Geopolitical shocks in the Baltic Sea: strategic and macroeconomic implications

Politea

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About the report

This report was commissioned by the Swedish Armed Forces, Directorate of Strategic Plans and Policy. It draws on primary data, secondary literature and expert interviews.

About Politea

Politea is a boutique analysis firm that helps organizations and authorities navigate an increasingly complex geopolitical landscape. Combining expertise from academia, industry, intelligence, and administration, it supports clients in mitigating risks, shaping strategies, and preparing for the future.

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Front page image: Sentinel satellite image by Copernicus.eu

The report was delivered in April 2026.

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1. Introduction

The Baltic Sea occupies a relatively modest place on the map, yet it plays an outsized role in European trade, energy and security. It connects a heterogeneous group of NATO members and Russia, while also concentrating critical infrastructure, dense trade networks, and strategically important supply chains within a relatively narrow maritime space. Recent geopolitical tensions have only heightened its significance, as countries around the region have adapted to new strategic realities.

This report investigates the effects of adverse geopolitical shocks in the Baltic Sea on the European and Russian economies from a macroeconomic and geostrategic perspective. More specifically, we analyze how a partial or near total blockade of the Baltic Sea could affect the economies and geopolitical dynamics of these regions. Our qualitative analysis is in part complemented by a simple data-driven macroeconomic model based on Input-Output (I/O) tables for Sweden and the EU-27. We use this framework to provide an approximate indication of the scale of the economic costs that could arise if geopolitical stress were to result in a partial or even near total temporary closure of commercial routes in the Baltic Sea. This provides initial quantitative benchmarks to inform our qualitative analysis.

For analytical simplicity, our model focuses on limitations to exports, and our time horizon is short, covering roughly the first one or two quarters following the onset of a Baltic Sea blockade. These assumptions make the analysis more tractable, for example by treating export capacity as taking a direct hit, while imports play a smaller role as inventories are depleted and firms and households adopt some degree of short-term substitution. For Russia, given both the lack of data and the unreliability of available economic indicators, we instead proceed by outlining the main channels through which the economic shock would likely propagate. In this context, establishing as clearly as possible the current condition of the Russian economy becomes indispensable, and we therefore devote an entire chapter to it.

Our model is simulated under two scenarios. In Scenario A, we assume that, in response to a critical deterioration in the security environment, NATO closes access to the Baltic Sea through the Danish Straits by military interdiction. Complementary measures are also imposed that effectively deny Russia access to its exclave of Kaliningrad. In Scenario B, a partial blockade is enforced through administrative and regulatory means, largely by significantly extending the scope and geographical reach of current sanctions on Russia.

Our results suggest that, in Scenario A, the inability to ship exports via the Baltic Sea could cause a marked contraction in Swedish GDP in the short run, broadly comparable in magnitude to the contraction observed in Sweden during the 2008 financial crisis. For the EU-27 as a whole, because a much smaller share of its exports is shipped through the Baltic Sea,

the corresponding contraction in economic activity is smaller. In the case of Russia, a near total blockade of the Baltic Sea could trigger a severe economic shock. There are several reasons why this is a plausible hypothesis. A major disruption to exports of oil and refined products, together with agricultural fertilizers, through Baltic routes would likely lead to a marked fall in export revenues, even if global energy prices were to rise somewhat in response. This is because roughly half of Russia's seaborne crude oil exports and more than 80 percent of exported fertilizers pass through Baltic ports. At the same time, Russia's ability to rely on the Black Sea as an alternative outlet remains constrained, given Ukraine's demonstrated capacity to disrupt shipping and energy infrastructure through asymmetric attacks.

For Russia, revenues from the export of energy products account for roughly a quarter of the federal budget. Given the country's constrained access to external financing under sanctions, offsetting part of the fiscal shock from abroad would be difficult, leaving the authorities even more reliant on domestic borrowing and reserve drawdowns. Gold reserves could provide some buffer, but monetizing them could face meaningful frictions in the short-run, as sanctions have complicated transactions involving Russian official entities and restricted their access to global gold markets. Overall, given that many of these policy-levers now appear near exhaustion, we find that a sudden economic shock of this magnitude could increase the risk of disproportionate military escalation. This could mean, for example, a shift from grey zone responses to overt conventional kinetic attacks on NATO targets.

The economic impact of a partial blockade, under Scenario B, would be milder according to our model. In this scenario, energy prices could rise moderately for the EU. In fact, the EU has never stopped importing natural gas and, to a smaller extent, oil from Russia.[1] While European economies would in aggregate slow down, demand for energy is likely to remain robust. Hence, the EU would effectively need to cover a certain deficit of energy products by shipping them from elsewhere. It is likely that agricultural products would increase in price as well.

In both scenarios, Sweden would probably face macroeconomic challenges greater than those affecting the EU as a whole. For instance, political uncertainty could lead firms to postpone investment, while households might increase precautionary savings and therefore reduce consumption. The Swedish krona would likely depreciate against the major reserve currencies. Inflation in Sweden could rise despite weaker aggregate demand, as the cost of imports, both energy and non-energy goods, increases. For the EU, the contraction in economic activity could be smaller than for Sweden, because a less significant share of its exports is shipped through the Baltic Sea. We note, however, that this adverse dynamic might be unevenly distributed across member states. Countries bordering the Baltic Sea would clearly be more exposed. Finland, whose trade is overwhelmingly dependent on maritime transport, could face some of the largest economic costs. Differences could also emerge among peripheral Southern European economies. For example, Italy, given its stronger integration into

[1] The EU Commission has recently estimated that, for 2025, the share of natural gas imported from Russia has been 12 percent of total imports; in the case of oil, Russian oil has been in the neighborhood of only 2 percent.

continental manufacturing supply chains, could prove more exposed than, for example, Portugal to disruptions affecting German intermediate goods.

In both scenarios, the US may be the country for which the economic costs of a Baltic blockade would likely be the smallest. This is not only because the US is less directly affected by a shock originating in the Baltic Sea, but also because such a shock would, to a significant extent, operate through higher energy prices. The US is, to a considerable degree, energy independent and can be regarded as a net exporter of energy. In addition, since the vast majority of commodities are typically priced in US dollars, the US is likely to be naturally better positioned to handle such a shock. Finally, an energy shock originating in the Baltic Sea could dramatically increase US political leverage over the European continent, as it can be argued that Europe has recently developed a marked dependence on imported US Liquefied Natural Gas (LNG).[2] This would come on top of the unique military capabilities of the US, which by themselves would place it in a clear position of strategic strength.

Historical precedents in which major global chokepoints cease to function properly offer a stark warning, namely that the transmission mechanisms triggered by such events can generate non-linear economic effects that even modern macroeconomic models may struggle to capture and forecast in full. A clear example is the Ever-Given incident of March 2021, when one of the world's largest container ships ran aground and blocked the Suez Canal for seven days, causing a backlog of more than 400 vessels and disrupting global trade. The canal normally carries about 15 percent of global maritime trade volume. The blockage of the Suez Canal is a useful benchmark for our case study, as it shows how complex and hard to predict the cascade effects of such events can be. More specifically, a shock to a maritime chokepoint begins as a physical interruption of traffic, but then spreads into higher freight costs, congestion, inventory stress, scheduling failures, and only subsequently into losses in output. Notably, Lloyd's List estimated that roughly USD 9.6 billion in trade flows were delayed each day during the disruption, while Qu et al. (2024) estimate total global value-added losses from the roughly week-long blockage at around USD 136.9 billion. This reflects the fact that global losses can rise in a nonlinear way with the duration of the blockage and can continue to unfold even after traffic resumes, going well beyond the narrow cost of cargo delayed in transit.

Another useful reference point is the recent severe disruption of shipping through the Strait of Hormuz following the military campaign launched by the US and Israel against Iran. At the time of writing, the economic consequences are still unfolding. While it takes time for these types of shocks to fully transmit through economies, some effects clearly show the direction and strength of the resulting economic trajectory. For example, the US inflation for March 2026, driven by considerably higher energy costs due to the blockade of the Strait of Hormuz, increased almost 1 per cent Month-over-Month. Considering that the inflation target for the US central bank is an annual 2 percent, a monthly jump of 1 percent is a very large monthly increase. Furthermore, the episode already illustrates the effectiveness of asymmetric coercion at sea. As in the Houthi campaign in the Red Sea, Iranian pressure has not depended

[2] The EU Commission has stated that, in 2025, around 58 percent of LNG imported in the EU was supplied by the US.

on expensive conventional naval power alone. Rather, a combination of relatively low-cost drones, anti-ship missiles, attacks on vessels, and a broader climate of threat has been sufficient to bring commercial traffic close to a near halt, sharply raising war risk premia and disrupting energy shipments. The response of the US administration reflects the difficulty of restoring confidence once a chokepoint is perceived as unsafe. In March, the Administration has discussed naval escorts for commercial shipping and has also introduced government backed political risk insurance and reinsurance support for maritime trade in the Gulf. Even so, such measures may alleviate part of the financial friction without fully neutralizing Iran's ability to impose disruption at relatively low cost and at scale.

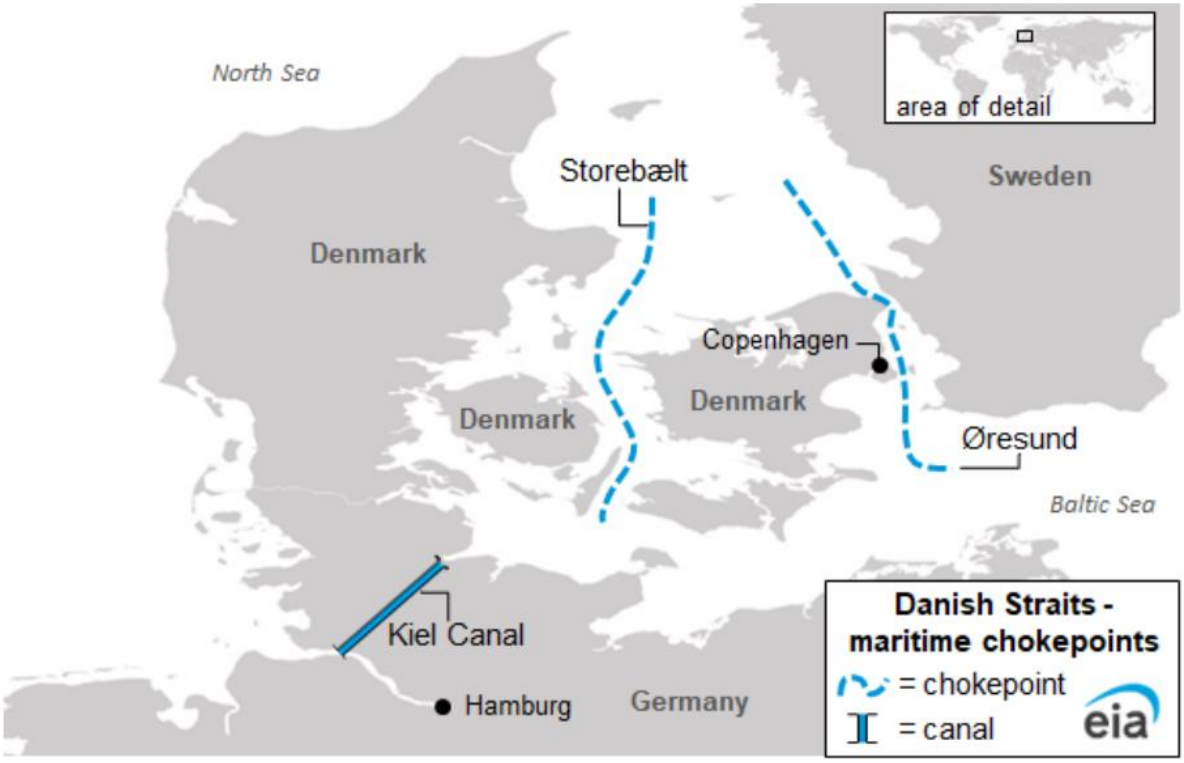
The remainder of the paper is structured as follows. Chapter 2 presents the economic geography of the Baltic Sea, focusing on trade flows, critical infrastructure, and recent hybrid type incidents. Chapter 3 introduces the Input Output framework, the underlying data, and the main modelling assumptions. Chapter 4 discusses the current condition of the Russian economy and the vulnerabilities that are most relevant for the analysis. Chapters 5 and 6 develop the two scenarios examined in the report, combining security analysis with macro-financial implications for Sweden, the EU-27, and Russia. Comparative remarks across the two scenarios can be found in Chapter 7. Chapter 8 considers selected wild cards that could reinforce or alter the scenario logic. Chapter 9 concludes.

2. Background: Baltic Sea economic and political geography

2.1 Trade Flows

The Baltic Sea is fundamental to European economies, as it combines the transit of passengers, goods and strategic energy shipments with dense critical infrastructure. It is characterized by a complex physical geography; the Danish straits, the gateways to the Baltic Sea from the North Sea, are narrow passages with relatively strong local currents that often require skilled technical navigation. The Kiel Canal in northern Germany provides an alternative route to the Danish Straits but it normally serves small tankers, and virtually only oil products are shipped through it.[3] Hence, no meaningful maritime rerouting option to access the Baltic Sea exists in practice (Vershuur et al., 2025).

