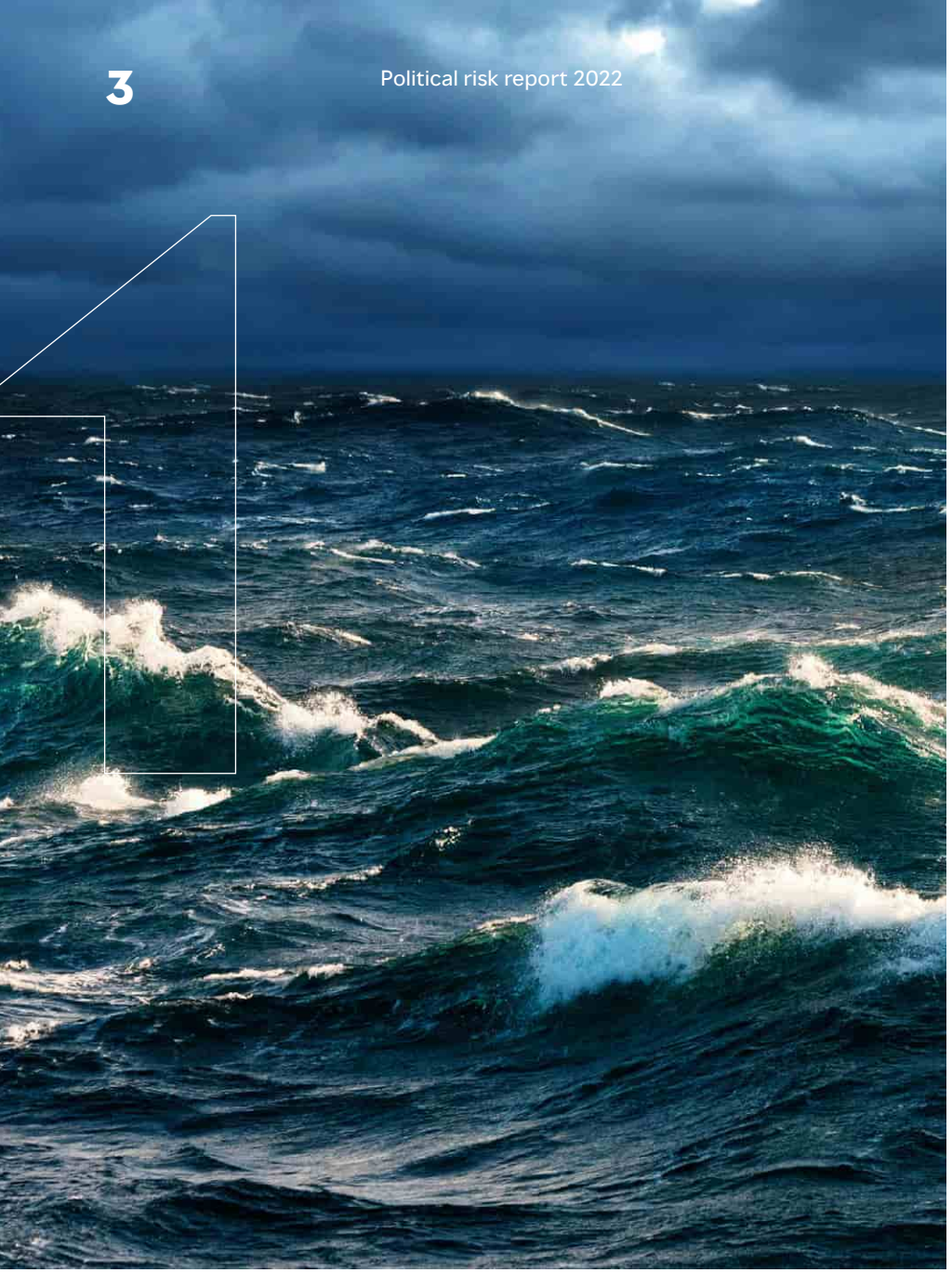
Marsh

Political risk report 2022

Considering the impacts of a changing world.

March 2022

Contents



Introduction

Marsh's *Political Risk Report 2022* focuses on three environments where even the smallest threat may produce planetary effects: ocean, mineral, and space.

These environments intersect with traditional assessments of political risk, which are based on national borders, and permeate the field of action of exporters, importers, and foreign direct investors alike. The mismatch that we perceive between multi-speed recoveries from the COVID-19 pandemic and global expectations and the consequences of the conflict in Ukraine could easily unfold across countries, but also across the above-named environments.

Oceans cover more than 70% of the planet, and more than 80% of sea depths are unexplored. About 44% of the world's population lives within 150 kilometers of a coastline, and 43% depend on seafood as their main protein source. Water connects people through ships and their cargo; critical infrastructure, such as undersea cables; and shared resources, such as seafood. Their pathways can be either open to or restricted for supply chains and other connections. Just as companies may look to political boundaries to describe degrees of risk across countries and regions, they may also look at oceans and their bounty as drivers of political risk.

Minerals, whether under the sea or on land, are essential for innovation and development, providing critical, though often underappreciated, ingredients for civilization. International competition over strategic resources and supply chain protection can divert investments toward frontier — or unexpected — geographies, as an effort to diversify from traditional producers.

Future availability of strategic materials including cobalt, copper, lithium, manganese, thorium, titanium, uranium, and vanadium could disrupt already fragile global supply chains. In fact, several countries are already pursuing aggressive procurement strategies that could raise the prospect of geopolitical conflict.

Space, too, has witnessed recent economic acceleration and exploration as the quest for new horizons continues. Consider that more than 1,500 satellites were launched in 2021 and manned flights to Mars are in the foreseeable future. With that progress comes an escalation of tensions related to espionage, military confrontation, and pollution. Space exploration and development go hand-in-hand with limited regulation and a number of highly probable, high impact, yet neglected, threats, as highlighted in the World Economic Forum's *Global Risks Report 2022.* Currently, space seems to have room for everyone. However, the lack of legislation and untested global governance, the amount of space junk and growing probability of collisions, and the entry of hundreds of private operators with diverse interests make this frontier more congested and less manageable than even a decade ago. In fact, the risk from the growing number of satellites in low Earth orbit may be poised to become a "grey rhino" — a highly probable, high impact event that is nonetheless neglected.

