



Defense Sitters

Transforming European Militaries in Times of War

Special Edition of the Munich Security Report on European Defense

June 2023

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Foreword



Christoph Heusgen

Dear Reader,

20 years ago, I was working in Brussels with then-EU High Representative Javier Solana. Under his leadership, we drafted the Union's first-ever security strategy entitled "A Secure Europe in a Better World." Today, the situation is entirely different. Faced with Russia's brutal war against Ukraine, Europe is no longer secure. We no longer have the luxury to prepare for a better world. We must prepare for an era of fierce geopolitical competition where the rules-based international order is under constant attack by autocratic revisionists, as the 2023 Munich Security Report details.

When introducing our last European Defense Report in 2017, my esteemed colleague and predecessor Wolfgang Ischinger wrote that "now is the moment to develop Europe as a much more credible security actor." The report called for higher, smarter, and more joint European spending on defense. What was true then, is even more pertinent now.

Putin's war against Ukraine shows just how dependent we Europeans still are on our American friends. Without their substantial military assistance to Ukraine, Russian troops would already stand at the Polish border. Without the US security guarantee, Putin would probably not stop there.

We cannot simply keep relying on the US when it comes to security on our own continent. Sooner or later, the US will shift its attention to the Indo-Pacific. They will rightly expect us to provide Ukraine with the support it needs and to take care of our own self-defense. These are two sides of the same coin. Ukraine is defending our freedom and we must do everything in our power to make sure that freedom is better equipped than tyranny.

Foremost, we need to do our homework and invest more in our security. After Russia's first invasion of Ukraine, all NATO Allies agreed to spend two percent of their GDPs on defense by 2024. It is unacceptable that in 2022, only five EU member states met this goal. It is good news that 20 of them have announced spending increases since February 2022. However, the proof of the pudding will be in the eating. Some European countries, including my own, are already falling behind their promises. Increased spending will be key for a stronger European pillar in NATO.

This pillar needs to rest on a robust and cohesive defense industrial base. Our 2017 European Defense Report already deplored the high degree of fragmentation in Europe and the vast opportunity costs this entails. Uncoordinated national spending increases now even risk exacerbating Europe's defense industrial fragmentation. The sense of urgency and rise in demand triggered by the Russian war against Ukraine has led many Europeans to buy equipment off-the-shelf and abroad. While this is understandable, it will also lead to inefficiencies and create new dependencies in the medium- to long-term. We need to strike a better balance between the need for speed and a sustainable European defense industrial and technological base.

This dilemma comes on top of well-known obstacles to European defense cooperation. They include a lack of political leadership, parochial industrial interests, a lack of standardization, and a patchwork of national arms control regulations. At the European Defense Roundtable we hosted at this year's Munich Security Conference, the message was clear: we all know these obstacles by heart. We have to use this transformative moment to finally move past them.

We have missed too many wake-up calls in the past. These include the supposed “hour of Europe” in the Balkan wars in the 1990s, the 2014 Russian invasion of Ukraine, and the disastrous withdrawal from Afghanistan in 2021 when we Europeans had to rely on our American friends to evacuate our own citizens.

This time has to be different because the threat to the security of Europe has never been greater since the end of the Cold War. If a brutal war of territorial conquest launched by a member of the UN Security Council on European soil will not transform European defense, what will? And yet, we are still sitting on the fence. While we have accepted that the status quo ante is no longer tenable, we have not acted decisively enough to truly transform European defense to allow us to provide Ukraine with what it needs for the long term and defend ourselves in a potential future war.

This report represents a contribution to achieving this aim. It highlights positive developments in European defense seen in the wake of the Russian invasion of Ukraine, including the announced spending increases and innovative initiatives to procure and ramp up production together. Europeans now have to up and meet their spending promises, learn the lessons from the Ukrainian battlefields, push for EU-NATO cooperation from the bottom up, scale up EU initiatives, and embark on an ambitious path toward a single market for defense.

I very much hope that you find this report a useful read!

Ambassador Dr. Christoph Heusgen
Chairman of the Munich Security Conference



Executive Summary

European defense has come a long way since February 2022 – but nowhere near far enough given the *Zeitenwende* that Russia’s war against Ukraine represents. Europeans have announced significant if still insufficient new defense spending, converged in their threat perceptions of Russia, and launched unprecedented EU initiatives to spur joint procurement and support Ukraine. However, there are already ominous signs that some states will not keep their spending pledges. Moreover, the EU initiatives currently lack the necessary financial clout and political support to make a real difference, while the need for speed in procuring equipment risks further fragmenting Europe’s defense industrial base. European defense is currently stuck between the *status quo ante* and the required transformation. Europeans need to come off this fence and commit to transforming how they cooperate. Otherwise, they will jeopardize the ability to defend themselves, become unable to support Ukraine over the long term, and risk marginalization in NATO.

Russia’s war against Ukraine exposed the dire state of European defense once and for all ([Chapter 2](#)). European capability gaps are vast; defense industries have been scaled down; and Europeans hardly cooperate. But the war could unleash new dynamics. Carried by public support for greater defense spending and cooperation, European policymakers have committed themselves to transforming European defense. The EU is trying to seize the moment by launching several initiatives that, if properly supported and funded, could help overcome the pathological fragmentation of Europe’s defense industrial base and establish the Union as a strategic enabler for NATO. But more needs to be done.

Transforming European defense in times of war and overcoming fragmentation first require agreeing on the needed capabilities ([Chapter 3](#)). Europe’s capability gaps cannot all be closed. Europeans therefore need to prioritize and plan better together, both within and between the EU and NATO. Indeed, Putin’s war against Ukraine has led to a convergence of threat

perceptions vis-à-vis Russia. The long-standing dilemma between territorial defense and crisis management has become less salient as priorities have shifted toward the former. At the same time, Ukraine's battlefields offer somewhat contradictory lessons on the future of war, giving rise to a new dilemma. Faced with a war of attrition, heavy weapons remain relevant as the backbone of territorial defense. At the same time, defense innovation has been key. Drones and loitering munitions have proven their effectiveness and data-connectivity has been an important enabler of effective warfare. To close both legacy and emerging capability gaps while avoiding new dependencies, Europeans will have to stay on top of the developments in warfare, invest more in defense innovation, and secure supply chains of strategic raw materials and semiconductors.

Setting joint priorities should lay the foundation for deeper cooperation in development and procurement ([Chapter 4](#)). In the past, Europeans have mostly developed and procured on a national basis or bought equipment off-the-shelf abroad. This has led to costly duplications of military capabilities, weakened Europe's defense technological and industrial base, and undermined the interoperability between national forces. In their scramble to rearm as quickly as possible since February 2022, Europeans have doubled down on national approaches. The EU has tabled several initiatives to incentivize joint development and procurement, including the European defence industry reinforcement through common procurement act (EDIRPA) and the Ammunition Initiative. While crossing erstwhile red lines, their impact is likely to be limited as the initiatives currently lack both funding and political support among the member states. NATO, the Organisation for Joint Armament Co-operation (OCCAR), or ad-hoc cooperation may offer alternative pathways but there are still too few precedents of successful multinational arms projects. Fragmentation can only be overcome if European states resist their unilateral instincts and if EU, NATO, and intergovernmental initiatives dovetail.

Five recommendations emerge from this report to help policymakers transform European defense ([Chapter 5](#)). First, they need to up their defense spending pledges and keep them. Second, they need to synergize NATO and EU planning and promote specialization. Third, policymakers should use the Ammunition Initiative as a model for other urgently needed equipment. Fourth, EU member states need to significantly increase common funds for joint procurement and ramping up of production capacities. And fifth, they need to move toward creating a single market for defense.



Introduction

1

This Time It's Different?

Will Russia's war against Ukraine cause a transformation of European defense cooperation? Could this time be different after previous shocks failed to engender significant change?

This Time It's Different?

Nicole Koenig and
Leonard Schütte

European states want to spend more on defense – at last. Russia's war on Ukraine has exposed the dire state of most European armies, continental defense cooperation, and defense industrial capacity. Once national decisionmakers mustered the will to provide Ukraine with military equipment to defend itself against Russia's aggression, many found tanks in disrepair, arsenals depleted, and armaments factories scaled back. Without substantial US aid, Kyiv would have likely fallen to Russian troops. While European states have markedly increased their provisions of equipment to Ukraine, much greater harm could have been averted with earlier action. And despite no improvement of the European, and indeed global, security environment in sight, Europeans are still stuck on the fence between the *status quo ante* and the required transformation of their defense cooperation. They need to come off this fence, resist national reflexes, and commit to a genuinely collective European approach to ensuring the security of the continent. The demand for joint action has hardly been higher.

European Defense Fragmentation: Symptoms and Sources

Since the end of the Cold War, Europeans have happily reaped peace dividends and significantly reduced their defense budgets. In many countries, national defense also suffered political neglect as a new era of peace and interdependence seemed imminent. Shocks such as Russia's annexation of Crimea and invasion of Eastern Ukraine from 2014 onward, former President Trump's threats of withdrawing US security guarantees, or Europe's impotence during the withdrawal from Afghanistan failed to alter how Europe organized its defense. However, Europe's defense malaise does not end with underspending. Above all, Europeans hardly cooperate on defense. The EU still essentially has 27 armies, 27 defense ministries, and 27 defense markets. This has caused costly duplications of military capabilities, weakened Europe's defense technological and industrial base (EDTIB), and undermined the interoperability between national forces. In addition, the acrimonious Brexit negotiations led to the UK, one of Europe's prime military powers, having no formal defense and security policy relationship with the EU.

The sources of Europe's defense fragmentation lie deep.² Threat perceptions among Europeans have traditionally differed. While Central and Eastern



“Strong economic and military support from the EU are crucial to Ukraine's chances of winning the war.”¹

Pål Jonson, Swedish
Minister for Defense,
Informal Meeting of EU
Defense Ministers,
March 7, 2023

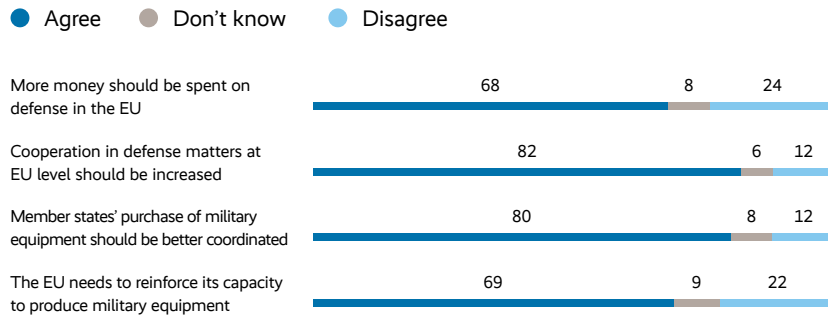
European states had warned about Russian imperialist ambitions long before the war, many Western and Southern Europeans downplayed these concerns and focused on the MENA region and terrorism.³ As a result, Europeans have struggled to both identify common priorities and build mutual trust, which are necessary for deeper defense cooperation. Differing strategic cultures – that is, views on the very purpose of armed forces, defense planning processes, or arms export regimes – have also exacerbated diverging threat perceptions across the continent, rendering joint planning and action even more difficult. Protectionist reflexes have furthermore undermined defense industrial cooperation, enabled by an EU treaty provision that allows national defense industries to be shielded from European competition. The US security umbrella has also given Europe a cushioning sense of stability. When Europeans have cooperated on developing equipment, projects have often been delayed, more expensive than planned, and divisive among partners.

The War as a Critical Juncture: New Path or End of the Road?

Russia's war on Ukraine is a critical juncture for Europe. Decisions taken now will shape the course of European defense because spending decisions have lock-in effects that will bind European states to a certain path in the long term. With every decision taken on a national basis, collaboration becomes more, and eventually prohibitively, difficult.

By unleashing new political dynamics, the war could allow Europeans to overcome national reflexes and embark on a new path. They have not only converged in their perception of Russia as the primary threat to their security. European policymakers have also professed the political will to “invest more and better.”⁴ Indeed, European publics, for the time being, support both objectives (Figure 1.1). Contrary to the credo that defense policy is too sensitive to pool, most EU citizens surveyed have expressed their support for deeper EU integration on defense, mirroring previous Eurobarometer surveys showing persistently high approval of European defense cooperation. The favorable attitudes toward increased spending are more striking and are likely caused by heightened threat perceptions. The prospect of Germany becoming a serious defense player, as proclaimed by Chancellor Scholz in his *Zeitenwende* speech, could also galvanize cooperation.

Figure 1.1
EU citizens' views on defense policy, January–February 2023,
percent



Data: Eurobarometer. Illustration: Munich Security Conference

However, early evidence casts doubt on whether Europeans will turn the right way. There are already signs that some Europeans will not live up to their spending pledges announced with great fanfare. Germany's failure to both meet NATO's two percent goal in 2023 and credibly demonstrate that it will do so permanently thereafter are cases in point. The promise to spend better together and reduce European fragmentation is in doubt as well. Europe's lack of preparedness means that the pressing military priorities are to replenish stocks, increase the readiness, and acquire new equipment as soon as possible. Inevitably, these short-term priorities are clashing with deeper European cooperation that would largely have medium to long-term benefits. Moreover, initial German and French reluctance to provide arms to Ukraine and impose severe sanctions on Russia has led to an erosion of trust among Central and Eastern European countries, which have consequently doubled down on their national defense approaches. The promises of rapid spending increases have also slowed incentives for industrial consolidation as arms companies around the Continent can expect full order books.

Transforming European Defense: EU as the Strategic Enabler for NATO

European policymakers therefore need to change course now to transform European defense. The prerequisite is that they increase and meet their spending pledges to be able to close some of the pressing capability gaps and meet NATO's two percent goal (Chapter 2). Europeans then need to jointly identify and prioritize their capability needs, including by learning the

lessons from Ukraine ([Chapter 3](#)). The Russian war against Ukraine has cemented NATO's role as Europe's primary standard-, demand-, and strategy-setter. It should therefore take the lead in identifying procurement priorities to close capability gaps – both old ones and new ones.

The EU, in turn, is the only organization that has meaningful funds available to incentivize cooperation on these joint priorities ([Chapter 4](#)). In addition, intergovernmental avant-garde groups can pave the way for joint procurement. The EU should also use its regulatory powers to work toward creating a single market for defense to overcome Europe's defense industrial fragmentation. A transformation of European defense thus means that Europeans spend significantly more (together), plan more together, and procure more together. If EU, NATO, and intergovernmental initiatives dovetail, the EU can become the strategic enabler for NATO ([Chapter 5](#)).

Amid high-intensity warfare on the European continent and worsening global security environment, European defense needs a transformation. This time has to be different.



2 Money Can('t) Buy You Force

What impact will the announced increases in defense spending have on European defense, and are EU member states living up to their promises? What capability gaps do EU member states need to close if they are to be equipped for a new, deteriorating security environment? How has the war against Ukraine impacted the fragmented EU defense landscape?

Money Can('t) Buy You Force

Isabell Kump and
Jintro Pauly

The announced increases in EU member states' defense budgets, if realized, would put an end to decades of underinvestment. Continuous budget cuts, starting with the cashing in of the peace dividend after the Cold War and exacerbated by austerity policies and uncoordinated cuts in the aftermath of the 2008 financial crisis, have resulted in a major and lasting depreciation of EU member states' armed forces.¹ This has led to a relative loss of the EU's combined military strength. While the US, Russia, and China increased their defense budgets by 65.7 percent, 292 percent, and 592 percent respectively between 1999 and 2021, combined EU defense spending only increased by 19.7 percent.²

The trend of decreasing military budgets was reversed after Russia's 2014 annexation of Crimea, which led several EU member states to increase their defense spending for the first time in years. Since 2015, EU member states' collective defense expenditure has steadily increased, with 2021 marking the seventh consecutive year of real growth.⁴ Nevertheless, European defense has remained underfunded, perpetuating Europe's dependence on the US.⁵ According to the NATO Secretary General's Annual Report 2022, only five countries that are members of both the EU and NATO met the goal of spending two percent of GDP on defense in 2022: Greece, Lithuania, Poland, Estonia, and Latvia.⁶

Defense Spending Increases: From Promise to Practice

20 EU member states have promised increases in defense spending since Russia's invaded Ukraine in February 2022, which on paper are far more significant than those implemented after 2014 (Figure 2.2). In his famous *Zeitenwende* speech, delivered three days after the start of Russia's war on Ukraine, German Chancellor Olaf Scholz announced the establishment of a 100 billion euro special fund (*Sondervermögen*) and pledged that Germany would spend two percent of its GDP on defense "from now on."⁷ In January 2023, French President Emmanuel Macron declared his country would reach NATO's two percent goal by 2025 and that its military spending would increase by a third by 2030.⁸ Some days later, Polish Prime Minister Mateusz Morawiecki made the commitment that his country would spend 4 percent of its GDP on defense in 2023.⁹ In terms of the share of GDP spent on defense, Warsaw would then even be ahead of Washington.¹⁰ Unsurprisingly, Russia's war has also led the Baltic states to significantly increase their defense

spending. Estonia, Latvia, and Lithuania have all pledged to increase their defense spending to 2.5 percent of their respective GDPs.¹¹ If EU member states met these spending pledges, their combined annual defense expenditure would increase by 61 percent by 2028, or 400 billion euros in real terms (Figure 2.1). EU member states would then on average spend 1.8 percent of GDP on defense by 2028.