Figure 1: The structure of the Danish straits



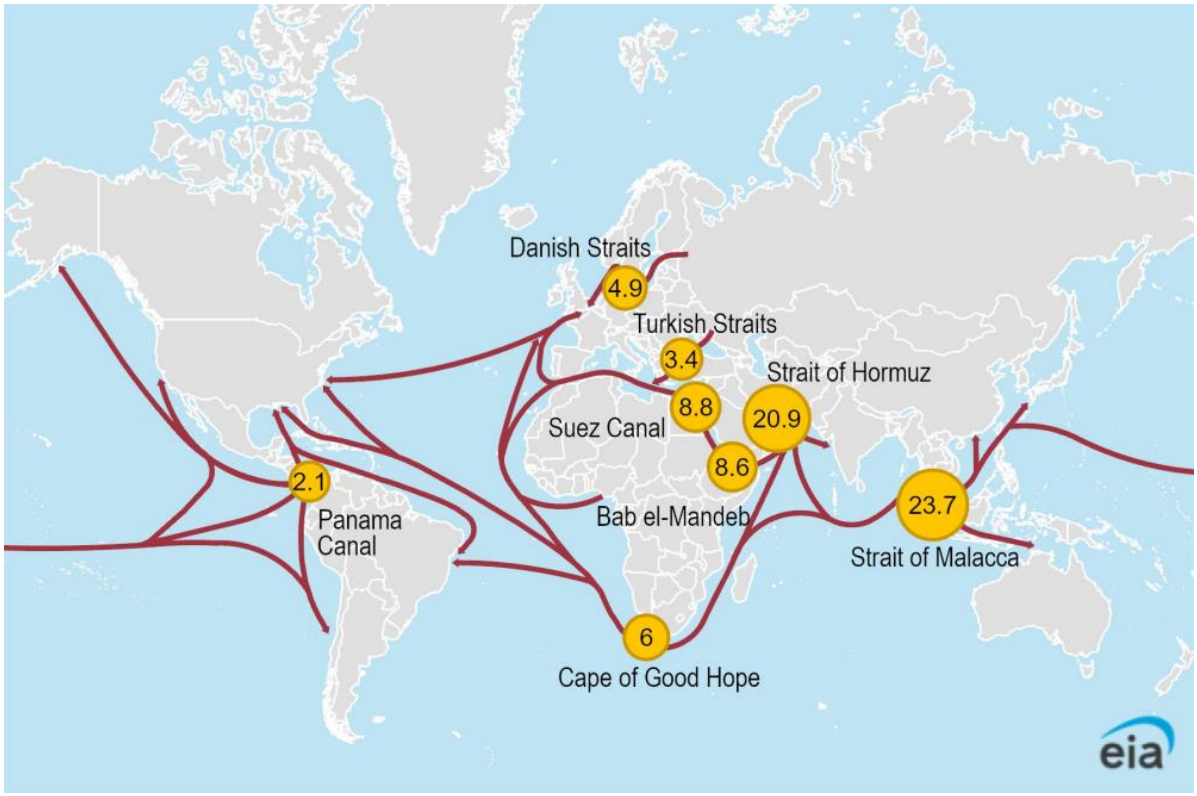
Source: US Energy Information Administration (EIA).

The political geography of the Baltic Sea is no less complex, as it encompasses several NATO countries, some of which are recent members, with one of the most important Russian cities, St. Petersburg and a Russian exclave, Kaliningrad. Such political architecture, combined with heightened geopolitical stress following Russia's 2022 invasion of Ukraine, has magnified the Baltic Sea's importance and use.

[3] The White Sea Baltic Canal in Russia also connects to the Baltic basin, but its shallow draft and limited capacity make it a negligible alternative in this context.

In fact, the US Energy Information Administration (EIA) finds that the volumes of crude oil and petroleum liquids transported through the Danish straits have increased by approximately 50 percent between 2020 and 2025.[4] This is largely the result of European states seeking alternatives to Russian supplies, which in turn has prompted Russia to look for alternative destinations for its energy exports. An even greater increase is observed for liquefied natural gas (LNG), with shipments through the Danish straits more than doubling between 2020 and 2023, reaching 1.3 billion cubic feet per day in 2023.

Figure 2*:* Daily transit volumes of petroleum and other liquids through world maritime oil chokepoints (million barrels per day) (2023)



Source: US Energy Information Administration (EIA).

The Baltic Sea is a crucial platform for trade of non-energy goods, too. Below, for selected macro-categories, we provide statistics for ports around the Baltic:

[4] The number of barrels increased from 3.3 mln per day in 2020 to 4.9 mln in 2023.

Table 1: Selected categories of non-energy goods transiting via the Baltic Sea

PORT	CARGO HANDLED (MILLION TONNES, 2024)	PORT	CONTAINERS (TEU) MANUFACTURED + CONSUMER GOODS	PORT	FORESTRY PRODUCTS HANDLED (MILLION TONNES, 2024; BREAKDOWN)
LT-KLAIPEDA	35.5 Mt (2024)	PL Gdańsk	2 250 000 TEU	FI-HaminaKotka	Paper 2.115 Mt, Pulp 1.474 Mt, Sawn goods 1.578 Mt.
DE-LÜBECK–TRAVEMÜNDE (LHG)	21.6 Mt (2024)	LT-Klaipeda	1,068,771 TEU (2024)	FI-Rauma	Paper 1.272 Mt, Pulp 0.385 Mt, Sawn goods 0.464 Mt.
FI-HELSINKI	12.2 Mt (2024)	FI-HaminaKotka	571,097 TEU (2024)	DE – Lübeck (LHG)	Paper + carton >1.0 Mt (2024).
SE-TRELLEBORG	11.7 Mt (2024)	LV – Riga	501,851 TEU (2024)	LV – Riga	Timber 2.912 Mt (2024).
DE-KIEL	7.60 Mt (2024)	FI – Helsinki	444,000 TEU (2024)		

TEU (twenty-foot equivalent unit) is a container-count unit, where 1 TEU corresponds to one 20-foot container (a 40-foot container counts as 2 TEU). TEU measures volume/handling activity, not weight: the same TEU total can correspond to very different tonnes depending on cargo density and how loaded containers are. In contrast, tonnes measure mass. In port statistics, “Mt” is often used to mean million tonnes (10^6 tonnes); one ton (t) is a metric ton = 1,000 kg. Because TEU and tonnes capture different things (container units vs cargo mass), comparisons across the two should be interpreted as complementary indicators rather than directly convertible without additional assumptions about average container weights and the share of empty containers.

Most manufactured goods around the Baltic move as unitised freight on ferries and Roll-on/Roll-off (Ro-Ro), meaning trucks and trailers carrying items like retail goods, machine parts, packaged food, electronics, and construction supplies. This traffic matters most for everyday consumption and for just-in-time industrial supply chains, especially for Finland and Sweden where short sea links connect factories and distribution centres to continental markets. In the container system, the biggest nodes handle consumer imports and export ready manufactured products, for example furniture, appliances, machinery, and chemical products in packaged form. This corner is most important for global trade connections and for logistics and warehousing clusters near the ports, because containers feed inland rail and road distribution.

Forestry products such as paper, pulp, and sawn timber are central to the forest industry and packaging value chains and they show up strongly in Nordic export ports. While omitted for simplicity in Table 1, other non-energy bulk flows are also important across the Baltic. Alongside grain, ports handle fertilizers that underpin farming and food production (especially in the Lithuanian Klaipeda), and minerals and construction materials that feed metals processing, manufacturing inputs, and the building sector. These cargoes are less visible than trailers and containers, but they provide the basic industrial feedstock that keeps regional production and construction running.

Geographically, the rankings reflect two patterns. The south Baltic concentrates the largest container hubs because it sits closer to main European shipping corridors, which is why ports in Poland and Lithuania rise to the top. The northern Baltic leads in Ro-Ro and forest industry flows because it serves national economies with heavy reliance on ferry links and forestry exports, with Helsinki and major Finnish forest ports as clear examples.

Such a significant amount of trade is based on exceptionally high maritime traffic. According to Helcom, on average, there are around 1500 IMO-registered ships operating in the Baltic Sea every day and more than 50,000 annual entries/exits via Skagen. In narrow points such as the corridor between Finland and Estonia, around 500 to 600 vessels are recorded passing each week, as reported by Reuters.

But the Baltic Sea is not exclusively a NATO/EU story. The sea hosts two critical harbors for the Russian economy: Primorsk and Ust-Luga. Recent estimates find that the two ports might have a combined capacity of clearing around 1.6/1.7 million barrels-per-day (bpd) of crude oil, which represents approximately 40 percent of the Russian total seaborne crude exports, and around 1.1 million bpd of oil refined products.[5] Adding the use of other smaller ports on the Baltic Sea, e.g. Vysotsk in Karelia, can bring the share to roughly 55 percent of total seaborne crude exports. Revenue from export of gas and oil is estimated to finance approximately 25

[5] Reuters reports that Ust Luga and Primorsk exported a combined 49.7 million metric tons of oil products in 2025. Expressed in daily barrel terms, this corresponds to about 1.09 million barrels per day under an illustrative assumption of 8 barrels per metric ton. Because the barrel to ton conversion depends on the underlying product mix, this figure should be interpreted as an approximation rather than a precise physical flow.

percent of the Russian federal budget. In addition, Russia is among the largest exporters of fertilizers globally and it has been estimated that more than 80 percent of this type of shipments pass through the Baltic Sea. Equally important, exports are critical in allowing Russia access to foreign hard currency. Taken together, these factors highlight Russia's significant economic vulnerability to disruptions in the Baltic Sea.

2.2 Critical infrastructure including recent hybrid-war type of events

Aside from the very dense maritime traffic, the Baltic Sea is characterized by an exceptionally concentrated critical infrastructure. This infrastructure pertains not only to the energy sector, with several pipeline and cables for the transit of gas and electricity, but also communication, as seabed cables allow efficient digital communication between Finland, Scandinavia and the rest of Europe. Table 2 below provides the most notable examples:

Table 2: Critical infrastructure in the Baltic Sea, selected assets.

ASSET	COUNTRIES	CAPACITY/ATTRIBUTES	NOTES
BALTICCONNECTOR GAS PIPELINE	FI - EE	7.2 million cubic meters of gas per day	The first gas interconnector between Finland and Estonia; ended Finland's gas isolation and connected it to the rest of Europe
NORD STREAM SYSTEM (NS 1 & NS 2)	RU - DE	55 billion cubic meters per year, each system	Offshore gas pipelines. NS1: both pipes damaged following sabotage. NS2: one pipe physically intact but not operating.
BALTIC PIPE	DK-PL	Capacity 10 bcm/year to Poland; 3bcm reverse direction	Uses Norwegian gas
NORDBALT (HIGH VOLTAGE DIRECT CURRENT - HVDC)	SE-LT	700 MW HVDC subsea link; ~450 km length.	
ESTLINK 2 (HVDC)	FI-EE	650 MW	
C-LION1 DATA CABLE	FIN-DEU	1,173 km; direct Finland-Central Europe link.	
SWEPOL LINK (HVDC)	SWE-PL	600 MW HVDC subsea link	

Winter navigation can be challenging in the Baltic Sea, especially in the region of Gulf of Bothnia, where a vast area could be frozen for months.[6] In difficult navigation conditions, the congested commercial traffic that often includes oil or other hazardous cargo transport is in

[6] This is partly mitigated by the use of ice-breakers by Finland and Sweden.

itself a risk, as spill of poisonous and polluting substances in the sea can have enormous economic consequences. The use of old ships that are typically part of the Russian shadow fleet further amplifies this risk. Not only the delicate natural habitat could be threatened, and therefore economic activities such as fishing, but also public health around the coasts and tourism could be heavily negatively affected.

From a systemic perspective, Finland can be identified as the most commercially vulnerable Baltic NATO country to disruptions in the Baltic Sea. On the top of the Gulf of Bothnia's tendency to freeze in wintertime, national statistics find that over 95 percent of Finland's trade by volume is transported by Baltic sea.[7] Finland's inland alternative routes connecting the country to the greater European continent are very long in comparison, for example, to the Baltic states. Regardless of the distance, they would likely be unsuitable as a substitute at scale. Moreover, much of its passenger traffic is concentrated via the Gulf of Finland that connects it to Estonia, which given its size and proximity to Russia can be considered particularly vulnerable.

Recent incidents and episodes of suspected sabotage have clearly shown the systemic role the Baltic Sea plays for European economies. The most notable include the damage to the Balticconnector and a telecom cable in Gulf of Finland in 2023, which necessitated taking out the gas infrastructure for repairs, two fiber-optic cables cut almost back-to-back in 2024 as well as the damages to the Estlink 2 power cable and multiple telecom lines between Estonia and Finland. It is suspected that in several cases these are due to the activity of third-countries' vessels, which could have dragged heavy anchors on elements of infrastructure. Similarly, GPS interference has greatly intensified in the eastern part of the Baltic Sea; in a specific episode, the plane of the President of the EU Commission, Ursula von der Leyen, was hit by the interference. As incidents have increased sharply in recent years, some NATO members have openly accused Russia of being the key actor behind the trend. In response to this heightened stress, NATO has launched a specific operation, Baltic Sentry, to increase presence and improve response to destabilizing acts targeting critical infrastructure.

3. The Input-Output (I/O) tables

To estimate the macroeconomic consequences of trade disruption, we utilize an Input-Output (I/O) tables model, which allows us to trace intersectoral dependencies and quantify how external shocks could propagate through a given economy. A simplified version of our model that includes only three sectors to describe the aggregate economy is presented in Appendix.