Political risk at sea

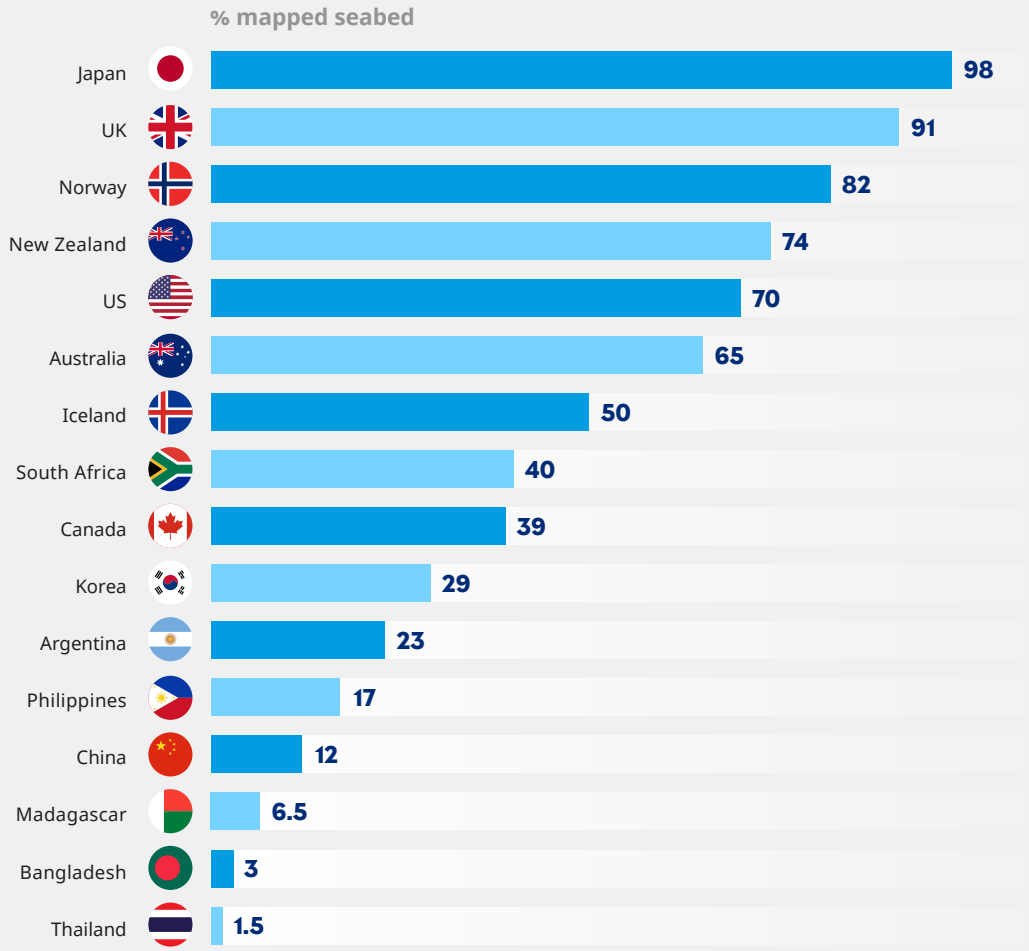
Water-related projects planned or underway around the world exceed US$185 billion in value.[1]

Most focus on inland water, such as hydropower projects, which could ignite interstate conflicts over transnational river basins in Africa or contribute to sovereign debt distress. Water may also be channeled to serve manufacturing facilities and mining operations, thus increasing social unrest and contract frustration risks as water scarcity is perhaps the most socially unifying threat across the planet. Oceans represent one of the most promising frontiers for meeting the growing demand for food, raw materials, and even space to expand.

The "blue acceleration" refers to the unprecedented surge in economic activity in the ocean, with its immense potential for exploration. Much of the activity occurs in exclusive economic zones (EEZs), areas of the sea that generally extend 200 nautical miles (230 miles) beyond a nation's territorial sea, within which a coastal nation has jurisdiction over both living and non-living resources. When an overlap occurs between contested EEZs it is up to each state to decide the actual maritime boundary, which generates further areas of tension. The exploration and mapping of these resources is the first step towards extracting economic value, and also serves to guide patrols in these areas to help create favorable environments for domestic companies and international trade (see Figure 1). By extending jurisdictions, EEZs have the potential to increase political tensions.

1| Source: Fitch Solutions, calculation by Marsh.

01| Extent of seabed mapping in countries' exclusive economic zones varies considerably



Source: *GEBCO - The General Bathymetric Chart of the Oceans, 2020*

> **The blue acceleration towards ocean resources is fueling tensions and geopolitical ambitions.**

2| ASEAN members are: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

The likely shift towards the diversification of supply chains resulting from the crisis in Ukraine — for example, towards Australia, India or Indonesia to substitute imports from Russia — could increase the focus on already congested sea areas, particularly in the Indo-Pacific region. Tense confrontation in the South China Sea adds to growing disturbances in coastal states' domestic environments. This area has become a flashpoint for the region, as US$3.4 trillion of goods pass each year through Beijing's "nine-dash line," a boundary unrecognized internationally that China has drawn around 85% of these waters. There is growing frustration with the slow pace of talks between the Association of Southeast Asian Nations (ASEAN) and China on a code of conduct for the South China Sea, as ASEAN countries fear losing EEZs and rights to map and explore, ultimately leading to an increase of revenues and geostrategic influence to the benefit of China[2]. Due to the pandemic, there were no in-person negotiations in 2020-21, although virtual meetings resumed last year. ASEAN membership has helped members reduce frictions and seek a common ground, even though ASEAN coastal members reject the nine-dash line.

The Organisation for Economic Co-operation and Development (OECD) estimates that the largest sector of the ocean economy is the offshore oil and gas industry, which generates one-third of the value added by all economic activities in the ocean. About 70% of the major hydrocarbon deposits discovered between 2000 and 2010 are located under the sea, and, as fields in shallow waters (less than 400 meters) become depleted, production is moving to greater depths. While greenfield offshore exploration is concentrated in developing countries, a new study led by Duke University shows that multinational offshore companies that generate the most revenue from the ocean are generally headquartered in high-income countries. Offshore extraction is generally more expensive, but is also less affected by political tensions within individual countries. If the energy transition to a low carbon economy were to bring a reduction in offshore activities, the impact on host countries' revenues and consequent political tensions would be significant.

The blue acceleration towards ocean resources is fueling tensions and geopolitical ambitions.

- **Indonesia** lost 25 islands as a result of exporting sand to Singapore, bringing about border demarcation talks. Singapore's population has doubled in the last 30 years, so it is stockpiling sand as its building areas would otherwise be saturated. Singapore's reclamations have increased landmass by 20%, inducing Indonesia, Malaysia (2018), and Cambodia (2017) to stop sand sales to selected countries. Procurement and marketing of sand has also unleashed criminal cartel activity — crime syndicates procuring Indian sand control several illegal mining sites, adding to security risks in the region.
- **France** has accumulated the largest EEZ in the world. The EEZ from French overseas territories and departments is about 8% of the world's total, while France represents less than 0.45% of the world's land area. Even though EEZs are not considered to be part of the territory of a state, they grant special rights to resources, such as fishing and mineral extraction, in an area extending 200 nautical miles (370km) from a country's coast. This incentivized France in 2018 to become the first European nation to articulate its own Indo-Pacific strategy, with a dedicated defense strategy completed in 2019. More than 7,000 French troops and several vessels are deployed permanently to the region.

02| Exclusive economic zones expand areas of intersection between countries, potentially heightening political tension

CONTESTED ZONES IN ORANGE

Source: *Flanders Marine Institute (2019). Maritime Boundaries Geodatabase, version 11. Available online at https://www.marineregions.org/.*

In the leading countries by EEZ extension, the risks of war and expropriation are relatively low, but the risks of terrorism, violence, and war itself have increased significantly on a relative basis (see Figure 3).

Marsh's risk ratings are generated monthly by a proprietary, algorithm-based modelling system incorporating over 200 international indices across 197 countries. For each peril, countries are scored on a scale from 0.1 to 10.0, with intervals of one decimal; 0.1 represents the lowest risk score, 10.0 the highest. Five risk bands are identified within the scale, correspond to distinct risk environments.