Figure 2.1

Potential increase in annual defense spending of EU member states, 2022–2028, billion EUR



McKinsey
& Company

Data: McKinsey. Illustration: Munich Security Conference

If translated into increased military capabilities, these investments will also contribute to more equal burden-sharing between the US and European NATO allies. A comparison between EU and US forecasts shows that the transatlantic spending gap could shrink from 2.4 percentage points in 2020 to 1.3 percentage points by 2028 (Figure 2.3).¹² This may partly defuse bipartisan criticism in the US that Europe does not pull its weight in providing for its own security. Greater burden-sharing would also better prepare Europe for a scenario in which the US limits its engagement in Europe's security.¹³ In light of the intensifying rivalry between the US and China, as well as the possibility of yet another US president coming into office who openly questions the relevance of the transatlantic alliance, this is a plausible scenario.¹⁴ However, even these new spending commitments are

Figure 2.2
EU member states' spending pledges in response to Russia's invasion of Ukraine, percent

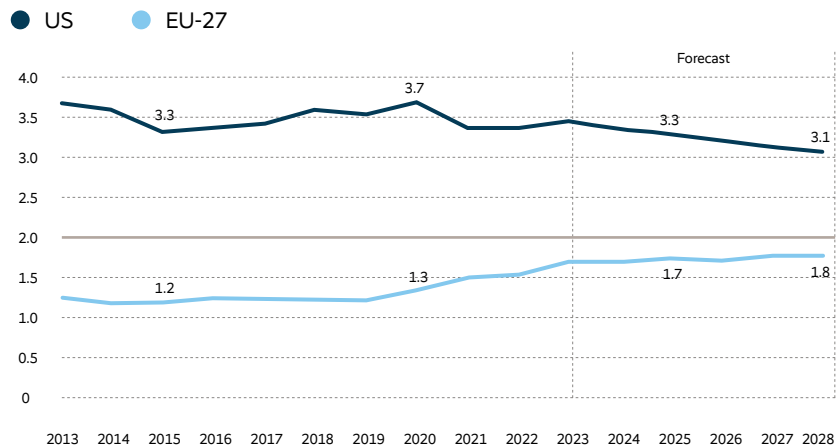
- Above NATO's two percent goal

EU member states	Spending pledges	Date of announcement	Military expenditure as percentage of GDP in 2022
Austria	1.5 percent of GDP by 2027	October 6, 2022	0.8 percent
Belgium	1.54 percent of GDP by 2030 and 2 percent of GDP by 2035	February 25, 2022	1.2 percent
Czech Republic	2 percent of GDP by 2024	September 16, 2022	1.4 percent
Denmark	2 percent of GDP by 2033	March 6, 2022	1.4 percent
Estonia	2.5 percent of GDP by 2022	March 25, 2022	2.1 percent
Finland	Increase spending by 2.2 billion euros over four years	April 5, 2022	1.7 percent
France	2 percent of GDP by 2025; 413 billion euros for the period of 2024-2030	January 20, 2023	1.9 percent
Germany	Establishment of a 100 billion euro special fund and announcement of a budget increase to 2 percent of GDP "from now on"	February 27, 2022	1.4 percent
Hungary	2 percent of GDP by 2023	December 28, 2022	1.5 percent
Italy	2 percent of GDP by 2028	March 31, 2022	1.7 percent
Latvia	2.5 percent of GDP by 2025	March 30, 2022	2.1 percent
Lithuania	2.5 percent of GDP by 2022	March 7, 2022	2.5 percent
Luxembourg	1 percent of GDP by 2028	June 24, 2022	0.7 percent
Netherlands	2 percent of GDP in 2024 and 2025	May 23, 2022	1.6 percent
Poland	4 percent of GDP in 2023	January 30, 2023	2.4 percent
Romania	2.5 percent of GDP by 2023	March 1, 2022	1.7 percent
Slovakia	2 percent of GDP by 2022	July 12, 2022	1.8 percent
Slovenia	2 percent of GDP by 2030	December 28, 2022	1.2 percent
Spain	2 percent of GDP by 2029	June 30, 2022	1.5 percent
Sweden	2 percent of GDP by 2026	November 1, 2022	1.3 percent

Data: IISS; various sources. Illustration: Munich Security Conference

not enough for the EU to collectively meet NATO's spending two percent goal – which could even be reconceptualized as a floor, not a ceiling, at NATO's July summit in Vilnius. Europeans cannot be complacent and need to further increase their defense spending.

Figure 2.3
EU-27 vs. US defense spending, 2013–2028, percent



McKinsey
& Company

Data: McKinsey. Illustration: Munich Security Conference

However, some states are already struggling to live up to their promises. According to Eva Högl, German Parliamentary Commissioner for the Armed Forces, as of February 2023, Germany had not yet spent “a single euro” from its 100 billion euro special fund.¹⁵ The country will only reach the two percent goal in 2024 – and only with the help of the special fund.¹⁶ Once the fund is exhausted, however, it is unclear whether Germany will be able to meet NATO's two percent goal.¹⁷ In the same vein, Italy is expected to fall short of its announced objective of reaching the two percent in 2028.¹⁸ Furthermore, the extent to which EU member states have increased their defense spending varies significantly. While the announced increases in Eastern and Central Europe mean that they would soon exceed NATO's two percent goal, others such as Spain are only planning to do so from 2029 onwards.¹⁹ Belgium does not intend to meet the target before 2035.²⁰

These variations indicate that, despite the overall convergence of threat perceptions on Russia – as seen inter alia in NATO’s new Strategic Concept and the EU’s Strategic Compass – the sense of urgency between North-Eastern and South-Western European countries still differs.²¹ France and Italy, for instance, still seem to prioritize the EU’s Southern Neighborhood. And although defense spending of countries in Central and Eastern Europe will remain lower in real monetary terms, their influence in the EU and NATO will likely increase as they have shown strong commitment in keeping their pledges. This may ultimately contribute to the power balance in both organizations shifting in favor of Central and Eastern Europe.²²

In addition, economic factors could reduce both the impact of these extra funds and the willingness of member states to live up to their promises. Inflation amounted to 6.9 percent in the eurozone in March 2023 and was highest in the Baltic countries, with rates ranging between 15.2 to 17.2 percent.²³ If unchecked, it will eat up part of the announced defense investments. According to recent estimates, only 50 to 70 billion euros could be left of Germany’s special fund to spend on hardware after inflation and additional costs are priced in.²⁴ Meanwhile, limited economic growth in the coming years, a consequence of both the pandemic and disruptions caused by Russia’s war on Ukraine, will increase domestic distributional conflicts. After a rebound of GDP growth in 2021 to 5.4 percent, the EU economy is expected to only grow at 0.8 percent and 1.6 percent in 2023 and 2024 respectively.²⁵ Prioritizing defense investment over social spending will thus become more difficult for many policymakers.

Capability Gaps: What Money Can(‘t) Buy

Despite these challenges, it is imperative that EU member states meet and up their defense spending pledges to face the current deteriorating security environment. After largely neglecting their promises made at the 2014 Wales summit, European NATO allies cannot afford to kick the can down the road any further. Part of the additional funding will have to be used to make up for years of underspending and to close the capability gaps that have arisen in European militaries since the 1990s. These long-standing gaps include air-to-air refueling and long-distance air lift.²⁶ European inventories have additionally suffered large reductions across several equipment categories of the EU member states’ air, maritime, and land forces. For example, the number of main battle tanks decreased by 80 percent between 1992 and 2021, while the number of 152mm/155mm artillery and multiple launch rocket systems fell by 64 percent and 48 percent respectively (Figure 2.4).

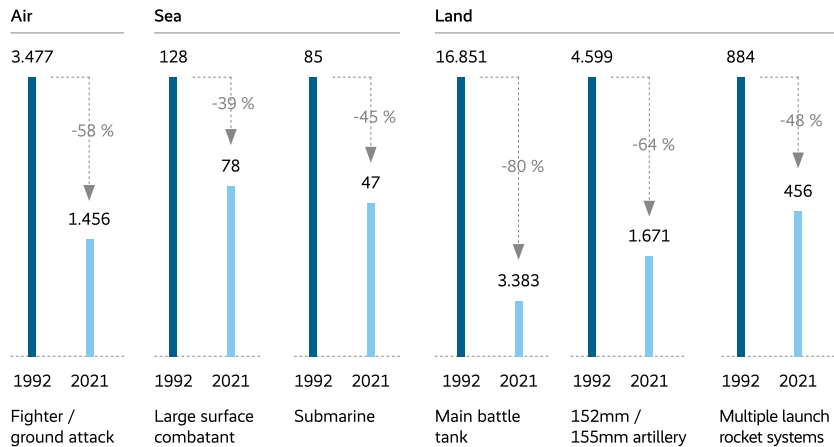


“After the Cold War, we shrunk our forces to bonsai armies.”²³

Josep Borrell, EU High Representative for Foreign Affairs and Security Policy, EEAS Blog, August 27, 2022

Figure 2.4

Reductions in selected EU countries' inventories across equipment categories prior to Russia's invasion of Ukraine, 1992 and 2021, number of equipment pieces and percent



Data: IISS. Illustration: McKinsey; Munich Security Conference

The military assistance provided to Ukraine since the onset of the war has exacerbated these pre-existing capability gaps and accelerated the reduction of inventory levels. EU member states have sent significant quantities of military hardware to Ukraine, including various types of main battle tanks, armored vehicles, fighter jets, artillery systems, and air-defense systems.²⁷ Between November 2022 and February 2023 alone, Poland, Spain, and the Netherlands, for instance, delivered a total of 46 main battle tanks to Ukraine.²⁸ In the same period, EU member states sent 39 152/155 howitzers and two multiple launch rocket systems to Ukraine.²⁹ These donations further reduced the countries' land equipment holdings throughout the EU. From November 2021 until February 2023, the stocks of 152mm/155mm artillery of the Netherlands, Poland, and Spain, for instance, reduced by 19.6, 12, and 10 percent respectively. In the same period, Poland's inventory of main battle tanks saw a 20.6 percent decrease.³⁰ EU member states thus have to replenish and expand depleted stocks urgently to ensure that this support can be sustained in the future.

Faced with widening, long-standing gaps and short-term needs, EU member states need to prioritize which capability gaps to fill. To do so, the EU heads of state or government tasked the European Commission and European Defence Agency (EDA) at the Versailles Summit in March 2022 to produce an analysis of defense investment gaps. The analysis, presented in May 2022, assessed the state of the EU's armed forces and issued recommendations on how to fill the most pressing gaps. The short-term priorities include, for instance, replenishing stockpiles, replacing Soviet-made equipment with more modern European solutions, and strengthening EU states' multilayer air and missile defense systems.³¹

Russia's war on Ukraine has not only widened Europe's long-standing capability gaps but also created new ones. For instance, it has demonstrated the relevance of several types of drones, ranging from larger ones armed with guided missiles to small commercial ones used for Intelligence, Surveillance, and Reconnaissance (ISR) purposes. At present, they still play a comparatively small role in the EU member states' armed forces.³² However, as the war in Ukraine shows, their role in the future of warfare will only increase ([Chapter 3](#)).

Finally, Russia's invasion of Ukraine has also underlined Europe's continued dependence on the US. Past events, such as the chaotic evacuation of US and European citizens from Afghanistan in August 2021, reconfirmed Europe's reliance on US high-end capabilities. These include air-to-air refueling and long-distance air lift as well as suppression of enemy air defenses and C4ISR (command, control, communications, computers, and ISR).³³ Recent analyses of the capacity of EU member states in the face of an actual war have shown how ill-prepared Europe still is. Germany would, for instance, only have munitions for two days of fighting.³⁴ Ramping up the production of ammunition, however, appears to be a difficult task at present, as NATO Secretary General Jens Stoltenberg warned in February 2023: "The waiting time for large-scale ammunition has increased from 12 to 28 months. Orders placed today would only be delivered two-and-a-half years later."³⁵ Greater efforts to close long-standing and new gaps are therefore essential to ensure better transatlantic burden-sharing and mitigate the risks that come with Europe's security reliance on the US.

European Fragmentation: Debilitating Diversity

The fragmented EDTIB is, however, a central impediment to closing long-standing and new capability gaps.³⁶ Unlike in other areas of the

economy, there is no European single market for defense but rather 27 national markets with high entry barriers for outside competition. As a result, European defense companies tend to produce small volumes of the same type of arms, which is not only inefficient but also hampers interoperability.³⁷

This fragmentation has led EU member states to use a much greater variety of different types of weapon systems than the US. The MSC's 2017 European Defense Report, a research project with McKinsey and the Hertie School's Centre for International Security Policy, showed that, in 2016, European member states used 178 different major weapon systems, whereas the US military only used 30.³⁸ For example, EU member states used a significantly wider range of different types of main battle tanks (17 versus 1), destroyers/frigates (29 versus 4), and fighter planes (20 versus 6) than the US. The situation has hardly improved since then. This fragmentation is worsened by the proliferation of national requirements and standards. These have often resulted in the production of multiple variants of certain military equipment. A case in point is the NH90 helicopter, which exists in over 20 different configurations.³⁹ This customization creep also obstructs collaborative development and procurement efforts among EU member states, making them more complex and costly.

Data from the 2022 Defense Gaps Analysis by the European Commission and EDA shows that, between 2007 and 2016, EU member states spent more than 60 percent of their defense procurement budgets on such imports, causing further underinvestment in the EDTIB.⁴⁰ Under pressure to replace weapon systems donated to Ukraine and to rearm as fast as possible, European member states have recently aggravated the fragmentation of the EDTIB by opting for available off-the-shelf procurement options rather than investing in European weapon systems that would decrease fragmentation but take longer to procure.⁴¹ Such off-the-shelf options often include hardware produced in non-EU countries.

A case in point is Germany: Since February 2022, it has ordered US-made F-35 fighter jets and Chinook heavy-lift helicopters and the Israeli-made Arrow-3 air-defense systems.⁴² The European Sky Shield Initiative, presented by Germany as a joint European project to develop a layered air-defense capability for Europe, envisions the procurement of German, US, and Israeli air-defense systems. Yet, it has been criticized by France for its reliance on non-European systems.⁴³ Poland, in turn, has invested in a range of



“In order to invest this funding in a meaningful and sustainable manner, we need a high performing and competitive arms industry in Germany and Europe as a whole.”⁴⁸

Olaf Scholz, German Chancellor, Munich Security Conference, February 17, 2023

non-European weapon systems, including K2 Black Panther main battle tanks, K239 Chunmoo multiple rocket launchers, and FA-50 fighter jets from South Korea.⁴⁴ In addition, it has ordered M1 Abrams main battle tanks and HIMARS multiple rocket launchers from the US.⁴⁵ Some of these systems were not used in Europe until Poland acquired them and thus add to the fragmentation of Europe’s defense landscape.⁴⁶ This procurement decision was primarily motivated by the acute threat Russia poses to Poland, leading Warsaw to prefer the early availability of off-the-shelf systems over the interoperability advantages of European systems that would take longer to procure. In addition, the recent Polish-German disagreements about the donation of Poland’s German-made heavy weaponry to Ukraine may have also played into the country’s decision to look for arms suppliers elsewhere.⁴⁷

Since Ukraine has received military support from many European partners, and these partners use a wide variety of different systems, the EU has essentially exported its fragmentation.⁴⁹ In this regard, the Ukrainian Defense Minister Oleksii Reznikov described the combination of different weapon systems in Ukraine’s army as a “military zoo.”⁵⁰ Ukraine has, for example, received five different types of main battle tanks from EU partners, including variations of the Leopard 2 and 1 as well as a variety of different Soviet-era tanks.⁵¹ This poses a great logistical challenge to Ukraine in terms of training and in navigating the complex logistics of maintaining and repairing a huge variety of weapon systems that all require their own types of spare parts while defending itself against Russia’s aggression.

Conclusion: Spending More and Spending Better

The increases in defense spending by numerous EU member states after decades of underinvestment is good news – if Europeans keep and further raise their pledges. With more financial resources, they have the chance to fill capability gaps and shortfalls in their military inventories and invest in the European defense technological and industrial base. The question now is how exactly these resources should be used. EU member states are facing various dilemmas, such as whether to focus on filling long-standing capability gaps or investing in new technologies that have proven effective in the war in Ukraine. Another dilemma facing EU member states is whether to invest in more European defense cooperation or prioritize a swift rebuilding of military capabilities by opting for the earliest-available off-the-shelf procurement option, even if this is not a European system. EU member states will now have to address the questions of what to prioritize in procurement, and how to procure better together.

Key Points

- ① In response to Russia's invasion of Ukraine, 20 EU member states have pledged to significantly increase their defense spending. Countries now need to live up to their promises and further increase them to strengthen European armed forces and contribute more to transatlantic burden-sharing.
- ② The new funding offers EU member states the opportunity to close pre-existing capability gaps, which have been widened by their military assistance to Ukraine. At the same time, Russia's war on Ukraine has also created new capability gaps in Europe.
- ③ Europe's habitually uncoordinated responses to the war risk worsening the perennial fragmentation of its defense industrial base. Moreover, EU member states are exporting their fragmentation to Ukraine.
- ④ EU member states are facing various dilemmas regarding how to prioritize the additional funds. These include whether they should focus on filling long-standing capability gaps or investing in new technologies and whether they should invest in more European defense cooperation or prioritize a swift rebuilding of military capabilities.



A WORLD OF INNOVATION

3 Prioritizing Together

How should Russia's war against Ukraine affect European procurement priorities? What lessons should Europeans draw from the Ukrainian battlefield in terms of defense innovation? Which critical dependencies and vulnerabilities does Europe's defense sector face and how can they be addressed?

Prioritizing Together

Paula Köhler and
Jintro Pauly

European states must take tough decisions on what to prioritize. This is no easy task, given an array of security threats and vast capability gaps caused by years of defense underinvestment. When setting priorities, European states have traditionally faced a dilemma between crisis management and territorial defense, and between Europe's neighbors to the East and the South. The Russian war on Ukraine has at least temporarily rendered this dilemma less salient. Member states have converged in their threat perceptions of Russia and collectively tilted toward territorial defense and Europe's Eastern neighborhood. Meanwhile, the war has brought another dilemma to the fore. It has shown that Europeans have to prepare for old warfare, dominated by mass and attrition, while simultaneously getting ready for new warfare characterized by an increased use of cheap, unmanned systems and a greater reliance on data-connectivity. This will require staying on top of developments in warfare, increased innovation spending, as well as concerted action to face a broadening range of dependencies.

A New Dilemma on the Rise: Attrition Versus Innovation

Decisions about procurement inevitably require policymakers to wrestle with the essential question of what the future of war will look like. Currently, many look to the Russian war against Ukraine for answers. Yet, the lessons from Ukraine are ambiguous. On the one hand, many observers have been taken aback by how similar warfare in the 21st century is to that of the 20th century: attrition warfare has returned; questions of ammunition production and getting tanks to the front line are central; and the old adage that "mass has a quality of its own" rings true again. Traditional warfighting capabilities, such as large quantities of armored fighting vehicles and artillery, are essential for territorial defense and reclaiming territory, and show the continued importance of kinetic force.¹ Despite the important role new technologies have played in Ukraine, they merely enhance the effectiveness of traditional core territorial defense capabilities. As UK Chief of the General Staff General Sir Patrick Sanders put it, "you can't cyber your way across a river."²

Among the new technologies, unmanned aerial systems have been the most visible ones in the war. These have appeared in many forms: small, commercial drones used for ISR purposes, larger military-grade armed drones, and loitering munitions ("kamikaze drones") used for devastating

one-time strikes. Although the role of armed drones has decreased as the conflict has progressed, small ISR drones and loitering munitions have remained highly relevant.⁴ ISR drones are used extensively for tactical reconnaissance on the frontlines, while both sides deploy loitering munitions.⁵

This unmanned aerial revolution is not so much a matter of groundbreaking new technologies, however. Drones and loitering munitions have existed for years. The revolutionary element is the extremely low production cost, enabling their use in great quantities and rendering them expendable. An Iranian-made Shahed-136 loitering munition, used extensively by Russia to attack Ukrainian cities, costs between 20,000 and 50,000 US dollars.⁶ Commercial ISR drones can cost as little as 2,000 US dollars.⁷ This allows drone usage in large quantities in this war. For example, Ukraine alone loses approximately 10,000 drones per month while reliable numbers for Russian losses are hard to come by.⁸ “Cheap and expendable” seems to be the new motto of drone warfare.