For simplicity, we model the blockade as a negative shock to exports (foreign final demand served via Baltic routes). This choice keeps the exercise transparent and tractable, as export losses can be mapped directly into the I/O framework without making strong assumptions about input substitution, inventory buffers, rerouting capacity, or firm-level import

[7] This was the case, for example, in 2023 and 2024.

dependencies. Import disruptions, particularly shortages of intermediate inputs, are therefore not modelled explicitly.

A key equation in our model describes the behavior of the parameter S, which governs what share of the total Swedish or EU-27 export is affected by the blockade.

$$(1)\quad S = \underbrace{s_{mode}}_{\substack{share\ of\ exports\ transported \\ by\ maritime\ shipping}} * \overbrace{s_{geo}}^{\substack{share\ tied\ specifically \\ to\ the\ Baltic}} * \underbrace{\alpha}_{\substack{severity\ of\ the\ blockade \\ 0 \le \alpha \le 1}}$$

The share of the total Swedish or EU-27 export affected by the blockade is in turn the result of the product of the parameters: s_{mode}, which represents the share of the total Swedish or EU-27 export that is shipped using maritime means; s_{geo}, which represents the fraction of maritime export shipped specifically via the Baltic Sea for a given economy; finally, α, represents the severity of the blockade.

The Table 3 below provides an overview of how we calibrate the model in Scenario A and B for Sweden and EU:

Table 3: Key parameters in the I/O model and their calibration

	PARAMETER	SCENARIO A	SCENARIO B	SOURCE	NOTES
SWEDEN	s_{mode_SWE}	0.56	0.56	Trafikanalys, 2023	Pertains to transport of goods (ton/km) and not civilian transport of physical persons
	s_{geo_SWE}	0.59	0.59	Trafikanalys, 2024	Own calculations using 2024 aggregate data from Trafikanalys
	α_{SWE}	0.9	0.3	Own calibration	
	S_{SWE}	≈0.3	≈0.1		Share of Exports affected, for Sweden
	PARAMETER	**SCENARIO A**	**SCENARIO B**	**SOURCE**	**NOTES**
EU-27	s_{mode_EU}	0.44	0.44	Eurostat, 2024	Calculated by value, as opposed to by weight
	s_{geo_EU}	0.18	0.18	European Commission, 2023	
	α_{EU}	0.9	0.3	Own Calibration	
	S_{EU}	≈0.07	≈0.025		Share of Exports affected, for EU-27

Across our two scenarios, only α varies, while the two other parameters remain fixed as recent reliable statistics exist that ensure a reasonable calibration. For both Sweden and the EU, in the case of a full blockade imposed with military means, as described in Scenario A, α might get close to 1. It is nevertheless reasonable to expect that a certain amount of traffic, in the form of smuggling or exceptions, will take place, which therefore motivates our value of $\alpha = 0.9$. In Scenario B, we set $\alpha = 0.3$; as the blockade is at least initially enforced via political means, we believe its intensity is meaningfully lower.

Our calibration choice reflects the risks that a partial blockade might prompt Russia to respond with asymmetric means. Even when retaliation is largely symbolic, insurance costs would increase and the overall attractiveness of doing business via the Baltic Sea would decrease. Some commercial actors might therefore choose alternative routes or temporarily stop part of their activities, thus motivating our calibration choice.

3.1 Data: sources and availability

To estimate our I/O model, we utilize Symmetric input-output table at basic prices (product by product, naio_10_cp1700) from Eurostat. This dataset uses Eurostat national supply, use and input-output data, specifically the symmetric input output table at basic prices in product-by-product form at current prices. This dataset is well suited to the exercise because the shock is defined at the product level, which allows exports, output, final demand, and value added to be analyzed within a consistent classification.

The analysis is carried out for Sweden and for the EU-27. Ideally, for a statistically meaningful comparison, we would need the same type of dataset for every country on the Baltic Sea. Unfortunately, this is practically not possible, as the majority of EU countries around the Baltic treat a large share of this data as confidential. Public data for Sweden and the EU-27, however, exist for 2023. We therefore choose to estimate the model for those two economic entities only.

3.2 The model

In our quantitative exercise, the blockade is modelled as a negative shock to the export component of final demand. Final demand is reduced by a calibrated share of exports, where the size of the shock reflects assumptions regarding the role of maritime transport, the share of exports exposed to the Baltic Sea, and the severity of the blockade under each scenario. The resulting decline in export demand is then allowed to propagate through the input output structure of the economy, generating both direct and indirect effects on output and value added.

The geopolitical shock itself is understood as an event potentially with little to no direct modern precedents. Given the ambition and complexity of assessing its macroeconomic effects, some simplification is unavoidable, both in terms of model choice and assumptions. We therefore regard an I/O framework as a reasonable approach, given the tradeoff between analytical reach, transparency, and complexity.

At the same time, it is important to clarify the limitations of this framework fully. First, this is a linear and static model, and is therefore only partly able to capture the propagation of a geopolitical shock such as a blockade of the Baltic Sea. In particular, it cannot describe the feedback loops that would emerge over time, namely the series of endogenous adjustments that the economy would generate in response to such a shock. Second, our time horizon is necessarily short, perhaps covering only the first one or two quarters after the shock materializes. It is likely that, during this period, the economy would only begin to adjust to the blockade. Third, our estimates should be interpreted as a conservative benchmark rather than a definitive one. It is entirely possible, for example, that impaired access to imports would cause the economy to operate considerably below potential, thereby lowering growth by several additional percentage points.[8] More broadly, our model cannot capture the effects of

[8] We believe that such an outcome would be smoothed in the short term by depleting strategic and commercial inventories, the use of alternative routes for imports, as well as adaptation by firms and households, among

such a shock on society as a whole, and therefore does not incorporate factors such as institutional uncertainty, population morale or resilience.

4. The Russian economy today

4.1 Premise

This project seeks to assess and compare the potential economic and political costs and risks arising from a partial or near total blockade of the Baltic Sea for Russia and Western countries. While estimates in absolute terms are clearly important, the initial conditions of the respective economies are equally critical. We therefore dedicate this chapter to clarify why, how and to what extent the Russian economy differs from a typical European economy.

The Russian economy appears to be in a state of crisis after more than four years of active combat. Several unconventional policy tools that would normally constitute a first response to an economic shock appear, in Russia's case, to have already been deployed, if not exhausted. This stands in relatively sharp contrast to the EU economies, where the need for unconventional policy measures has emerged at times but has, overall, been temporary. Similarly, the current sanctions regime, especially in the financial sphere, continues to exert persistent pressure on the Russian economy. This, of course, contrasts with the position of the EU economic bloc, which can rely on deep capital markets and considerably looser financial conditions.

An additional caveat applies to any overly simple, mechanical comparison between the EU and Russian economies. A large share of the Russian economy is now concentrated in military production and, in that sense, generates relatively little lasting value for the wider economy. In other words, a mine, a tank, or an artillery projectile is used up in war. Unlike civilian investment in capital or infrastructure, it does not expand productive capacity or improve living standards in any meaningful sense.

Thus, irrespective of the magnitude of the economic shock associated with frictions in the Baltic Sea, our assessment is that the transmission channels and overall adverse effects are likely to affect Russia more severely than the EU, given the different initial conditions of the two economies. Accordingly, this chapter provides a more granular examination of the key features of the Russian economy today.

4.2 On current economic conditions and policies in Russia

The now four-year long invasion of Ukraine has left a lasting scar on the Russian economy. Even in a comparatively favorable scenario for Russia, healing that damage would require substantial time and resources. This is a crucial point, yet it is still frequently somewhat misunderstood. One reason is that public non-expert debate often leans on anecdotal evidence or on headline official statistics, even though some of the most commonly cited Russian wartime indicators are increasingly difficult to interpret and, in some cases, of

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others. A common rule of thumb is that commercial inventories are built for lasting 90 to 120 days. See, for example, the note by Allianz on the operating cycle.

questionable reliability.[9] At the same time, in the short run, it is likely that the Russian economy remains relatively far from a sudden financial or macroeconomic collapse, which is a consensus view in the literature. For example, Wannheden (2025) and Dobrowski (2025) provide evidence showing that Russia could continue to finance its war effort by depleting its National Wealth Fund, raising taxes and further increasing its domestic borrowing. Similarly, in an updated version of its 2024 report, SITE (2025) finds that the Russian economy remains relatively stable, despite accumulation of underlying imbalances and structural weaknesses. Nevertheless, the Russian economy is particularly vulnerable to large unexpected shocks, which could in turn trigger non-linear adverse dynamics. In fact, unlike many advanced Western economies, Russia is now on a path of gradually exhausting the buffers that had helped insulate it from major shocks.

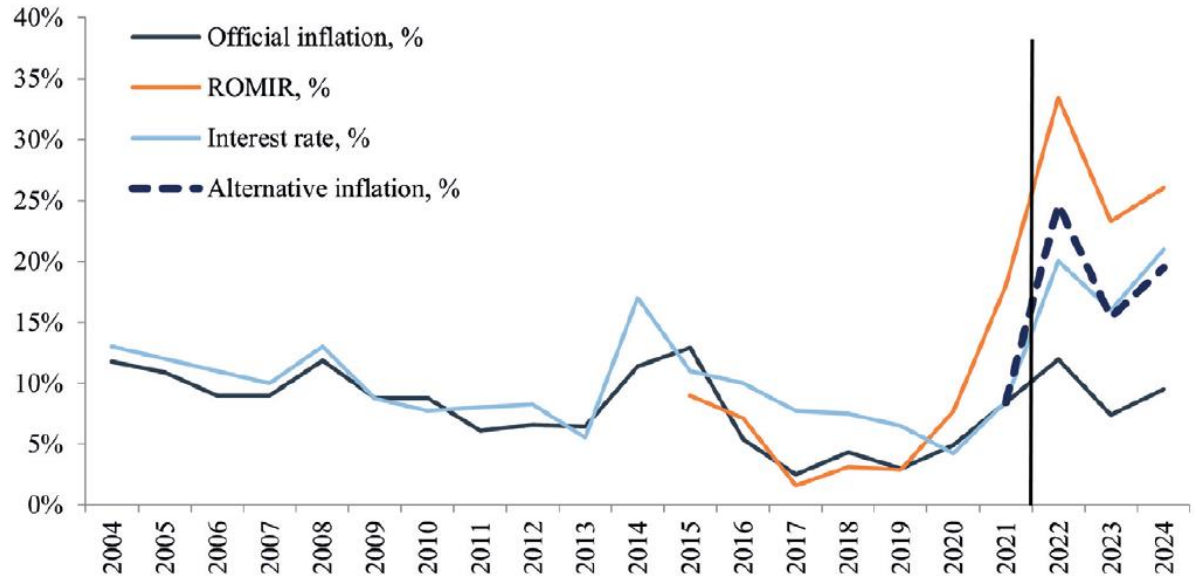
A general finding across many studies is that the repositioning of the Russian economy along the lines of a war-economy has generated an inner bifurcation in its economic structure; those actors closer to the military complex have seen their income growing while actors in other sectors (the majority of the Russian population) have experienced a significant fall in their standards of living, as shown in Vlasiuk et al. (2025), SITE (2025) and Wannheden (2025). As a result, relying only on aggregate macroeconomic indicators risks being superficial, because averages across these two groups are only weakly informative. For the Russian regime, by contrast, the use of average numbers is beneficial in several respects. Benign headline indicators help sustain internal propaganda portraying the economy as broadly robust in the face of unprecedented pressure from the West. Externally, they help project the narrative that Russia remains economically stable and is prepared for a prolonged confrontation with the West over Ukraine, thereby seeking to weaken Western resolve and to alter the calculus regarding how long to continue supporting Ukraine in its defense.

Inflation is probably the most important and most emblematic variable to consider. It is not only a useful indicator of the pressure under which the Russian economy is operating, but also a key determinant of how other major indicators, such as GDP and real income growth, should be interpreted. Official statistics for inflation in Russia are almost certainly unreliable when taken at face value, as doing so would lead to either contradictions or unreasonably extreme conditions in terms of policy.[10] Analytical evidence shows that inflation during wartime in Russia was likely much higher than reported by official statistics; in some years, like 2022, the officially reported growth of consumer prices (roughly 12 percent) could have been less than half of what other reasonable indicators would suggest (just below 35 percent at its peak), as shown in Figure 3 below.

Figure 3: Nominal interest rate, official consumer prices inflation in Russia and alternative indicators

[9] See, for example, this report by the Swedish Konjunkturinstitutet and the Stockholm Institute of Transition Economics (SITE), where it is explicitly stated that (p.3): "*Key economic indicators such as inflation and real GDP growth should be treated with a significant degree of care and official numbers of these variables should not be cited without an explicit warning that they are part of the Russian propaganda narrative.*". Thomas Nilsson, the Head of the Swedish Military Intelligence and Security, paints a similar picture in his FT interview.

[10] For example, assuming that recent mild inflation figures were true, and subtracting this from the nominal interest rate set by the Russian Central Bank would result in instantaneous real rates of almost 10 percent. This would make the Russian monetary policy the tightest in the world by a large margin, which is very unlikely.



Source: Vlasiuk et al. (2025).

