

Negative implications of sanction policies for the SME sector

A specific consideration of the sanctioning of critical
raw materials

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Preliminary remark

This policy paper analyses the economic effects of sanctions policies on small and medium-sized enterprises. A special focus is placed on the aluminium processing industry and the sanctioning of critical raw materials such as oil and gas. In order to understand the breadth and complexity of this topic, we will first discuss free trade versus regulations and sanctions and analyse the effects on the global and domestic economy, industry and politics. The focus is on discussing why sanctions are often ineffective and can harm both the sanctioned and the sanctioning state. This is illustrated by historical examples and current sanctions against Russia. Building on this, there is a specific discussion of the effects on the aluminium industry and the associated challenges for small and medium-sized enterprises (SMEs). The article concludes with a discussion of strategic considerations and the need for a balanced approach that takes into account economic and non-economic objectives.

The debate on free trade versus regulations and sanctions is a key issue in foreign trade and international economic policy. This policy paper examines the impact of both approaches on the global economy and politics, as well as on the domestic economy and industries. Sanctions policy is not new. There are many striking historical examples that illustrate the consequences that sanctions policies can have and how they can damage not only the economy of the sanctioned state, but also that of the sanctioning state.

The current economic policy debate is focussing on the international sanctions against Russia. It is difficult to accurately assess the impact of the current sanctions against Russia, as history is not repeating itself. The economic sanctions imposed in response to Russia's military actions in Ukraine are aimed at severely damaging Russia's economy. Economic history shows that sanctions very often did not achieve the intended goals of their creators. Sometimes they even have the opposite effect, as illustrated by the French blockade measures against England during the Continental Blockade.

Economic blockades have long been a tool in international conflicts. Their purpose is to exert pressure on a country or group of countries without using direct military force. They aim to prevent or impede economic exchange and access to resources such as raw materials, goods and funds. This can lead to considerable economic difficulties and political pressure on the nation concerned. England is considered to be a kind of country of origin of such measures, which were already used in the age of mercantilism. Early examples include the English Navigation Acts between 1651 and 1663, which aimed to force the Netherlands out of colonial trade and strengthen English naval power. These acts led to the Anglo-Dutch naval wars and had far-reaching economic consequences for the Netherlands. However, the Navigation Acts also had a negative impact on England. Although they aimed to strengthen English naval supremacy and promote trade, the trade conflicts and the Anglo-Dutch naval wars led to considerable costs for England. In addition, the acts

increased the prices of imported goods as competition was reduced by restricting trade to English ships. These trade restrictions hindered the efficiency and innovation of international trade and led to a reduction in overall economic welfare, as they disrupted the function of prices and thus the free market mechanism.

The Anglo-French rivalry and the Continental Blockade are also examples of the use of economic sanctions. During the French Revolution and in the years that followed, the Royal Navy blockaded French harbours and Napoleon attempted to isolate Britain economically through the Berlin Decree of 1806. Although these measures led to challenges for Britain, Napoleon's plan ultimately failed and Britain was able to open up new trade routes, while the continent and France in particular were hit hard economically.

In general, history shows that sanctions can have complex and often unforeseen consequences. The current sanctions against Russia are no exception.

Part A. Implications of free trade, regulation and dealing with sanctions

A.1 Economic benefits of free trade

Free trade" refers to the unrestricted exchange of goods and services between countries without tariff or non-tariff barriers to trade. David Ricardo used the economic theory of comparative advantage to illustrate the welfare-enhancing effect of free trade. According to this theory, it makes sense for countries to specialise in the production of goods and services in which they have relative cost advantages (i.e. are more efficient in production). Through free trade, goods and services can then be exchanged between countries. This enables the best possible utilisation of efficient production and ultimately leads to an increase in the prosperity of both countries involved in international trade.

The advantages of free trade include

- **Increasing efficiency and prosperity:** Countries can reduce their production costs and increase their economic output through specialisation and economies of scale.
- **Consumer benefits:** Free trade leads to a greater variety of products ("love of variety") and lower prices for consumers.
- **Promoting competition:** Free trade forces companies to produce cost-efficiently in order to remain competitive in the global market.
- **Economic growth and development:** For developing countries, free trade can improve access to markets and technologies, which promotes growth and development.

A.2 Negative impact of regulation and sanctions

Regulations and sanctions are instruments used by states to achieve certain economic, social or political goals. Regulations include measures such as tariffs, quotas, standards or subsidies that can distort and restrict free trade. Sanctions, on the other hand, are punitive measures imposed on certain countries or organisations, often for political or security policy reasons.

If a government imposes an import duty, this leads to a loss of welfare (the so-called Harberg triangles). Without the tariff, relatively cheap products can be imported from abroad, which is very good for consumers as they can buy a wide variety of products at favourable prices. If the government now introduces an import duty, three major economic effects arise: 1) A duty increases the price of the goods at which they are offered domestically. Consumers now pay a higher price and will consume less overall (in theory, this is referred to as a reduction in consumer surplus). 2) Due to the higher price, fewer products are imported. Some domestic suppliers can now offer the product, but they would not be able to offer it well if there were free competition (because they have a production structure that is too inefficient). Overall, less of this good is consumed. 3) The state receives customs revenue. Economic theory and empiricism show that the negative effect of the price increase and the decrease in consumer surplus outweighs and cannot be offset. Although a few domestic companies can compete on the market as a result of the tariff, which would not have been competitive without the tariff, the import tariff leads to an overall net welfare loss.

In addition, import barriers are also export barriers. If some domestic companies are protected from unwelcome foreign competition by an import tariff, resources (e.g. highly qualified labour) in this country are diverted from efficient use in the production of another industry (the export industry) and channelled into inefficient use (the import industry). This market distortion means that less is imported, but less is exported. As a result, the export industry, which was able to produce efficiently and sell its goods on the world markets without the import duty, suffers.

Why are regulations and sanctions introduced despite the loss of economic welfare? Mostly on the basis of the following arguments:

- **Protection of the domestic economy:** As explained in theory, a frequently cited reason for introducing regulations is to protect domestic industries from foreign competition. However, as explained above, this leads to higher prices for industry and consumers, a loss of overall economic welfare and damage to export-orientated industries.
- **Social and ecological standards:** Regulations are often used in an attempt to enforce higher social and environmental standards. Whether this is necessary and expedient or whether this argument is

used from a political economy perspective to push through interests requires closer scrutiny in individual cases.