This development has consequences for the future of air defense, as the missiles used by missile-based air-defense systems, for example, Iris-T, are significantly more expensive than the loitering munitions they shoot down (Figure 3.1).⁹ In addition, missile-based air-defense systems, which can usually only carry a limited number of missiles, are vulnerable to overwhelming swarms of cheap armed drones or loitering munitions.¹⁰ In contrast, the German Gepard self-propelled anti-aircraft gun, which uses 35mm canons rather than guided missiles, has been more effective than expected in countering Russian loitering munitions and, to a lesser extent, cruise missiles. Phased-out by the German military in 2012 and donated to Ukraine in 2022, it has emerged as an effective and comparatively cheap air-defense system against loitering munitions.¹¹ In the first week of 2023 alone, Ukraine shot down around 80 air vehicles in the Kyiv area, with many of the successes attributed to Gepard systems.¹²

The important role of drones in Ukraine hinges on another key innovation characterizing this war: data connectivity.¹³ Ukraine’s ISR drones have high military impact because the images they gather can swiftly be communicated to other relevant units.¹⁴ Commanders or artillery units can use these images for targeting purposes as well as post-strike damage assessments. Software systems enable military units or even Ukrainian civilian observers to quickly upload intelligence from a variety of data sources, such as satellite imagery, cell phone, or drone videos. These systems

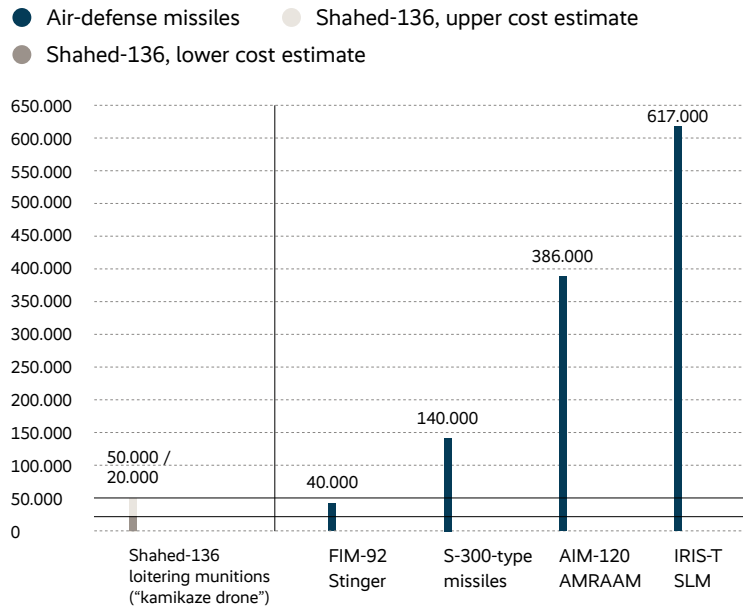


“With new layers of technology, we still have to remember the mass. There is no point of having one fancy weapon if someone else has 10.000 un-fancy weapons.”³

Kersti Kaljulaid, former President of the Republic of Estonia, Munich Security Conference, February 16, 2023

Figure 3.1

Cost per unit of Shahed-136 loitering munitions and selected air-defense missiles, 2022, USD



Data: Deutsche Welle; Molnar; Politico; The New York Times; US Air Force.
Illustration: Munich Security Conference

provide data to soldiers, for example, in the form of interactive battlefield maps, which enhances their situational awareness and enables faster targeting of enemy forces. Moreover, artificial intelligence (AI) can facilitate the processing of gathered data, for example, by identifying vehicle types or suggesting priorities for targeting.

In terms of hardware, this data connectivity is made possible by the Starlink satellite-based communications system currently provided by SpaceX, a US-based private company.¹⁵ This points to another key development in this war: an increasing dependence on commercial actors and their technologies. With such dependence come new vulnerabilities, as states' military capabilities might be severely compromised if private actors decided to withdraw their support. SpaceX CEO Elon Musk threatened to do as much when he announced the suspension of Ukraine's free access to Starlink in October 2022, although he reversed this decision a few days later under



“Europe must get its act together. [...] Now is the time to work together on joint development and smart procurement to have not only more but also better capabilities. [...] That will make us better partners in the Alliance.”¹⁷

Kajsa Ollongren, Dutch Defense Minister, Atlantic Council’s Transatlantic Security Initiative, July 14, 2022

public pressure.¹⁶ Losing access to Starlink would have had disastrous consequences for Ukraine as it would have severely curtailed the data connectivity of its armed forces.

Lessons From Ukraine: Implications for European Procurement and Spending

To guarantee Europe’s security now and in the future, European policymakers as well as defense planners in EU and NATO should heed the lessons from Ukraine. The defense investment gaps analysis, released by the European Commission and the EDA three months into the war, offers valuable insights (Box 3.1). But this analysis could only ever reflect early lessons of the war. Based on the above, three priorities for capability development and procurement stand out.

First, EU member states should keep investing in classical core capabilities for territorial defense, such as armored fighting vehicles and artillery. Without these systems, territorial defense is hardly possible. At the very least, member states should replenish them enough to make up for the systems donated to Ukraine. The EDA’s 2022 Coordinated Annual Review on Defence (CARD) Report as well as the defense investment gaps analysis underline this assessment, arguing that the return of high-intensity warfare to Europe requires the expansion of EU member states’ inventory of main battle tanks and artillery.¹⁸

Second, EU member states should take note of the innovations brought about by Russia’s war against Ukraine. The increased relevance of drones and loitering munitions has consequences for air defense which they must take into account. Russia will likely continue to use cheap, expendable loitering munitions to attack Ukraine. This means EU member states should anticipate Ukraine’s demand for air defense missiles to remain high. It is essential that Ukraine’s European allies can meet the embattled country’s needs. Although air-defense missiles are more complex and costly than artillery shells, the EU’s Ammunition Initiative set up to provide Ukraine with sufficient artillery ammunition could serve as a blueprint for a system that ensures Ukraine’s supply of air-defense ammunition (Chapter 4). In the long term, EU member states will have to find a more sustainable solution for the problems expendable drones and loitering munitions pose for missile-based air defense. The vulnerabilities of such defensive systems will only increase once the AI technology to deploy swarms of autonomously interacting drones matures.¹⁹ EU member states should prepare for this,

Box 3.1

Selected priorities identified by the EU's May 2022 Defence Investment Gaps Analysis

Short-term priorities:

- Replenishing stockpiles to secure combat readiness of forces
- Replacing Soviet-made equipment with modern European solutions
- Strengthening the EU member states' air and missile defense systems

Medium- to long-term priorities:

- Air domain: developing the "Eurodrone" (MALE RPAS), procuring counter-drone capabilities, modernizing anti-access/area denial systems and the fleet of multi-role fighter aircraft
- Land domain: upgrading and expanding the existing inventory of main battle tanks and armored fighting vehicles, procuring anti-tank and artillery systems
- Maritime domain: procuring high-end inter-connected ships augmented by unmanned platforms to benefit ISR capabilities and protect sea lines of communication
- Space domain: enabling space-based assets, optimizing synergies with the EU's space-based connectivity program
- Cyber domain: work toward a full-spectrum cyber-defense capability

either by investing in drone capabilities themselves, investing in air-defense capabilities that can efficiently neutralize (autonomous) drones and loitering munitions, or by regulating the proliferation of these systems.

The defense investment gaps analysis partly recognizes this, by emphasizing the importance of investing in drone capabilities and mentioning the Eurodrone as a promising project.²⁰ This drone will, however, not be delivered until 2029 and the French Senate already criticized it for being too heavy and expensive.²¹ It does not seem to be a great example of the cheap and expandable aerial systems that play such a large role in in the current war in Ukraine. This raises the question whether EU member states should prioritize investments in much cheaper systems,

such as smaller ISR drones, when it comes to drone capabilities. Some member states have already come to this conclusion: in May 2023, the Czech Republic cancelled the procurement of three larger Israeli Heron 1 drones and announced it would acquire two hundred smaller ISR drones instead.²²

Regarding air defense, the defense investment gap analysis does mention the need for anti-drone systems, but prioritizes the procurement of mid-range air- and missile-defense systems.²³ The 2022 CARD Report, while not mentioning anti-drone capabilities, stresses the importance of “high-end” air-defense systems.²⁴ If this is to mean guided-missile-based systems, investing in such systems alone will not suffice. Russia’s war against Ukraine has demonstrated that guided-missile-based air defense, which is also the focus of Germany’s European Sky Shield Initiative,²⁵ is vulnerable to large quantities of unmanned aerial systems. To safeguard their air-defense capabilities in the future, EU member states will have to address this vulnerability.

Third, EU member states should invest in better data connectivity of their armed forces. In Ukraine, it is the factor that allows other innovations to reach their full potential. The defense investment gaps analysis therefore recommends investing in an “ultra-secured” European connectivity program.²⁶ At the same time, however, EU member states should reduce the current dependency on private actors regarding satellite networks in low-Earth orbit which are necessary for extensive data connectivity.²⁷ In fact, the EU is already taking steps to address this dependency and seeking to develop an EU low-Earth orbit (LEO) satellite constellation to enable secure connectivity for EU member states. A 2022 Commission initiative called Infrastructure for Resilience, Interconnectivity and Security by Satellite (IRIS², not to be confused with the IRIS-T guided missile) proposes to launch up to 170 LEO satellites between 2025 and 2027 and is currently awaiting approval from the European Parliament.²⁸ This requires a large investment and could enhance the defense capabilities of all EU member states. The EU is thus well-positioned to take on this initiative, thereby providing a European public good, which brings space-based, secure communications to European governments and businesses. Additionally, apart from hardware, there is a software component worth exploring: Open-architecture software that allows kits to “plug and play”²⁹ could help in overcoming fragmentation and address difficulties in interoperability.

The latter points presuppose significant investment in defense innovation. Despite a steady rise in EU defense ministries' research & technology (R&T) budgets, most are still too low to keep up with the changing face of war witnessed in Ukraine. In total, EU member states spent 3.6 billion euros, or 1.7 percent of their total defense expenditure, on defense R&T in 2021 (Figure 3.2).³⁰ While this constitutes a new record high, it still falls short of the EU goal of spending two percent of total defense expenditure on R&T. Moreover, there are vast discrepancies between member states. Only two of them spent significantly more than 1.7 percent, thereby pulling up the average. The European Defence Agency concludes that: "For European defense to be at the cutting edge of preparing for future conflicts and capabilities, a larger number of member states would need to increase R&T spending at a faster rate than their total defense expenditure."³¹

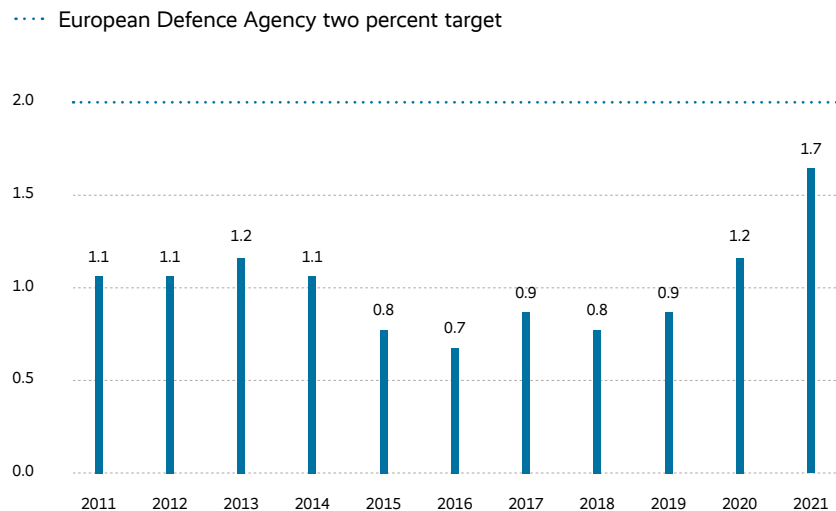
Falling behind on defense innovation entails security risks for EU member states. They could miss out on key emerging and disruptive innovations, resulting in a relative loss of military strength. In addition, a widening transatlantic defense innovation gap could complicate interoperability with technologically more advanced US forces. A report published by Boston Consulting Group and the Munich Security Conference in 2023 highlighted a widening defense innovation readiness gap. Surveying 59 defense ministries, as well as EU and NATO, showed that 78 percent of ministries of defense consider their pace of innovation as insufficient.³²

The EU and NATO have both taken initiatives to stimulate defense innovation. Within the EU Defence Innovation Scheme (EUDIS), the European Commission is identifying ideas, technologies, and solutions that require support to reach their full potential. EUDIS provides practical support by building a network of relevant defense innovation partners as well as funding: It should provide up to two billion euros for defense innovation through 2027. This includes 1.46 billion euros from the European Defence Fund (EDF), ninety million in co-funding from member states, and at least four hundred million from other public and private sources.³³ The EU has also established a Hub for EU Defence Innovation (HEDI) within the EDA as a deliverable of its 2022 Strategic Compass.³⁴ HEDI is envisioned as a platform to increase and better coordinate member state cooperation on defense innovation. Meanwhile, NATO has launched its own initiative to promote defense innovation: the Defence Innovation Accelerator for the North Atlantic (DIANA). DIANA also aims to offer both practical support

and funding. The practical support consists, among other things, of granting projects access to deep-tech test centers in NATO countries.³⁵

While both initiatives are important for advancing innovation and integration of Emerging and Developing Technologies (EDTs) into defense, there is a lack of synchronization between the EU and NATO in this area. Critics have lamented duplication, as both organizations have developed their own slightly differing lists with priority areas for innovation. The EU's list includes "advanced manufacturing, advanced materials, life-science technologies, micro/nano-electronics and photonics, artificial intelligence and security and connectivity."³⁶ NATO has in turn suggested focusing on "artificial intelligence, data, autonomy, quantum-enabled technologies, biotechnology, hypersonic technologies, space, novel materials and manufacturing, and energy and propulsion." In addition, a lack of interoperability and differences in transatlantic approaches on how to use new technologies could make true policy change and innovation difficult.³⁷

Figure 3.2
Defense research and technology spending, 2011–2021,
percent of total EU defense spending



Data: European Defence Agency. Illustration: Munich Security Conference

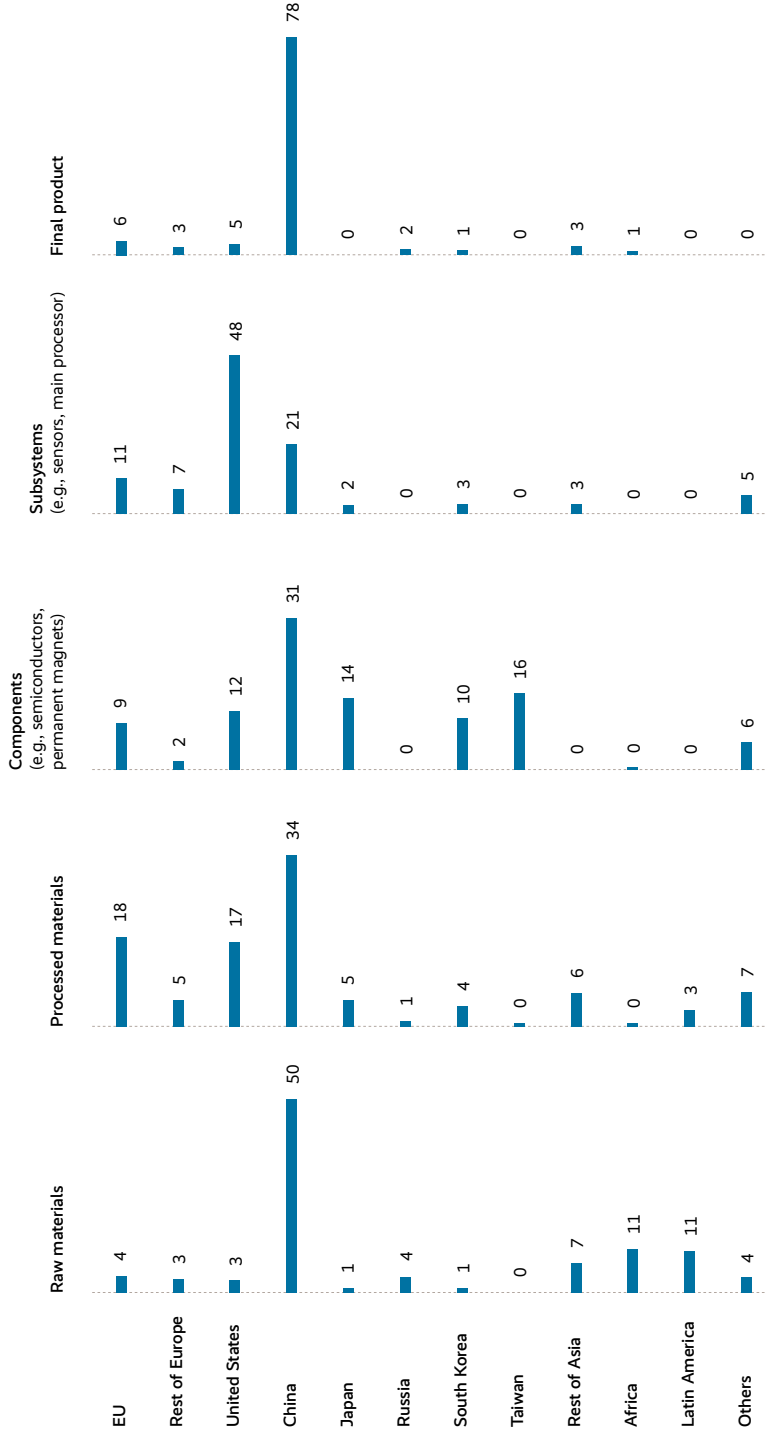
Securing the Source: Raw Materials and Dependencies

A precondition for strengthening European armies is that Europe can source the necessary raw materials. But as in green technologies, Europe is dangerously dependent on others. For almost all military assets, including tanks, fighter aircraft, ammunition, and submarines, the EU faces a very high supply risk with regard to certain components needed to build a military force, such as aluminum, natural graphite, and a high risk regarding beryllium, chromium, and copper.³⁸ This becomes especially apparent when looking at supply chains of drones. Drones require a wide range of critical and strategic raw materials. Europe's drone production is vulnerable to several bottlenecks regarding raw materials, components, and assembly (Figure 3.3). Europe is particularly dependent on China, which enjoys a strong industrial position in every step of the drone-making process. While China is by far the largest supplier of raw materials, African and Latin American countries have notable capacities, with each continent supplying 11 percent of all needed materials. In later steps of the drone production process, including the manufacturing of components and subsystems, the situation looks somewhat better, as either European countries themselves or their partner nations such as the US and Japan have relevant capacities.

The EU does recognize this vulnerability and has identified 34 raw materials as critical, some of which have additionally been designated as strategic raw materials.³⁹ The main supplier of these materials is often China. To address these dependencies, the EU proposed the Critical Raw Materials Act in 2023. It sets out a range of goals to re-shore some extraction and processing capacities back to the EU to reduce dependencies and enhance diversification.⁴⁰ These are ambitious goals that will take time to implement. Until then, the production of military capabilities in Europe remains vulnerable to supply chain shocks.

In addition to raw materials, the EU faces a huge vulnerability in the field of semiconductors. Microchips are necessary for almost all technological devices, including weapons systems and drones. Yet, the semiconductor market is one of a kind: it is fundamentally dependent on only a few companies with unique capabilities. Great power competition between the US and China as well as concerns about a potential escalation of the conflict in Taiwan heighten the issue of reliable supply chains in this field.

Figure 3.3
Overview of producing countries in the drone supply chain, 2023, percent



Data and illustration: European Commission



“We are never again going to make ourselves existentially dependent on a country that does not share our values. Complete economic dependency rooted in the principle of hope makes us susceptible to political blackmail. Now that we know better, we must not repeat this mistake.”⁴¹

Annalena Baerbock,
German Foreign Minister,
Süddeutsche Zeitung,
October 14, 2022

The EU has reacted to these developments by introducing the European Chips Act to advance European competitiveness. It seeks to mobilize 43 billion euros in public and private investment by 2030 to boost Europe’s technological capabilities and increase supply chain security.⁴² By doing so, the EU is joining other players in heavily subsidizing chip manufacturing. China aims to spend 150 billion US dollars in the coming decade, whereas the US plans to spend 52 billion US dollars over the next five years.⁴³ Taken together, the EU, US, Japanese, and Chinese plans would amount to “721 billion USD or 0.9% of global GDP.”⁴⁴ While the EU is right to take urgent action in bolstering its competitiveness in the chip field, critics have warned that this type of industrial action could lead to inefficiencies, such as overcapacity.⁴⁵

All in all, both the Critical Raw Materials Act and the European Chips Act are important steps in addressing the EU’s dependency on other actors, especially China, for producing key components of weapons manufacturing. Yet, securing supply chains in critical raw materials and semiconductors in the long term will remain a challenge for European countries with limited budgets, especially as reshoring production to Europe disrupts markets and may lead to higher production costs for already expensive military equipment and its components.