Understated inflation, in turn, could have provided a much more benign picture of Russian GDP growth and real growth of income, as those are real variables which are derived by deflating their nominal equivalent with some indicator of inflation. In fact, experts assess that Russian economy might have been in uninterrupted stagnation or recession since at least 2024. This would be a more compatible picture with the conditions prevailing in the Russian economy since the invasion of Ukraine began. Specifically, Russia has been subject to external forces such as Western sanctions, low oil prices and more recently an intensified campaign of Ukrainian drone strikes against infrastructure for refinement of oil. These coexisted with internal weakness due to acute labor force shortages and a growing economic uncertainty.

Against this backdrop, the overall stability of the Russian ruble might raise questions. How can an economy suffer from persistently elevated inflation and clearly suboptimal growth rates and continue to enjoy exchange rate stability? The answer is that the current exchange rate levels could be considered largely artificial and the result of the use of highly unconventional policies. For example, the Russian economy operates in a state of capital controls, where acquiring foreign currency might be difficult in practice. Import constraints also matter, since imports would normally be a standard channel through which demand for foreign currency rises at the expense of the domestic currency. Furthermore, a large part of the global economic community sees acquiring Russian rubles either economically undesirable or as practically impossible. Overall, this contributes to lower liquidity in the currency markets. In addition, unconventional policies such as forcing Russian exporters to convert to rubles a significant share of the foreign currency acquired in their operations has at times helped sustain structural, artificial demand for the Russian currency.

The Russian financial system appears under considerable stress, too. Analysis shows that the Russian policy-makers have now for some time adopted the following macro financial domestic funding loop: the Russian government issues bonds, which are typically bought by

the banking sector and sold to the Russian Central Bank, which buys them for newly 'printed' cash.[11] As a result, as banks become increasingly concentrated on financing the government, liquidity for the Russian real economy becomes scarcer, pushing up effective interest rates. Similarly, because the state uses the newly acquired funds to finance its war effort, the non-military sector likely suffers a lack of investment. Under the current conditions, as the economic boom is confined to the military sector, inflation remains elevated but lacks the prerequisites to translate in an uncontrolled inflationary spiral.

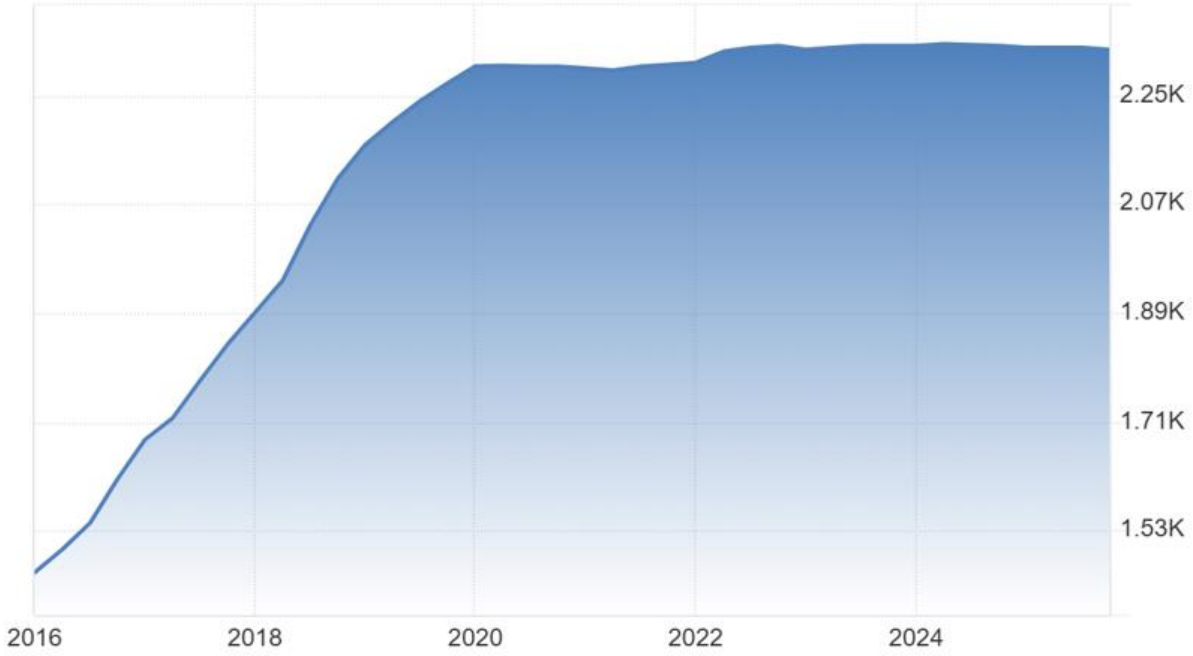
The Russian economy utilizes several means to remain afloat. Revenues from export of oil and natural gas contribute to sustain a considerable share of its federal budget and provide a crucial source of foreign currency, which in turn can be used to finance the imports of those inputs necessary to war effort. In addition, Russia has a sovereign wealth fund known as National Wealth Fund (NWF), the result of accumulated profits from the oil and gas industry and invested in financial assets. The NWF has extensively been used to finance the war in Ukraine and the federal budget, and there are indications that the size of its liquid assets has shrunk by 75 percent throughout the period of hostilities. The remaining share of the NWF is possibly at around USD 30 to 50 billion, which equates just roughly two to three months of federal revenue. In 2026, the Russian state raised the standard VAT rate from 20 to 22 percent; prior to that, in 2025, the corporate profit tax was raised by 5 percentage points, to 25 percent and new mineral extraction taxes introduced. The willingness to shift from companies to the general public to accrue tax revenue is a symptom of how fragile the Russian public finances can have become.

Starting in 2014, Russia began increasing its reserves of gold at a substantial pace. The size of gold reserves is currently estimated at around 2 330 metric-tonnes, equivalent to roughly 375 billion USD.[12]

[11] Dabrowski (2025) shows that OFZ have become the main source of deficit financing in 2025, with Russian commercial banks holding 62.2 percent of domestic public debt. He separately describes large quasi fiscal operations outside the formal budget, especially rapidly expanding and partly subsidized corporate credit directed toward war related needs.

[12] We assume that a price of Gold is 5 000 USD/troy ounce. As previously explained, data reported by Russian authorities carry the risk of being contaminated by political second aims. Furthermore, it has to be observed that Gold reported in the central bank stocks is not necessarily freely available, as a part of it might have been pledged as collateral in other transactions.

Figure 4: Russian Gold Reserves (Tonnes)



Source: Trading Economics

But gold reserves are not necessarily a universal panacea, as the attempt to liquidate them for foreign hard currency under the current sanctions regime could come with major frictions. Moreover, the sole intention of liquidating a significant part of this stock might prompt the price of gold on international markets to sell-off sharply in expectation of even lower prices.

Overall, the Russian economy could be considered as weak and launched along suboptimal trajectories. In the short run, however, in the absence of significant shocks, it is capable of remaining resilient thanks to a mix of unconventional policies, that include strict regulations, coercion of the banking systems and depletion of national savings.

5. Scenario A: Near total blockade

5.1 Scenario A: Security

Scenario A reflects part of a response to rapid developments that represent a critical threat to the EU and/or NATO. The use of tactical nuclear weapons in Ukraine by Russia or the initiation of a blockade of Taiwan by China are possible triggers. Scenario A could also arise from an adverse escalatory development of Scenario B below.

In Scenario A, in response to external critical threats and in the name of collective self-defense, NATO enforces a military blockade of the Baltic Sea in the Danish straits: *Operation Baltic Shield*.[13]

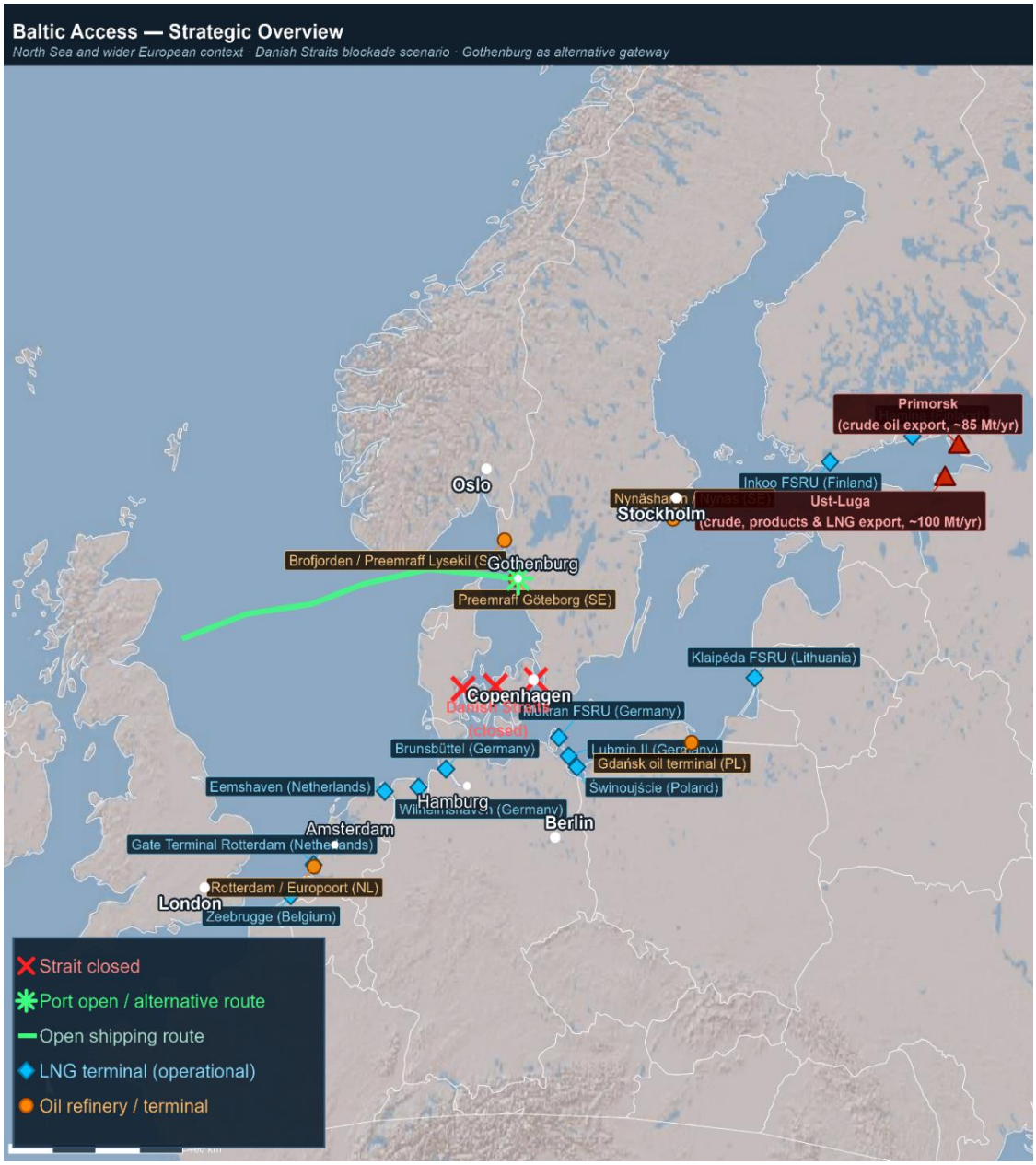
Control of the Danish Straits is a necessary condition for any effective blockade of the Baltic and likely the key determinant of its feasibility, given the sea's constrained geography and narrow, shallow, and readily monitored access routes. More specifically, as shown in Figure 5 below, the scenario assumes that commercial shipping through the Great Belt, the Little Belt, and Öresund comes to a halt. This implies that ports such as those of Trondheim and Narvik in Norway or Gothenburg in Sweden, together with other more Western ports on the North Sea, would continue to function relatively normally.

For NATO, severing the Russian link to Kaliningrad oblast is important not only for imposing additional constraints on Russia. In fact, the Suwalki gap between Kaliningrad, Poland, Belarus, Lithuania hosts the E67 road, which in case of blockade of the Baltic would likely become critical for commerce between the three Baltic states and the rest of Europe. Thus, a land blockade to the Russian exclave is enforced, and all checkpoints between Belarus and the EU are closed. Swedish ports and in particular Gotland, together with German and Polish harbors, become central to the operation's success, as they allow refueling, repairs and rotation of NATO assets.

The blockade prevents the majority of seaborne trade across the Baltic Sea from taking place. Mining of the Baltic Sea by NATO and the risks associated with the military operations bring seaborne commercial activity to a virtual halt for NATO member states operating there. Ports on the Norwegian coast and in the North Sea are of great importance for limiting the economic damages from the blockade of the Baltic and operate normally. Other means of transportation, such as civil aviation, continue to function by avoiding the airspace over the Baltic Sea. The Öresund bridge remains open but the traffic slows down as controls of goods and physical persons transiting are brought to the highest level.

[13] Our assessment is that this type of military action would likely be sustainable in practice only under the NATO umbrella. However, this does not preclude a configuration in which a subset of NATO members assumes a more active role, potentially through a *coalition of the willing*, while other members provide political support or simply refrain from obstructing the initiative.

Figure 5: Blockade of the Baltic Sea through military interdiction of selected passages in the Danish Straits



Sources: Chokepoint scenario: authors' own. Figure: created with R and using Claude AI in combination with Natural Earth (boundaries), Esri World Shaded Relief (basemap), IEEFA European LNG Tracker 2024, Global Energy Monitor, Preem, St1, Nynäs (refinery data); Norwegian Petroleum Directorate.