- **Equalisation of trade imbalances:** Regulations could be used to reduce trade imbalances and stabilise the domestic economy. From an economic point of view, it is important to emphasise causality. Trade imbalances can be the (short-term) result of market fluctuations, but should not be misused as a motivation for market-distorting interventions that would harm the export industry and lead to an overall loss of economic welfare.
- **National security and foreign policy:** Sanctions in particular are often used as an instrument of foreign policy to influence the behaviour of other states or to sanction human rights violations and aggression. It should be noted that misguided sanctions can have unintended negative consequences, such as the deterioration of the humanitarian situation for the civilian population of the sanctioned country due to a lack of essential goods and medicines. They can also contribute to the entrenchment of authoritarian regimes by allowing rulers to scapegoat external forces for internal problems. In addition, such sanctions can affect the economies of the sanctioning countries themselves, disrupt trade relations and lead to a deterioration in diplomatic relations. In some cases, they can also unintentionally strengthen the power of criminal networks that profit from circumventing sanctions.

A.3 Objectives and implications of sanctions

Sanctions, especially in response to acts of war, have various objectives:

- **Deterrence and punishment:** Sanctions serve to punish aggressive behaviour or violations of international law and to deter potential aggressors.
- **Influencing policy and behaviour:** States use economic and diplomatic pressure to try to influence the policy or behaviour of a sanctioned country.
- **Signalling international norms and values:** Sanctions can send a strong signal to the international community that certain actions will not be tolerated.

The effects of sanctions are manifold:

- **Economic losses for the sanctioned country:** Sanctions can cause considerable economic damage by restricting access to international markets, capital and resources.
- **Humanitarian impact:** The civilian population often suffers from sanctions, especially if they lead to food and medicine shortages.
- **Political reactions and escalation:** Sanctions can lead to a hardening of political attitudes and sometimes contribute to an escalation of conflicts.
- **Global economic impact:** Sanctions can also affect global markets, for example by increasing commodity prices or disrupting supply chains.

Effects of an export ban on the sanctioned country:

- Reduction of supply in the sanctioned country leads to higher prices and lower consumption.
- Welfare loss: The higher price reduces the consumer surplus of the sanctioned country. The producer surplus increases slightly, but this only partially compensates for the lower consumer surplus. An irretrievable loss of welfare remains.

Effects on the country imposing the sanction:

- The lower exports lead to a reduction in gross domestic product, a price reduction, lost profit options and market access for domestic companies. The demand curve shifts to the left, resulting in a reduction in producer surplus.
- Economic losses are borne by producers, labour and taxpayers, in particular through lost profits, wage losses and job losses.

Importance of supply and demand elasticities:

- The strength of the impact depends on the price elasticity of demand and supply.
- A steep demand curve (price-inelastic demand) leads to a greater decline in consumer surplus.
- A steep supply curve leads to a greater welfare loss for exporting companies.

Importance of intermediate consumption and third countries:

- A lack of intermediate inputs can lead to production interruptions and further economic consequences. This does not only apply to the sanctioned country. In the context of globally organised supply chains, this usually also has an impact on the sanctioning countries.
- Third countries can mitigate the effects of sanctions, especially if they supply substitutes for sanctioned products.

Medium and long-term effects:

- Sanctioned countries can adapt in the medium and long term, e.g. through their own production or trade relations with other countries.
- In the context of increasing geopolitical conflicts, more and more preferential trade agreements are being concluded between "friendly" countries. This reinforces the increasingly clear geopolitical divide.
- Empirical studies show that sanctions are particularly effective in the first two years, but diminish in the long term (Neuenkirch and Neumeier, 2015).

Success of sanctions:

- Distinction between economic and political effects.
- Success depends on factors such as the size of the economy, the unity of the sanctioning countries and the dependence of the sanctioned country on the products concerned.
- Empirical analyses show a low success rate of sanctions (Hafner, 2016).

Outlook on the prospects of success of the current sanctions against Russia:

- The sanctions against Russia could cause considerable economic damage, particularly due to the unity of the international community and Russia's dependence on imports.
- Possible support from third countries and not all banks are excluded from the SWIFT system (Grözinger, 2022).
- Further sanctions against supporters of the Putin regime could be more effective.
- Despite uncertainty about political success, sanctions send a strong signal and have a deterrent effect.

A.4 Circumvention of sanctions

In recent years, various sanctioned states have taken measures to circumvent international sanctions. Some examples and methods used by these states include

- **Hidden financial transactions and the use of shell companies:** Sanctioned states, particularly Russia, have used covert or disguised financial transactions and set up shell companies in other countries to trade and circumvent sanctions. There are indications that sanctioned goods, such as high-tech products and dual-use goods, enter the sanctioned state via third countries such as Armenia, Kazakhstan and Kyrgyzstan.
- **Circumvention of oil embargoes and trade restrictions:** The EU has found that certain companies that could not sell sanctioned goods to Russia instead sold production rights to Russia so that these goods could be produced locally. In addition, the EU's 11th sanctions package includes measures against the transport of sanctioned Russian goods, including a ban on lorries with Russian trailers and semi-trailers from transporting goods to the EU and a ban on ships handling sanctioned Russian cargo from calling at EU ports.
- **Extension of export bans on luxury goods:** The EU has extended the export ban on luxury cars to Russia to include all new and used cars with an engine of over 1,900 cm³ as well as all electric and hybrid vehicles.
- **Use of third countries to circumvent trade restrictions:** The EU has taken measures in the 11th sanctions package to combat the circumvention of trade sanctions by third countries. This includes a ban on "shadow" entities from third countries that deliberately circumvent EU sanctions by disguising the identity of the end user in order to buy or sell sanctioned goods, which are then channelled to the final destination.
- **Third-country involvement and international pressure:** The US, the EU, the UK and other countries have put pressure on companies in third countries to prevent sanctions from being circumvented by Russia. This includes efforts to identify and monitor potential hubs for sanctioned Russian economic activity, particularly in countries such as the Middle East, Turkey, Africa and Central Asia.
- **Guidance on avoiding sanctions evasion:** Both the EU and the UK have published guidance to help businesses implement sanctions effectively and prevent evasion. This guidance emphasises the importance of due diligence to ensure that goods and services are not diverted to Russia or sanctioned persons.