Conclusion: A Steep Learning Curve

The return of large-scale war to the European continent has shifted priorities. It has, at least temporarily, resolved the old dilemma between crisis management and territorial defense in favor of the latter. At the same time, it has highlighted a new dilemma, namely the need to prepare for both traditional and new warfare at the same time. Europeans should use the lessons from Ukraine to jointly set priorities for future defense investment. They will need to find the right balance of capabilities, especially between the firepower of a large mass of heavy weaponry and the sophistication of integrated, low-cost technology. The current focus on filling legacy gaps and restocking heavy equipment risks widening Europe’s defense innovation gap compared to other global players. Meanwhile, fresh thinking is needed for Europeans to join forces in providing European public goods. These include key enablers, such as the low-Earth orbit satellite constellation IRIS², but also joint strategies to counter dependencies and vulnerabilities. Hence, the EU needs to intensify efforts to diversify suppliers and closely coordinate its policies with key allies like the US, for example, in the Trade and Technology Council. All this means that Europeans have to stay on top of developments in warfare.

Key Points

- ① Russia's war against Ukraine has led to a convergence of threat perceptions across Europe, tilting the balance from crisis management toward territorial defense and rendering the old dilemma between the two less salient.
- ② Heavy weapon systems, such as main battle tanks and artillery, have demonstrated their continued relevance in Ukraine. As they remain the backbone of any force engaged in territorial defense, they require further investment from European states.
- ③ Increasingly cheap ISR drones and loitering munitions have proven to be game changers in Ukraine. EU member states must prepare for the further proliferation of these systems and address the respective vulnerabilities of current air-defense systems.
- ④ Better data connectivity is key for Europe's armed forces to unlock the full potential of other technological systems. This requires more innovation spending, including on appropriate hardware systems such as low-Earth orbit satellite constellations.
- ⑤ A precondition for the success of these defense investments is the reliability of EU member states' supply of strategic raw materials and semiconductors required for military systems. Reshoring, friendshoring, diversification of suppliers, and recycling are necessary to mitigate risks.



4 Spending Together

Why do Europeans not collaborate more on arms development and procurement? Can recent EU initiatives incentivize more cooperation? What can alternative formats of cooperation contribute to overcoming the fragmentation of Europe's defense industrial base?

Spending Together

Nicole Koenig and
Leonard Schütte

The increases in European defense spending not only beg the question of what to spend the money on but also how to spend it. The *status quo ante* is untenable; the fragmented European defense market wastes scarce resources and thus risks eroding public support for more defense spending. It also undermines military interoperability and deepens dependencies on non-European suppliers. Indeed, Europe's initial responses to Russia's war against Ukraine may even have exacerbated existing fragmentation as the need for speed often trumped unity. Substantial reforms of how Europeans procure and develop military equipment should therefore accompany the increases in defense budgets.

The EU has recognized the problem. In recent documents, the European Commission and the European External Action Service made several proposals aimed at deepening European defense industrial cooperation.¹ More than one year on from the beginning of the war, there have been some notable achievements, but overall, the results are inadequate. Outside the EU framework, there are also alternative paths toward closer defense cooperation. NATO plays an important role in setting standards and capability demands, but its processes are insufficiently synergized with EU initiatives. European states have further sought to establish intergovernmental paths for defense cooperation, but there are still too few examples of best practice. Having recognized the need to reform but without committing to the transformation the security environment requires, European defense is thus currently stuck on the fence.

Defense Industrial Cooperation: Navigating the Procurement Trilemma

On top of the structural obstacles that beset European defense cooperation in general, arms procurement and development come with specific trade-offs (Figure 4.1). Decisionmakers face three options when acquiring new equipment that is not readily available from domestic or European producers.²

First, governments can commission domestic companies to develop the equipment needed. This way, they can remain independent of other countries in this sensitive realm, protect domestic jobs and industrial capacity, and tailor the equipment to their militaries' needs. However, given the rapidly increasing armament costs and technological demands of modern weaponry, national solutions may simply be unfeasible. Even when

national development is possible, it can be slow and costly compared to off-the-shelf options elsewhere. In addition, national procurement may exacerbate European fragmentation if it is uncoordinated with others. Second, governments can buy equipment off-the-shelf from suppliers outside Europe, often from those in the US. This tends to be the fastest way to acquire equipment and may be cheaper than developing new systems. Such

Figure 4.1

Arms procurement and development trilemma in Europe

Type of procurement or development	Pros	Cons
National <i>E.g., French Rafale jets</i>	<ul style="list-style-type: none"> • Sovereign control • Protection of domestic jobs and industrial capacity • Customization of equipment 	<ul style="list-style-type: none"> • Costly • Slow • European fragmentation
Off-the-shelf abroad <i>E.g., Polish order of South Korean tanks, German order of US F35 fighter jets</i>	<ul style="list-style-type: none"> • Often faster and cheaper • Tried-and-tested products • Generating goodwill with supplying country 	<ul style="list-style-type: none"> • European fragmentation • More external dependencies • Loss of jobs and industrial capacity
European <i>E.g., European Ammunition Initiative, FCAS</i>	<ul style="list-style-type: none"> • Economies of scale • Interoperability in Europe • Stronger European industrial base 	<ul style="list-style-type: none"> • Often slow and complex • Limited sovereign control • Political risk • Only partial customization

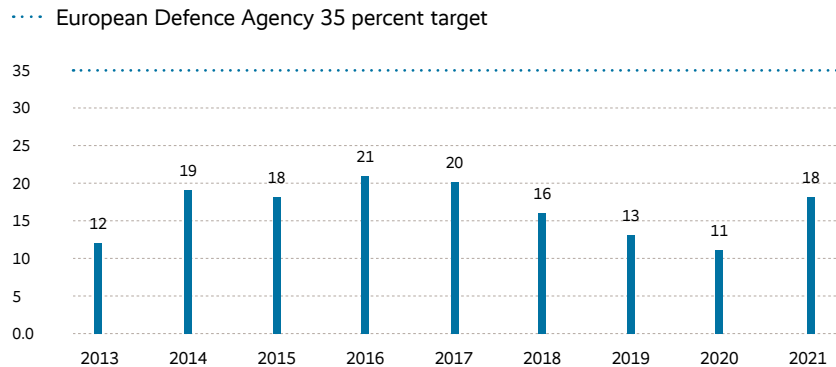
Data and illustration: Munich Security Conference

equipment is likely to have been used elsewhere, testifying to its quality. Purchasing from key allies also serves to generate political goodwill. But such purchases taken by states unilaterally will also likely increase fragmentation across Europe, undermine the continent's defense industrial base, and deepen dependencies on others.

Third, cooperative procurement or development among several European states, potentially with support from the EU (see section below), would ensure that new capabilities are interoperable while fostering European industry. Joint procurement also offers the benefits of economies of scale. However, coordination among several states, with diverging strategic cultures and threat perceptions, is complex and likely to be slow. Indeed, both intergovernmental and EU development and procurement projects have a bad track record.³ The political conflicts over the direction and division of labor regarding the Franco-German-Spanish project to develop the Future Combat Air System (FCAS) and the concomitant delays testify to the complexity of such multinational endeavors.⁴

Thus far, Europeans have mostly opted for national development or buying off-the-shelf abroad. They hardly cooperate on joint arms procurement and development. In its latest CARD Report, the EDA attests that “cooperation remains the exception rather than the norm.”⁵ As Figure 4.2 shows, EU member states have routinely failed to meet their self-imposed target to spend 35 percent of their total defense equipment procurement collaboratively, reaching only a meagre 18 percent in 2021. The economies of scale, not to mention the increased interoperability, that greater cooperative spending could generate are enormous. A 2019 study by the European Parliament refers to potential savings of 22 billion euros per year – around 10 percent of the EU’s total defense spending in 2022 (Chapter 2).⁶

Figure 4.2
European collaborative defense equipment spending, 2013–2021, percent



Data: European Defence Agency. Illustration: Munich Security Conference

Another reason for the malaise in EU defense industrial cooperation is that there is no single, integrated market for defense like in other areas of economic exchange in the EU. Internally, there is no unrestricted movement of goods between EU member states. The EU’s treaties grant defense a special status and member states have excessively used national security provisions (Article 346, Treaty on the Functioning of the European Union – Box 4.1) to exempt defense industrial orders from European competition. The resulting market barriers mean that the European defense market is deeply fragmented and inefficient. The EU has attempted in vain to rein in the habitual use of Article 346 by means of Directive 2009/81. Moreover, national export control procedures are still in place, meaning there are serious

regulatory obstacles to intra-EU arms trade. As a result, the most recent available data shows that only 9 percent of tendered contracts were awarded to other EU-based suppliers, with domestic suppliers winning more than three quarters of contracts.⁷ Externally, moreover, the EU lacks a common arms export policy. In 2008, the EU agreed on a legally binding Common Position on Arms Export Control, but member states have diverged in its implementation and pursued disparate national approaches. In the Strategic Compass, the member states agreed to further streamline their practices “for defense capabilities jointly developed, in particular in an EU framework thus ensuring EDF-funded products will profit from adequate and competitive access to international markets, in line with the 2008 Council Common Position.”⁸ However, this change is yet to materialize. The defense market remains one of the last vestiges of a nationally organized European economy.

Box 4.1

Article 346 Treaty on the Functioning of the European Union (TFEU) – National Security Exemption

1. The provisions of the Treaties shall not preclude the application of the following rules:
 - (a) no Member State shall be obliged to supply information the disclosure of which it considers contrary to the essential interests of its security;
 - (b) any Member State may take such measures as it considers necessary for the protection of the essential interests of its security which are connected with the production of or trade in arms, munitions and war material; such measures shall not adversely affect the conditions of competition in the internal market regarding products which are not intended for specifically military purposes.
2. The Council may, acting unanimously on a proposal from the Commission, make changes to the list, which it drew up on 15 April 1958, of the products to which the provisions of paragraph 1(b) apply.

Russia's War on Ukraine: Urgency Beats Unity

The Russian war on Ukraine could actually render cooperation on arms procurement even more difficult. European states are scrambling to replenish their stocks, replace the equipment they sent to Ukraine, and reinforce their militaries in this new adverse security environment. And they are seeking to do so fast. Polish military planners, for instance, assume that Russia will be able to regenerate its conventional forces within five years.⁹ European production capacities are currently insufficient to meet demand. Upon signing an agreement to purchase tanks, fighter jets, and howitzer artillery from South Korea, Polish Defense Minister Mariusz Blaszczak hence emphasized that “fast delivery” was a key factor in the decision, as acquiring German Leopard tanks would have taken significantly longer.¹⁰

In a similar vein, the German Defense Ministry decreed in April 2023 that “with immediate effect, the factor time shall have the highest priority.”¹¹ Accordingly, the German Defense Ministry placed the largest orders of the special fund for off-the-shelf American-made equipment – F-35 fighter jets and Chinook helicopters. Moreover, the war illustrated the practical ramifications of Europe's diverging arms exports rules and cultures. Germany's initial reluctance to allow other European states to provide Ukraine with German-made Leopard tanks caused much frustration and could deter states from joining cooperative arms projects in the future should Germany demand a veto over their subsequent exports.

The Russian war on Ukraine has thus exacerbated some of the obstacles to European defense industrial cooperation while simultaneously dramatically increasing the demand for joint action. The prioritization of fast deliveries is understandable but comes at the cost of further fragmentation of Europe's defense industrial base at a time when it is already highly dependent on the US. Crucially, arms procurement decisions have lock-in effects. They imply long-term maintenance contracts with external suppliers. Moreover, the longevity of weapon systems means that they will likely delay or even deplete investment in next generation systems. For example, some worry about the adverse effects that Germany's purchase of F-35 fighter jets from the US might have for FCAS.¹² Thus, procurement decisions taken now risk preventing the consolidation of the European defense industrial base for years and potentially decades to come. Policymakers must thus walk the fine line of rapidly equipping their armed forces and Ukraine while strengthening the European defense sector in the long term.

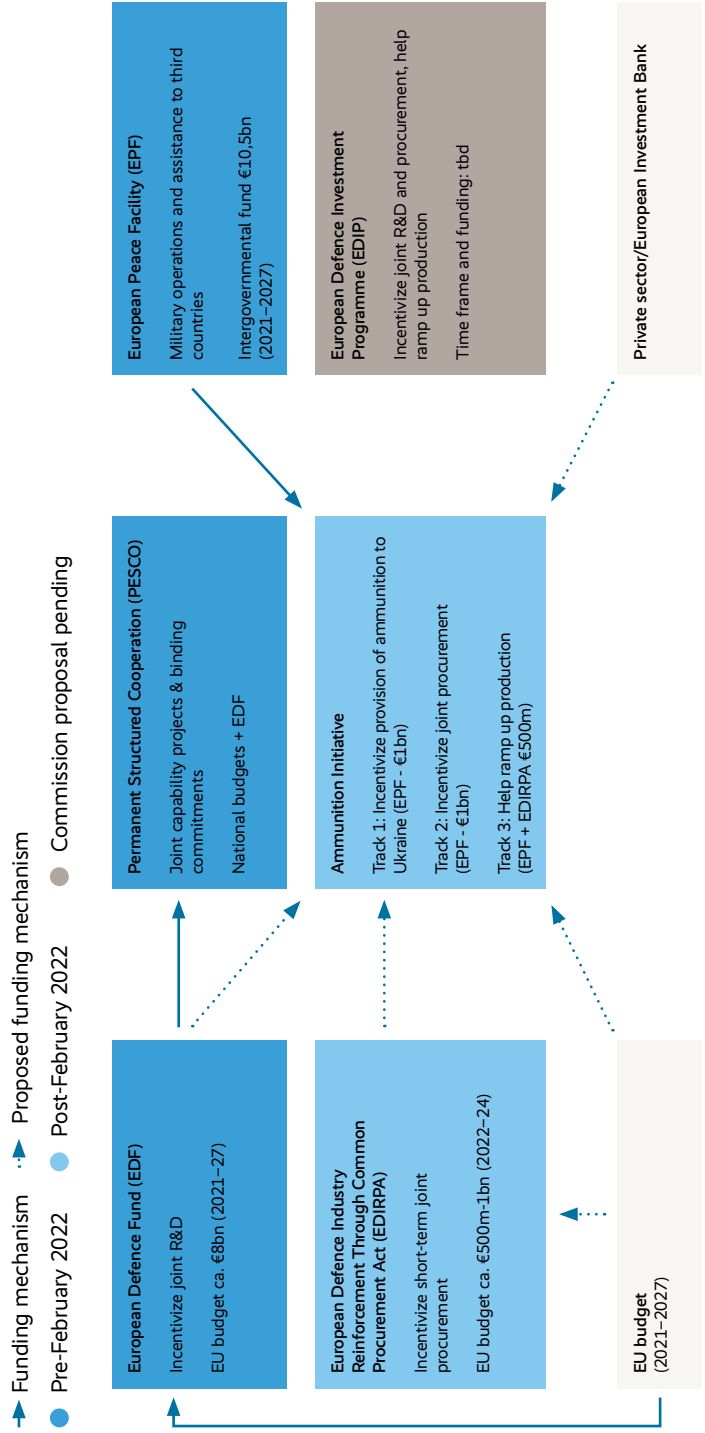
EU Defense Initiatives: Breaking Taboos but Not Walls

Even before the war, the EU had taken various initiatives to foster defense industrial cooperation. These include the establishment of the European Defence Fund, which provides around 8 billion euros from the EU budget (2021–2027) for collaborative defense research and capability development. In 2017, 25 EU member states agreed to activate Permanent Structured Cooperation (PESCO) in defense and have launched 68 joint capability projects since. The EU also established CARD, a process monitoring national defense plans with the aim of coordinating spending and identifying opportunities for collaboration. While introducing a defense chapter in the EU budget for the first time was considered a small revolution in Brussels, the member states cut the EDF by 39 percent compared to the initial Commission proposal in the negotiations on the EU’s 2021–2027 budget.¹³ Moreover, the 2022 CARD Report noted that the EDF, PESCO and CARD “have not reached their full potential” and that “no improved coherence of the EU defense landscape has yet been observed.”¹⁴

The Russian war on Ukraine has added a much greater sense of urgency to the quest to spend better together. The Strategic Compass, agreed shortly after the start of the war, stressed the need to become “bolder and faster in filling critical capability gaps, overcoming fragmentation, [and] achieving full interoperability.”¹⁵ The quick and substantial use of the intergovernmental European Peace Facility (EPF) to reimburse and coordinate military assistance for Ukraine has been an important and visible contribution to Ukraine’s fight. The EU has also launched a range of additional initiatives to boost industrial cooperation and joint procurement in the short to medium term (Figure 4.3).

First, the Commission proposed the European Defence Industry Reinforcement through Common Procurement Act (EDIRPA) in July 2022. This short-term financial instrument (2022–2024) is intended to consolidate states’ demand for the most urgent and critical capability gaps created or widened by the response to the Russian invasion. The fund is supposed to co-finance procurement carried out by at least three member states. The proposal is innovative, as it would, for the first time, allow the use of the EU budget for joint defense procurement. While Article 41 of the Treaty on European Union bans using the EU budget for military and defense expenditure, the Commission found a creative workaround and chose a legal basis focused on fostering industrial competitiveness. This means that the funds can only be used to cover the administrative costs related to the

Figure 4.3
Key EU defense initiatives, before and after February 2022



Data and illustration: Munich Security Conference



“We must respond collectively to the depletion of national stocks in [...] following the transfer to Ukraine. [...] With EDIRPA, we propose a European vehicle to lead part of the recovery effort.”¹⁷

Thierry Breton, European Commissioner for Internal Market, European Defence and Security Conference, October 11, 2022

increased complexity of joint procurement. The contribution from the EU budget can amount to up to one quarter of the value of a procurement contract.¹⁶

EDIRPA is, however, unlikely to have much of an impact because the instrument provides too little too late. First, its budget appears insufficient to offer a real incentive. The Commission has proposed a financial volume of 500 million euros – a drop in the ocean compared to the overall increase of member states’ defense expenditure. Second, almost a year on, EDIRPA has yet to be formally adopted, undermining its short-term ambitions. It took the European Parliament four months to clarify the competences of its respective committees and another four to consolidate its position. The proposal is now supposed to be agreed by summer 2023 or shortly after, leaving a lifespan of only fifteen months.

The negotiations also illustrate the trade-off between strengthening the EU’s defense industry and other considerations such as speed and the integrity of existing supply chains. The question whether EDIRPA should subsidize equipment that contains components from non-associated third countries has proved controversial, with France pushing for an EU-only approach. Meanwhile, Germany as well as Central and Eastern European states have advocated for greater openness. The Council eventually settled on a 30 percent cap on third-country components whereas the European Parliament proposed 40 percent.¹⁸

A second key measure is the Ammunition Initiative initially proposed by Estonia in February 2023. It aims at providing Ukraine with one million rounds of much-needed artillery ammunition within 12 months and has three complementary tracks:

- Track 1 was agreed upon in March 2023.¹⁹ It foresees the donation of artillery ammunition to Ukraine from national stocks or from reprioritizing orders until May 31, 2023. An amount of up to one billion euros from the EPF has been set aside to partially reimburse donors. As of May 23, the EU had provided Ukraine with 220.000 rounds of ammunition.²⁰ This figure is likely higher in reality as member states can submit invoices up to six weeks after the deadline.