Source: Marsh

Information current as at March 2022.

03| Political risk ratings for selected countries with large EEZs

Political Risk Report 2022

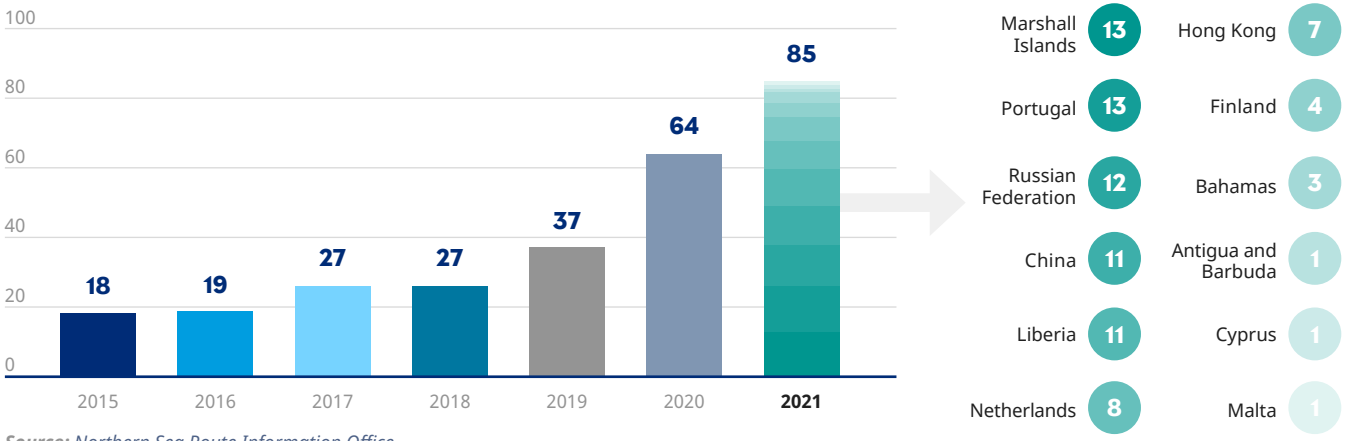
Countries	Strikes, Riots & Civil Commotion	Terrorism	War & Civil War	Country Economic Risk	Currency Inconvertibility & Transfer Risk	Sovereign Credit Risk	Expropriation	Contractual Agreement Repudiation	Legal & Regulatory Risk
Australia	4.4	2.9	1.4	2.9	1.2	0.9	1.2	3.9	2.0
Brazil	6.1	1.8	2.3	4.7	4.1	5.0	2.9	4.8	4.9
Canada	4.4	3.0	1.7	3.1	1.3	1.0	1.0	3.1	2.4
Chile	5.7	4.3	2.4	3.6	3.1	2.7	2.7	4.1	2.9
France	6.4	5.0	2.2	3.1	1.5	1.5	1.5	3.6	2.6
Indonesia	5.7	5.8	4.0	4.0	4.1	4.0	5.3	5.2	5.8
Japan	2.8	1.6	2.1	3.2	1.3	2.4	0.9	2.1	2.6
New Zealand	3.7	2.3	1.0	3.1	1.1	1.2	0.9	2.1	1.7
Russian Federation	4.6	4.3	4.5	4.4	6.2	6.7	7.1	6.5	5.9
United Kingdom	4.3	4.5	2.6	3.1	1.5	1.9	1.7	3.9	2.6
US	5.0	4.4	3.0	3.0	1.4	1.0	1.1	4.1	2.5

2022 rating changes v. 2021

Countries	Strikes, Riots & Civil Commotion	Terrorism	War & Civil War	Country Economic Risk	Currency Inconvertibility & Transfer Risk	Sovereign Credit Risk	Expropriation	Contractual Agreement Repudiation	Legal & Regulatory Risk
Australia	0.6	-0.1	0.0	-0.2	0.1	-0.2	0.0	0.0	0.0
Brazil	0.4	-0.1	0.0	0.2	0.0	-0.1	0.0	0.0	0.0
Canada	0.1	-0.1	0.3	-0.2	0.0	-0.1	0.0	-0.4	0.1
Chile	-0.7	0.4	0.1	0.0	0.4	0.2	1.1	0.4	0.0
France	0.1	-0.1	-0.1	-0.1	0.0	-0.1	0.0	0.0	-0.1
Indonesia	0.0	0.7	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Japan	0.1	0.0	0.3	-0.2	0.0	-0.1	0.0	0.0	0.1
New Zealand	0.1	0.4	0.0	-0.1	0.0	0.0	0.0	-0.2	0.1
Russian Federation	0.4	-0.4	0.4	-0.3	0.6	2.2	0.5	0.6	0.2
United Kingdom	0.0	-0.2	0.0	-0.6	-0.1	-0.2	0.1	-0.2	0.1
US	-0.4	0.2	0.0	-0.2	-0.2	-0.1	-0.9	-0.2	-0.1

- **The Northern Sea Route** (NSR) is another maritime area where frictions between countries could spark wider conflicts and disrupt international trade (see Figure 4). The entire route lies in Arctic waters and within Russia's EEZ, meaning that the Russian State Atomic Energy Corporation (Rosatom) oversees transits of all ships. The risk of confiscation or expropriation remains high in Russia, including its territorial waters. In August and September of 2021, up to 85 vessels contemporarily navigated these waters. With maritime traffic at large, the flag that a ship flies does not generally reflect the prevailing economic interest of its cargo. This adds elements of uncertainty and tension should retaliatory measures be implemented as well as additional controls over cargos, considering that 40% of vessels transiting the NSR in 2021 carried the flags of Liberia, Portugal, or the Marshall Islands. Russia continues to carefully monitor transits through its territorial waters. Potential retaliation against third countries' vessels and cargos, including a full blockade, could disrupt trade flows and divert attention from the fragile environmental situation along the route.

04| Number of transit voyages along the Northern Sea Route continues to increase



Source: Northern Sea Route Information Office

The great mineral rush

Mineral production is concentrated in relatively restricted areas of the planet with well-known political risks. The search for new mineral suppliers may produce additional consequences.

Commitments to achieve net zero carbon dioxide emissions by countries that currently account for 70% of global GDP are **increasing the demand for clean energy, bringing several minerals into focus** (see Figure 5). However, the related supply chain, as a recent report by the International Energy Agency points out, features high-intensity use of certain minerals, such as lithium, nickel, cobalt, manganese and graphite for batteries; rare minerals for electric turbines and motors for electric cars; and copper and silver for solar panels. The European Commission has drawn up a list of "critical raw materials" to identify those requiring a procurement strategy. Similarly, the US adopted a national strategy in 2017 to secure access to 35 strategic minerals.

In several cases, existing mineral reserves have given control over global supplies to certain countries, such as Chile, China, the Democratic Republic of Congo, Guinea, and South Africa. The quest for alternatives could lead consuming countries to evaluate different locations or second-tier producers, with mixed effects on host economies.