The effects on the Russian economy are likely significant on impact. Its Ust-Luga and Primorsk harbors and export terminals are forced to restrict the largest share of their operations. A stop to exports makes foreign hard currency scarce. It also creates a significant domestic surplus of oil, which the country might struggle to store. Risks to the Russian economy are exacerbated if Ukraine chooses to simultaneously target Russian oil export terminals in the Black Sea (e.g., Tuapse and Novorossiysk). Ukraine has already carried out this type of operations in the past, often successfully and repeatedly. A sudden, simultaneous shutdown of its Baltic and Black Sea export infrastructure would be an acute crisis for the Russian energy sector, as it would

strand a significant amount of crude oil and refined products with no immediate viable alternative outlet. Alternative pipelines or export terminals such as ESPO or the Arctic routes lack the spare capacity to absorb the shortfall, domestic storage would saturate within weeks, and many fields cannot simply be paused without risking permanent reservoir damage. Conversely, shall Ukraine refrain from damaging Russian export terminals in the Black Sea, this could act as a cushion to the Russian economy, offering Russian oil a partial escape route.

A near total impossibility of exporting commodities via the Baltic Sea has the potential of driving Russia into an unprecedented military escalation against NATO. A blockade of Kaliningrad could be used as a pretext to justify aggressive actions under the guise of a humanitarian emergency. It is reasonable to expect that several options would be on the table. Current aggressive posture would likely be, at the minimum, drastically heightened. Thus, cyberattacks against civilian infrastructure could intensify, violations of NATO borders with military jets would increase in geography and scope, sabotage against the critical infrastructure of the Baltic Sea could increase substantially, nuclear signaling and more assertive repositioning of nuclear capable assets in Belarus and Western Russia could be carried out. More kinetic risks exist as well, as Russia may choose to fight an asymmetric war in the Baltic Sea, similarly to what Ukraine has done in the Black Sea. This could be done, for example, by using seaborne autonomous vehicles to strike valuable NATO military assets or port infrastructure. Hence, it could be strategically sound for NATO to present the blockade as reversible and define possible conditions that, if met, would lead to a reversal.

At a political level, divisions could arise and erode cohesion among NATO and EU member states as the costs of the blockade mount. Together with a virtually certain lack of a UN mandate, it will be important for NATO to give space to exceptions based on humanitarian grounds.

It is worth emphasizing that a serious and prolonged effort of the Russian military in a second operational theatre might severely overstretch its forces and lead to highly unpopular political choices as well as considerable risks. For example, a general mobilization might be necessary to sustain a campaign on two fronts: the Baltic Sea and Ukraine. However, it is commonly believed that a full mobilization is among the most undesirable political moves for the Russian leadership. Ukraine could seize the opportunity and go offensive, potentially recapturing a significant part of the occupied territory. Were that the case, the Russian political decision-makers would come under severe stress in justifying the entire Ukraine campaign.

ANALYTICAL BOX – Can Russia initiate a blockade of the Baltic Sea?

Recent public debate has raised the possibility of Russian military action in the Baltic Sea, including the seizure of a small island, while Swedish military representatives have also discussed the risk of a Russian initiated blockade of the Baltic Sea. Should such an event occur, we judge it more likely to resemble Scenario A, with a greater role for kinetic military activity, than Scenario B, since Russia lacks the ability to impose economic sanctions on EU countries.

A Baltic blockade would probably be one of the shocks to which Russia is most exposed, given the concentration of its commodity exports through Baltic ports. The economic rationale for Russia to close the Baltic Sea is therefore weak. A military rationale could nevertheless emerge if Russia judged that such a move would impose greater economic and political costs on the Western coalition than on Russia itself.

That calculation is unlikely under current conditions, where disruption in the Strait of Hormuz has increased the value of oil and energy products. It could change, however, if the US were to relax sanctions on Iranian oil and Iranian and Venezuelan supply returned more freely to global markets. In that case, a glut in the oil market could push prices sharply lower, reducing the opportunity cost for Russia of losing Baltic energy revenues. A severe global recession, particularly in the US or China, could have a similar effect by depressing demand for energy commodities.

5.2 Scenario A: Macro-financial implications

- Sweden and the EU-27

At a macroeconomic level, our focus is on the first couple of quarters following the beginning of the blockade. Over this window, our preliminary calculations suggest that Sweden could suffer a drop in GDP comparable or even exceeding the peak of 2008 financial crisis. This means that the economy might contract on impact at a rate of approximately 10 percent on annualized terms.[14] While for the EU-27, the overall fall in GDP will likely be somewhat smaller, -1.3 percent, but nevertheless significant and asymmetrically distributed among EU member states. We emphasize that this is the initial impact calculated on annualized terms. In other words, this does not imply the economy will necessarily evolve along this trajectory for a whole year.[15]

Table 4: Scenario A, potential short-run macroeconomic outcomes for Sweden and the EU-27

SCENARIO A	CALIBRATED EXPORT SHOCK, S	Δ GDP PROXY BASED ON VALUE ADDED, %
SWEDEN	0.3	− 10.5 %
EU-27	0.07	− 1.3 %

Source: Own calculations. Figures should be interpreted as annual equivalent magnitudes under the maintained shock, not as model-based forecasts of annual GDP growth.

[14] From a macroeconomic perspective, Sweden is a small and a significantly open-economy. For example, the value of annual export is typically approximately 50 percent of its GDP, while the same indicator for the EU-27 is around 20 percent.

[15] If GDP falls by 10 percent from one quarter to the next, growth for the full calendar year could still end up positive or relatively high if activity rebounds strongly in the following quarters.

Oil prices might spike globally, as a considerable share of Russian oil, equivalent to about 11 percent of the global supply, is trapped inside Russian borders.[16] However, political pressure on OPEC, on selected OPEC members and/or other oil exporting countries could result in a greater supply, thus acting as a ceiling for oil prices. Similarly, redirecting export of European producers at least partly or releasing strategic reserves might prove a necessary policy to smoothen out the inevitable volatility in the energy markets.[17] In this sense, Ukraine could help Europe with storage of natural gas, leveraging its vast underground facilities in the West of the country. Its 30 billion cubic meters of gas storage capacity represent roughly 6 percent of EU annual gas consumption. Further options include a temporarily increase of the use of coal as source of energy or, on a longer time scale and when possible, restart the use of nuclear plants.

Given that economic stress might be concentrated in the Northern part of the European continent, the Swedish krona could depreciate considerably against the US dollar (USD) and the Euro, while the Euro is likely to depreciate significantly against the USD. Because commodities are typically priced in USD, the depreciation of European domestic currencies against the USD could be a challenge if persistent. Swedish and European equity and debt markets could suffer significant drawdowns, which could considerably tighten financial conditions.

As exports are not able to leave Sweden and the possibility of importing goods is partly impaired, the blockade would work as both an adverse demand and supply shock. Thus, unemployment in Sweden would almost surely increase, as production will have to be curtailed.[18] Unemployment is more likely to increase in sectors directly associated with the blockade of the Baltic Sea and therefore seaborne exports.[19] In the short-term, expansionary fiscal policy could help to mitigate the adverse trend. For example, direct transfers to citizens and businesses, as during parts of the Covid crisis, might at least slow the rate at which unemployment increases. However, as the shock would likely raise government bond yields, making any fiscal response more costly to finance. Clearly, in this type of environment, inflationary pressures are likely to rapidly build-up.

- Russia

In the case of Russian economy, the unavailability and quality of Russian data make a quantitative exercise unsuitable. Nevertheless, the shock due to the blockade of the Baltic would likely propagate through standard macroeconomic channels. This makes it possible to provide cautious qualitative evaluation despite data limitations. Our assessment is that in this

[16] See Spiro, Wachtmeister and Gars (2025b). We calculate that in scenario where no oil is exported via Russian Baltic and Black Sea terminals would equate a loss of around 5 percent of global supply of oil.

[17] It is also useful to recall that due to a lower aggregate demand, industrial demand for energy can decrease markedly in these conditions. This can exert downward pressure on energy prices.

[18] In standard macroeconomic, an adverse shock to aggregate demand typically leads to a lower production of output and therefore lowers the need to hire workers, which would explain the spike of unemployment in Sweden. Any classic macroeconomic textbook can describe this mechanism in more detail, for example Blanchard (2025).

[19] This may include sectors such as forestry, machinery and equipment, chemical goods. Export of services is likely to be less affected.

type of scenario, the Russian economy would suffer an acute economic loss.[20] This is largely because the structure of the Russian economy, concentrated around energy and agricultural exports, characterized by relative technological backwardness, and substantially weakened by years of war-economy policies is particularly vulnerable to precisely the type of shock that a blockade of the Baltic Sea would imply.

On top of a direct loss of a large share of federal revenues, a number of vicious feedback loops would likely impact the Russian economy. Timely access to foreign currency could become a persistent challenge, undermining the ability to pay for imports. While gold prices, a commodity Russia has been stockpiling for years as we have shown in Chapter 4, might reach new highs, there is no guarantee Russia would be able to liquidate its holdings quickly, at scale, or at acceptable prices under tightened financial and logistical constraints. Meanwhile, oil that cannot be exported would accumulate: Russia would face a choice between shutting in production and leaning more heavily on storage, including longer tanker parking or floating storage, the supply of which in the Baltic Sea is likely to suffer itself from the blockade. Oil extraction would have to slow significantly, and in parts of Russia the operational challenges of shutting in and restarting production could produce lasting losses or costly damage in some fields. A similar dynamic is likely for the export of fertilizers.

Under such conditions, price discovery in Russian financial markets could become severely impaired. Trading would likely be halted, at least temporarily, as occurred after Russia's full-scale invasion of Ukraine in 2022. Financial conditions would tighten sharply, placing the financial system under sudden and severe stress. In this environment, the Central Bank of Russia could temporarily prioritize financial stability over strict inflation targeting, easing financial conditions in the short term despite the risk of higher inflation.

Finally, supply chains in Russia's North-West could suffer enormously, and systemically important cities such as St. Petersburg might, over time, face shortages or disruptions in the supply of a wide range of goods. All in all, Russia could face a double-digit GDP contraction in annualized terms, which is particularly more likely in a severe, binding and long-lasting blockade.

[20] In Analytical Boxes below, we attempt to quantify what would be, for Russia, the revenue at risk from a halt in the export of energy and agricultural products in Scenario A and B and how that has been partly already the case because of the Ukrainian bombing campaign in spring 2026. The lack of data prevents us from quantifying the macroeconomic propagation of this shock throughout the Russian economy.

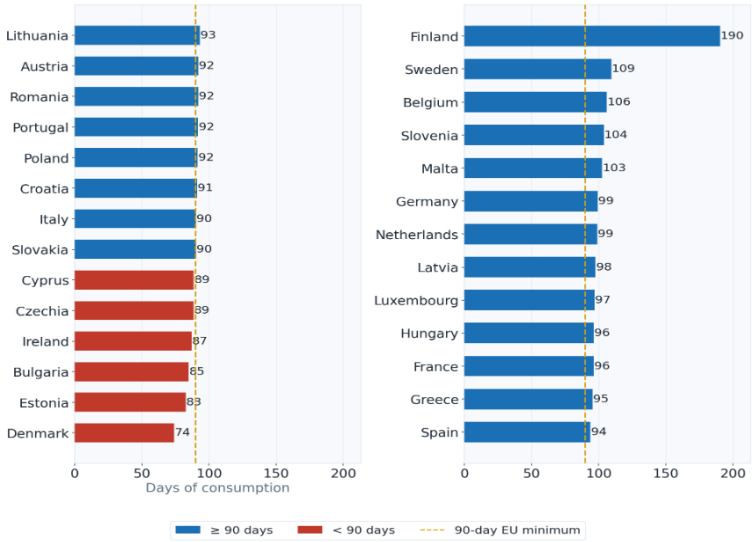
ANALYTICAL BOX - Disruptions to imports shipped via the Baltic Sea could be severe for Western countries, but mitigating factors exist

Our modelling focus has been on how reduced export capacity via the Baltic Sea may harm the EU-27 and Swedish economies. However, a partial or near total blockade would also disrupt imports, likely worsening the outcomes presented in Chapter 5.

A full assessment of simultaneous shocks to imports and exports would ideally rely on a framework that captures interactions across sectors, prices, substitution, and macroeconomic feedback effects over time. A general equilibrium model is one natural candidate for such an exercise. In principle, this could be done using a Dynamic Stochastic General Equilibrium model such as the Riksbank's MAJA. However, models of this kind are generally developed for the analysis of economies under more normal conditions and are less well suited to sudden disruptions in trade logistics and emergency policy interventions. They are also demanding in terms of calibration and implementation. We therefore choose here to proceed with a qualitative assessment.

A near total blockade of the Baltic Sea would imply a sharp and immediate reduction in export capacity for Baltic exposed economies and sectors. When it comes to imports, however, several mitigating mechanisms could be activated. First, countries typically hold strategic reserves of energy goods and often of agricultural products, which together with commercial inventories and storage, could cushion the initial shock.