“We need to do the same as during the pandemic; ask the industry: What do you need to scale up production?”²²

Ursula von der Leyen,
European Commission
President, Munich Security
Conference, February 18,
2023

- Track 2 seeks to incentivize the joint procurement of ammunition from the European defense industry and Norway. The consolidation of demand should lead to economies of scale and provide the industry with the large, multi-year contracts it needs to ramp up production. Joint procurement can either be organized via the EDA or member state consortia with a lead nation. Track 2 will be supported by another billion euros from the EPF covering the partial reimbursement of ammunition procured for Ukraine.
- Track 3 focuses on ramping up European manufacturing capacities for ammunition. In May, the Commission proposed the Act in Support of Ammunition Production (ASAP) with a volume of 500 million euros being redeployed from the EDF and EDIRPA for the period until June 2025.²¹ The instrument should help European companies address bottlenecks and shortages they face in the ramp up (e.g., skilled personnel, machines, supply chains, raw materials). Companies that signed up for procurement contracts under Track 2 would get preferential access to Track 3. In a bold move, the Commission also proposed freeing up funding from the cohesion funds and the Recovery and Resilience Facility to allow member states to redirect these to their defense industries. This is intended to attract additional funding, either from the European Investment Bank (EIB) or from private banks.

As it has done with EDIRPA, the EU has broken fresh ground with the Ammunition Initiative. While it is too early to judge its success, the initiative is innovative and could serve as a model for jointly procuring different weapon systems. Even so, some obstacles will endure.

Money will likely be a constraining factor. The EPF, used for Tracks 1 and 2, has been topped up several times based on what could be called the “Borrell method”: the EU’s High Representative has repeatedly announced increases in the media ahead of important meetings to exert pressure on the member states to agree (which they need to do unanimously). So far, the method has worked, but resistance among member states, including Germany as the EPF’s largest contributor, is mounting.²³ The fact that Hungary vetoed the disbursement of a fresh 500-million-euro tranche in mid-May to remove the country’s biggest bank from a sanctions list of international sponsors of Russia’s war, indicates how fragile the consensus is.²⁴ The proposed funding from the EU budget for Track 3 is limited and the impact of other financing options remains questionable. Redirecting cohesion and recovery money



“We need to go even further, towards greater standardization and simplification, and do it in Europe.”³⁵

Emmanuel Macron, French President, Munich Security Conference, February 17, 2023

would require renegotiating the respective national plans and programming with the Commission. Any new measures would also have to be consistent with these funds’ objectives. If cohesion money were to be used for ammunition production, for instance, socially or economically disadvantaged regions would have to benefit from it. The provision of EIB financing for anything beyond dual-use goods would, in turn, presuppose a loosening of the bank’s environmental, social, and governance criteria. There has been reluctance to do so for fear of the bank’s downgrading by rating agencies.²⁵

In addition, the Ammunition Initiative faced yet another controversy on third-country components. The French insistence that the joint procurement should exclude ammunition that is not entirely produced on EU territory held up negotiations for weeks. This stance frustrated others who argued that European firms relied on some external components to deliver the shells on time.²⁶

These challenges do not bode well for the EU’s longer-term initiative, the European Defence Investment Programme (EDIP), which is meant to build on EDIRPA and ASAP. According to the Commission, EDIP should establish “the conditions and criteria for Member States to form consortia [...] that will jointly procure, for the use of participating Member States, defense capabilities that are developed in a collaborative way within the EU and would benefit from a VAT exemption.”²⁷ Thus, it should serve as “the anchor for future joint development and procurement projects of high common interest” and support these financially as well as helping to ramp up production capacities.²⁸ The Commission had initially promised a concrete proposal for the third quarter of 2022, which was then postponed to June 2023 and could be delayed even further, largely due to a lack of financing. The suggested fiscal incentive, the VAT waiver for collaborative projects, has already run into opposition from the German Finance Ministry, and could be dead on arrival.²⁹ The dearth of unallocated funding in the EU budget means that support for the ramp up of production capacities would have to come from other pots, as is the case for Track 3 of the Ammunition Initiative. In addition, the controversy on third-country participation and components could easily haunt negotiations again. This could cause delays, which would put its adoption before the 2024 European Parliament elections at risk.³⁰

Overall, the EU’s initiatives are breaking taboos and setting important precedents, but the lack of both adequate funding and political ownership by member states will likely limit their practical impact.

NATO and OCCAR: Alternative Facilitators of Cooperation

The EU has, of course, no monopoly over fostering European defense industrial cooperation. Indeed, national and NATO priorities have traditionally shaped defense planning in Europe.³¹ NATO's principal role in this area is to set both standards and demands for the Alliance. Its sophisticated Defense Planning Process (NDPP) seeks to harmonize national defense plans to meet capability targets deemed necessary to fulfill NATO's objectives.³² By identifying and subsequently apportioning concrete targets for each ally, the NDPP provides direction for European states on what to procure and can point to potential synergies.

NATO's role as a demand and standard setter could be upgraded at its forthcoming summit in Vilnius in July 2023. The Secretary-General expects leaders to endorse a "NATO Defense Production Action Plan" to boost production capacities and investment.³³ This plan could set procurement targets for specific types of equipment, e.g., ammunition, and issue guidelines for standardization and stockpiles. Like the EU measures, the plan's adoption of a multi-year perspective is meant to provide industry with the longer-term demand signal it needs to invest in production lines, personnel, and supply chains.

This plan could also enhance NATO's role as a coordinator and convener that fosters joint capability development. It remains to be seen whether it will merely allot national targets or also collaborative or even regional procurement objectives for specific groups of nations, which would constitute a shift away from the NDPP's current methodology. Regional procurement targets could be in line with the regional defense plans NATO is developing as part of its new Force Model and promote greater specialization of tasks in Europe. Furthermore, the plan could strengthen the NATO Support and Procurement Agency (NSPA). The agency usually acts as an intermediary between Allies and industry on NATO's High Visibility Projects – forms of multinational capability cooperation in areas like air-to-air refueling or ammunition stockpiling. NATO also convenes the Conference of National Armaments Directors to encourage greater procurement coordination and cooperation among allies. Unlike the EU, however, the Alliance lacks meaningful funds to incentivize cooperation, which effectively limits its role. There is potential for synergies where NATO takes the lead in setting targets and standards while the EU prepares the ground for European defense industrial cooperation. However, the planning processes of the two organizations are insufficiently intertwined to effectively divide the labor between them.

Alongside NATO, OCCAR has acted as an important coordinating body for several major multinational procurement projects in Europe. With a select membership of Germany, France, Italy, Spain, the United Kingdom, and Belgium (other countries can join projects on an ad-hoc basis), OCCAR serves as an avant-garde group of Europe's most important defense industrial players. Accordingly, many of Europe's most important multinational projects were managed by OCCAR, including the Airbus A400M transport aircraft, the Boxer armored fighting vehicle, and the Eurodrone (MALE RPAS). This raises the wider question of how to guarantee that Europe's manifold procurement institutions add value, ensure a meaningful division of labor, and avoid duplicating each other.

Bi- and Multilateral Cooperation: From the Bottom Up

Most large multinational projects in Europe have been conducted on a purely intergovernmental basis. There have been many negative examples, characterized by clashing industrial interests, huge delays, and exploding costs. However, there are also positive examples that illustrate the potential of nationally-driven consolidation, integration, and task specialization from the bottom up.

One such example is the German-Norwegian naval cooperation. In 2021, the two nations agreed to jointly procure the same submarines and naval strike missiles. The German company Thyssenkrupp Marine Systems will provide six identical submarines, two for Germany and four for Norway. The Norwegian company Kongsberg Defence and Aerospace will in turn supply the respective naval strike missiles for both sides. The two nations thereby acquire capabilities that are key for securing NATO's northern flank. The decision will not only lead to deeper bilateral industrial cooperation but also entail closer navy-to-navy cooperation, including on training, exercises, spare parts, and lifetime management of the submarines.

Another example of best practice is the Belgian-Dutch naval cooperation (Benesam). The two countries have agreed to harmonize requirements for the replacement of their M-frigates and minehunters in a common procurement process. The acquisition of near-identical models will allow them to fully integrate support functions. This specific example builds on many decades of successful naval cooperation between the two countries. In 2022, France joined the bilateral minehunter cooperation, a logical step considering that the French shipbuilder Naval Group was constructing twelve new vessels for the two countries.³⁴

Both examples illustrate the well-known benefits of harmonizing specifications and requirements. A hallmark study from 1999 estimated that armaments standardization could lead to cost savings of up to 50 percent.³⁶ According to the study, standardization lowers procurement costs, promotes interoperability, and facilitates integration or task specialization in support and maintenance. The latter aspect is far from negligible given that maintenance costs represent 30 to 70 percent of the lifecycle costs of any platform.³⁷ Even so, most nations have their own maintenance facilities. The savings potential for large-scale projects such as the FCAS and the Main Ground Combat System (MGCS) would be immense.

The above examples, however, also indicate that mutual trust is a determining factor for partial defense integration and task specialization. These forms of cooperation always imply giving up a degree of national sovereignty and independence. This is why they take time to develop and are more prevalent in some constellations than others. Strategic cultures, geographic proximity and history play an important role in this regard.³⁸

Conclusion: Fence-Sitting Rather Than Transformation

Existing formats of joint development and procurement have not yielded sufficient benefits to convince European states of their merit vis-a-vis off-the-shelf purchases. While the EU has launched several initiatives that go beyond erstwhile red lines, the return of large-scale war to the European continent has not yet led to the transformation in defense industrial cooperation that is warranted. One reason is a lack of political leadership, notably by France and Germany. While France is perceived as instrumentalizing the EU initiatives for its own industrial interests, Germany is seen as missing in action and neglecting the European dimension in its response to the *Zeitenwende*.³⁹ In addition, the EU initiatives are chronically underfunded when compared to Europe's overall defense spending increases. The impact of alternative paths to cooperation, be it via NATO, OCCAR, or smaller intergovernmental formats, depends entirely on the political will of European states to overcome narrow national industrial interests and shed a degree of sovereignty. Further reforms and a change of mindset in national capitals are needed to set European defense cooperation on a new path.

Key Points

- ① European states do not collaborate enough on arms development and procurement, causing costly inefficiencies and poor military interoperability. The initial responses to Russia's war on Ukraine have even exacerbated Europe's defense fragmentation.
- ② Europeans face a trilemma: they can develop and procure equipment nationally, off-the-shelf abroad, or in cooperation with others. Each option involves different trade-offs between costs, control, speed, industrial interests, and European fragmentation.
- ③ The EU has launched several unprecedented initiatives to incentivize joint procurement and ramp up production. But their impact is likely limited as they suffer from a lack of funding and political support by the member states.
- ④ Alternative pathways via OCCAR, NATO, or ad-hoc cooperation have hitherto rarely delivered sufficient added value. Europeans need to learn from the few positive examples of multinational arms cooperation.



Five Recommendations

5 How to Come Off De Fense

What concrete short- and medium-term steps should Europeans take to transform their defense cooperation?

How to Come Off De Fense

Nicole Koenig and
Leonard Schütte

European defense has come a long way since February 2022 – but nowhere near far enough given the *Zeitenwende* that Russia’s war against Ukraine represents. More than 20 EU member states have since announced defense spending increases, but there are signs that some Western European states, in particular, may not meet their pledges. The overlap in EU and NATO membership is growing, but there are few indications that this will truly boost coordination between the two organizations. The EU has tabled innovative measures to spur joint procurement and industrial ramp up, but these are underfunded, and member states routinely miss their collaborative spending target. Europeans seem to be stuck between the *status quo ante* and the transformation of defense cooperation that the current situation warrants.

Europeans cannot afford to sit on the fence and wait for a *Zeitenwende 2.0* before embarking on an ambitious reform path. The global security environment is darkening, and Russia is not the only revisionist actor seeking to undermine the rules-based international order. The US will inevitably shift its attention toward the Indo-Pacific. If Europeans fail to reverse course now, they will jeopardize their ability to defend themselves, become unable to support Ukraine over the long term, and risk marginalization in NATO. As a result, European citizens would be much less secure.

The crucial capability gap in European defense is still political leadership. While both EU High Representative Josep Borrell and Commission President Ursula von der Leyen have been driving EU support for Ukraine and defense cooperation, key member states are missing in action. Under the Scholz government, Germany has faced recurrent criticism for its absence in EU defense questions.¹ Meanwhile, France is seen as pursuing narrow industrial rather than collective European interests. Their initial dithering on arms donations to Ukraine and energy sanctions, exacerbated by a history of neglecting Central and Eastern European views on Russia, has caused lasting damage to their credibility – and to that of European defense initiatives – in Warsaw, Tallinn, and beyond. The onus lies on Germany and France to win back trust. Macron’s speech in Bratislava in May 2023, in which he confessed to have previously “lost an opportunity to” Central and Eastern Europeans, was a good start.² At the same time, all EU member states need to suppress national sovereignty reflexes and look beyond narrow industrial interests.

European policymakers have the levers to significantly strengthen European defense in times of war. Some of those levers need to be pulled now, others require more time. Policymakers should consider these five recommendations:

1. Up Defense Spending Pledges and Keep Them

There is no peace dividend anymore. As agreed in Versailles last year, Europeans must – now and in the future – “resolutely invest more and better in defense capabilities and innovative technologies.”³ At the moment, they are still missing NATO’s overall defense spending commitment as well as the EDA’s targets on defense innovation and collaborative equipment spending. Even if Europeans were to realize the announced defense spending increases, they would still collectively fail to meet NATO’s two percent goal by 2028 (not to mention the actual target date of 2024). There is currently a vivid discussion within the Alliance on redefining the two percent as a bottom rather than a ceiling. A further increase of NATO’s spending pledge would put even greater pressure on European laggards. Making matters worse, several states have already backpedaled on their commitments. Special funds like the German *Sondervermögen* can be helpful cash injections (assuming they are actually dispensed), but regular defense budgets must be increased now to signal to adversaries, allies, and defense industries that Europeans are serious about their promises. As media attention on Ukraine will inevitably wane and inflation continues to bite, this will require steadfastness.

European policymakers should also use the current reform of the Stability and Growth Pact to stimulate defense spending and cooperation. In recent Conclusions on the topic, the Council endorsed a proposal by the Commission to classify defense as an EU strategic priority, investments in which would qualify for an extended period to reduce the accumulated debt.⁴ Member states should be bolder and exempt collaborative EU defense spending from the Stability and Growth Pact altogether. This could represent an incentive for joint procurement and development in addition to those detailed below.

In light of the lessons from Ukraine, Europeans also need to dedicate sufficient funds for innovation. The defense innovation gap between Europe and the rest of the world is widening, which not only undermines Europe’s relative military strength but also puts its interoperability with technologically advanced US forces at risk. Upgrading the data connectivity of European



“To me, the formula cannot be: NATO or the EU. It has to be: NATO and the EU. Or, more precisely: a stronger Europe for a stronger NATO.”⁵

Boris Pistorius, German Defense Minister, Munich Security Conference, February 18, 2023

armed forces and preparing them for the proliferation of drones and loitering munitions should be a priority.

2. Synergize NATO and EU Planning and Agree on Specialization

Spending better together will require identifying a limited number of cooperation priorities which have the potential to generate significant economies of scale, provide important European public goods, and enhance the EU’s role as a strategic enabler of NATO. In an ideal world, cooperation priorities would be agreed top-down, based on fully harmonized EU and NATO planning processes. NATO could take the lead in setting capability targets and answer the question of what should be done. The EU, in turn, could lead on the question of how to do what needs to be done and use its growing toolbox (CARD, EDF, PESCO, EDIRPA, EDIP) to incentivize cooperation. This ideal vision faces two obstacles. First, while NATO and the EU’s members and priorities overlap, they are not identical. The long-standing blockades between Greece and Cyprus on the one hand, and Turkey on the other continue to hamper formal cooperation and information-sharing. Second, defense planning remains a national prerogative, and both EU and NATO planning processes have suffered from a lack of compliance.

The growing overlap in membership should nonetheless lead members of both organizations to push for more synergies. Forthcoming EU and NATO documents represent an opportunity in this regard. The NATO Defense Production Action Plan, announced for July 2023, could provide industry with the necessary long-term demand signal it needs to ramp up production. The EU could then support the ramp up of European capacities with subsidies under ASAP and later EDIP. Furthermore, both planning processes should be more attuned to each other. NATO could complement national requirements with multinational ones to set a political incentive for collaboration.⁶ The EU’s Capability Development Plan, to be agreed upon in the fall 2023, should take relevant NATO priorities on board. The priorities in both documents should then be taken up by regional or functional defense avant-gardes. While this idea is far from new, NATO’s announced regional plans could provide an additional push for specialization. These defense avant-gardes will have to be led by Europe’s largest defense industrial players, but they should also include smaller, notably Central and Eastern countries with relevant capabilities.

Taking inspiration from the NDPP, EU members could also decide to reform the CARD process to allow for naming and shaming and more peer pressure.

This could be done by including comparative national data instead of aggregate numbers in CARD reports. Greater transparency could raise the pressure on EU member states to actually meet the more binding PESCO commitments – in particular collaborative and national spending targets – by 2025, as stated in the Strategic Compass. Finally, the EU and NATO should better coordinate their innovation initiatives (HEDI, EUDIS, and DIANA) rather than succumbing to bureaucratic beauty contests.

3. Use the Ammunition Initiative as a Model for Other Urgently Needed Equipment

While the jury is still out on its effectiveness, the Ammunition Initiative provides an innovative model to incentivize further arms donations to Ukraine, jointly and swiftly procure their replacements to fill capability gaps, and potentially support increasing production capacities. As the EPF can only contribute funding for assistance to third countries, the model only applies to equipment donated to Ukraine (and, theoretically, other third countries). The equipment thus needs to meet three criteria: 1) Ukraine requires more of the equipment in question; 2) EU member states want to replenish their stocks; and 3) production capacities in Europe are currently insufficient (though one could also just focus on the first two tracks).

The EU's Defence Joint Procurement Task Force has identified seven areas of common and urgent procurement needs, ranging from medical equipment to air-defense missiles. NATO's Defense Production Action Plan is also expected to identify short-term procurement targets. Assuming that Ukraine shares some of these procurement needs, these priorities should guide future initiatives. When jointly procuring ammunition or other goods for short term use in Ukraine, the priority should be speed of delivery, not whether orders exclusively benefit the European industry.

4. Significantly Increase EU Funds for Joint Procurement and Ramp-up of Production Capacities

Where the Ammunition Initiative could serve as a short-term model for Ukraine-related procurement, EDIP is meant to be the EU's long-term instrument to incentivize joint procurement and subsidize European defense companies to increase their production capacities to meet this demand. Unlike EDIRPA, EDIP should almost exclusively benefit European companies to consolidate Europe's defense industrial base. Indeed, increasing and sustaining European production capacities is a prerequisite for joint procurement. Another requirement for strengthening European

defense industries is to reduce critical dependencies. EDIP should model the ASAP regulation of the Ammunition Initiative. Therein, the Commission suggested drawing up a list of defense-relevant products, including raw materials and components, which are or could in the future be affected by disruptions to the single market. It proposes continuous monitoring, based on information from the industry, which would enable it to draw up emergency responses to current or future shortages.