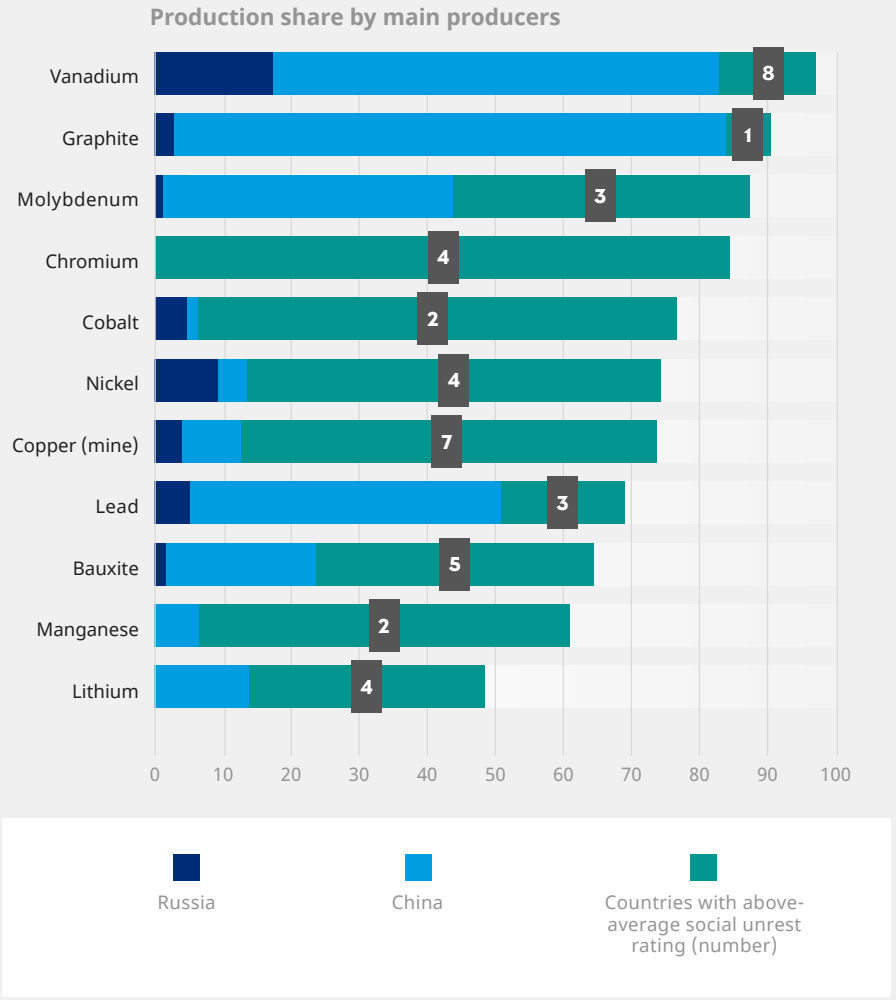
Energy transition increases value — and risk — of key minerals

On land, the main challenge lies in mitigating the risks posed by having a small number of countries producing strategic minerals for the energy transition.

In December 2021, the International Monetary Fund (IMF) posted an analysis on metals linked to energy transition, assessing how prices have headed upwards as economies re-opened in the wake of pandemic closures. Such trends highlight that production constraints, supply chain responses, and frailties in global trade networks may not have been entirely factored into current price models and investment decisions. According to the IMF, insufficient financing is likely across the mining sector, due to growing investor concerns on environmental, social, and governance (ESG) considerations.

1| Source: Fitch Solutions, calculation by Marsh.

05| Control of essential materials for the energy transition sits with a number countries



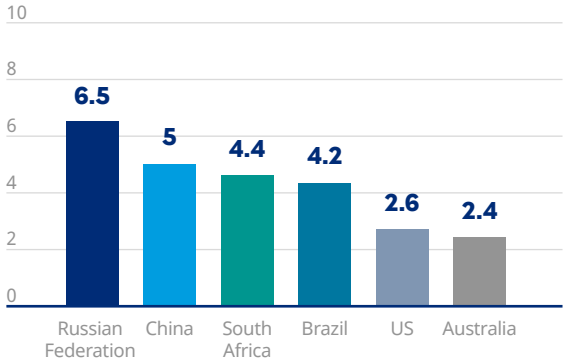
Source: *USGS*

06| Vanadium is one example of supply concentration's potential impact on political risk

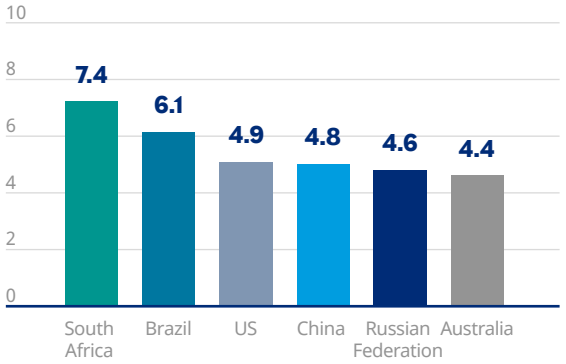
World mine production and reserves of vanadium

Countries	Production (million tons)	Terrorism	Reserves (thousand metric tons)
	2019	2020	
US	460	170	45
Australia	0	0	4,000
Brazil	5,940	6,600	120
China	54,000	53,000	9,500
Russian Federation	18,400	18,000	5,000
South Africa	8,030	8,200	3,500

Average investment environment risk in selected vanadium-producing countries



Strikes, riots, and civil commotion risks in selected vanadium-producing countries



Source: Marsh / USGS

One example of supply concentration is vanadium, a metal that can make materials stronger, lighter, and more resistant to corrosion and absorption of other elements (see Figure 6). Vanadium has recently become key to the automotive sector and steelmaking in general, but it also acts as a supercharger for batteries and a main ingredient for decentralized electrical generation.

In 2020, 83% of the global production of vanadium was located in China and Russia. The remaining three main producers — Brazil, South Africa, and US — show an increased likelihood of strikes, riots, and civil commotion events. Since 79% of vanadium was sourced in countries whose legal and regulatory field are riskier than the world average, and have deteriorated during the pandemic, **political violence may become a substantial risk should supply from China or Russia be scaled back.** Due to vanadium's limited supply **base, business interruption risk is heightened compared to other minerals. Such a development in producing countries could lead to protests and demonstrations given the amplifying effect that such disruptions could have on industries and countries hosting consumers of the mineral.**

From sand to gold, seabed extraction on the rise

The extraction of minerals — primarily cobalt, zinc, manganese, titanium, iron, and gold — **from the seabed has become both profitable and possible.** In many cases, extracting these mineral deposits, which are worth billions of dollars, could be easier, technically, from the seabed compared to from land-based deposits as it would not require building roads, disposal systems, landfills, and related infrastructure.

Unbridled industrial exploitation of these resources could cause irreversible damage to underwater ecosystems, which produce 50% of the planet's oxygen, regulate the climate, and are essential to the food chain. To deal with this threat, the United Nations Environment Programme Finance Initiative (UNEP-FI) and the OECD developed the first guide to sustainable investment in the ocean economy, including a restriction list that would exclude deep-sea mining investments from sustainable ocean economic activities.