These examples show that sanctioned states use diverse and complex methods to circumvent international sanctions and that the international community is constantly taking new measures to prevent and combat such circumvention. Here is an example of the circumvention of sanctions: The European Union has imposed various sanctions on Russia since the start of the Ukraine war, including on trade in certain Russian goods. Despite these measures, trade in Russian products has not come to a standstill. Instead, third countries have established themselves as intermediate suppliers, enabling EU member states to continue to purchase sanctioned goods. This practice raises questions about the effectiveness of the sanctions and shows that certain countries, particularly Italy, have few qualms about circumventing the sanctions in this way.

A striking example of these circumvention practices is the import of Russian copper to Italy via Turkey. According to reports in the Financial Times, Italy imported thousands of tonnes of Russian copper via Turkey in July 2023, which not only undermines the sanctions but also highlights Italy's dependence on Russian raw materials. Turkey has established itself as a central transshipment point for Russian goods, with imports of Russian copper through Turkey almost tripling compared to the same period last year. The CRU Group, a British group of companies, points out that the level of Turkish copper imports is far higher than domestic demand, which indicates that surplus goods are being sold on to the EU.

In addition to Turkey, the United Arab Emirates also act as a middleman for Russian goods. This practice shows the complex trade relations and the difficulties in effectively enforcing the sanctions. Turkey and the United Arab Emirates continue to maintain close diplomatic relations with Russia and have not joined the Western sanctions, which facilitates trade through these countries.

The situation not only sheds light on the challenges of enforcing sanctions, but also on the economic interests that prompt countries to look for ways to circumvent these sanctions. For Italy, for example, the import of copper from Russia via Turkey has proven to be a significant economic factor. According to the Financial Times, Italy has now become Turkey's most important export destination for copper, which emphasises the strategic importance of this trade route.

These developments show how complex and intertwined international trade relations are and that the use of third countries as intermediary suppliers makes it much more difficult to enforce sanctions. It also highlights the need to strengthen global cooperation and develop more effective mechanisms to ensure compliance with internationally agreed sanctions.

A.5 Interim conclusion and strategic considerations

The debate on free trade versus regulations and sanctions is complex and depends heavily on the specific circumstances of a country or region. While free trade generally leads to efficiency gains and increased prosperity, regulations and sanctions may be necessary to achieve specific political, social or environmental goals. It is important that decision-makers carefully consider the short- and long-term effects of both approaches and adopt a balanced approach that takes into account both economic and non-economic objectives.

In practice, this requires a combination of open markets and targeted regulations to maximise the benefits of free trade while minimising negative impacts. International cooperation and dialogue are critical to developing effective and equitable trade regimes that both promote economic prosperity and address the challenges of global inequalities, environmental problems and political conflict.

The inclusion of sanctions for political reasons, especially in war-related situations, adds another dimension to the free trade versus regulation debate. Sanctions are often used as a tool of international politics to influence the behaviour of states, especially in relation to human rights violations, aggression or warfare.

The effectiveness of sanctions as a political instrument is controversial. On the one hand, they can be effective in enforcing international norms and sanctioning aggressive behaviour. On the other hand, they can have unintended negative consequences, both for the population of the sanctioned country and globally. Sanctions can affect energy and commodity prices, especially when they are imposed on countries that are major exporters of these goods. The sanctions against Russia in the current Russia-Ukraine war provide a current example. Russia is a major exporter of energy, particularly natural gas and oil. In response to the conflict, many countries imposed sanctions against Russia, which led to a reduction in energy supplies. This caused a shortage of energy supplies on the global market and drove up the prices of oil, natural gas and, as a result, electricity. The European Union has long been a major importer of Russian oil, but the outbreak of the conflict in Ukraine has significantly affected this trade relationship, leading to an embargo on the import of Russian oil. According to official data from Eurostat, the effect of the embargo is evident, as imports of crude oil were reduced to just 1.4 million tonnes in March 2023, compared to an average of 15.2 million tonnes between 2019 and 2022. However, despite this seemingly positive development, circumvention mechanisms exist through which Russian oil continues to enter the EU via third countries. An analysis by the Centre for Research on Energy and Clean Air (CREA) reveals that imports of refined oil products from countries that have not imposed sanctions on Russia - specifically China, India, the United Arab Emirates, Turkey and Singapore - have increased by 26%. These countries are also among the main buyers of Russian oil. According to the current sanctions regulations, the country of origin of the products is considered to be the country in which

they were refined, regardless of whether the crude oil originates from Russia and thus potentially generates funds for the conflict. The low cost of Russian oil also means that the diesel produced from it is often cheaper than that produced in Europe, even when transport costs are taken into account - a fact that industry insiders consider remarkable.

Russia is also an important supplier of raw materials such as aluminium, palladium and other metals. The sanctions and resulting supply shortages led to price increases for these raw materials, which in turn led to cost increases in various industries such as the automotive and electronics sectors. These global effects show how economic measures against a country that is central to the world economy can have far-reaching and sometimes unforeseen consequences for the global economy and individual consumers. They often lead to higher costs for businesses and consumers and can affect economic growth worldwide.

One example of what happens when important raw materials are lacking should be mentioned here: According to Eurometaux, China covers more than half of the world's production of processed minerals and metals and is the EU's main supplier of several critical raw materials, in particular magnesium, which is a key material in aluminium production. China has a near monopoly on global magnesium production (89%) and has supplied around 93 per cent of the EU's demand since the EU closed its last magnesium production plant in 2001. There was a shortage of Chinese magnesium in the fourth quarter of 2021, triggered by rising coal costs in China. Spot prices for magnesium rose by an average of 157% between September and October 2021. This shortage caused great concern among European aluminium smelters due to the potentially catastrophic impact of a magnesium shortage on aluminium production. China has significantly subsidised its domestic production of metals and other strategic materials through its "Made in China 2025" industrial strategy. As a result, the Chinese industry has developed overcapacity for various metals such as tungsten, lead and especially aluminium. According to the OECD, China's growing dominance in the aluminium industry has led to significant disruption for other countries and global trade patterns.