The EU's initiatives to incentivize joint procurement and ramp up production are already breaking erstwhile taboos. For these changes to be more than symbolic and make a structural difference to EU defense cooperation, the EU needs to muster additional funding. Policymakers can use three complementary channels to increase European defense instruments.

First, the regular EU budget could be used to fund EDIP. Its mid-term review, due later this year, could be an opportunity to redirect current funding streams. Yet, the current budget has little, if anything, left to spare. Like ASAP, EDIP could cannibalize other EU funds, such as the EDF or even EDIRPA, but these are likewise not all that flush with money. Hence, the most realistic option would be to significantly increase the budgetary provisions for defense – that is, for EDIP but also the EDF and the Military Mobility initiative – in the next cycle (2028–2034), negotiations for which will start soon enough. Policymakers must resist the pressure to cut the budgetary provisions for defense like they did in the last negotiations.

Second, policymakers can increase existing intergovernmental funds or create new ones to fund EDIP. The EPF, coming with the abovementioned limitations, is one such example. A more ambitious proposal would see the EU create something akin to its debt-financed Covid recovery fund to rearm Europe.⁷ In light of increasing interest rates, there is currently little appetite among many EU member states to take on more joint debt.⁸ But like other erstwhile red lines vis-a-vis the war, this one could be crossed in the medium term with sufficient political leadership.

Third, EU finance ministers could decide to loosen the European Investment Bank's lending policy to support European defense industry, also to attract further private capital. This could help defense companies better access the necessary capital to ramp up production and serve as an incentive for green and circular economy approaches in the sector.⁹ At the moment, the Bank is restricted to funding dual-use goods only.

5. Move Toward a European Single Market for Defense

In the medium to long term, European leaders need to move toward a true single market for defense. This has at least three important dimensions.

The first is greater standardization. The EU and NATO have been pushing for standardization and interoperability for many decades, but the effects of their largely voluntary approaches have been limited.¹⁰ The lack of compliance mechanisms only leaves financial incentives and political pressure as levers. The EDF makes the co-funding of joint development projects dependent on the definition of common technical specifications. The impact on standardization will be limited for now as EU co-funding currently only applies to a small share of multinational defense projects, but this could change with a larger volume for the EDF in the EU's next budget (see recommendation 4). For the bulk of funds, it will be up to the member states to push their industries toward greater harmonization by replicating or joining successful models, such as the German-Norwegian or Dutch-Belgian naval cooperations.

Second, addressing the excessive use of the national security exemption (Article 346 (1b) TFEU) will be key for establishing a level-playing field among European industrial players. Experts have suggested more transparent reporting on statistics for awarding contracts and stricter monitoring by the Commission, coupled with a more forward-leaning approach to infringement procedures.¹¹ Another option would be narrowing the scope of the national defense exemption. According to Article 346 (1c) TFEU, the Council can decide unanimously, on a proposal from the Commission, to amend the list of arms, munitions, and war material to which paragraph 1(b) applies.¹² The member states could agree on a gradual liberalization of Europe's defense market for products that are not considered national key technologies. A more radical step would be to abolish the national defense exemption altogether.¹³ This could be done through a limited treaty change, as had been done with the European Stability Mechanism (ESM) during the sovereign debt crisis. Treaty revision is, however, a thorny affair and even changing two sentences, as was also the case for the ESM, can take several years.

A third important step toward a single market for defense would be to harmonize Europe's patchwork of national arms export control regulations. Greater consistency would level the playing field for Europe's defense industry, which is heavily export-dependent. Two general policy options are on the table. The first would be an EU regulation that holds members to the 2008 Common Position on arms exports. Although this option is *inter alia* supported by the German government, France has traditionally rejected it, fearing that it would lead to a highly restrictive regime. Limiting the scope to products developed jointly in an EU framework, as the Compass suggests, could make it politically more feasible. The 2021 EDF regulation already empowers the Commission to carry out *ex-ante* arms export assessments for products developed with its support. A new EU arms exports control regulation could establish an independent EU risk assessment body, which could draw up a blacklist of countries in light of the 2008 Common Position and ensure continuous monitoring.¹⁴

The second option consists of the broadening and institutionalization of intergovernmental agreements. The German government suggested strengthening and extending the tripartite agreement on arms exports with France and Spain, concluded in the context of FCAS, to other nations. The three parties agreed that they would not prevent each other from exporting jointly developed goods unless immediate interests or national security were affected. Both options should be pursued in parallel but Europeanization from the bottom up seems to be more feasible in the short term.

European Defense Sitters: Come Off De Fense Now

The transformation of European defense will not happen overnight, but it must start now. Some steps, notably those outlined in recommendations 1-3, should be taken in the short-term and before the end of the EU's current legislature. Others, including substantial increases in EU funding for joint procurement and industrial ramp up and steps toward a single market for defense, might take more time. Discussions should, however, start now. The 2024 European Parliament elections provide an opportunity for an in-depth debate on the future of the EU, the needed reforms, and potential treaty changes. EU leaders and institutions should then start the new legislative term with a revision of the Strategic Compass to agree on an ambitious reform agenda for European defense, which should also be reflected in the EU's next multi-annual financial framework.

Key Points

- ① Europeans should raise and keep their spending pledges as well as related spending targets for cooperation and defense innovation.
- ② EU and NATO members should push for more synergies between the respective planning processes and use the current momentum to induce greater specialization.
- ③ EU member states should replicate the model of the Ammunition Initiative for other urgently needed equipment.
- ④ EU member states should significantly enhance funds to incentivize joint procurement and support the ramp-up of production capacities.
- ⑤ EU member states should take ambitious steps toward a single market for defense and establish a level playing field among industrial players.




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Notes

Quotations originally in British English have been adapted to American English.

Endnotes

1 Introduction: This Time It's Different?

1. Swedish Presidency of the Council of the European Union, "Video Message From Swedish Minister for Defence Pål Jonson," Stockholm: Government of Sweden, 2023, <https://perma.cc/K9UE-7APM>.
2. Sean Monaghan, "Solving Europe's Defense Dilemma: Overcoming the Challenges to European Defense Cooperation," Washington, DC: CSIS, CSIS Briefs, March 2023, <https://perma.cc/N3CR-72KY>.
3. Hugo Meijer and Stephen G. Brooks, "Illusions of Autonomy: Why Europe Cannot Provide for Its Security If the United States Pulls Back," *International Security* 45:4 (2021), 7–43, doi:10.1162/isec_a_00405.
4. European Council, "The Versailles declaration, 10 and 11 March 2022," Press Release, March 11, 2022, <https://perma.cc/37NK-87LX>.

2 Defense Budgets: Money Can('t) Buy You Force

1. Max Bergmann et al., "Transforming European Defense," Washington, DC: CSIS, CSIS Briefs, August 2022, <https://perma.cc/6NRS-VPC4>, 1–2; Sophia Becker, Christian Mölling, and Torben Schütz, "Deterrence and Defense in Times of Covid-19: Europe's Political Choices," Berlin: DGAP, DGAP Policy Brief 9, April 2020, <https://perma.cc/SMN8-23NX>, 2.
2. SIPRI data quoted in European Commission, "Joint Communication to the European Parliament, the European Council, the Council, The European Economic and Social Committee and the Committee of the Regions on the Defence Investment Gaps Analysis and Way Forward," Brussels: European Commission, May 18, 2022, <https://perma.cc/AR28-5RQB>, 4.

3. Paul Taylor, "How to Spend Europe's Defense Bonanza Intelligently," *POLITICO*, September 2, 2022, <https://perma.cc/8G78-K4QK>.
4. EDA, "European Defence Spending Surpasses €200 billion for the First Time," Brussels: EDA, December 8, 2022, <https://perma.cc/C8SP-G88A>.
5. Bergmann et al., "Transforming European Defense," 2–3; Max Bergmann and Sophia Besch, "Why European Defense Still Depends on America: Don't Believe the Hype - the War in Ukraine Has Led to Little Change," *Foreign Affairs*, March 7, 2023, <https://perma.cc/J84P-G85G>.
6. NATO, "The Secretary General's Annual Report 2022," Brussels: NATO, March 21, 2023, <https://perma.cc/8TXR-85PA>, 52.
7. Olaf Scholz, "Policy Statement by Olaf Scholz, Chancellor of the Federal Republic of Germany and Member of the German Bundestag, 27 February 2022 in Berlin," Berlin: German Bundestag, February 27, 2022, <https://perma.cc/7ED5-PXM4>.
8. "Macron Announces Military Spending to Increase by a Third Until 2030," *Le Monde*, January 20, 2023, <https://perma.cc/873V-XN8H>.
9. "Poland to Ramp up Defense Budget to 4% of GDP," *Deutsche Welle*, January 30, 2023, <https://perma.cc/2KJ2-RBJD>.
10. "Poland to Ramp up Defense Budget to 4% of GDP," *Deutsche Welle*.
11. IISS, "The Military Balance 2023: The Annual Assessment of Global Military Capabilities and Defense Economics," London: IISS, 1st, February 15, 2023, <https://perma.cc/6RPJ-MN38>, 64.
12. This decrease would, however, also stem from the forecasted decline in US spending in the coming years.
13. Hans Binnendijk, Daniel S. Hamilton, and Alexander Vershbow, "Strategic Responsibility: Rebalancing European and Trans-Atlantic Defense," Washington, DC: Brookings Institution, June 24, 2022, <https://perma.cc/NB2F-24VC>.
14. Bergmann and Besch, "Why European Defense Still Depends on America"; Aneta Zachová and Davide Basso, "Czech President: EU Army no Longer in Macron's Mind," *Euractiv*, March 3, 2023, <https://perma.cc/GM8K-42VC>.

15. Die Wehrbeauftragte des Deutschen Bundestages, "Jahresbericht 2022 der Wehrbeauftragten (64. Bericht)," Berlin: Deutscher Bundestag, February 28, 2023, <https://perma.cc/J5KG-X6YV>.
16. "Europe is Struggling to Rebuild Its Military Clout," *The Economist*, May 7, 2023, <https://perma.cc/T6Q4-XXNF>.
17. "Deutschland verfehlt Zweiprozentziel bei Verteidigungsausgaben," *Zeit Online*, August 15, 2022, <https://perma.cc/75UU-P7ND>.
18. "Europe is Struggling to Rebuild Its Military Clout."
19. Angelo Amante, "NATO Wants Italy to Hit Spending Target as Soon as Next Year, Minister Says," Reuters, February 16, 2023, <https://perma.cc/5225-76WV>; Joseph Wilson, "Spain Boosts Military Spending to Close Gap With NATO Goal," AP, July 5, 2022, <https://perma.cc/6RXL-L63Z>.
20. Andreas Kockartz, "Belgiens Regierung erhöht den Verteidigungsetat um 2 % des BIP," VRT NWS, June 19, 2022, <https://perma.cc/4JKR-U74H>.
21. "Europe is Struggling to Rebuild Its Military Clout," *The Economist*.
22. Eoin Drea, "With Ukraine War, EU Balance of Power Shifts East: Russia's War Has Opened up a Vast Strategic Chasm Within the European Union," *Foreign Policy*, June 21, 2022, <https://perma.cc/B94M-NHWG>; David Hutt, "Central and Eastern Europe Want More Security Clout. Will Increased Spending be Enough?," *Euronews*, February 14, 2023, <https://perma.cc/X9ER-Y9Z8>.
23. Eurostat, "Euro Area Annual Inflation up to 7.0%," Luxembourg: Eurostat, euroindicators 52/2023, May 2, 2023, <https://perma.cc/W3VL-RXL5>.
24. Ben Knight, "What Happened to the German Military's €100 Billion Fund?," *Deutsche Welle*, February 28, 2023, <https://perma.cc/7TY2-KXCS>.
25. European Commission, "European Economic Forecast: Winter 2023," Luxembourg: European Commission, European Economy Institutional Paper 194, February 2023, <https://perma.cc/Y4RU-DXZZ>, 1; Eurostat, "EU's GDP up by 5.4% in 2021 but Still Below 2019 Level," Eurostat, June 29, 2022, <https://perma.cc/K9NS-4VVW>.
26. Yvonne-Stefania Efsthathiou, "European Strategic Airlift: a Work in Progress," London: IISS, Military Balance Blog, January 10, 2019, <https://perma.cc/JL37-AK5H>; Andrea Aversano Stabile and Giorgio Di Mizio, "Enhancing Military Capabilities in Europe: The Case of Air-to-Air Refuelling," Rome: IAI, IAI Commentaries 18/50, September 2018, <https://perma.cc/972Q-972P>, 2.
27. Joost Oliemans and Stijn Mitzer, "Answering the Call: Heavy Weaponry Supplied to Ukraine," *Oryx*, April 11, 2022, <https://perma.cc/E6AY-EAPT>.
28. Analysis by McKinsey based on data provided by Institute for the World Economy, "Ukraine Support Tracker: A Database of Military, Financial and Humanitarian Aid to Ukraine," Kiel: Institute for the World Economy, April 4, 2023, <https://perma.cc/5XUK-JCMC>; Christoph Trebesch et al., "The Ukraine Support Tracker: Which Countries Help Ukraine and How?," Kiel, Kiel Working Paper 2218, February 2023, <https://perma.cc/CNN8-6UMJ>; IISS, "The Military Balance 2023"; IISS, "The Military Balance 2022: The Annual Assessment of Global Military Capabilities and Defense Economics," London: IISS, 1st, February 15, 2022, <https://perma.cc/SBQ7-3Z2U>; Deliveries by the Netherlands consist of main battle tanks purchased for donation to Ukraine specifically. They were acquired from various sources, such as from Germany and the Czech Republic. See Oliemans and Mitzer, "Answering the Call: Heavy Weaponry Supplied to Ukraine."
29. Analysis by McKinsey based on data provided by Institute for the World Economy, "Ukraine Support Tracker"; Trebesch et al., "The Ukraine Support Tracker"; IISS, "The Military Balance 2023"; IISS, "The Military Balance 2022."
30. Analysis by McKinsey based on data provided by Institute for the World Economy, "Ukraine Support Tracker"; Trebesch et al., "The Ukraine Support Tracker"; IISS, "The Military Balance 2023"; IISS, "The Military Balance 2022."
31. European Commission, "Joint Communication to the European Parliament, the European Council, the Council, The European Economic and Social Committee and the Committee of the Regions on the Defence Investment Gaps Analysis and Way Forward.," 7.
32. Nico Lange, "How to Beat Russia: What Armed Forces in NATO Should Learn From Ukraine's Homeland Defense," Bratislava: Globsec, February 2023, <https://perma.cc/K6B6-AJXH>, 21–22.
33. Bergmann et al., "Transforming European Defense."
34. James Angelos, "Can Germany be a Great Military

Power Again?," *The New York Times Magazine*, January 24, 2023, <https://perma.cc/L6HF-6RJW>.

35. Jens Stoltenberg, "Pre-Ministerial Press Conference by NATO Secretary General Jens Stoltenberg ahead of the meetings of NATO Defense Ministers," Brussels: NATO, February 13, 2023, <https://perma.cc/5M7U-7ZBC>.
36. Nathalie Tocci, "The Paradox of Europe's Defense Moment," *Texas National Security Review* 6:1 (2021/2023), 99–108, <https://perma.cc/Z3PF-4XRB>, 104.
37. Paula Alvarez-Couceiro, "Europe at a Strategic Disadvantage: A Fragmented Defense Industry," April 24, 2023, <https://perma.cc/DL2M-BL7U>; Ilya Gridneff, "Why Europe's Defense Industry Can't Keep up," *POLITICO*, October 11, 2022, <https://perma.cc/7AUX-UPHB>.
38. Defined as EU member states (then still including the UK) and Norway, Serbia, Switzerland, and Ukraine; David Bachmann et al., "More European, More Connected and More Capable: Building the European Armed Forces of the Future," Munich: Munich Security Conference, McKinsey, and Hertie School of Governance, 2017, doi:10.47342/BXTP7454, 13.
39. Dick Zandee, "Open Strategic Autonomy in European Defense: What Countries Must do," The Hague: Clingendael, Policy Brief, December 2022, <https://perma.cc/A46H-DVAH>, 5.
40. European Commission, "Joint Communication to the European Parliament, the European Council, the Council, The European Economic and Social Committee and the Committee of the Regions on the Defence Investment Gaps Analysis and Way Forward," 5–6.
41. Sean Monaghan, "Solving Europe's Defense Dilemma: Overcoming the Challenges to European Defense Cooperation," Washington, DC: CSIS, CSIS Briefs, March 2023, <https://perma.cc/N3CR-72KY>, 6.
42. Reuters, "Chinook Helicopters Could Cost Germany Twice as Much as Planned - Business Insider," *Euronews*, January 20, 2023, <https://perma.cc/F7LC-2YRB>; Peter Hille and Nina Werkhäuser, "The German Military's New Shopping List," *Deutsche Welle*, March 6, 2022, <https://perma.cc/WMQ3-UBCM>; Sven Arnold and Torben Arnold, "Germany's Fragile Leadership Role in European Air Defence: The need for adjustments at all levels of the European Sky Shield Initiative," Berlin: Stiftung Wissenschaft und Politik, Comment 6, February 2023,

doi:10.18449/2023C06, 2.

43. Arnold and Arnold, "Germany's Fragile Leadership Role in European Air Defence," 5.
44. Matthew Karnitschnig and Wojciech Kość, "Meet Europe's Coming Military Superpower: Poland," *POLITICO*, November 21, 2022, <https://perma.cc/AB69-4R8Y>.
45. Mike Stone and Rhea Binoy, "U.S. Approves up to \$10 bln Sale of HIMARS Rocket Launchers, Ammunition to Poland," *Reuters*, February 7, 2023, <https://perma.cc/D43T-BBBX>.
46. IISS, "The Military Balance 2023," 72–149.
47. Blake Herzinger, "South Korea Could Sweep up Europe's Tank Market," *Foreign Policy*, January 30, 2023, <https://perma.cc/73GS-WBZ2>; "Poland Ready to Send Ukraine Tanks Even if Germany Opposes it - deputy FM," *Reuters Media*, January 20, 2023, <https://perma.cc/56HC-HXRW>.
48. Olaf Scholz, "Remarks by the Chancellor of the Federal Republic of Germany and Member of the German Bundestag Olaf Scholz at the 2023 Munich Security Conference," Munich: Munich Security Conference, February 17, 2023, <https://perma.cc/G2GV-JLLZ>.
49. "The West is Struggling to Forge a New Arsenal of Democracy," *The Economist*, February 19, 2023, <https://perma.cc/B9DV-AT98>.
50. "Ukrainian Armored Fist Gets Ready for Counteroffensive - Ukraine's Defense Minister," *Euromaidan Press*, March 27, 2023, <https://perma.cc/269Z-RWC3>.
51. Oliemans and Mitzer, "Answering the Call: Heavy Weaponry Supplied to Ukraine."

3 Critical Capabilities: Prioritizing Together

1. Nico Lange, "How to Beat Russia: What Armed Forces in NATO Should Learn From Ukraine's Homeland Defense," Bratislava: Globsec, February 2023, <https://perma.cc/K6B6-AJXH>, 24–27; Valery Zaluzhny, interviewed by *The Economist*, December 15, 2022, n.a.
2. Patrick Sanders, "General Sir Patrick Sanders, Chief of the General Staff, Opens the RUSI Land Warfare Conference With His Speech," London: Royal United

Services Institute, June 28, 2022, <https://perma.cc/8GYR-B6ZC>.

3. Kersti Kaljulaid, “MSC Innovation Night,” Munich: Munich Security Conference, February 16, 2023, <https://perma.cc/ZX7R-HZ8Y>.