The Clarion-Clipperton area of the Pacific Ocean, between Hawaii and Mexico, would on its own contain more manganese, nickel, cobalt, titanium, and yttrium than all terrestrial reserves. Underwater reserves of cobalt, for example, would be five times greater than all terrestrial reserves, while titanium reserves appear to be 6,000 times greater than all terrestrial reserves combined.

The extraction of minerals from the deep seabed is perhaps the most controversial issue in the race for underwater resources. At present, mining takes place close to the coast, mainly for sand and other materials used in the construction industry. Nevertheless, the growth of high-tech industries and the need for a low-emission future have brought to the fore commercial interest in minerals between 800 and 6,500 meters below sea level.

Unregulated sand mining has been documented in 70 countries globally, with associated conflicts related to ecological destruction, livelihood disruption, and labor rights violations. Conflicts over sand have reportedly killed hundreds in recent years, including local citizens, security personnel, and government officials.

The global consumption of sand is ten times higher than cement use. Urbanization still prevails in several countries with positive demographics, and cities are being constructed at a scale and pace never seen before. Singapore provides a glimpse into the future in this regard as the state leverages sand as a strategic resource, stockpiling massive quantities in reserve — akin to the strategic stockpiling of oil and gas.

The last three decades have seen a construction boom in Singapore as the population nearly doubled, while reclamation has increased its landmass by 20%. This urban and terrestrial expansion required the entirety of Singapore's local sand deposits, including from its seafloor. As a result, the state turned to its neighbors for additional supplies to maintain growth.

As Singapore imported sand from its neighbors, some small islands started disappearing. Indonesia, for example, lost 25 islands while exporting sand to Singapore, which resulted in border demarcation talks between Indonesian and Singaporean lawmakers. The situation deteriorated to such an extent that Malaysia stopped selling sand to Singapore. Indonesia and Cambodia followed suit in 2007, while Vietnam imposed a sand ban in 2009.

Another impact of this sand rush can be found in India, where sand mafias rank among the most powerful criminal syndicates. The sand mafia influences the nationwide construction industry and the political apparatus. What is happening in India and Singapore is a manifestation of a slowly building crisis that demonstrates the advent of conflicts over access to sand.

The Indian government introduced a general order at the start of 2022 that set the price of sand sold at quarries. This improved the economic climate of an infrastructure sector impacted heavily by the pandemic and by the increasing costs of raw materials. The new regulations ensure that sand is readily available for approximately one-eighth of what the price was before the changes were implemented. The measures also increased self-sufficiency, as previously the country relied heavily on sand imports from Malaysia.

In the race for underwater resources, the position of small island states is particularly delicate. Too small and remote to be able to develop a domestic market, access foreign markets, and diversify their economies, they are largely dependent on the rest of the world for development aid, remittances, and tourism. These islands are experiencing increasing interest from major powers, and rapidly becoming a bone of contention, fueling a global trend towards regional conflicts that are of little public interest, but of great importance to supply chains and trade. Kiribati, for example, is a state made up of 33 atolls spread over an area of about 3.5 million square kilometers — larger than India. Globally, there is a risk of increasing inequalities between countries and worsening injustices related to climate change.

3| Though much of the Arabian-Nubian Shield remains underexplored, there is a benchmark to measure its overall mineral potentials. In the Saudi portion, decades of exploration by various organizations and companies has led to the discovery of more than 5,300 mineral prospects. For the most part, the Arabian-Nubian Shield shares the same geological evolution, so it is believed that the other nations hold undiscovered mineral sites that are in proportion to the respective territories.

THE ARABIAN-NUBIAN SHIELD: SEDIMENTS BRING RENEWED, METAMORPHIC POTENTIAL

The Arabian-Nubian Shield is poised to become the next big mining destination, involving the economies of Egypt, Ethiopia, Saudi Arabia, and Sudan and holding copious deposits of materials deemed "strategically significant" across the globe.

At almost three million square kilometers, the Arabian-Nubian Shield constitutes one of the world's largest Precambrian rock formations.

It stretches across nine countries from the eastern Nile basin to the Saudi highlands, including the whole maritime area leading to the Suez Canal. Strategic materials include chromite, cobalt, copper, manganese, nickel, niobium, tantalum, and uranium. Chromite is crucial for super alloys that form the basis of jet turbine engines, tantalum is vital to household electronics, and niobium is used to strengthen alloys designated for rockets and missiles.[3]

Establishing a share in the global production of these minerals potentially would bring immense wealth and international advantage, but the Arabian portion could develop faster than the Nubian side due to political risk. The Egyptian government, due to compounded economic stagnation, has seen policymakers roll back measures designed to deter foreign direct investment — no doubt a measure to better serve the formative stages of the mining sector. Mining operations could also drain water from the already contested Nile Basin that Egypt shares with Sudan and Ethiopia. Sudan is the third-largest exporter of gold among African nations, but the political situation remains unpredictable following a coup in October 2021. Indeed, the ease of access to gold deposits has provided insurgents with the funding to acquire arms and confront the central authorities. Ethiopia's potential has increasingly drawn the attention of the international mining community, with export of minerals growing from US$9.6 million in 2015 to US$504.7 million in 2021.

However, the outbreak of the Tigray War has negatively affected Ethiopia's standing on the world stage; the Tigray region roughly coincides with Ethiopia's part of the Arabian-Nubian Shield. Mining enterprises hailing from Australia, China, Israel, and South Africa have all demonstrated interest of varying degrees in better understanding the full nature of the mining potential in the region.

Saudi Arabia's mining industry is well placed to support this aspired demand, as there is enough mineral wealth in the country to aid its attempts to pivot its economic portfolio away from hydrocarbons. Policymakers seek to quadruple the mining sector's GDP contribution by 2030, from US$17 billion to US$64 billion. Since the advent of Vision 2030, the state has passed about 400 updates to its policies — including new mining investment laws, streamlining license applications, and data sharing — as it seeks to reduce risks that investors could face.

As we saw in 2021 when the Suez Canal was blocked by a mega-ship, one regional trigger can have serious consequences on existing frictions among countries and on global trade as a whole. As the Arabian-Nubian Shield gradually opens for business, social stability and policy predictability will tell which countries will be able to benefit from this mineral wealth, and which will not (see Figure 7).

HIGH RISK
8.1–10.0
6.1–8.0
4.1–6.0
2.1–4.0
0.1–2.0
LOW RISK

Source: Marsh

Information current as at March 2022.

