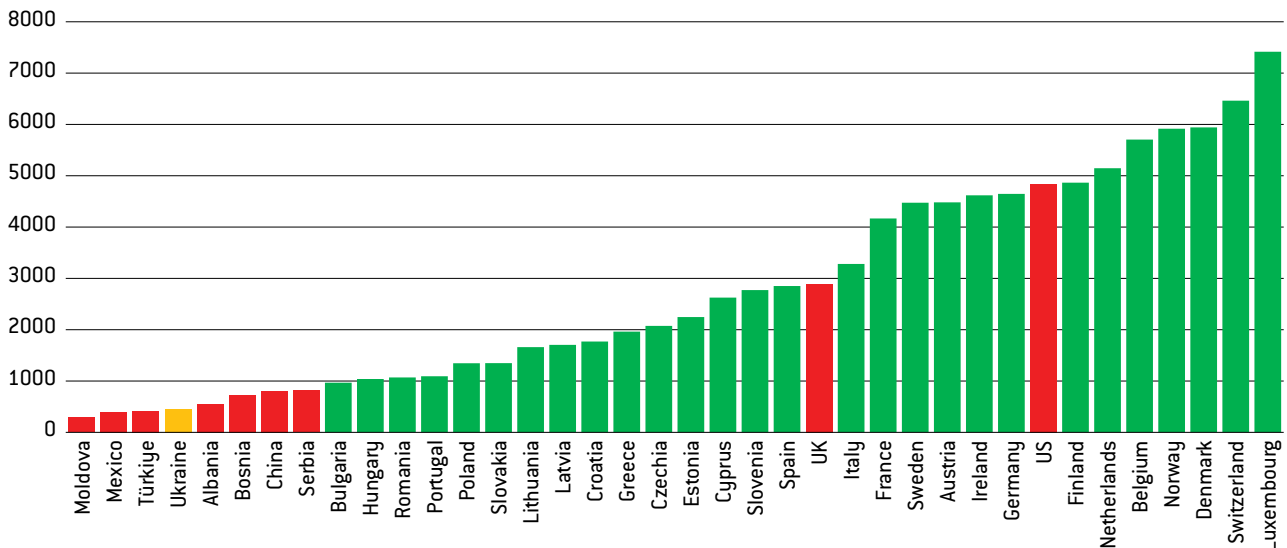
25 RBC Ukraine, 'Ukraine signs key defense memorandum with IRIS-T manufacturer', 9 March 2025, <https://newsukraine.rbc.ua/news/ukraine-signs-key-defense-memorandum-with-1741550412.html>.

Figure 4: Cost of investments, 2019, US 2017 = 100



Source: Bruegel based on Penn World Tables 10.1. Note: cost of investment is shown in price level of capital formation.

Figure 5: Average monthly wage 2022, US\$



Source: Bruegel based on ILO.

For other EU governments, looking to meet a potential NATO defence-spending target that could be around the level of 3.7 percent, and to equip their armed forces with modern weaponry at a fiscally affordable cost and produced to the greatest extent possible inside the EU, relying on Ukraine as a future military production platform will increase their purchasing power. Full integration of lower-cost Ukrainian production locations into the corporate structures and pan-EU supply chains of the EU's major arms producers will also offer these companies improved profitability and global competitiveness.

This is particularly the case as the political economy of the huge US defence budget requires that virtually all such appropriations for US military-equipment procurement must be spent and the equipment produced in the US. This will likely make it harder for the largest US arms producers from fully establishing themselves with production locations at scale in Ukraine, even if they look likely to acquire a number of Ukrainian defence startups.

US arms producers must constantly ensure that their (costly) production generates the

domestic jobs in the United States to help justify the size of the US defence budget. They will consequently find it difficult to exploit fully the lower-cost weapons-production opportunities offered by Ukraine. Following the March 2025 stop in US weapons supply and intelligence-sharing with Ukraine, these issues for US arms producers may be compounded by a perceived loss of trustworthiness of US weapons among European governments. None will want to risk that future US administrations might – as with Ukraine today – deny them the full freedom of use against Russian forces. This lack of trust in future US arms supplies (traditionally a key component of European military equipment purchases) further underlines the need for Europe to achieve the scale in arms production that Ukraine can facilitate.

Jobs and control over critical military technology are always important political issues, though Ukraine's future role as the EU's (and non-EU NATO's) ultimate security guarantee against renewed Russian aggression should encourage other EU governments to share their most advanced relevant technology with Ukraine. Jobs on the other hand tend to be zero-sum – scaled up weapons-production facilities are either built in a jurisdiction or they are not. EU countries will have to accept that if they wish to benefit from the lower prices provided by a fully-integrated Ukrainian defence sector in the EU, a big chunk of all the EU's future arsenal will have to be built in Ukraine.