In practice, it is important that sanctions are targeted and proportionate. They should be part of a broader political strategy that includes diplomatic efforts and international co-operation. It is also crucial to consider the humanitarian impact of sanctions and to take measures to minimise civilian suffering.

To summarise, sanctions for political reasons, especially in war-related contexts, are a complex and sometimes controversial instrument of international relations. They require careful consideration of their objectives, effects and ethical implications. The challenge is to find an approach that is both effective and just and that contributes to resolving conflicts rather than exacerbating them.

Part B: In focus: Sanctioning

B.1 Implications of sanctioning critical raw materials

Sanctions are often used as a means of international politics to influence the behaviour of states or specific actors. They are used to achieve political, economic or military objectives and are usually a reaction to behaviour that is considered unacceptable. However, the sanctioning of materials, especially when critical raw materials are involved, can have far-reaching and sometimes serious negative effects. The sanctions against Iran come to mind at this point. The United States and other countries have imposed sanctions on Iran several times over the years, mainly due to Iran's nuclear programme and concerns about the sponsorship of terrorism. Iran is a major oil exporter, and sanctions aimed at restricting Iranian oil exports have had an impact on both the Iranian economy and global oil markets. These sanctions led to a reduction in global oil supply and contributed to price fluctuations on the international oil markets. Countries that previously imported Iranian oil had to look for alternative sources of supply, which in some cases led to higher energy costs and supply uncertainties.

These effects not only affect the target country, but also the economy of the sanctioning states. It is important to find a balance between political objectives and maintaining the economic stability and competitiveness of the industry.

1. negative impact on global supply chains

Critical raw materials are indispensable for modern industry. They are used in a wide range of products and technologies, from mobile phones to renewable energies. The disruption of global supply chains of such materials due to sanctions can lead to shortages and price increases. These disruptions have far-reaching consequences, not only for producers and consumers in the target country, but also for companies and consumers in the sanctioning countries. A study by the Peterson Institute for International Economics shows that sanctions can often have unintended economic consequences for the sanctioning countries themselves (Hufbauer, Schott & Elliott, 2009).

2. impairment of the economy in sanctioning states

The sanctioning of critical raw materials can have a negative impact on the economy of the sanctioning countries. Companies that rely on imported raw materials may be confronted with higher costs and delivery delays. This can lead to a decline in production, an increase in prices and ultimately to a loss of jobs. Sanctions against a country can cause significant disruption to logistics processes as they abruptly disrupt existing supply chains and force companies to quickly look for alternative sources of supply. This search is

often time-consuming and cost-intensive, as new suppliers have to be assessed and contracts renegotiated. At the same time, planning uncertainties arise as the availability and stability of supply sources are influenced by political developments. Companies have to adapt to these changes and reorganise their supply chains, which involves compliance challenges and legal reviews. This process is not only complex, but also leads to higher costs and requires a flexible and adaptable approach to make supply chains efficient and sustainable. Higher production costs can reduce competitiveness in global markets. A report by Chatham House emphasises that sanctions often lead to unexpected economic damage in the sanctioning countries (O'Sullivan, 2019).

A striking example of the disruption to the supply chain of critical raw materials caused by sanctions, which led to shortages and price increases, is the sanctioning of rare earth metals from China. China is one of the largest producers of rare earth metals, which are used in a variety of high-tech products such as smartphones, electric vehicles and wind turbines. In the early 2010s, China reduced its export quotas for rare earth metals, which was not directly due to sanctions, but had similar effects to sanctions. This reduction led to a global shortage and a significant increase in prices for these raw materials. The dependence of many industrialised countries on Chinese rare earth metals became apparent, and companies in these countries were faced with supply uncertainties and rising costs. This example illustrates how the disruption of the supply chain of critical raw materials not only affects producers and consumers in the target country, but can also have far-reaching consequences for companies and consumers in other countries. It shows the importance of a diversified and secure supply of key raw materials and the potential risks associated with a strong dependence on individual supplier countries.

3. impact on the innovation and technology sector

The development of new technologies, particularly in the fields of renewable energy, electromobility and digitalisation, is heavily dependent on the availability of critical raw materials. These materials, including rare earths, lithium and cobalt, are crucial for the production of batteries, permanent magnets, photovoltaic modules and other key components of these technologies. The European Union's Critical Raw Material Act aims to ensure security of supply and sustainability in the use of these essential raw materials.

Sanctions or trade restrictions on the raw materials listed in the Critical Raw Material Act could have a significant impact on research and development (R&D) in the technology fields mentioned. By making access to these necessary materials more difficult, such measures could slow down development processes, increase research and production costs and delay the market launch of new technologies. This would not only slow down technological development in the sanctioning countries, but could also undermine their long-term competitiveness and innovative capacity.

The World Economic Forum's Global Risks Report emphasises the critical importance of these raw materials for technological innovation and highlights how geopolitical tensions and sanctions can affect the global supply chain for these materials. The report warns of the risks posed by the concentration of extraction and processing of critical raw materials in a few countries and how political decisions, including sanctions, can jeopardise the stability of these supply chains (World Economic Forum, 2020).

4. political and diplomatic repercussions

The sanctioning of critical raw materials can also exacerbate political and diplomatic tensions. This can lead to a deterioration in relations between the sanctioning countries and the affected states. In the long term, this can affect international trade and diplomatic efforts and lead to further fragmentation of the global economic order. The Council on Foreign Relations emphasises the potentially counterproductive diplomatic effects of sanctions (Council on Foreign Relations, 2021).

5. unintended consequences and evasive manoeuvres

Sanctions often lead to unintended consequences. For example, they can encourage the development of alternative supply chains or the emergence of black markets. In addition, affected countries can enter into new trade partnerships with other states in order to circumvent the sanctions. This can undermine the effectiveness of sanctions and lead to a reorganisation of global trade relations. A further expansion of regional/preferential trade agreements is a deviation from the multilateral globalisation goal of the World Trade Organisation. Sanctions could therefore also have a negative impact on achieving the goals of the WTO development rounds. An analysis by Reuters shows how countries are finding alternative markets and trade routes to circumvent sanctions (Reuters, 2022).