Figure 6: EU Emergency Oil Stocks by Country, Latest Available Observation
Days equivalent

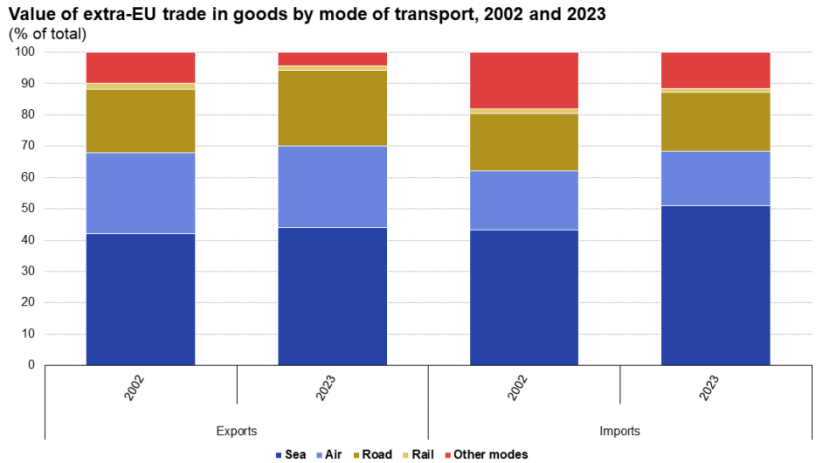


Source: Own graph using Eurostat's nrg_stk_oem monthly data and Claude AI. Latest reported observation by country; dates differ across countries and are between November 2025 and February 2026.

Second, structural adjustment by firms through import substitution, together with changes in household consumption patterns, could over time reduce the need to import certain goods. Third, whenever feasible, European exports originally intended for third countries could be redirected so as to partly accommodate acute demand within partner countries, as might be the case for energy products exported by Norway. Fourth, rapid policy and regulatory changes, including the temporary relaxation of constraints on producers, could also contribute to stabilizing the outlook in the short term. Finally, a range of measures would likely remain available that, while almost certainly macroeconomically painful, could still help avert economic collapse. Rationing or priority allocation of certain goods might, for example, be temporarily introduced. Likewise, the inability to export could reduce industrial activity and thereby lower demand for imported intermediate goods and energy.

A sharp disruption of imports would, similarly to the case of exports, likely be a highly concentrated shock, modest for the EU in aggregate but potentially critical for some countries across the Baltic Sea, such as Finland. Eurostat's short sea shipping statistics show that in 2024 the Baltic Sea accounted for 16.2% of EU short sea shipping tonnage, while short sea shipping itself represented 58.3% of total EU seaborne goods transport. Taken together, these figures suggest that the Baltic accounts for roughly 9% of total EU seaborne goods transport. This provides a useful, although imperfect, proxy for the EU's aggregate exposure to a near total blockade of the Baltic Sea.

Figure 7: Maritime Transport as the Main Channel for EU Imports



Source: Eurostat.

Clusters of physically heavier goods could suffer disproportionately, as those are typically the ones shipped by sea. Hence, energy goods (crude oil, refined oil products, LNG), industrial inputs (chemicals, metals intermediates) and agricultural inputs such as fertilizers would be more affected than high value, light goods such as medicines, electronics or even electricity.

A few factors could increase or decrease pressure on the European economies via the import channel. For example, a blockade initiated in May or June would, *ceteris paribus*, exert less pressure on energy prices and fertilizers availability than one initiated between November and January. This is because winter energy demand is higher, and shortages of agricultural inputs may become more acute as the planting season approaches. Similarly, other elements partially outside the control of NATO or the EU could affect the economic costs of Baltic blockade. For example, simultaneous disruptions in the Strait of Hormuz involving Iran, or in the Suez Canal caused by the Houthis in Yemen, would likely magnify the energy shock. China's stance could also prove significant. In particular, China could exacerbate the shock by restricting selected critical raw materials, magnets, and materials used in battery supply chains or other industrial processes relevant for energy storage and the functioning of renewable energy systems.

FACT BOX – Ukraine enters the Baltic theater

In March and April 2026, Ukraine conducted a significant offensive over several days against major Russian energy infrastructure in the Baltic and Black Sea regions. Drone swarms repeatedly struck energy export hubs, including Ust Luga and Primorsk, the Kirishi refinery in Leningrad Oblast, the Novorossiysk export terminal, and other military targets. While publicly available information remains limited, some assessments suggest that Russia may have temporarily lost at least 40 percent of its seaborne oil export capacity.

Table 6: Timeline of selected Ukrainian operations in the Baltic Sea in March/April 2026

DATE	INFRASTRUCTURE	SOURCE	NOTE
March 22	Ust-Luga and Primorsk	Reuters	Both Primorsk and Ust-Luga are hit; both initially cease operations, but Ust-Luga reopens the day after.
March 25	Ust-Luga and Primorsk	Reuters	Larger strike; Primorsk and Ust Luga suspended crude and oil product loadings, Ukrainian SBU claims to have damaged oil loadings and tanks.
March 27	Ust-Luga	Reuters	Oil loadings at Ust-Luga were halted. Novatek suspended gas condensate processing and naphtha export loadings at its Ust Luga complex after the attacks.
March 29	Ust-Luga	Reuters	
March 31	Ust-Luga	Reuters	Zelensky asked to refrain from new strikes on energy infrastructure in the Baltic; he conditions it on reciprocal measures by Russia and an Easter cease-fire.
April 5	Primorsk	RBC Ukraine	Three RVSP-20000 tanks (20,000 m^3 capacity each) were damaged, with petroleum products catching fire.
April 5	Lukoil NORSI refinery (Nizhny Novgorod)	Kyiv Post	Strikes damaged key crude processing units AVT-6 and AVT-1, as well as unit 19/6 used in bitumen production.
April 6	Novorossiysk – Sheskharis terminal + CPC terminal	The Moscow Times	Satellite imagery confirmed damage to oil pipelines near Berths 1 and 2 of the Sheskharis terminal, as well as to Berth 2 itself and pipeline shut-off valves. Four oil product storage tanks also caught fire at the CPC terminal, plus a mooring point and loading infrastructure were damaged.
April 7	Ust-Luga	Kyiv Independent	Three Transneft-Baltika storage tanks were hit; Ukrainian General Staff confirmed involvement.

As shown in Table 6, the Ukrainian operation coincided with a rapid increase in energy prices linked to the war involving Iran and began only a few days after the Trump administration eased sanctions on Russian sea-borne oil loaded on vessels as of 12 March 2026. The timing therefore suggests that one possible objective of the operation was to limit Russia's windfall gains from the export of

energy products. Despite the considerable damage inflicted on a key pillar of the Russian economy, the authorities' reaction has remained largely rhetorical and has fallen short of overt escalation.* Russian air defense assets failed to prevent the repeated attacks, and the authorities have described them as terrorist attacks. Russia also appears to have sought to shape the information environment by alleging that Ukrainian drones heading towards Leningrad Oblast had crossed NATO airspace in the Baltic region.

The first economic estimates have recently started to emerge. In one case, the assessment by the Kyiv School of Economics (reported by the Financial Times) suggests that in the single week ending March 29, Russia has likely suffered damages equal USD 1 billion. At the time of writing, Ust-Luga, Primorsk and Novorossiysk are unlikely to be fully operational. Potential damages to the loading structures, apart from the destruction of tank reservoirs, suggests that those ports might continue to operate below potential for weeks to come. This, in turn, underscores the potential strategic value of partnership with Ukraine for NATO allies. While the Baltic Sea has remained formally open, Russia's ability to benefit fully from its use appears to have been materially constrained, which may be seen as a more limited and less costly analogue to Scenario B. At the same time, from a risk perspective, one possible implication is that persistent pressure on Russia's energy export capacity could strengthen its incentive to raise tensions in the Baltic Sea in an attempt to impose costs on the wider West.

Figure 8.1: Primorsk before and after the Ukrainian attacks at the end of March

Figure 8.2: Part of Ust-Luga port before and after the Ukrainian attacks at the end of March

Source: Radio Svoboda, via Planet Labs.
Note: Latest images where damage is visible are from April 1st, 2026.

* During the days in which the Ukrainian campaign took place, Russia has hit gas infrastructure in North-Eastern Ukraine and continued daily drone attacks, especially on Western Ukraine. However, these actions are well in the perimeter of what Russia typically does and hardly to be viewed as escalation or retaliation.

6. Scenario B: Partial blockade

6.1 Scenario B: Security

Scenario B reflects a response to severe, persistent harm in the Baltic Sea. An environmental disaster, such as a significant oil and/or toxic-chemical spill involving the Russian-flagged ships or its shadow fleet, could generate profound and long-term impacts across Baltic economies and communities and provides the rationale for the response in Scenario B. The response is political in the first instance and approaches the logic of economic warfare. It is best understood as a broader coercive regime in which the Baltic maritime dimension is central, but not the only component.

As a response to a crisis of Russian making, the EU in coordination with NATO greatly extends the scope and geography of sanctions that are currently in place. The resulting policy regime can be thought as partly overlapping with full transport ban on Russian oil, reflecting in part proposals as those suggested by Gars, Spiro & Wachtmeister (2025). Specifically, port-entry bans and refusals of access, currently applied to Russian-flagged vessels, are extended to cover the broader shadow fleet. Exceptions on imports of Russian oil and natural gas at European level are discontinued, which results into an effective ban of importing Russian energy products into the EU.[21] Selected companies and/or ports worldwide that collaborate with Russian flagged vessels and its shadow fleet might also be sanctioned and prevented from getting access to European markets and capital markets.

A series of initiatives are taken with the aim of imposing additional friction on the Russian ability to ship energy products via the Baltic Sea. The measures are primarily administrative in nature, but a credible prospect of force may form part of the deterrent. For example, Port State Control (PSC) sharply increases inspection/detainment of ships for safety/pollution/seafarer-rule compliance, and imposes refusal-of-access consequences for repeat or serious deficiencies.[22] This now applies to the totality of the Russian shadow fleet. Physical enforcement is applied in a systematic way to selected ships of the Russian shadow fleet. These ships are stopped, boarded, controlled and escorted away from a certain area or even detained for a period of time.[23]

Complementary measures contribute to increase pressure on the Russian economy through channels other than the Baltic Sea. Exports to Russia from the EU are essentially stopped,

[21] At the time of writing, the EU applies a price cap on Russian seaborne crude by restricting EU firms from providing key services (shipping, insurance, financing) unless the oil is sold at or below the cap. As an alternative to the full import ban, the price of the cap could be further lowered, for example from roughly USD 45 today to USD 35 per barrel.

[22] Starting in 2025, insurance documentation requirements for ships transiting the Danish Straits began to be enforced more systematically, led by Denmark and later joined by Sweden and Germany, as reported by Foreign Affairs.

[23] We note that European states have recently intensified their actions of physical enforcement against the Russian shadow fleet. France, UK, Sweden and even militarily smaller states like Belgium have boarded, investigated and even seized ships suspected to belong to the Russian shadow fleet. However, our Scenario B assumes that the magnitude of this effort is significantly larger. To put things in perspective: according to Reuters, the estimated global size of the shadow fleet used to evade sanctions worldwide lies somewhere between 1 200 and 1 600 tankers; Kyiv School of Economics was able to link 200 of those ships directly to Russia but other estimates point to the number being as high as 800.

while exports to Central Asian countries and Turkey are more efficiently scrutinized. Border crossings into Kaliningrad Oblast and other bordering regions between Russia, Belarus and the EU are indefinitely closed. Agreement is reached that part of the costs arising directly from the more assertive EU posture may be deducted from the NATO defense spending target.

Nevertheless, the political process might be slow and at times uncertain, as internal political consensus has to be built at every iteration.[24] Costs for some EU members might rapidly accrue as the risk outlook deteriorates and uncertainty persists. While countries on the Baltic Sea would be more directly impacted, second order propagations cannot be ruled out. The case of Italy is perhaps the most illustrative, as the country combines a significant dependence on Germany[25] for importing intermediate goods with a political tradition characterized by heterogeneous views on bilateral relationships with Russia and on Italo-Russian interests. Finally, we believe that in any type of scenario where geopolitical tensions increase in the Baltic Sea, the role of the US is likely to be crucial. This pertains not only to its military capabilities, for which the case is self-evident, but includes as well broader geoeconomic considerations. For example, it is generally considered that energy independence is a structural EU vulnerability.[26] In this sense, pressure on the Russian energy sector as well as a deeper disengagement from Russian fossil-fuels necessitate of finding alternative supplies. Typically, this demand is met by the US, for example, via LNG deliveries. In a situation where the Baltic Sea experiences geopolitical volatility, this dependency would be amplified resulting in political leverage for the US administration over the EU.

As we explain in Section 6.2, we believe that the partial blockade of the Baltic Sea would likely force the Russian economy somewhat deeper along the current undesirable and suboptimal trajectories. Nevertheless, the availability of time and a renewed policy effort via unconventional macroeconomic policies could prevent it from collapsing. From a security perspective, multiple additional levers would probably remain available to Western policy-makers, which in turn would allow to further erode Russian capabilities. First, Ukraine could help to put pressure on the Russian economy in the Black Sea by limiting its capabilities in exporting energy products from the Black Sea terminals. Second, Western policy-makers could increase the scope of the blockade and raise somewhat the value of α when needed. In turn, this can elicit a Russian military response. We recognize that such a response might come with attached costs for the European economies. Given the density of critical infrastructure in the Baltic Sea, responses by Russia that include for example higher intensity of hybrid warfare may carry systemic risks. Similarly, Russia might choose to use its navy to escort part of its cargo fleet, an initiative it has floated in the past as part of its broader informational escalation strategy. However, it is unlikely that Russia would be able to extend such protection to the

[24] For example, the political sensitivity to higher prices for energy goods is particularly clear in the case of the US administration, which in response to higher oil prices stemming from its war against Iran has with little hesitation temporarily relaxed sanctions on Russian oil in March 2026.