4. Lange, “How to Beat Russia,” 20–22; Stijn Mitzer, “Defending Ukraine: Listing Russian Military Equipment Destroyed By Bayraktar TB2s,” *Oryx*, February 27, 2022, <https://perma.cc/FXG5-YKLN>.

5. Brennan Deveraux, “Loitering Munitions in Ukraine and Beyond,” *War on the Rocks*, April 22, 2022, <https://perma.cc/J2WG-8XXH>.

6. Grisha Misilyuk, “Iranian Drones in the Russian Invasion: Analysis by Molfar Experts,” *Molfar*, October 18, 2022, <https://perma.cc/ZC54-4V2A>.

7. Greg Myre, “A Chinese Drone for Hobbyists Plays a Crucial Role in the Russia-Ukraine War,” *NPR*, March 28, 2023, <https://perma.cc/D7UD-MER7>.

8. Jack Watling and Nick Reynolds, “Meatgrinder: Russian Tactics in the Second Year of Its Invasion of Ukraine,” London: RUSI, May 19, 2023, <https://perma.cc/CQ7D-W93T>, 18.

9. Svenja Moller, “Luftabwehrsystem: Worum handelt es sich bei Iris-T SLM?,” *Augsburger Allgemeine*, Januar 23, 2023, <https://perma.cc/SV5U-M7YS>.

10. “IRIS-T SL Surface-to-Air Guided Missile,” *Airforce Technology*, September 18, 2020, <https://perma.cc/M4S5-239J>.

11. Bundeswehr, *Dienstschluss des Gepards in der Bundeswehr*, 2012, Youtube, zuletzt geprüft am 5/26/2023, <https://perma.cc/XF3K-UZZ9>; Joost Oliemans and Stijn Mitzer, “Answering the Call: Heavy Weaponry Supplied to Ukraine,” *Oryx*, April 11, 2022, <https://perma.cc/E6AY-EAPT>.

12. Paul McLeary, “The Little-Known Weapon Knocking Down Iranian Drones Over Kyiv,” *POLITICO*, January 4, 2023, <https://perma.cc/5VRW-KVQN>.

13. David Ignatius, “How the Algorithm Tipped the Balance in Ukraine,” *The Washington Post*, December 19, 2022, <https://perma.cc/7WQT-TG67>.

14. Lange, “How to Beat Russia,” 12–14.

15. Olga Boichak and Tetyana Lokot, “Billionaires Won’t Save Ukraine’s Internet,” *Foreign Policy*, November 20, 2022, <https://perma.cc/6XP8-BWU5>.

16. Craig Howie, “‘The Hell With It’: Elon Musk Will

Fund Ukraine’s Starlink After All,” *POLITICO*, October 15, 2022, <https://perma.cc/CH6Q-DS9W>.

17. Kajsja Ollongren, “A Conversation With Dutch Minister of Defense Kajsja Ollongren,” Washington, DC: Atlantic Council’s Transatlantic Security Initiative, July 14, 2022, <https://perma.cc/ZZU9-X7EA>.

18. European Commission, “Joint Communication to the European Parliament, the European Council, the Council, The European Economic and Social Committee and the Committee of the Regions on the Defence Investment Gaps Analysis and Way Forward,” European Commission, May 18, 2022, <https://perma.cc/AR28-5RQB>, 7.

19. James Vincent, “Watch a Swarm of Drones Autonomously Track a Human Through a Dense Forest,” *The Verge*, May 5, 2022, <https://perma.cc/L66N-G6EK>.

20. European Commission, “Joint Communication to the European Parliament, the European Council, the Council, The European Economic and Social Committee and the Committee of the Regions on the Defence Investment Gaps Analysis and Way Forward,” 7.

21. “Projet de Drone Européen: Le ‘Prix de la Souveraineté’ en Question,” *France 24*, February 25, 2020, <https://perma.cc/9UVU-D2UM>.

22. “Czech Republic: 200 Smaller Drones Instead of Three Herons,” *Defence Industry Europe*, May 22, 2023, <https://perma.cc/28UQ-4DQU>.

23. European Commission, “Joint Communication to the European Parliament, the European Council, the Council, The European Economic and Social Committee and the Committee of the Regions on the Defence Investment Gaps Analysis and Way Forward,” 7.

24. European Defence Agency, “2022 Coordinated Annual Review on Defence Report,” Brussels: European Defence Agency, <https://perma.cc/2AY7-ZWE6>, 6.

25. Sven Arnold and Torben Arnold, “Germany’s Fragile Leadership Role in European Air Defence: The need for adjustments at all levels of the European Sky Shield Initiative,” Berlin: SWP, SWP Comment 6, February 2023, doi:10.18449/2023C06, 3.

26. European Commission, “Joint Communication to the European Parliament, the European Council, the Council, The European Economic and Social Committee and the Committee of the Regions on the Defence Investment Gaps Analysis and Way Forward,” 7.

27. Boichak and Lokot, "Billionaires Won't Save Ukraine's Internet."
28. Clément Evroux, "EU Secure Connectivity Programme 2023-2027: Building a Multi-Orbital Satellite Constellation," Brussels: European Parliamentary Research Service, February 2023, <https://perma.cc/NH7X-YYCG>, 1–6.
29. "How to Get More Bang for the Buck in Western Defence Budgets: Lessons From the War in Ukraine," *The Economist*, May 25, 2023, <https://perma.cc/3X2P-WEHZ>.
30. European Defence Agency, "Defence Data 2020-2021: Key Findings and Analysis," Brussels: European Defence Agency, 2022, <https://perma.cc/2UWS-7BAC>, 13.
31. European Defence Agency, "Defence Data 2020-2021," 14.
32. Matthew Schlueter, Marc Giesener, and Lauren Mayer, "The Defense Innovation Readiness Gap is Widening," BCG and MSC Security Innovation Board, The Defense Innovation Readiness Gap Series, February 16, 2023, <https://perma.cc/6JPV-QNTG>, 7.
33. European Commission, "EU Defence Innovation Scheme (EUDIS)," Brussels: European Commission, n.d., <https://perma.cc/K73J-WJN6>.
34. European Union, "A Strategic Compass for Security and Defence: For a European Union that Protects Its Citizens, Values and Interests and Contributes to International Peace and Security," Brussels: European Union, March 21, 2022, <https://perma.cc/4FEN-82EU>, 34.
35. NATO, "Defence Innovation Accelerator for the North Atlantic (DIANA)," Brussels: NATO, n.d., <https://perma.cc/CWR6-CAED>.
36. European Commission, "Key Enabling Technologies Policy: How the Commission invests in specific technologies to help industry in Europe," Brussels: European Commission, n.d., <https://perma.cc/G5DG-LBS5>.
37. James Foggo et al., "Elevating Our Edge: A Path to Integrating Emerging and Disruptive Technologies," Washington, DC: Center for European Policy Analysis, September 27, 2022, <https://perma.cc/JQ8M-FKSF>.
38. Benedetta Girardi et al., "Strategic Raw Materials for Defence: Mapping European Industry Needs," The Hague: The Hague Center for Strategic Studies, January 2023, <https://perma.cc/VYM9-WEHL>, V.
39. European Commission, "Critical Raw Materials," Brussels: European Commission, 2023, <https://perma.cc/HQJ7-VYUQ>.
40. Communication From the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A Secure and Sustainable Supply of Critical Raw Materials in Support of the Twin Transition, COM(2023) 165 final: European Union (2023), zuletzt geprüft am 5/26/2023, <https://perma.cc/9H8A-P45F>.
41. German Federal Foreign Office, "Our Arms Deliveries Are Protecting Human Live: Foreign Minister Annalena Baerbock in an Interview with the Süddeutsche Zeitung", Berlin: German Federal Foreign Office, October 14, 2022, <https://perma.cc/M5GT-7VYM>.
42. European Commission, "European Chips Act," Brussels: European Commission, February 8, 2022, <https://perma.cc/LX7H-KWZP>.
43. Niclas Poitiers and Pauline Weil, "Is the EU Chips Act the Right Approach?," Brussels: Bruegel, June 2, 2022, <https://perma.cc/7A8W-R2HN>.
44. Niclas Poitiers and Pauline Weil, "Fishing for Chips: Assessing the EU Chips Act," Paris: Institut français des relations internationales, July 8, 2022, <https://perma.cc/R4AE-7W8K>, 7.
45. Poitiers and Weil, "Is the EU Chips Act the Right Approach?"; Poitiers and Weil, "Fishing for Chips," 4.

4 Procurement Processes: Spending Together

1. European Commission, "Joint Communication to the European Parliament, the European Council, the Council, The European Economic and Social Committee and the Committee of the Regions on the Defence Investment Gaps Analysis and Way Forward,": European Commission, May 18, 2022, <https://perma.cc/AR28-5RQB>; European External Action Service, "Annual Progress Report on the Implementation of the Strategic Compass for Security and Defence: Report of the High Representative of the Union for Foreign Affairs and Security Policy to the Council," Brussels: European External Action Service, March 20, 2023, <https://perma.cc/AE84-DC7T>.
2. Antonio Calcara, *European Defence Decision-Making: Dilemmas of Collaborative Arms Procurement*, London:

Routledge, 2020, 1. Aufl., Routledge Studies in European Security and Strategy, doi:10.4324/9780367853792.

3. Jacopo Barigazzi, "EU Military Projects Face Delays, Leaked Document Shows," *POLITICO*, July 21, 2021, <https://perma.cc/8YMP-VMSV>.
4. Vivienne Machi, "FCAS Warplane Program Stalls, as Dassault and Airbus Fail to Reach key Industry Deal," *Defense News*, March 4, 2022, <https://perma.cc/6TK9-UQV3>.
5. European Defence Agency, "2022 Coordinated Annual Review on Defence Report," Brussels: European Defence Agency, <https://perma.cc/2AY7-ZWE6>.
6. Micaela Del Monte et al., "Europe's Two Trillion Euro Dividend: Mapping the Cost of Non-Europe, 2019-24," Brussels: European Parliamentary Research, April 2019, doi:10.2861/46766.
7. Lucie Béraud-Sudreau, "Integrated Markets? Europe's Defence Industry After 20 Years," in: Daniel Fiott (ed.), *The CSDP in 2020: The EU's Legacy and Ambition in Security and Defence*. Paris: European Union Institute for Security Studies, 2020, 59–73, <https://perma.cc/6P74-5NRF>.
8. Council of the European Union, "A Strategic Compass for Security and Defense: For a European Union That Protects its Citizens, Values and Interests and Contributes to International Peace and Security," Brussels: Council of the European Union, March 21, 2022, <https://perma.cc/DFW9-DQRK>.
9. Thomas Wiegold et al., "#72 Polens ambitionierte Verteidigungsplanung: 'Multipolarität' und die Rolle des Globalen Südens," Sicherheitshalber Podcast, May 11, 2023, <https://perma.cc/H4EX-MMFQ>.
10. "Poland Buys South Korean tanks and Combat Planes," *Deutsche Welle*, July 23, 2022, <https://perma.cc/BJ55-G7M7>.
11. Mike Szymanski, "Rüsten, so schnell wie möglich," *Süddeutsche Zeitung*, April 26, 2023, <https://perma.cc/2EWS-XZP6>.
12. Torben Arnold, "Die Entscheidung zum Kauf von F-35-Kampffluggesamts für die Luftwaffe: Herausforderung für die Integration und die Weiterentwicklung europäischer Luftkampfsysteme," Berlin: Stiftung Wissenschaft und Politik, SWP-Aktuell 23, 2023, doi:10.18449/2023A23.
13. Nicole Koenig and Eulalia Rubio, "What the European Council's MFF/Recovery Deal Tells Us About

the EU's Global Ambition," Berlin: Jacques Delors Centre, Policy Brief, July 22, 2020, <https://perma.cc/GYU5-GHVL>.

14. European Defence Agency, "2022 Coordinated Annual Review on Defence Report."
15. Council of the European Union, "A Strategic Compass for Security and Defense."
16. European Parliament, "Report on the Proposal for a Regulation of the European Parliament and of the Council on Establishing the European Defence Industry Reinforcement Through Common Procurement Act," Brussels: European Parliament, April 28, 2023, <https://perma.cc/8Q6J-Y2GQ>.
17. Thierry Breton, "European Defence and Security Conference - Speech by Commissioner Thierry Breton," Brussels, October 11, 2022, <https://perma.cc/4X37-HMYK>.
18. Council of the European Union, "EU Defence Industry: Council Reaches General Approach on Boosting Common Procurement," Press Release, December 1, 2022, <https://perma.cc/WK4C-7CKP>.
19. Council of the European Union, "Delivery and Joint Procurement of Ammunition for Ukraine," Brussels: Council of the European Union, March 20, 2023, <https://perma.cc/8HJ7-4T2Z>.
20. Jacopo Barigazzi, "EU claims it's now on track to get Ukraine 1M ammo rounds," *POLITICO*, May 23, 2023, <https://perma.cc/L65G-WB2F>.
21. European Commission, "Proposal for a Regulation of the European Parliament and of the Council on Establishing the Act in Support of Ammunition Production," Brussels: European Commission, May 3, 2023, <https://perma.cc/RQ5W-RJJS>.
22. Ursula von der Leyen, "Remarks at the Munich Security Conference 2023," Munich: Munich Security Conference, February 2, 2023, <https://perma.cc/8F6D-43P2>.
23. Interview with officials, Brussels, April 17, 2023.
24. Justin Spike, "Hungary blocks military aid to Ukraine over listing of Hungarian bank," AP, May 17, 2023, <https://perma.cc/4TZW-LAWN>.
25. April 18, 2023.
26. Jacopo Barigazzi, "France and Poland Spar as EU Plan to buy Ukraine Ammo Idles in Legal Limbo," *POLITICO*, April 19, 2023, <https://perma.cc/D7PZ-3HN9>.

27. European Commission, “Joint Communication to the European Parliament, the European Council, the Council, The European Economic and Social Committee and the Committee of the Regions on the Defence Investment Gaps Analysis and Way Forward.”
28. European Commission, “Joint Communication to the European Parliament, the European Council, the Council, The European Economic and Social Committee and the Committee of the Regions on the Defence Investment Gaps Analysis and Way Forward.”
29. Interview with officials, Brussels, April 18, 2023.
30. Gaspard Schnitzler, “EDIRPA/EDIP: Risks and Opportunities of Future Joint Procurement Incentives for the European Defence Market,” Paris: Armament Industry European Research Group, Policy Paper 81, March 2023, <https://perma.cc/WMV6-JPGP>.
31. Daniel Fiott, “Strategic Competition: Toward a Genuine Step-Change for Europe’s Defense Industry?,” *The Economics of Peace and Security Journal* 18:1 (2023), 7–17, doi:10.15355/epsj.18.1.7.
32. John R. Deni, *Security Threats, American Pressure, and the Role of Key Personnel: How NATO’s Defence Planning Process is Alleviating the Burden-Sharing Dilemma*, Carlisle Barracks, PA: US Army War College Press, 2020.
33. Agnes Szücs, “NATO Military Chiefs Discuss New Regional Defense Plans,” *Anadolu Ajansı*, May 10, 2023, <https://perma.cc/8JU2-CN6F>.
34. Dick Zandee and Adája Stoetman, “Specialising in European defence: To choose or not to choose?,” The Hague: Clingendael, July 2022, <https://perma.cc/8DX8-BZ6E>.
35. Emmanuel Macron, “Remarks by the President of the French Republic Emmanuel Macron at the 2023 Munich Security Conference,” Munich: Munich Security Conference, February 17, 2023, <https://perma.cc/E7VV-TTLL>.
36. Jordi Molas-Gallart and Richard Hawkins, “Standardisation Systems in the Defence Industries of the European Union and the United States,” Brighton: Science Policy Research Unit, University of Sussex, 1999, <https://perma.cc/R7HD-CC4H>.
37. David Bachmann et al., “More European, More Connected and More Capable: Building the European Armed Forces of the Future,” Munich: Munich Security

Conference, McKinsey, and Hertie School of Governance, 2017, doi:10.47342/BXTP7454.

38. Zandee and Stoetman, “Specialising in European defence.”

39. Interviews with officials, Brussels, April 17-19, 2023.

5 Five Recommendations: How to Come Off De Fense

1. Interviews with officials, Brussels, April 17-19, 2023.
2. Emmanuel Macron, “Closing speech by the President of the French Republic,” Bratislava, May 31, 2023, <https://perma.cc/D7QM-76J9>.
3. European Council, “The Versailles declaration, 10 and 11 March 2022,” Press Release, March 11, 2022, <https://perma.cc/37NK-87LX>.
4. Council of the European Union, “Economic governance framework: Council agrees its orientations for a reform,” Press Release, March 14, 2023, <https://perma.cc/JD6N-XDW6>.
5. Boris Pistorius, “Pistorius, MSC 23: ‘Strengthening NATO’s Eastern Flank Means Strengthening us’,” Munich, February 20, 2023, <https://perma.cc/XJ9B-L8FW>.
6. Dick Zandee and Adája Stoetman, “Specialising in European defence: To choose or not to choose?,” The Hague: Clingendael, July 2022, <https://perma.cc/8DX8-BZ6E>.
7. Max Bergmann and Benjamin Haddad, “Europe Needs to Step Up on Defense,” *Foreign Affairs*, November 18, 2021, <https://perma.cc/RW3C-BCA5>.
8. Suzanne Lynch, “The EU wants to build tomorrow’s technologies. Will countries pay for it?,” *POLITICO*, May 22, 2023, <https://perma.cc/7SVH-33WH>.
9. Sylvie Matelly, “Articulating ESG Criteria and the Financing of the EDTIB: A Prospective View,” ARES, <https://perma.cc/CY5N-7YT2>.
10. Daniel Fiott, “European Armaments Standardisation,” Brussels: European Parliament, October 2018, <https://perma.cc/F32J-C2A6>.
11. Isabelle Ioannides, “EU Defence Package: Defence Procurement and Intra-Community Transfers Directives,” Brussels: European Parliament, October 19, 2020, <https://perma.cc/K9BS-LN7U>.
12. Council Decision 255/58: Council of the European

Union (1958), <https://perma.cc/3PNH-BCSP>.

13. Karel Lannoo, “After One Year of War, the EU Must Create a Single Market for Defence,” Brussels: CEPS, February 23, 2023, <https://perma.cc/W2V5-3CUN>.

14. Dylan Macchiarini Crosson and Steven Blockmans, “The Five ‘I’s of EU Defence,” CEPS, October 5, 2022, <https://perma.cc/33XZ-D4M3>.

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Possible deviations from a total of 100 percent in visualized data result from rounding.

1 Introduction: This Time It's Different?

[1.1 EU citizens' views on defense policy, January–February 2023, percent.](#)

Illustration by the Munich Security Conference based on European Commission, “Eurobarometer 98: Public opinion in the European Union,” Brussels: European Commission, 2022, doi:10.2775/460956. Figures shown here combine the net responses agreeing (“totally agree” and “tend to agree”) and disagreeing (“totally disagree” and “tend to disagree”), with the gray bar representing “don't know.”