B.2 Lobbying of NGOs and associations for sanctions

NGOs and organisations use their transitive, territorial power to influence states and persuade them to impose sanctions on other states or groups. These sanctions are based on collectively binding decisions within a territorially limited political system and are thus an expression of the sovereignty of the respective state. NGOs are often on the periphery of political action and use public protests, lobbying and information campaigns to draw attention to human rights violations and oppression in other countries. Their challenge is to argue within the logic of territorial sovereignty and to present unilateral sanctions as an expression of state autonomy.

NGOs and associations can also demand sanctions in the context of semi-territorial power by pointing out violations of international norms and exerting influence in international institutions. For example, they can impose sanctions on members or remind states of their international obligations. NGOs are also involved in international organisations such as the United Nations or the European Union, although they are not directly involved in the decision-making process. They play an important role by providing expertise and information that is important for the political assessment of the situation and the effective implementation of sanctions.

Furthermore, NGOs utilise transitive, post-territorial, global power by demanding or imposing sanctions in transnational regimes or independently sanctioning states and other actors in the name of universal norms such as human rights, environmental protection or anti-corruption. These sanctions can take the form of instruments such as naming and shaming or boycotts. A concrete example of the exercise of territorial sanctioning power by NGOs is the Massachusetts Burma Law, which sanctioned companies doing business with Myanmar based on the illegitimacy of the Myanmar military government. This law was later overturned by the US Supreme Court, but shows how NGOs can use territorial power to effect political change.

Associations and NGOs can also be drivers of sanctions in order to pursue economic interests, for example in the aluminium industry. They demand trade restrictions against countries with important aluminium producers in order to protect their domestic industry. Sometimes the enforcement of environmental or socio-political standards also serves to protect domestic sectors. However, as described above, these sanctions have far-reaching effects on global supply chains, prices and the availability of aluminium and, ultimately, on other industries, consumers and the economic performance of an affected country.

The European Aluminium Association is currently trying to reduce the supply of imported raw aluminium through an orchestrated campaign by calling for sanctions. In particular, this would lead to a higher price for industrial consumers of aluminium. In fact, European producers are unable to fill the gap between demand and domestic supply due to high energy prices. Europe is already dependent on imports from third countries.

According to the European Association of Aluminium Producers, the annual production of aluminium in Europe in 2021 was eight million tonnes, while annual consumption was nine million tonnes of aluminium. Since then, however, many manufacturers have significantly reduced their production capacities or even stopped production completely.

B.3 Impact of sanctions on the supply chains of small and medium-sized enterprises

Dependence and challenges:

- **Dependence on imports:** European companies, especially in Germany, are heavily dependent on metal imports, as the EU has limited reserves of its own and cannot meet demand through recycling. This dependency is particularly high for certain metals, with an import dependency of up to 100 per cent. "Depending on the materials required, the situation varies from sector to sector. Mechanical engineering and metal industry companies most frequently cite procurement problems with steel (85%) and aluminium (39% mechanical engineering, 44% metal industry). The construction industry also frequently reports scarce availability and high prices for steel (72 per cent), wood (46 per cent) and plastic (46 per cent).
- **Rising demand:** Developments in green energy, electromobility and digitalisation are expected to lead to a significant increase in demand for metals. The International Energy Agency forecasts that global demand for critical metals for green energy technologies will quadruple by 2040.
- **Geopolitical risks:** The COVID-19 pandemic and the Russian war of aggression against Ukraine have exacerbated the risks in supply chains. China plays a central role in supply chains and poses a risk to European economic sovereignty due to its dominance. The geopolitical challenges posed by the China-Taiwan conflict are also extremely important for global supply chains and international logistics. A further escalation of the situation could have a significant impact on supply chains. Although many companies and, from an aggregated perspective, countries are trying to achieve more diversity in global supply structures with the China+1 initiative and want to move away from China as the major global "production hub", the Chinese economy still plays a central role in the production of intermediate goods. A shift to Southeast Asian countries, such as Vietnam, can be recognised, but cannot yet significantly reduce dependence on China.

Sustainability and governance:

- **EU sustainability targets:** The EU has ambitious sustainability targets, the implementation of which poses a challenge in the complex metal supply chains. There are a variety of standards for sustainability, which are often implemented inconsistently.
- **Power asymmetries and lack of transparency:** Power asymmetries in supply chains make effective sustainability governance more difficult. A lack of transparency prevents power asymmetries from being identified and addressed.

- **International initiatives and legislation:** Several international initiatives and legislation have been introduced to improve sustainability in supply chains, including the UN Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises. The EU has introduced legislation on corporate due diligence in metal supply chains.

Structure and risks of supply chains:

- **Supply chain phases:** The supply chain can be divided into four main phases: Mining, smelting and refining, industrial processing and recycling.
- **Environmental and human rights risks:** The greatest risks lie in the mining phase, including environmental degradation, air pollution, water consumption and energy intensity. Mining in populated areas has a direct social impact and harbours risks for the observance of human rights. Current cases of problems with the environment and working conditions in the mining of cobalt in third countries such as Morocco are being discussed intensively in the press. In addition, since January 2023, the new Supply Chain Act has been exerting pressure on companies to take responsibility (and thus, in this specific case, costs) for these business ethics problems.
- **Further risks:** The smelting, refining and transport phases are also associated with environmental and climate impacts. For example, the majority of the energy required for the smelting and refining of platinum and copper comes from fossil fuels.

Small and medium-sized enterprises (SMEs) are particularly affected by the challenges in metal supply chains in various ways:

- **Vulnerability to supply chain disruptions:** SMEs are particularly vulnerable to disruptions in global value chains (GVCs). They typically have a lower diversity of suppliers and customers and lower liquidity than larger companies. The COVID-19 crisis and Russia's war against Ukraine have severely challenged the resilience of supply chains. SMEs integrated in GVCs were initially more affected, but recovered faster. Other threats such as natural disasters and cyberattacks pose additional risks.
- **Impact of market conditions and international events:** The pandemic and geopolitical events have led to global product shortages in various sectors, resulting in fierce competition and penalising smaller companies in procurement. Shifts in energy prices and high inflation have impacted the organisation of GVCs as companies, countries and regions seek to reduce dependencies on price fluctuations and diversify sources of essential products and raw materials.