[25] It is generally considered that this dependence is so high that can be approximated in the following figure: in terms of trade, Italy is 2.5 times more dependent on Germany than Germany is on Italy, as suggested by the Italian statistical agency ISTAT [pag. 8].

[26] The EU has itself on several occasions stressed how vulnerable it is to energy crises.

fleet as a whole. Moreover, a measure of this kind would likely increase the transportation costs of energy products substantially.

6.2 Scenario B: Macro-financial implications

- Sweden and the EU-27

Our macroeconomic model suggests that, under the conditions of Scenario B, GDP in Sweden would experience a marked short run contraction in economic activity. Expressed in annual equivalent terms, the impact corresponds to roughly 4 percent of our GDP proxy. For the EU-27 as a whole, the corresponding effect is materially smaller, at roughly 0.4 percent. This difference reflects the fact that Sweden is substantially more exposed to Baltic Sea trade, while the Union average is diluted by large member states whose trade structure is less directly dependent on the region.

Table 5: Scenario B, potential short-run macroeconomic outcomes for Sweden and the EU-27

SCENARIO B	CALIBRATED EXPORT SHOCK, S	Δ GDP PROXY BASED ON VALUE ADDED, %
Sweden	0.10	- 4.1 %
EU-27	0.02	- 0.4 %

Source: Own calculations. Figures should be interpreted as annual equivalent magnitudes under the maintained shock, not as model-based forecasts of annual GDP growth.

We regard these results as plausible. Under Scenario B, oil and gas prices would likely rise, though probably less sharply than under Scenario A. A portion of Russian supply would no longer reach global markets as smoothly as before, while insurance, transport and compliance costs would also increase. At the same time, higher energy prices would not necessarily remain persistently elevated. Greater cohesion among oil exporting countries could lead to an increase in production. A recent example is the decision by OPEC plus to raise output modestly during the recent Middle East conflict, even if the scale of that response remained limited relative to the disruption. Europe could also partly cushion the shock through other channels, including continued Norwegian supply and, if necessary, the release of strategic petroleum reserves to smooth the impact of higher energy prices.[27]

Together with higher energy prices, political uncertainty related to the status of the Baltic Sea might increase costs for firms, for example via higher insurance premia. The perception of an

[27] The mere timing of the measures envisaged under Scenario B could also shape the outlook for energy prices. In late summer and early autumn, EU gas storage sites are being refilled and demand for Natural Gas is typically elevated. Uncertainty over whether the coming winter will be colder than expected can amplify this effect. By contrast, in early spring, as temperatures rise across Europe, attention tends to shift toward the level of gas in storage rather than the risk of meeting unexpectedly high demand due to a sudden deterioration in weather conditions. This can provide a buffer and temper the magnitude of the energy shock stemming from a partial halt in Russian export of fossil fuels.

increased risk might cause firms to delay investment or operations. As a result, the weaker activity implied by the model could be accompanied by an adverse price shock, producing a stagflationary configuration in at least some parts of Europe.

For Sweden, exports play a central role in the national economy. Adverse developments in this corner of the economy would therefore likely push unemployment higher, as weaker demand would reduce the need for production. The combination of weaker economic activity and stronger inflationary pressures, together with some depreciation of the Swedish krona driven by a prevailing risk-off sentiment in financial markets, would make it difficult for the Riksbank to deliver substantial interest rate cuts. Such a response could in fact risk a further weakening of the krona, thereby worsening the inflation outlook through higher import prices.

In the EU, aggregate figures would probably mask materially different national realities. While the Union as a whole could experience growth below potential, the short-term effects on more peripheral economies such as Portugal and Greece would likely be milder than in the Baltic region. Within the Baltic area itself, the fall in economic activity would depend on the extent to which each economy relies on the Baltic Sea for trade. Finland would likely be among the most affected. Under such conditions, the Euro could depreciate against the US dollar, consistent with the dollar's usual safe haven role during risk-off episodes and in function of the economic performance differential. The US economy might also prove relatively more resilient, not least because over the past decade it has become a net energy exporter. For that reason, US equity markets could outperform their European counterparts, although this last point should be seen as a plausible market implication rather than a mechanical result.

Changes in at least three factors could affect this outlook. First, any meaningful escalation by Russia would further increase economic uncertainty and thereby deepen the adverse trajectory described for the Swedish and EU economies. Second, a lack of political cohesion at the EU level, together with the resulting increase in economic and political uncertainty, could also deepen the economic contraction. Third, the perceived persistence of the conditions described in Scenario B could push economic outcomes along non-linear paths. The longer the partial blockade persists, the greater the risk that the economic outlook deteriorates more than proportionally. This is because firms and households, anticipating a more durable policy shift, may begin to adopt more structural changes in their behavior. For example, they may choose to save a larger share of income and postpone investment and consumption, thereby deepening the decline in output.

- Russia

For Russia, the macrofinancial implications of Scenario B are somewhat less immediate than in Scenario A, but still significant. The most direct channel is likely to be a rise in the cost of exporting oil. If a larger share of the shadow fleet becomes exposed to inspections, detentions, denial of port services and higher compliance costs, the cost of transporting Russian oil would likely increase materially.

While it is difficult to pinpoint how much these costs could increase exactly, Gars, Spiro & Wachtmeister (2025) show that Russian economic performance has in the recent years been rather elastic with respect to this indicator. For instance, they find that an increase of USD 5 per barrel in the costs of transportation of Russian oil is capable of costing Russia a 0.5 percent of its GDP. Hence, if the policies under Scenario B were to raise Russian oil shipping costs by, say, USD 10 to 20 per barrel, this alone could imply an output loss equivalent to roughly 1 to 2 percent of Russia's publicly reported GDP of roughly USD 2 500 billions, even before accounting for any revenue losses stemming from lower export volumes.

Because the Baltic Sea accounts for a large share of Russia's seaborne oil exports, the resulting stress would likely extend beyond transport costs. To the extent that exports are delayed, diverted or forced to clear at larger discounts, export revenues would fall and pressures on the federal budget would intensify. At the same time, foreign currency inflows would weaken. It is also likely that in these conditions the Russian ruble would depreciate further, as exporters would acquire less foreign currency to sell in the domestic markets. This would limit what has been one of the main channels behind the overall resilience of the Russian ruble: a coerced mechanical selling of foreign currency by exporters on the domestic markets.

Even so, economic policies in Scenario B would not necessarily produce a rapid macroeconomic breakdown in Russia. Unlike in Scenario A, pressure would accumulate more gradually and largely through channels that are already active to some degree. This would give Russian policy-makers time to intensify existing coping mechanisms, for example through tighter capital controls, higher taxation, further use of the National Wealth Fund, or other administrative measures designed to support fiscal revenues and the exchange rate. For that reason, the more plausible outcome is not an immediate collapse, but a gradual worsening of the Russian macrofinancial position, with lower export efficiency, weaker fiscal space and greater pressure on the ruble and the budget over time.[28]

[28] Dabrowski (2025) identifies fiscal reserves, domestic borrowing, and higher taxation as the main channels through which Russia can continue financing the war in the short term. In Scenario B, these same levers would likely remain available as adjustment mechanisms, though only at the cost of faster fiscal deterioration and tighter domestic financial conditions.

ANALYTICAL BOX – What kind of costs could Russia face in Scenario A and B?

Using data on the composition of Russian exports, we derive an estimate of the economic shock for Russia stemming from a Baltic Sea blockade under Scenario A and B. We focus on three categories of goods exported via the Baltic: crude oil, refined oil products, and fertilizers.

Table 7: Baltic exposed volumes and Russian export revenues at risk

PRODUCT	QUANTITY EXPORTED	PRICE	NOTE	DAILY AND ANNUAL REVENUE AT RISK: SCENARIO A ($\alpha = 0.9$)	DAILY AND ANNUAL REVENUE AT RISK: SCENARIO B ($\alpha = 0.3$)
Crude Oil	1.65 million bpd (mbpd)	78 USD/ barrel	Dec 26 Brent is priced 83 USD per barrel on 13th of April 2026, we assume a price of USD 78 per Ural barrel after a USD 5 discount (a conservative discount in favor of Russia)	*Daily figure*: 0.9* 1.65 m/bpd * USD 78 = USD 115.8 m/day	USD 38.6 m/day
				Annual figure: USD 115.8m * 365 = USD 42.3 billion (bln) per year	USD 14.1 bln/year
Refined products	1.1 (mbpd)	90 USD/ barrel	Assumes a refining margin premium of 12 USD over crude	USD 89.1 m/day	USD 29.7 m/day
				USD 32.5 bln/year	USD 10.8 bln/year
Fertilizers	33.6 million tons per year	USD 515/ton	Russia's export of fertilizers typically includes Nitrogen (urea proxy, assumed price USD 450/ton), Potash (assumed price USD 380/ton) and DAP (Complex fertilizer proxy, estimated at USD 720/ton). For simplicity, we assume a 1/3 share of each in total export.	USD 42.6 m/day	USD 14.2 m/day
				USD 15.6 bln/year	USD 5.2 bln/year
		TOTAL ANNUAL REVENUE AT RISK		**90.4 BLN/YEAR**	**30.1 BLN/YEAR**

Note: For simplicity, Table 7 approximates Russian exports by including the Ust-Luga and Primorsk export facilities only. While other export infrastructure exists in the Baltic, they are smaller and assumed to move the estimations only at the margin.

The calculations in Table 7 show that Russia would incur a yearly cost of up to USD 90 bln in Scenario A and USD 30 bln in Scenario B. Relative to Russia's estimated GDP of USD 2,510 billion in 2025, the potential annual cost of a blockade would amount to 3.6 percent of GDP in Scenario A and 1.2 percent in Scenario B. Measured against Russian federal annual revenues, estimated at roughly

USD 481 billion, the potential cost of the blockade would correspond to 18.8 percent of revenues in Scenario A and 6.3 percent in Scenario B.

While taken in isolation the direct shock may appear manageable at first glance, additional important considerations apply. First, as we emphasize in Chapter 4, one risk is that Russian official GDP figures are considerably over-optimistic. Were that the case, the costs of export loss in relation to GDP would likely be significantly higher. Furthermore, this shock would not only reduce gross export revenues directly, but would also propagate through the wider economy via lower demand for labour, transport, logistics, refining, and port services, together with a significant domestic surplus of oil that would not be easily manageable.

The Russian economy is also unusually exposed because wartime growth has become increasingly concentrated in military-related activity. For example, SIPRI estimates planned military expenditure at 7.2 percent of GDP in 2025, while BOFIT notes that value added in branches connected to the war effort grew by 20 percent in 2025, compared with only 0.4 percent in the rest of manufacturing. This means that headline GDP may overstate the economy's underlying resilience, since part of measured output reflects wartime mobilization rather than broad based gains in productivity, welfare, or future civilian productive capacity. Finally, Ukrainian offensive capabilities represent an additional factor that could significantly magnify stress on the Russian energy sector. Novorossiysk alone processes approximately 0.7 million bpd of crude and 0.5 million bpd of refined products; simultaneous disruption of both Baltic and Black Sea export capacity would leave western Russia with no viable seaborne outlet at scale. Taken together, these factors suggest that the figures in Table 7 are more likely to understate than overstate the true economic damage a Baltic blockade would inflict on Russia.

Is it possible for Russia to re-reroute its oil from the Baltic Sea?
In practice, this is not possible to do cheaply, quickly and at scale, which strengthens the case of a Baltic blockade as a revenue-denial tool. Russia produces around 9 to 10 mbpd of crude oil. Roughly half is exported. Based on data collected by Burggraben, on which this subsection draws heavily, India absorbs around 1.4-1.8 mbpd, while China 2.2-2.4 mbpd, with around 1.7 mbpd seaborne.

For export purposes, Russian crude oil production can be effectively thought as yielding two considerably distinct types of products. The western export system is centered on Urals crude, which is a medium dense and rather sulfurous type of oil. The eastern system is centered on ESPO (Eastern Siberia–Pacific Ocean), a lighter, cleaner and generally more valuable barrel, mainly directed toward Asian markets. The amount of sulfur, which is typically an undesirable element present in crude oil, is roughly three times higher in the Ural crude as compared to ESPO. Other essential differences in chemical and physical properties exist. Taken together, these differences therefore substantially limit Russia's ability to simply move oil from one export system to another.

The different qualities of crude are also clearly reflected in the geography of Russian exports. Urals crude is typically moved through Baltic Sea terminals, or through Novorossiysk on the Black Sea. It used to mainly feed European refineries, but after the EU sanctions regime was introduced, large volumes were redirected toward India and Turkey. This rerouting has been possible, but not

costless. It has required longer shipping routes, greater reliance on shadow fleet logistics, and larger discounts to buyers.

Figure 9: Russian crude pipeline and storage system

Source: S&P Global.

In contrast, the ESPO blend is mainly intended to serve customers in Asia, especially China. Chinese refineries using the eastern Russian supply system are better adapted to the lighter ESPO barrel than to large additional volumes of Urals crude. China can probably buy some Urals but this is unlikely to be a frictionless substitute for the Baltic route. Moreover, the ESPO pipeline system has limited spare capacity. Rerouting surplus oil from the Baltic Sea toward China is therefore likely to run into significant structural constraints.

Additional factors also make frictionless rerouting unlikely. Russian export terminals in the Black Sea have recently been hit hard by Ukraine. Some damage could take months to repair and, even if repaired, this infrastructure is likely to remain exposed to future Ukrainian strikes, given its proximity and strategic importance. Other export outlets, such as Murmansk or the Arctic routes, are more distant, slower to scale, probably already close to full use, and particularly sensitive to seasonality.