2 Defense Budgets: Money Can('t) Buy You Force

[2.1 Potential increase in annual defense spending of EU member states, 2022–2028, billion EUR](#)

Illustration by the Munich Security Conference based on data provided by McKinsey. McKinsey's analysis relies on various public news outlets and government publications. The defense spending model includes two different scenarios, which were modeled based on public information. Assumptions were made where public information could not be retrieved (such as commitments to the ramp up of announced spending increases over time). Readers are invited to reach out to the publishers for more detailed information on each scenario. The baseline forecast represents all announcements made by governments or armed forces of the EU-27 member states prior to Russia's invasion of Ukraine with regards to their future defense spending. Building on a growth trajectory that started in around 2014, the baseline scenario shows continuing defense spending growth, which is driven by several countries' pre-invasion announcements to invest more in defense. However, under this scenario, some countries do not increase their defense spending (e.g., Germany had planned with a flat defense budget of around 50 billion euros per year prior to Russia's invasion of Ukraine). The current post-invasion outlook reflects announcements that were made after the invasion of Ukraine and represents spending “on top” of the baseline. It does not project the lowest or highest possible spending but rather models the likely spending pattern under current conditions, based on announcements made until early May 2023. For instance, it includes the new French Military Programming Law 2024-2030 and the German 100 billion euro special fund. This scenario assumes that countries' perception of the overall security situation in Europe remains comparable to today (i.e., no further escalation). This is modeled by the majority of countries reaching their envisioned spending levels (as share of GDP) but not necessarily all at the targeted time, as the required budget shifts are expected to cause delays (e.g., a country might then reach its announced target of spending 2 percent of GDP on defense in 2026 rather than 2024). The scenario is based on the assumption that 13 out of 20 countries, who initially committed to NATO's 2 percent target, will achieve the goal in 2024.

Disclaimer: The invasion of Ukraine in February 2022 is having deep human as well as social and economic impact across countries and sectors. The implications of the invasion are rapidly evolving and are inherently uncertain. As a result, the scenarios and the data and analyses should be treated as a best-efforts perspective at a specific point of time, which seeks to help inform discussion and decisions taken by leaders of relevant organizations. The deliverables do not set out economic or geopolitical forecasts and should not be treated as doing so. It also does not provide legal analysis, including but not limited to legal advice on sanctions or export control issues.

2.2 EU member states' spending pledges in response to Russia's invasion of Ukraine, percent

Illustration by the Munich Security Conference based on IISS, "The Military Balance 2023: The Annual Assessment of Global Military Capabilities and Defense Economics," London: IISS, February 15, 2023, <https://perma.cc/6RPJ-MN38>, 64; Christina Mackenzie, "Seven European Nations Have Increased Defense Budgets in One Month. Who Will be Next?," *Breaking Defense*, March 22, 2022, <https://perma.cc/V5AQ-928C>; "Heeresbudget soll 2027 auf 1.5 Prozent des BIP steigen," *ORF*, October 6, 2022, <https://perma.cc/2PV4-KJTG>; Maïthé Chini, "Europe is a gentle giant: Belgian PM De Croo Delivers State of the Union," *The Brussels Times*, October 11, 2022, <https://perma.cc/36SC-VKNV>; "Czech Republic's Defence Spending to Reach 2% of GDP by 2024, says govt," *Business Standard*, September 16, 2022, <https://perma.cc/WY23-V5PR>; Camille Gijis, "Denmark to Increase Defense Spending and Phase Out Russian Natural Gas," *Politico*, March 7, 2022, <https://perma.cc/4A83-GLYL>; Esme Kirk-Wade and Sanjana Balakrishnan, "Defense Spending Pledges by NATO Members Since Russia Invaded Ukraine," London: UK Parliament House of Commons Library, August 11, 2022, <https://perma.cc/V3PL-2WT8>; "Poland to Ramp up Defense Budget to 4% of GDP," *DW*, January 30, 2023, <https://perma.cc/QA5M-8LKJ>; Gerard O'Dwyer, "Sweden Boosts Defense Spending, NATO Goal in Mind," *DefenseNews*, November 22, 2022, <https://perma.cc/N8LA-UVEP>; "Sweden's Supreme Commander Says Defence Spending to Reach 2% of GDP by 2026," *Reuters*, November 1, 2022, <https://perma.cc/PKV7-EDKH>; Marta Rodriguez Martinez, "NATO: Why is Spending 2% of GDP on Defence so Controversial?," *Euronews*, April 7, 2023, <https://perma.cc/G85S-H8CH>; "Macron Announces Military Spending to Increase by a Third Until 2030," *Le Monde*, January 20, 2023, <https://perma.cc/5GH7-LVAU>; "Spain Will Gradually Raise Spending on Defence to 2% of GDP by 2029," *Reuters*, June 30, 2022, <https://perma.cc/8NZ4-F987>; "Defence Spending Target Pushed Forward by Five Years in Latest Plan," *The Slovenia Times*, December 28, 2022, <https://perma.cc/3FRJ-LWGJ>; Yannick Lambert, "Luxembourg to Double Defence Spending by 2028," *Luxembourg Times*, June 24, 2022, <https://perma.cc/W9NW-QBGC>; "Lithuania to Ramp up Military Spending, PM says," *Reuters*, March 7, 2022, <https://perma.cc/CEH8-CC6N>; Tom Kington, "Italy Aims to Reach NATO Defence-Spending Target by 2028, Four Years Late," *DefenseNews*, April 1, 2022, <https://perma.cc/QX5H-CUFN>; "Latvian Government Confirms Increased Defense Spend," *Public Broadcasting of Latvia*, March 30, 2022, <https://perma.cc/T582-DEP3>; "Hungary's Military Spending to Reach 2 Percent of GDP Next Year," *Hungary Today*, Decem-

ber 29, 2022, <https://perma.cc/5WD4-JXE9>. As for the Netherlands, spending pledges to reach 2 percent of GDP have only been made for 2024 and 2025, see Netherlands Ministry of Defence, “Additional EUR 5 Billion in Defence Spending on a Structural Basis,” The Hague: Netherlands Ministry of Defence, May 20, 2022, <https://perma.cc/QLP3-4QCX>. Data on the military expenditure as percentage of GDP in 2022 is based on SIPRI, “SIPRI Military Expenditure Database 2023,” Stockholm: SIPRI, 2023, <https://perma.cc/ZGM4-7ERT>. The figures have been rounded to the first decimal.

2.3 EU-27 vs. US defense spending, 2013–2028, percent

Illustration by the Munich Security Conference based on data provided by McKinsey. McKinsey’s analysis relies, among others, on Office of the Undersecretary of Defense (Comptroller), “National Defense Budget Estimates for FY 2024,” Washington, DC: US Department of Defense, May 2023, <https://perma.cc/6KLR-WKP5>; The White House, “Table 24-1 Policy Net Budget Authority by Function, Category, and Program (in Million of Dollars),” Washington, DC: The White House, 2023, <https://perma.cc/JSP2-SVPG> and International Monetary Fund, “World Economic Outlook Database,” Washington, DC: International Monetary Fund, April 2023, <https://www.imf.org/en/Publications/WEO/weo-database/2023/April/download-entire-database>. The figure is based on the same baseline scenario and forecast scenario as figure 2.1. The category “US” comprises the US national defense budget, or “function”, which is part of the US federal budget. The national defense function (function 050) encompasses three subfunctions: Department of Defense Military Activities (subfunction 051), Atomic energy defense activities (subfunction 053), and defense-related activities of other federal agencies (subfunction 054). The national defense budget estimates for FY 2024 can be found here: Office of the Undersecretary of Defense (Comptroller), “National Defense Budget Estimates for FY 2024,” Washington, DC: US Department of Defense, May 2023, <https://perma.cc/6KLR-WKP5>.

2.4 Reductions in selected EU countries’ inventories across equipment categories prior to Russia’s invasion of Ukraine, 1992 and 2021, number of equipment pieces and percent

Illustration by the Munich Security Conference and McKinsey based on data compiled by McKinsey and provided by IISS. McKinsey’s analysis is based on IISS, “The Military Balance 2022: The Annual Assessment of Global Military Capabilities and Defense Economics,” London: IISS, February 15, 2022, <https://perma.cc/SBQ7-3Z2U> and IISS, “The Military Balance 1992-93,” London: Oxford University Press, October 9, 1992, <https://perma.cc/ZLC9-S5CV> (reproduced with permission). The figure shows the combined equipment holdings of several EU member states, including Finland, France, Germany, Greece, Italy, the Netherlands, Poland, Spain, and Sweden as of June 1992 until November 2021. The category “fighter/ground attack” includes fighter jets and ground attack/fighter bombers. The category “large surface combatant” includes cruisers, destroyers, and frigates.

3 Critical Capabilities: Prioritizing Together

3.1 Cost per unit of Shahed-136 loitering munitions and selected air-defense missiles, 2022, USD

Illustration by the Munich Security Conference based on articles published by Frank Hofmann and Nicola Berdnyk, Grisha Misilyuk, Matthew Mpoke Bigg, Lara Seligman, and the US Air Force. For data on which air defense systems are used in Ukraine to neutralize Shahed-136 loitering munitions, see Frank Hofmann and Mykola Berdnyk, “Ukraine: Deutscher Nachschub für die Offensive,” Deutsche Welle, May 11, 2023, <https://perma.cc/7YB3-P725>, Grisha Misilyuk, “Iranian Drones in the Russian Invasion: Analysis by Molfar Experts,” Molfar, October 18, 2022, <https://perma.cc/ZC54-4V2A>, and Matthew Mpoke Bigg, “Ukraine Keeps Downing Russian Drones, but Price Tag Is High,” The New York Times, January 3, 2023, <https://perma.cc/XY34-93VE>. Please note that the NASAMS air defense system mentioned in the latter two sources uses the AIM-120 AMRAAM missiles listed in the graph as ammunition, as stated in Lara Seligman, “U.S. Military Eyes Mounting Western Air-To-Air Missiles on Ukrainian MiGs,” POLITICO, March 7, 2023, <https://perma.cc/22N5-CD8X>. Please also note that the “C-300” system mentioned in Misilyuk’s article refers to the “S-300” air defense system listed in the graph, as this “C” is to be read as a Cyrillic rather than a Latin letter. For the price estimates of the Shahed-136, FIM-92 Stinger, and S-300-type missiles, see the article by Misilyuk as well. For the price estimate of the AIM-120 AMRAAM, see US Air Force, “AIM-120 AMRAAM,” n.a.: US Air Force, n.d., <https://perma.cc/9Q2X-RYFF>. Please note that although the Misilyuk article provides a different price range for the AIM-120 AMRAAM/NASAMS, the price estimate of the US Air Force was included in the graph instead as this estimate is more precise. For the price estimate of the IRIS-T SLM, see the article by Hofmann & Berdnyk cited above. Please note that the price estimate for the IRIS-T SLM has been rounded off from 616.681 to 617.000 in the graph.

3.2 Defense research and technology spending, 2011–2021, percent of total EU defense spending

Illustration by the Munich Security Conference based on European Defence Agency, “Defence Data 2020-2021: Key Findings and Analysis,” Brussels: European Defence Agency, 2022, <https://perma.cc/2UWS-7BAC>, 13.

3.3 Overview of producing countries in the drone supply chain, 2023, percent

Data and illustration based on S. Carrara et al., “Supply Chain Analysis and Material Demand Forecast in Strategic Technologies and Sectors in the EU: A Foresight Study,” Luxembourg: Publications Office of the European Union, 2023, <https://perma.cc/96AY-3KNA>, 124–25. To make the graph understandable without the context provided in the report it was originally published in, some category descriptions have been renamed: “assemblies” has been renamed “subsystems” and “super assemblies” has been renamed “final product”. A detailed description of what these categories encompass exactly can be found on page 125 of the report cited here.

4 Procurement Processes: Spending Together

4.1 Arms procurement and development trilemma in Europe

Data and illustration by the Munich Security Conference. The table was inspired by Antonio Calcara, “European Defence Decision-Making: Dilemmas of Collaborative Arms Procurement,” Abingdon: Routledge, 2020.

4.2 European collaborative defense equipment spending, 2013–2021, percent

Illustration by the Munich Security Conference based on European Defence Agency, “Defence Data 2020-2021: Key Findings and Analysis,” Brussels: European Defence Agency, 2022, <https://perma.cc/2UWS-7BAC>, 13.

4.3 Key EU defense initiatives, before and after February 2022

Data and illustration by the Munich Security Conference.



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List of Abbreviations

AI	Artificial Intelligence
AMRAAM	Advanced Medium-Range Air-to-Air Missile
ASAP	Act in Support of Ammunition Production
BENESAM	Belgisch-Nederlandse Samenwerking / Belgium-Netherlands Cooperation Accord
C4ISR	Command, control, communications, computers, intelligence, surveillance, and reconnaissance
CARD	Coordinated Annual Review on Defence
CEO	Chief Executive Officer
DIANA	Defence Innovation Accelerator for the North Atlantic
DOD	US Department of Defense
EDA	European Defence Agency
EDF	European Defence Fund
EDIP	European Defence Investment Programme
EDIRPA	European defence industry reinforcement through common procurement act
EDTIB	European defense technological and industrial base
EDTs	Emerging and Disruptive Technologies
EPF	European Peace Facility
ESM	European Stability Mechanism
EU	European Union
EUDIS	EU Defence Innovation Scheme
FCAS	Future Combat Air System
GDP	Gross Domestic Product
HEDI	Hub for EU Defence Innovation
HIMARS	High Mobility Artillery Rocket System
IRIS ²	Infrastructure for Resilience, Interconnectivity and Security by Satellite
IRIS-T SLM	InfraRed Imaging System Tail/Thrust Vector-Controlled Surface Launched Medium Range
ISR	Intelligence, Surveillance, and Reconnaissance
LEO	Low-Earth orbit
MALE RPAS	Medium Altitude Long Endurance Remotely Piloted Aircraft System
MGCS	Main Ground Combat System
NDPP	NATO Defense Planning Process
NSPA	NATO Support and Procurement Agency
OCCAR	Organisation Conjointe de Coopération en matière d'Armement / Organisation for Joint Armament Co-operation
PESCO	Permanent Structured Cooperation
R&T	Research & Technology
TEU	Treaty on European Union
TFEU	Treaty on the Functioning of the European Union
US	United States

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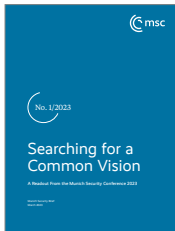
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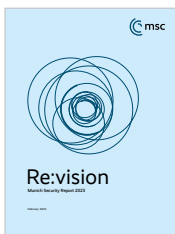
Latest MSC Publications



Nicole Koenig and Leonard Schütte, “Searching for a Common Vision: A Readout From the Munich Security Conference 2023”

Munich: Munich Security Conference, Munich Security Brief 1, February 2023, <https://doi.org//10.47342/JPRD3642>.

The Munich Security Conference 2023 took place amid intensifying efforts by autocratic states to revise the international order: from Russia’s ongoing war against Ukraine to China’s attempts to assert a sphere of influence in East Asia. Meanwhile, many states in the “Global South” have refused to speak up against Russia’s fundamental violation of the UN Charter. In Munich, leaders of liberal democracies therefore sought to push back against this revisionism, reaffirm their commitment to Ukraine’s victory, and discuss how to re-envision the order to create wider ownership.



Tobias Bunde, Sophie Eisentraut, Natalie Knapp, Leonard Schütte, Julia Hammelehle, Isabell Kump, Amadée Mudie-Mantz, and Jintro Pauly, “Munich Security Report 2023: Re:vision”

Munich: Munich Security Conference, February 2023, <https://doi.org/10.47342/ZBJA9198>.

The Munich Security Report 2023 shows how competing visions for the international order are playing out in several policy fields. Set against the background of intensifying autocratic revisionism, manifest in Russia’s war of aggression against Ukraine as well as China’s support for Russia and growing assertiveness, the report analyses the fault lines shaping human rights, global infrastructures, development cooperation, energy relations, and the nuclear order.



Isabell Kump and Leonard Schütte, “Dark Clouds Over the Black Sea: A Readout From the Munich Leaders Meeting in Bucharest in November 2022”

Munich: Munich Security Conference, Munich Security Brief 4, December 2022, <https://doi.org/10.47342/VJZB9052>.

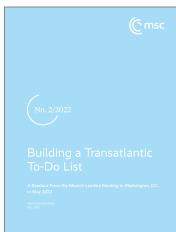
In late November 2022, the MSC held its first formal meeting in Southeastern Europe – the region most affected by Russia’s war on Ukraine. This Munich Security Brief summarizes the discussions centering on support for Ukraine, the Black Sea region, and the implications of the war for the European security architecture. It includes an updated edition of the “Transatlantic To-Do List.”



Tobias Bunde and Sophie Eisentraut, “Zeitenwende for the G7: Insights From the Munich Security Index Special G7 Edition”

Munich: Munich Security Conference, Munich Security Brief 3, June 2022, <https://doi.org/10.47342/JDIE4364>.

As survey data collected for a special edition of the Munich Security Index shows, Germany is not the only country where people perceive the Russian invasion of Ukraine as a *Zeitenwende* – a turning point. This Munich Security Brief discusses the momentous changes in public opinion in the G7 countries and provides an overview of the challenges facing the G7 in a security environment shaped by both traditional and nontraditional security risks.



Randolf Carr and Julia Hammelehle, “Building a Transatlantic To-Do List: A Readout From the Munich Leaders Meeting in Washington, DC, in May 2022”

Munich: Munich Security Conference, Munich Security Brief 2, May 2022, <https://doi.org/10.47342/TGHT8654>.

Following the Russian invasion of Ukraine, the transatlantic partners showed remarkable unity. Building on this transatlantic momentum, the discussions at the Munich Leaders Meeting in Washington, DC, highlighted the need to develop joint responses to the *Zeitenwende*. This includes a multitude of challenges beyond Russia. This Munich Security Brief summarizes the discussions at the Munich Leaders Meeting and the ambitious “Transatlantic To-Do List” that emerged from them.



Sophie Eisentraut, “Unity in a Time of Upheaval: A Readout From the Munich Security Conference 2022”

Munich: Munich Security Conference, Munich Security Brief 1, February 2022, <https://doi.org/10.47342/JMVD4331>.

Overshadowed by the growing threat of a major military conflict in Eastern Europe, last year’s Munich Security Conference occurred at a particularly critical moment for European security and international peace. Nonetheless, as the Munich Security Report 2022 had hoped for, the political leaders present in Munich actively fought the impression of collective helplessness in the face of the “Russia crisis” and many other overlapping conflicts. This Munich Security Brief summarizes the conference’s key takeaways.

About

About the Munich Security Conference (MSC)

The Munich Security Conference is the world's leading forum for debating international security policy. In addition to its annual flagship conference, the MSC regularly convenes high-profile events around the world. The MSC publishes the annual Munich Security Report and other publications on specific security issues.

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European defense has come a long way since February 2022 – but nowhere near far enough given the *Zeitenwende* that Russia’s war against Ukraine represents. Europeans have announced significant if still insufficient new defense spending, converged in their threat perceptions of Russia, and launched unprecedented EU initiatives to spur joint procurement and support Ukraine. However, there are already ominous signs that some states will not keep their spending pledges. Moreover, the EU initiatives currently lack the necessary financial clout and political support to make a real difference, while the need for speed in procuring equipment risks further fragmenting Europe’s defense industrial base. European defense is currently stuck between the status quo ante and the required transformation. Europeans need to come off this fence and commit to transforming how they cooperate. Otherwise, they will jeopardize the ability to defend themselves, become unable to support Ukraine over the long term, and risk marginalization in NATO.

Nicole Koenig, Leonard Schütte, Natalie Knapp, Paula Köhler, Isabell Kump, and Jintro Pauly, “Defense Sitters: Transforming European Militaries in Times of War,” Munich: Munich Security Conference, Special Edition of the Munich Security Report, June 2023, <https://doi.org/10.47342/LIHA9331>.