- **Sustainability and circular economy:** There are growing demands from markets, investors and regulators for better integration of environmental, social and governance (ESG) aspects in GVCs. SMEs face the challenge of developing more sustainable business models that promote the circular economy and improve the resilience of their supply chains. Since January 2013, the Supply Chain Act has been in force, which obliges companies to take responsibility for ethical issues in their supply chain, both for intermediate goods produced in-house abroad and for intermediate goods procured from third-party suppliers. This puts particular pressure on SMEs, which have more difficult access to capital, information and labour due to their size. For many SMEs, this induces a considerable future cost factor.
- **Digital transformation and cyberattacks:** SMEs are particularly vulnerable to cyberattacks. During the COVID-19 pandemic, they have become increasingly dependent on digital technology. Their lack of preparation for such incidents contrasts with the sophistication of the attacks. SMEs tend to delegate responsibility for digital security to third parties, which increases their vulnerability.
- **Budget constraints and supplier relationships:** SMEs typically have more modest IT budgets, which presents a challenge in achieving the required visibility into their supply chains. They often struggle to manage relationships with suppliers effectively, especially when compared to larger organisations.

In summary, SMEs are constrained in their ability to participate in international networks by their limited internal capacities, such as management skills, technology and capital, as well as external barriers, such as access to trade finance and information gaps. Recent disruptions in supply chains have exacerbated these challenges. To be successful, SMEs need to build resilience, diversify their supply chains and adapt to changing market conditions.

B.4 Possible consequences of sanctions using the example of the raw material aluminium

Importance of aluminium

- **Importance for many industries:** Aluminium is an essential component of many industries, including automotive, construction, aerospace and packaging. Restricting access to this raw material could have a negative impact on these industries.
- **High energy costs in Europe:** The production of raw aluminium is energy-intensive. Due to the high energy costs in Europe, domestic production is limited, which increases dependence on imports. Sanctions against Russian aluminium could exacerbate this dependency and drive prices up further.
- **Security of supply:** The European aluminium industry is dependent on continuous and reliable supplies. Sanctions could jeopardise security of supply and lead to bottlenecks.
- **Global price development:** Sanctions could lead to a shortage on the global market and drive up global aluminium prices, which would have a negative impact on consumers and companies.

Effects of direct sanctions on the industry

The aluminium industry is an important economic sector in the EU, with direct employment of around 230,000 people and around one million indirect jobs. The downstream sector, which includes the further processing of aluminium, accounts for the majority of employment in the industry. Alongside China, Russia is the world's leading aluminium producer and plays an important role in the global aluminium supply.

If sanctions are imposed on Russian aluminium, the cost of primary aluminium for EU customers could rise significantly, which would lead to economic burdens for companies and consumers. Based on the experience of 2018, when the US imposed sanctions on the largest producer Rusal, this led to a short-term price increase of around 30 per cent. A complete elimination of Russian metal from the EU market could increase overall costs for customers by a further 30-40 per cent.

In principle, the EU faces another dilemma with a possible sanctions policy. This is because China in particular would fill the resulting gap and flood the EU market with cheap imports of semi-finished products, which would lead to a further loss of European jobs.

B.5 Interim conclusion

The sanctioning of critical commodities is a double-edged sword. While they serve as a political tool to respond to undesirable behaviour, they can also have a significant negative impact on the economy of the sanctioning states and the global economic order. Careful consideration of the rationale for sanctions and the potential consequences is therefore essential before such measures are taken. It is important to consider alternative approaches and diplomatic solutions in order to achieve the intended goals without jeopardising one's own economy and global stability.

The study - "Sanctions against Russia: Was their impact overestimated? An interim assessment" provides a detailed analysis of the effects of the sanctions imposed by the West following the Russian attack on Ukraine. These sanctions include export and import bans, financial sanctions and measures against individuals, such as travel bans and asset freezes. The main aim of the sanctions, to persuade the Russian government to end the war, has not yet been achieved. Surprisingly, the Russian economy has only shrunk by around two per cent in 2022, which is far less than originally expected. The sanctions aim to put pressure on the Russian government through economic costs. So far, however, these costs have not been sufficient to have the desired effect. However, it is expected that the economic damage to Russia will increase over time.

The effectiveness of economic sanctions depends on various factors, including the extent to which different countries participate in the sanctions, the type of goods affected and the speed of implementation of the sanctions. The greater economic damage occurs when many countries participate and when consumer goods, intermediate goods and raw materials are affected by the trade sanctions.

The current sanctions situation shows that democratic market economies in Europe, the USA and Japan are acting in unison. However, the limited participation of other economies poses a problem. Countries such as China and India act as buyers of Russian raw materials and partially compensate for the loss of Russian exports to the sanctioning countries.

Although the sanctions appear to have had little impact on the Russian economy, some developments indicate that Russia's actual economic situation is less resilient than macroeconomic indicators would suggest. For example, production in the defence industry has increased, but this has had no positive impact on the supply of consumer goods to the population. In addition, there is high capital flight and declining income from the sale of fossil fuels.

One important aspect is the distinction between consumer goods and consumer durables. While the EU mainly imports raw materials from Russia, Russia mainly imports consumer goods. The impact of sanctions on these different categories of goods varies and changes over time.

Countries that continue to maintain economic relations with Russia could sooner or later become the target of economic sanctions themselves. China in particular plays a decisive role in global economic relations.

China's support for Russia could diminish due to the importance of economic relations with the EU and the USA, which would increase the economic burden on Russia. However, the situation is made even more complex by the fact that China is creating another significant geopolitical conflict with its Taiwan policy. This conflict is particularly important for the further development of China's economic relations with the West.

The political success of sanctions also depends on the reaction of the population. In democratic states, it is more likely that the government will react to sanctions due to economic damage. In autocratic states, on the other hand, basic democratic rights can be restricted and the loss of votes due to electoral manipulation can be reduced, which puts less pressure on the government.

In conclusion, it can be said that the sanctions against Russia have not yet had the desired political effect. They do send out a strong political signal that can act as a deterrent to other states planning similar undesirable actions. However, sanctions also damage their own economy, especially in a phase of high energy and pandemic follow-up costs and the expected further price increases due to the upcoming climate and digital transformation of companies. This would put them under further pressure. Just how volatile the markets are currently reacting is shown by the fact that shortly after the European Industry Association EA called for sanctions, trading in aluminium in London increased after Politico reported that the European Union was considering sanctions against Russian aluminium in the run-up to the second anniversary of the invasion of Ukraine.