7. Comparative Remarks

Both policies in Scenario A and B have the potential of generating uniquely challenging economic conditions for Russia. We recognize that certain political and military initiatives included in the scenarios may, in specific circumstances, represent the only proportional and optimal response to a specific type of events.[29] This notwithstanding, we believe that Scenario B can still be seen as implying a more favorable overall risk outlook without necessarily falling short of a hypothetical goal of persistently lowering the Russian economic capabilities. In Scenario B, the overall economic costs are lower for the Western block, it is more easily reversible and there is less of an unambiguous and rational case for Russia to disproportionally escalate from a position of relative weakness. While the gradualism built in Scenario B could allow Russian policy-makers to use time to deploy unconventional policies, Western policy-makers would likewise retain multiple levers through which pressure on the Russian economy could be increased or relaxed over time.

A further question is which bloc could realistically initiate a policy of deliberate friction in the Baltic Sea, either along the lines of Scenario A or Scenario B. Scenario B can by and large only be initiated by the Western bloc, since Russia lacks the capacity to impose meaningful sanctions on the EU. By contrast, Russia could in theory initiate a blockade of the Baltic Sea through military interdiction, including by means of asymmetric warfare. Under current conditions, with energy product prices elevated, the economic cost of doing so would likely be too high for Russia. This calculus could change if energy prices were to fall sharply. A sudden relaxation of sanctions on Iranian and Venezuelan oil, for example, could add significant supply to the market and depress prices. A severe economic and financial recession, particularly if originating in the US or China, could have a similar effect by weakening global energy demand. In such circumstances, the combined economic, political and military calculus could shift. Russia might then assess that a Baltic blockade would impose proportionally larger costs on the Western bloc, making this type of escalation relatively more attractive.

8. Wild Cards

Wild cards [**WD**] refer to unlikely or unexpected events that could have a major impact if they occur. Wild cards can be used in conjunction with scenarios, serving as disruptive factors that test, reinforce, or magnify the scenario logic. They can also be seen as stand-alone analytical tools widening the realm of possible developments to prepare for.

WD 1: Political instability leads to a massive refugee crisis on EU borders. Fueled by economic and military setbacks in the Baltic and in Ukraine, the Russian chain of command and institutions crumble. Internal disorder arises. This could give rise to a historically unprecedented flux of Russian refugees on the Finnish border, which potentially hundreds of thousands of Russians could attempt to cross. This may result in a humanitarian catastrophe for some of the Nordic countries.

[29] For example, a partial administrative-driven blockade of the Baltic Sea is clearly a disproportional response to a hypothetical use of tactical nuclear weapons in Ukraine.

WD 2**: **China doubles down on Russia in Ukraine, as significant capabilities are provided. As a response to the partial blockade in Scenario B penalizing Russian assets, China begins to openly provide military support to Russia in its military effort in Ukraine. This includes not only satellite intelligence, but a diverse set of weapons, ranging from ammunition to missiles. This prevents Ukraine from leveraging Russian overextension and achieving large-scale operational successes, which in turn decreases the chances of domestic instability in Russia.

WD 3: EU cohesion weakens in a delicate moment. As the costs of a full or partial blockade mount, skepticism and division emerge between selected of EU and NATO members, in a period when elections approach in big EU players such as France. Politically polarized forces campaign in an attempt to capitalize on policy uncertainty and public confusion, which brings them votes. The partial or near total blockade loses public support and the Western forces suffer a politically strategic setback.

WD 4: Undesired Transition from Scenario B to A. Miscalibration in Scenario B, unexpectedly, leads to Scenario A, which could develop in less favorable terms for NATO and the EU. Preparations for a scenario that is different from the realized one lead to inefficiencies. For example, energy prices increase more and more rapidly than expected, political consensus has to be built faster at every iteration, which fuels uncertainty and leads to a more fragile political position.

WD 5: China capitalizes on Russian fatal weakness. A full, sustained blockade succeeds in severely straining Russia's political and military chains of command. In a scenario of acute weakening, Russia's growing dependence could expand China's leverage in the Russian Far East, potentially leading to substantial economic and security concessions, and, in extreme tail-risk scenarios, sharper territorial pressure given that parts of the region were ceded to Russia in the mid-19th century.

9. Conclusion

Political and economic considerations and dependencies, together with exceptionally concentrated critical infrastructure, make the relatively small Baltic Sea a strategically critical point for Europe. In this report, we analyze what outcomes a geopolitical shock would produce in this environment for EU/NATO members and compare them to those of Russia. Our work is structured across two main scenarios, one envisioning a partial blockade of the Baltic Sea using largely administrative and regulatory tools, while the other assuming a near total blockade enforced via military interdiction. Methodologically, the report combines qualitative security analysis with quantitative macroeconomic exercises based on an Input-Output model for Sweden and the EU 27.

Our findings and results could be summarized as follows. A near total blockade could be enacted by NATO in response to developments critical to the alliance members. Such a blockade would, in first place, prevent access of Russian ships to the Baltic Sea via the Danish straits across its Great Belt, Small Belt and Öresund. We assume this type of posture would elicit a form of military retaliation by Russia that, at the minimum, would preclude a safe navigation in the Baltic Sea for the majority of Western commercial ships. Thus, the possibility

of exporting via the Baltic Sea would be severely constrained for both Russian and Western countries.

In the first few weeks and months after the onset of the blockade, Sweden could suffer a fall in its GDP growth similar to that experienced during the 2008 financial crisis. For the EU-27, the economic costs would be milder but asymmetrically distributed. Countries closer to the Baltic Sea, or those whose economies are more closely interconnected with those on the Baltic Sea would likely be hit the most. For Western countries, import needs would initially be met with inventory drawdowns, or rerouted or substituted. Nevertheless, they are likely to amplify economic losses. For Russia, a total stop to exports of its energy products via the Baltic Sea would represent a big shock, especially if Ukraine is able to simultaneously exert pressure on Black Sea terminals. In a state of economic weakness, a significant share of the Russian federal budget would disappear, foreign currency inflows would dry up, cutting off access to imports. Inventories of unsold and unshipped oil would accumulate. It is difficult to see which policy levers could timely and decisively reverse such a dynamic. This is also why we believe that in Scenario A there exists a non-negligible probability of military escalation by Russia.

Scenario B presents a somewhat different logic. Here, the blockade is partial and enforced primarily through political, regulatory, and administrative means, including a major extension of the scope and geographical reach of current sanctions. Such a regime could emerge, for example, in response to persistent and severe harms in the Baltic Sea attributable to Russia. The economic impact of a partial blockade, under Scenario B, would be milder than in Scenario A according to our model. Swedish GDP could, in the first weeks or months, decline at an annualized rate of roughly 4 percent, while the contraction for the EU-27 would be considerably smaller, at around 0.5 percent of GDP. We believe that the partial blockade of the Baltic Sea would likely force the Russian economy somewhat deeper along the current undesirable and suboptimal trajectories. Availability of time and an efficient use of unconventional macroeconomic policies could prevent it from collapsing. At the same time, we regard the mix of economic costs and uncertainty that Russia would bear in Scenario B, together with a probable need of being active on an additional, Baltic front as challenging for the Russian state.

Overall, both policies in Scenario A and B have the potential to generate uniquely challenging economic conditions for Russia. We recognize that certain political and military initiatives included in the scenarios may, in specific circumstances, represent the only proportional and optimal response to a certain type of events. At the same time, Scenario B appears to lead to somewhat superior outcomes for NATO/EU; Scenario B is capable of hurting Russia without necessarily creating an unequivocal case for military escalation and is likely to be associated with lower macroeconomic costs.

Appendix: A stylized three sector Input-Output model

To clarify the logic of the model used in the main analysis, this appendix presents a very simple three sector input-output example. The main purpose is to illustrate how an export shock propagates through production linkages and affects gross value added.

Suppose a representative economy is summarized with the following three sectors: Agriculture, Industry, and Services.

Table A.1: A three-sector illustrative economy

SELLER/BUYER	AGRICULTURE	INDUSTRY	SERVICES	TOTAL FINAL DEMAND (TFU)	OUTPUT
Agriculture	10	7.5	4	78.5	100
Industry	15	30	10	95	150
Services	5	15	30	150	200

The rows of Table A.1 indicate the seller, while the columns denote the buyer of a certain output. Thus, the 7.5 in row Agriculture, column Industry means: Industry buys 7.5 worth of Agriculture inputs. This captures intermediate demand, that is, transactions between firms. The final demand, in the TFU column, measures the total demand of our economy. This includes actors such as households and the government. Hence, the 78.5 in the fifth column means that final users demand 78.5 of agriculture product. The Gross Output, in the sixth column, sums the intermediate and the final demand.

In a more general notation, this can be rewritten as follows. An entry z_{ij} measures the amount of output from sector i used as an intermediate input by sector j. These flows capture intermediate demand, that is, production used by other firms. The column for total final uses, denoted TFU, measures demand from final users such as households, government, and foreign buyers. Gross output, denoted x_j is equal to the sum of intermediate and final demand for each sector.

Gross output is not, however, an appropriate proxy for GDP, as it double counts the intermediate production. Instead, the best GDP proxy would be the Value Added (VA), which is obtained by subtracting the intermediate inputs used in a sector from its gross output. Aggregate gross value added is then obtained by summing sectoral value added across sectors. For example, Agriculture utilizes $10 + 15 + 5 = 30$ units of input, which can be subtracted from the Output column to generate the VA. Thus, $100 - (10 + 15 + 5) = 70$. Doing this for every sector in the economy yields:

(A.1) Agriculture: $VA = 100 - 30 = 70$

(A.2) Industry: $VA = 150 - 52.5 = 97.5$

(A.3) Services: $VA = 200 - 44 = 156$

yields a Gross Value Added of $70 + 97.5 + 156 = 323.5$. In our model, this can be considered a proxy for the national GDP. Rewritten in a more general form: for each sector j, value added is defined as gross output minus the total value of intermediate inputs used in production:

(A.4) $VA_j = x_j - \sum_i z_{ij}$

In our simulations, we use the concept of *value-added intensity,* that is a parameter v_j that measures how much value added is generated per unit of gross output. For example, for the sector Agriculture, we have that $\frac{VA_A}{Output_A} = 70/100 = 0.7$.

Furthermore, we define the so-called technical coefficients as $a_{ij} = Z_{ij}/x_j$, which measure how much input from sector i is required to produce one unit of output in sector j. For example, the input from Agriculture into Industry is:

(A.5) $a_{Ag,Ind} = \frac{Z_{Ag,Ind}}{x_{Ind}} = \frac{7.5}{150} = 0.05$

Thus, Industry needs 0.05 units of Agriculture per unit of Industry output. Collecting those into a matrix A gives the standard input output coefficient matrix.

The blockade is modelled as a negative shock to the export component of final demand. Let y denote the baseline vector of total final demand, and let p^6 denote the export vector. Post shock final demand is then written as

(A.6) $y' = y - Sp^6$

where S is a calibration parameter capturing the effective size of the export shock. In the main analysis, Eq. (1) in the text, this parameter is defined as:

$$S = \underbrace{s_{mode}}_{\substack{share\ of\ exports \\ shipped\ via\ the\ affected\ mode}} * \overbrace{s_{geo}}^{\substack{share\ tied\ specifically \\ to\ the\ Baltic}} * \underbrace{\alpha}_{\substack{severity\ of\ the\ blockade \\ 0 \le \alpha \le 1}}$$

where s_{mode} captures the role of seaborne transport, s_{geo} captures exposure to the Baltic Sea, and α captures the severity of the blockade scenario.

The intuition is the following. In a demand driven input output framework, production adjusts to final demand. A reduced ability to export lowers the foreign component of demand. This reduces output in the sectors directly exposed to exports, which in turn lowers demand for inputs from their suppliers, and so on throughout the production network. In the near total blockade scenario, we assume that no meaningful rerouting is immediately available. This is a strong assumption, but it is consistent with using the framework to study short run propagation over roughly one to two quarters.

The full model logic

The actual exercise applies this logic to a much larger input output table. The model starts from the standard accounting identity:

(A.7) $x' = Ax' + y'$

where x' is gross output after the shock and y' is final demand after the export loss. Rearranging (A.7) gives:

(A.8) $x' = (I - A)^{-1}y'$

Thus, the difference between post shock and baseline output can be written as:

(A.9) $\Delta x = x' - x = (I - A)^{-1}\Delta y$

where $\Delta y = y' - y$.

To translate this into a GDP effect, we multiply the output change in each sector by its baseline value added intensity:

(A.10) $\Delta GVA_j = v_j \cdot \Delta x_j$

Summing across sectors gives the total change in Gross Value Added, which we interpret as a short run proxy for the impact on GDP:

(A.11) $\Delta\, GVA \;=\; \sum_j \Delta v_j\, \Delta x_j$

Interpretation and limitations

This framework is intentionally simple. Its purpose is not to forecast the exact macroeconomic path of an economy under a blockade scenario, but to provide a structured approximation of the order of magnitude of the shock and of how it propagates across sectors.

The model is static and demand driven. It assumes fixed production relationships across sectors, no immediate substitution toward alternative suppliers or routes, and no rapid policy offset. It therefore captures the short run propagation of an export shock, rather than medium term adaptation. In the context of a Baltic blockade, this makes the framework most useful for assessing the first round and early second round effects over roughly one to two quarters.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