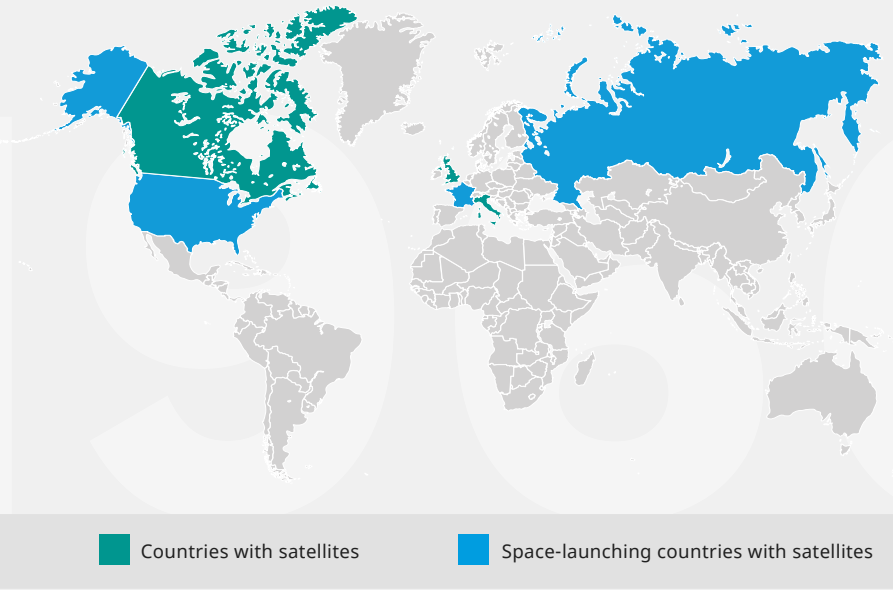
07| Political risk remains high in Sub-Saharan Africa across all perils, while Middle East and North Africa remain riskiest for personal and asset security.

Region	Security Environment			Trading Environment			Investment Environment		
	Strikes, Riots & Civil Commotion	Terrorism	War & Civil War	Country Economic Risk	Currency Inconvertibility & Transfer Risk	Sovereign Credit Risk	Expropriation	Contractual Agreement Repudiation	Legal & Regulatory Risk
Americas	5.2	2.4	2.5	4.7	4.1	5.9	3.8	5.1	4.9
Asia Pacific	4.0	2.9	2.7	4.5	4.2	4.8	3.5	4.4	4.9
Eastern Europe and Central Asia	5.0	3.5	4.5	5.3	5.4	6.3	6.0	5.8	5.6
Europe	3.9	2.6	2.1	3.4	2.4	3.1	2.1	3.7	3.4
Middle East and North Africa	5.5	5.5	4.6	5.0	4.9	5.7	4.9	5.9	5.7
Sub-Saharan Africa	5.5	4.3	3.9	5.6	5.7	6.8	5.3	5.8	6.2

4 Risks grow as space fills

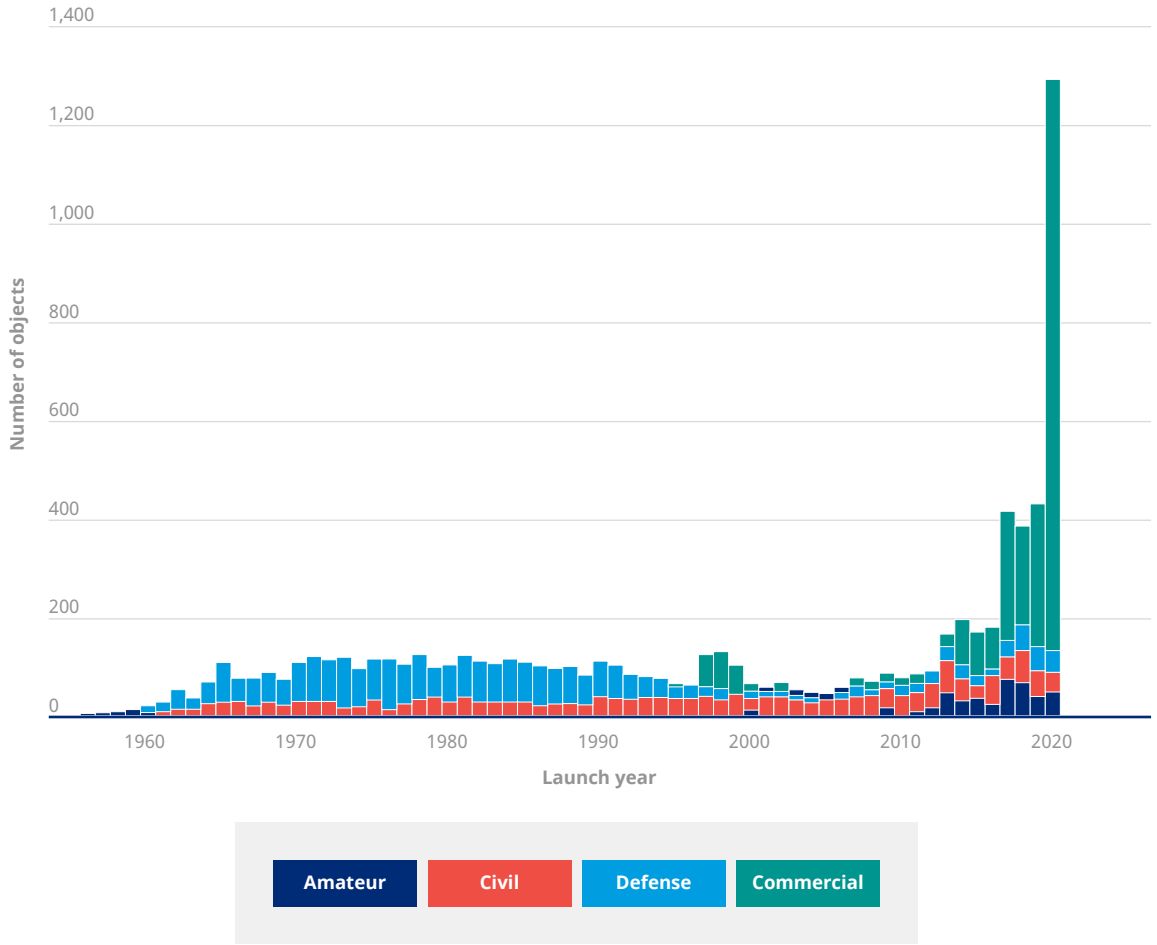
More than 4,550 operational satellites are currently in orbit around Earth (see Figure 8). In 1960, there were two countries investing in space; in 2006, they were 47; today, there are about 70; and in a few years there will be more than 80. One company alone, Starlink, aims to fly 12,000 satellites to enable its broadband global internet connections.

Evolution of the space economy and militarization of orbits are reconfiguring this environment. The space economy is currently based around greater accessibility and digitalization. Many countries can conduct missions aimed at intelligence gathering, navigation, and military communications, meaning the militarization of orbits poses an increasing threat, which could impact diplomacy and trigger conflicts. Greater accessibility to space increases this risk. The reduction in launch costs — from US$18,500 per kilogram sent into orbit between 1970 and 2000 to less than US$3,000 today — has been achieved thanks in part to the reusability of "enabling technologies," such as rockets, combined with the miniaturization of components. For example, decommissioned offshore oil rigs have been used as spaceports, and some are being converted into agile launch pads for the private industry. Furthermore, the emergence of new types of hypersonic weapons whose trajectory includes an exo-atmospheric segment is causing concern. What had been a bipolar competition in the last century has seen the entry of China and the urgency of making agreements in this regard.



9| The number of commercial satellites in low Earth orbit (between 200 km and 1,750 km) continues to increase

Payload launch traffic into 200 <h_P < 1,750km



Source: ESA

The value of the space industry has skyrocketed in recent years. The low Earth orbit is spacious and could host 100,000 satellites within the next decade, but whoever arrives first can grab the most strategic orbits. In 2017, the industry's total value was about US$383 billion, supported by public spending of US$76 billion. According to Morgan Stanley and Merrill Lynch, the space business will reach a value between US$1.1 trillion and US$2.7 trillion by 2040. In 2019, 41% of the top 100 venture capitalists had one or more investments in the space sector. Now, the "New Eldorado" is arriving downstream — the mass of innovative and value-added services and applications derived from the upstream extraterrestrial infrastructure. Current examples, ranging from agriculture to infrastructure monitoring, are only a fraction of a business whose potential is only now being imagined.