Prices rose as much as 3.6 per cent on the London Metal Exchange as the report raised fresh concerns about the flow of Russian metal into Western markets, and shares in US and European aluminium companies jumped. The high prices may be beneficial for the producers of aluminium in Europe, but not for the consumers, the users of aluminium, who both employ the most people and are the main drivers of the transport and energy transition.

Part C: Evaluation and economic policy recommendations

C.1 There are many arguments against the sanctioning of aluminium products

1. **Uniqueness:** Aluminium is the only sector in which large private players (companies and associations) have publicly and aggressively lobbied for sanctions that would affect their own sector in order to seek their own commercial advantage.
2. **Abuse of sanctions:** Sanctions as a political tool should not be abused by private actors to promote their market interests, nor should states and international institutions allow sanctions to be unduly influenced by lobby groups.
3. **Lack of geopolitical necessity:** Questions are being asked as to why aluminium was added to the EU sanctions, especially after this important, lightweight and infinitely recyclable metal was finally added to the list of critical raw materials for the green transition.
4. **Growing deficit:** Europe has a growing net deficit of primary aluminium of over 84%. New smelting production investments are not in sight, and even optimistic recycling scenarios only cover half of the demand at best. Instead of sanctions, trade facilitation and subsidies for the aluminium industry should be considered.
5. **Risks of sanctions:** Sanctions should be used with extreme caution to avoid unintended, harmful effects.
6. **Little impact on the sanctioned country:** Sanctions against aluminium would hardly weaken the Russian economy, as state revenues from the Russian aluminium industry account for less than 0.1% of the Russian annual budget.
7. **Symbolic measures with negative effects:** The proposed limited list of aluminium products in the sanctions would hit European SMEs hard and increase market uncertainty and price pressure on SMEs, which are particularly hard hit.

It can be assumed that adding aluminium to the sanctions would neither contribute to ending the war in Ukraine nor strengthen the competitiveness of European SMEs, but would only lead to more market uncertainty and price increases that could endanger many EU companies.

Aluminium was and is the target of a vigorous and persistent lobbying campaign by competitors of Russian producers and some industry associations and finally made it into the Commission's proposal for the 12th EU sanctions package.

Sanctions are sovereign policy instruments with broad implications for the people of the sanctioned country and regions, which are at the disposal of states and should not be instrumentalised by private actors to promote their market interests through non-market practices. Sovereign states and intergovernmental institutions should not allow such a powerful and sensitive political, security and diplomatic tool as sanctions to fall prey to the excessive influence of lobby groups. What geopolitical imperatives led to the need to include aluminium in the European Union's range of sanctions, immediately after this essential element for promoting sustainable development - characterised by its low density and capacity for infinite recycling - was officially classified as a critical raw material?

Europe has a growing net deficit of primary aluminium, which now stands at more than 84%. No one foresees new investment in smelting production on our continent, and the most optimistic recycling scenarios will at best cover half of our demand for this increasingly sought-after material. If we are serious about our industrial renaissance and the Green Deal, instead of sanctioning much-needed aluminium supplies from low-carbon sources, we should liberalise trade in raw aluminium, free low-carbon aluminium from CBAM overcosts and red tape, benefit the EU aluminium industry with IRA-like incentives and massively subsidise electricity prices.

Sanctions are traditionally implemented to undermine the economic capacity of a sanctioned state. In the context of aluminium, however, the strategic rationale behind the inclusion of this metal in the European Union's sanctions portfolio appears ambiguous. The analysis of the fiscal contributions of the Russian aluminium industry, which consists primarily of private sector entities, reveals that its tax contributions represent less than 0.1% of the Russian annual budget. Against this background, the hypothesis that aluminium-related sanctions could have a substantial impact on Russia's political or economic landscape seems questionable. In addition, Russian producers have the option of selling their low-emission aluminium products on Asian markets, which are showing increasing demand for environmentally friendly goods. Consequently, the sanctioning of aluminium could primarily have a negative impact on European aluminium processors, end-users and consumers by causing them to lose essential supplies of low-carbon materials. This comes at a time when international competitors could potentially intensify their purchases of Russian raw aluminium and semi-finished products, increase their processing and increase their market penetration in the European green products sector. Such a development risks penalising the already vulnerable and struggling small and medium-sized enterprises (SMEs) in Europe, which should be protected by EU institutions. The integration of a specific selection of aluminium products into the European Commission's twelfth sanctions package, as outlined in media reports, is characterised by a narrow limitation of scope. This selection nevertheless represents a significant share of the European Union's aluminium imports in the wire rod category, at 17% in the first half of 2023, resulting in a limited availability of substitution options for consuming small and medium-sized enterprises

(SMEs) in Europe, which could have serious economic consequences. The implementation of this almost symbolic list - which can be considered ineffective in practice - would, if ratified, lead to a paradoxical effect: An increase in market uncertainty and fears. The constant question of what measures could be taken next contributes to destabilisation and intensifies the pressure on pricing. This represents a considerable burden for SMEs within this industry with typically low profit margins. At the same time, this development is proving beneficial for players whose market capitalisation and bonus structures are directly linked to sales prices. Interestingly, these players are among the most vocal supporters of trade restrictions and sanctions, which potentially favours their position.

A concise analysis shows that the inclusion of aluminium products in the proposal for the European Union's twelfth sanctions package cannot be seen as evidence of a strategically sound approach. This measure is unlikely to help speed up the end of the conflict in Ukraine. Instead, it is likely to divert further Russian low-carbon aluminium supplies - imports of which are of critical importance to the EU - towards China and other competitors. In addition, market uncertainty is expected to deepen, which in turn could lead to price increases. Such developments harbour the risk of putting hundreds of European companies in a precarious position. Stakeholders representing aluminium users in Europe are therefore rightly calling on the Member States and the European Commission to thoroughly evaluate the potential consequences of such a decision before opening another metaphorical "Pandora's box" within the EU's already extensive range of sanctions. Such an action could, contrary to the intention, cause significant damage to the EU's industrial capacity and its decarbonisation efforts - both central pillars of President Ursula von der Leyen's goal to transform the European Union into the "world's first sustainable power".