A fully-integrated EU internal market in defence equipment facilitated by EU competition policy exemptions (as called for by Draghi, 2024) will see market forces shift towards Ukraine and make it the principal weapons production location in an enlarged EU. This will help rebuild the Ukrainian economy, and help restore the cost-competitive military-industrial capacity of the entire EU, and with it Europe's military deterrence against Russia. It will, however, also see fewer defence-sector jobs created in the rest of the EU than might have otherwise been created as a result of higher defence spending. This is a policy trade-off EU countries should be conscious of, but should embrace for their own security.

4 What must Europe do next?

As the early March 2025 as above in US arms supplies and intelligence sharing with Ukraine have cast doubts about the fundamental trustworthiness of the United States as an ally of Ukraine and as the anchor of NATO security provision in any conflict with Russia, the importance of ever closer EU and Ukrainian collaboration has increased. As US military supplies and intelligence for the war dry up, Ukraine's reliance on rising European financial and military support will increase correspondingly, as does the EU's immediate dependency on Ukraine for current military deterrence of Russia, with American support via NATO in doubt. The EU and Ukraine need each other; Ukraine must survive Russia's onslaught and the EU must find an affordable path to rearmament.

The rapid emergence of Ukraine as a large-scale, innovative and low-cost defence producer will help facilitate the need EU countries have to balance future rising defence expenditures with other urgent spending priorities. The implementation of the Danish Model, in which EU members and other allied governments directly fund the production of weaponry for Ukrainian frontline forces at Ukrainian production locations, is already helping expand Ukraine's production capacity.

Successful integration of the EU's military industrial sectors (Draghi, 2024), will enable all of an enlarged EU, including Ukraine, to take full advantage of the future lower-cost military production capabilities of Ukraine, also after the end of Russia's invasion.

Fiscally necessary relentless pursuit of cost-conscious weapons procurement, technical experience and scale will see market forces and commercial logic push a large share of the EU's future total military industrial capacity to locate in Ukraine. This will be good for Ukraine's

reconstruction and long-term security, good for EU taxpayers and good for all of Europe's military deterrence.

The outlook for the war in Ukraine remains uncertain, though peace remains unlikely in the near term and Ukraine's prospects for NATO membership are similarly elusive. For the EU and other European NATO members to sustainably strengthen their independent military deterrence against Russia, for Ukraine to remain safe from future renewed Russian attacks and for all of Europe to benefit fully from the wartime innovation undertaken in Ukraine since February 2022, EU and European NATO members should take four urgent steps:

1. The Danish Model has shown its scalability and must be fully applied to produce the weapons Ukraine needs today and Europe will need in the future. EU and other European NATO members must provide immediately the necessary funding to ensure that Ukraine's weapons producers can operate at a 100 percent capacity utilisation rate. Europe cannot afford to leave any part of its most cost-efficient military producer idle at this time. According to Ukrainian estimates, full capacity utilisation will in 2025 require an additional €18 billion in funding on top of the currently allocated €16 billion²⁶. Additional European funding of Ukrainian weapons production of this rough magnitude must be agreed urgently in the coming weeks.
2. Ukraine will be the cornerstone of Europe's future military deterrence capability, whether in or outside NATO. Consequently, and also reflecting Ukraine's likely accelerated gradual entry into the EU, Ukraine should be immediately invited to participate fully in all the EU's embryonic defence and defence-industrial-related institutions. These include, but may not be limited to, the European Defence Industrial Strategy, the European Defence Fund, the Act in Support of Ammunition Production (Regulation (EU) 2023/1525), the European Defence Industry Reinforcement through common Procurement Act (Regulation (EU) 2023/2418) and the European Defence Industry Programme. In short, in defence and military-industrial terms, the EU should immediately begin treating Ukraine as a full member.
3. Following on from the previous point, there should be no distinction between buying European/investing in the European defence sector and buying Ukrainian/investing in the Ukrainian defence sector. Ukraine should for defence procurement and investment purposes already be treated as a full EU member.
4. Ukraine will, through the establishment and upkeep of a large standing army, including after the current war with Russia, provide a material part of Europe's future military deterrence of Russia. There should thus be no legal limitations on the sharing of the most advanced European military technology with Ukrainian public and private entities. This will require adapting relevant EU, and first and foremost EU-country, technology export and transfer control rules. It will also require Ukraine to lift any regulatory barriers on arms, parts and technology-sharing with relevant EU entities.

26 Ministry of Defence of Ukraine news of 22 January 2025, 'Rustem Umerov: Supporting Ukraine's defense production is a strategic contribution to Europe's security', <https://mod.gov.ua/en/news/rustem-umerov-supporting-ukraine-s-defense-production-is-a-strategic-contribution-to-europe-s-security>.

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