As part of space expansionism, orbital debris, or "space junk," is increasing, with unpredictable consequences (see Figure 9). The US Department of Defense Space Surveillance Network (SSN) has tracked more than 27,000 pieces of orbital debris. Many more pieces — too tiny to be tracked by SSN sensors, but still capable of posing significant threats to space missions — populate the near-Earth space environment. The European Space Agency (ESA) estimates the presence in orbit of 36,500 artificial objects larger than 10 centimeters, one million between one and 10 centimeters, and 330 million between one millimeter and one centimeter.

According to the 1967 Outer Space Treaty, the foundation of international space law, each country remains the owner of any object launched into the cosmos even after it has been reduced to crumbs. A government can be liable only if the damage is due to its fault or the fault of persons for whom it is responsible. In 1978, the crash of the nuclear-powered Soviet satellite Kosmos 954 in Canadian territory led to the only claim filed under the subsequent Space Liability Convention of 1972.

In January 2022, the China National Space Administration made public the close-range encounter — at a distance of only 14.5 meters — between the Tsinghua science satellite and debris from the Russian Kosmos 1408 satellite. Risks multiplied after a Russian anti-satellite test in November 2021 created a myriad of debris — about 1,600 pieces more than ten centimeters wide — in an orbit between 400 and 1,100 kilometers from Earth. In January 2007, China became the third country to conduct a successful anti-satellite test (the first since the US and the Soviet Union completed tests in the 1970s) by launching a ballistic missile to an altitude of more than 850 km and destroying an inactive weather satellite. The explosion generated more than 2,000 pieces of space debris the size of golf balls or larger. The orbital speeds are extremely high, approximately 25,270 km/h in low Earth orbit, which would be enough to circle the Earth at the equator in approximately one hour and 40 minutes. This means an impact of even a small piece of space junk could seriously damage orbiting equipment and risk triggering international conflicts.

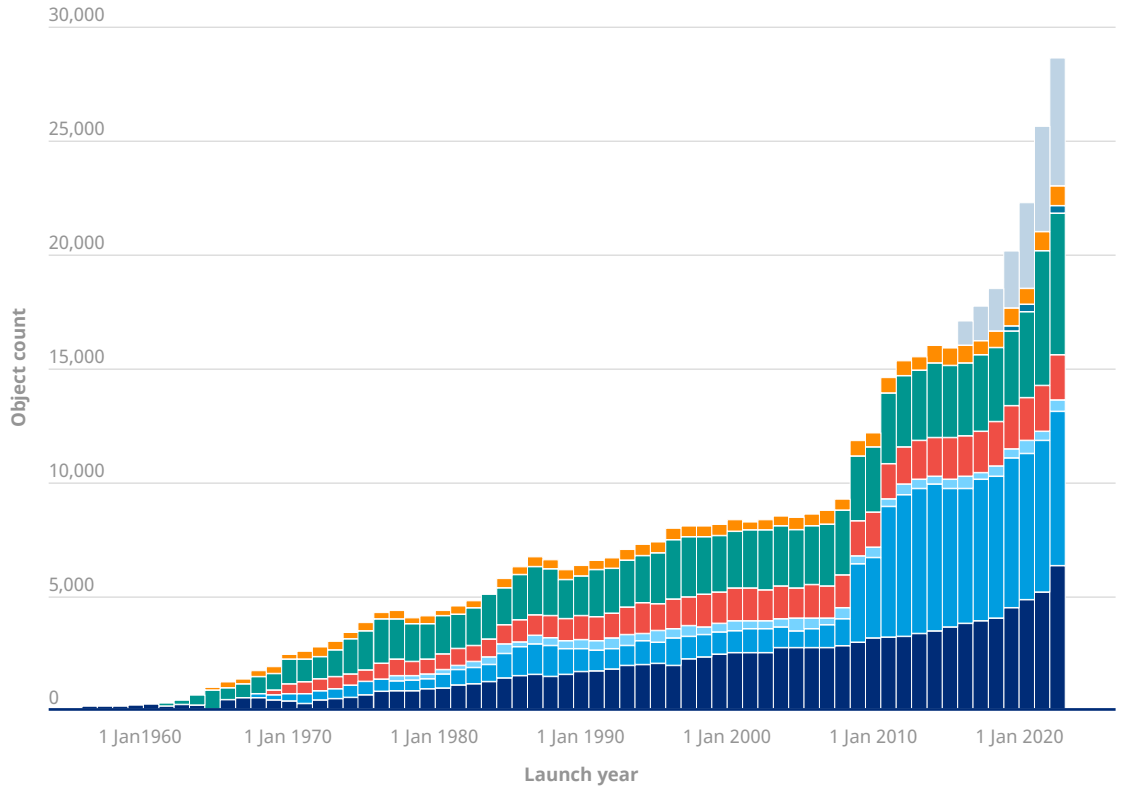
> **The planetary space race is also diverse in terms of political risks**

The planetary space race is also diverse in terms of political risks, including the regulation of components subject to dual use, the revocation of licenses and contracts in order to preserve a country's strategic interests, and expropriation-like events if a launch base or supporting infrastructure is located in third countries. Reshoring of launch bases is already taking place to allow countries to equip themselves with the infrastructure and technology to create their own space policy and prevent transport risks on the ground. In 2022, a satellite is expected to be launched from a spaceport in the United Kingdom for the first time.

Resource extraction in space could also generate conflict and is already fostering new colonization to seek commercially exploitable resources and offer an array of services to different customers.