C.2 The impact of price increases on the downstream industry

- **Operating rates and order situation:** Aluminium processors are affected by the high cost of aluminium, which has an impact on operating rates and the order situation. For aluminium wire and cable manufacturers, operating rates increased significantly, but the outlook for future orders is not optimistic. High aluminium prices led to a decline in orders from government agencies such as the national grid.
- **Production restrictions:** Aluminium extrusion companies recorded a slight recovery in operating rates, but production at most manufacturers is still well below normal levels. High aluminium and silicon costs impacted the order situation in the photovoltaic industry, while construction extrusion companies experienced subdued demand due to high aluminium costs.
- **Global market developments:** Global aluminium production has increased despite the energy crisis, but global demand has declined due to economic recession concerns and ongoing COVID-19 restrictions in China. This has led to weaker growth in demand for aluminium, which in turn is putting pressure on processors.
- **Macroeconomic challenges:** The aluminium industry is facing macroeconomic headwinds. High energy prices, tighter monetary policy by central banks and the weak global growth outlook have affected demand for aluminium. This could have an impact on medium-sized processors, who may be faced with lower order volumes and rising operating costs.
- **Volatility of aluminium prices:** Aluminium prices showed a macroeconomic downward trend during 2022, leading to fluctuations in aluminium processors' operating rates. This price volatility could have an impact on the planning and profitability of medium-sized processors, especially when it comes to sourcing raw materials and setting sales prices.

Overall, medium-sized aluminium processors have been significantly affected by the price increases for aluminium, which is reflected in reduced operating rates, difficulties in procuring orders, increased production costs and general uncertainty regarding market developments.

C.3 Sanctions and the Carbon Border Adjustment Mechanism

Possible sanctions on aluminium and the introduction of the Carbon Border Adjustment Mechanism (CBAM) in the EU entail further significant negative changes and financial implications for the aluminium industry and other emissions-intensive sectors. The CBAM aims to create parity in CO₂ emission costs between EU and non-EU manufacturers and to prevent carbon leakage, i.e. the relocation of emissions-intensive manufacturing activities to countries with less stringent emissions regulations.

Here are some key elements of CBAM and their potential costs to the aluminium industry:

- **CO₂ price for imported goods:** The price for CBAM certificates is based on the average weekly price for EU emission certificates (EU ETS). One CBAM certificate corresponds to one tonne of CO₂ emissions released during the manufacturing process of the imported goods. Companies can reduce the number of CBAM certificates to be surrendered if a CO₂ price has already been paid in the country of origin.
- **Transition phase without financial obligations:** The transition phase, which began on 1 October 2023, obliges importers to report the greenhouse gas emissions associated with their products, but without having to purchase emission allowances. This phase will last until 31 December 2025.
- **CBAM implementation phase from 01 January 2026:** From 1 January 2026, the CBAM will apply in full and importers must purchase CBAM allowances for the emissions contained in the imported goods. The number of certificates must cover at least 80 per cent of the emissions of the imports made.
- **Cost increase due to reduction of free ETS certificates:** Parallel to the introduction of the CBAM, the free CO₂ certificates allocated in the EU Emissions Trading System will be gradually reduced by the end of 2034. This will lead to an increase in CO₂ pricing regardless of the country of origin of the goods.
- **Preparation and compliance:** Companies need to prepare for CBAM implementation by reviewing their product portfolio, communicating with business partners and suppliers, preparing CBAM reports and registering as authorised CBAM filers.

The exact cost to the aluminium industry of introducing CBAM depends on a number of factors, including the emissions intensity of the products manufactured, the price of CO₂ in the country of origin and the price of EU emission allowances. As these factors vary, it is difficult to determine a precise amount for the total costs. However, it is clear that the aluminium industry, like other affected sectors, will face additional financial burdens.

Aluminium processing companies could also be affected by the introduction of the CBAM, especially if they import aluminium or aluminium-containing products that fall under the scheme. The CBAM aims to take into account the CO₂ emissions of emission-intensive goods produced abroad and imported into the EU in order to ensure a level playing field with goods produced in the EU. The scheme initially covers a few main product categories, including iron and steel, aluminium, cement, fertilisers, electricity and hydrogen.

Aluminium processing companies that import aluminium or aluminium-containing products from countries outside the EU may have to purchase CBAM certificates for the emissions contained in the imported goods. This could increase the costs for these companies, as they will have to pay for the CO₂ emissions generated during the production of the imported goods.

It is important that affected companies closely follow the developments around CBAM and adapt their business processes accordingly. They should also check whether their imports fall under the CBAM regulation and prepare for the new requirements, such as reporting emissions and purchasing CBAM certificates.

Conclusion

The policy paper shows that sanctions for political reasons, especially in war-related contexts, are often complex and sometimes controversial instruments of international relations. Their effectiveness as a policy tool is controversial, as they can be effective in enforcing international norms and sanctioning aggressive behaviour, but can also have unintended negative consequences, both for the population of the sanctioned country and for the sanctioning country and the global economy.

The analysis emphasises that sanctions often do not achieve the desired political goals. Instead, like regulations, they cause economic damage in both the sanctioned and the sanctioning countries. One reason for this is that sanctioned countries often find ways to circumvent the sanctions, for example through covert financial transactions, the use of shell companies or trade via third countries.

The sanctioning of critical raw materials in particular, as in the case of aluminium, can have far-reaching and sometimes serious negative effects that affect not only the target country but also the economy of the sanctioning states. This leads to disruptions in global supply chains, price increases and economic burdens for companies and consumers. In addition, political and diplomatic tensions can be exacerbated and the global economic order further fragmented.

It is therefore necessary to point out that sanctions should be used as a political instrument by governments and should not be instrumentalised by private lobby groups to promote their market interests, as seems to be the case with the planned sanctioning of aluminium. It would be counterproductive if such an important diplomatic tool were to fall prey to the excessive influence of individual interest groups.

The paper concludes that careful consideration of the potential consequences of sanctions is crucial before such measures are taken. Alternative approaches and diplomatic solutions should be considered in order to achieve the intended goals without jeopardising one's own economy and global stability. In the case of the aluminium industry in particular, it is argued that sanctions are more likely to lead to self-inflicted harm and do not necessarily contribute to the achievement of policy objectives.

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