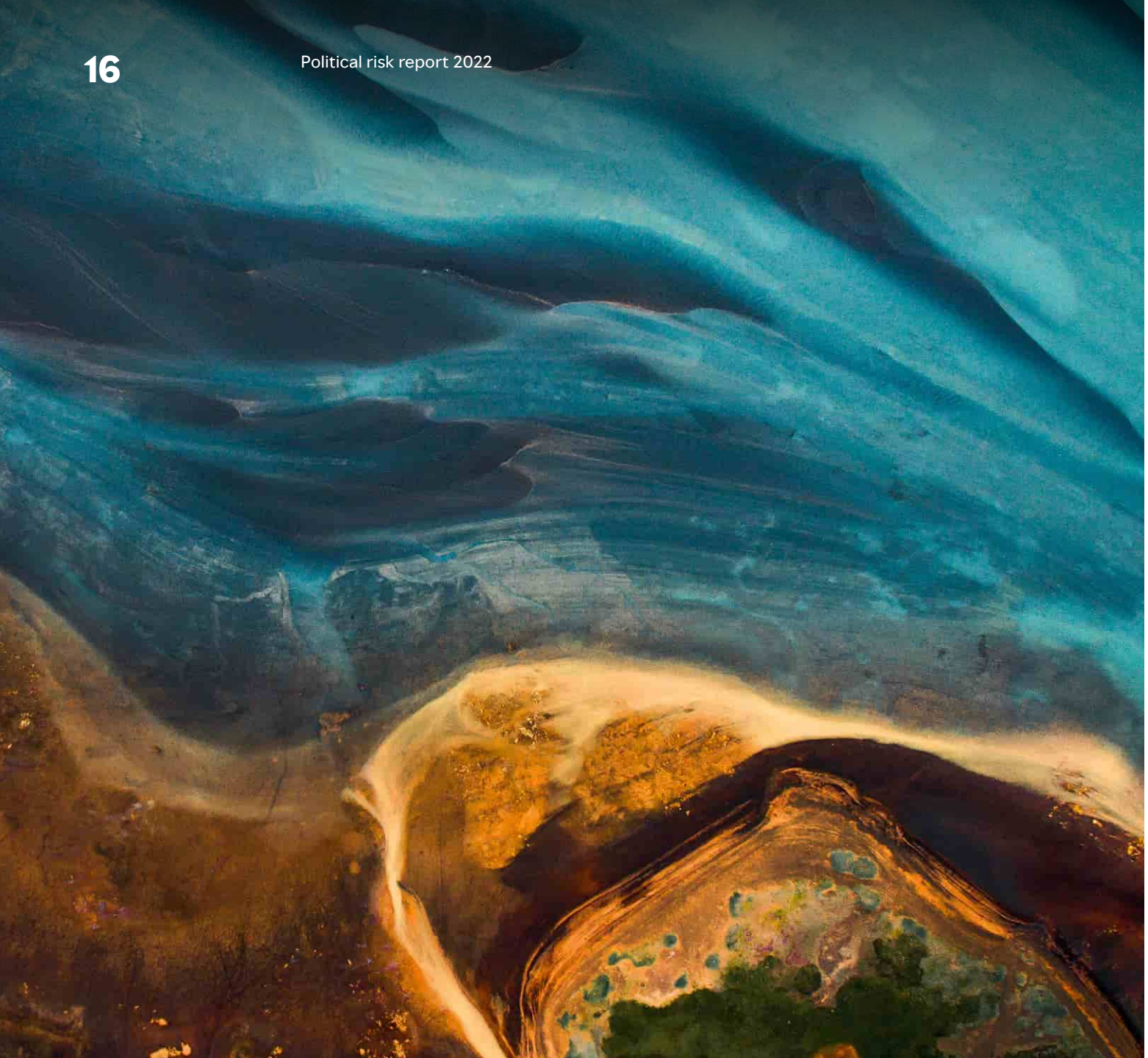
Multilateralism seems limited now by the acceleration of the race for space and the reduction of costs. In the coming years, space-based human activity is expected to increase. However, a dangerous militarization could transform an immense opportunity for development into an unexplored dimension of geopolitical confrontation between old and new powers.

10| Space debris of various types is increasing in all orbits



PL Payload (usually one or many satellites that a rocket launches to space)
PF Payload Fragmentation Debris
PD Payload Debris
PM Payload Mission Related Object
RB Rocket Body
RF Rocket Fragmentation Debris
RD Rocket Debris
RM Rocket Mission Related Object
UI Unidentified.

Source: ESA



UNEVEN RECOVERY MAY EXACERBATE RISKS

The growing demand for access to the **oceans' resources, strategically important minerals, and the ever more crowded, loosely regulated arena of space increases political risk.**

This includes the risk of war, which increased in most of the regions in 2021, according to Marsh's political risk rankings. Although war risk remains the lowest-rated of the nine perils we analyze, it moved higher in this year's study (see Figure 11).

> **"Traditional borders between countries remain key delineators of political risk."**

Marsh's risk ratings are generated monthly by a proprietary, algorithm-based modelling system incorporating over 200 international indices across 197 countries. For each peril, countries are scored on a scale from 0.1 to 10.0, with intervals of one decimal; 0.1 represents the lowest risk score, 10.0 the highest. Five risk bands are identified within the scale, correspond to distinct risk environments.

Source: Marsh

Information current as at March 2022.

11| Political risk report 2022 — Risk rating average / change by region

Region	Security Environment			Trading Environment			Investment Environment		
	Strikes, Riots & Civil Commotion	Terrorism	War & Civil War	Country Economic Risk	Currency Inconvertibility & Transfer Risk	Sovereign Credit Risk	Expropriation	Contractual Agreement Repudiation	Legal & Regulatory Risk
Americas	5.2	2.4	2.5	4.7	4.1	5.9	3.8	5.1	4.9
Asia Pacific	4.0	2.9	2.7	4.5	4.2	4.8	3.5	4.4	4.9
Eastern Europe and Central Asia	5.0	3.5	4.5	5.3	5.4	6.3	6.0	5.8	5.6
Europe	3.9	2.6	2.1	3.4	2.4	3.1	2.1	3.7	3.4
Middle East and North Africa	5.6	5.5	4.6	5.0	4.9	5.7	4.9	5.9	5.7
Sub-Saharan Africa	5.5	4.3	3.9	5.6	5.7	6.8	5.3	5.8	6.2

Countries	Strikes, Riots & Civil Commotion	Terrorism	War & Civil War	Country Economic Risk	Currency Inconvertibility & Transfer Risk	Sovereign Credit Risk	Expropriation	Contractual Agreement Repudiation	Legal & Regulatory Risk
Americas	0.1	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	0.0
Asia Pacific	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Eastern Europe and Central Asia	-0.1	0.0	0.4	-0.4	0.1	0.2	0.1	0.1	0.0
Europe	0.1	-0.1	0.1	-0.4	0.1	-0.1	0.0	0.0	0.0
Middle East and North Africa	0.0	-0.1	0.0	-0.4	-0.1	-0.1	0.1	0.0	0.0
Sub-Saharan Africa	0.0	0.0	0.1	-0.3	-0.1	-0.1	0.0	0.0	0.0

Source: Marsh

Similarly, while the overall economic risk rating worsened in only nine countries in 2022 over 2021, divisions within countries and regions continued to widen, fueling social unrest and terrorist threats. It is not clear whether the ongoing recovery from the pandemic's economic damage will have enough traction to pull many countries out of their economic distress. The post-pandemic scenario appears more sensitive to ubiquitous threats from various small triggers — such as an aerial transmitted virus, a computer code that initiates a ransomware attack, or the effect of a half-degree temperature change on the environment. Similarly, as the escalation of the Ukraine crisis threatens food and energy security, countries most dependent on imports could suffer dramatic setbacks.

The acceleration of the global economy and inflationary pressures are leaving behind countries and areas that are less socially resilient and institutionally effective. Almost 60% of the 197 jurisdictions that we analyzed experienced a deterioration of their sovereign debt profiles, and more than half presented a higher risk of internal violence. This deterioration is evident in regions where the social and economic gaps were already wide, such as Africa and Latin Latin America, or following the escalation of the crisis in Ukraine, but several predictive signs foreshadow possible ruptures even in economies considered more resilient, including several Tiger Cub Economies.[4] The relative stability shown in risk ratings across Sub-Saharan Africa is particularly alarming because the economic risk remains substantially higher than the world average, and is not recovering substantially despite the global economic cycle. Similarly, a modest economic recovery indicator in the Asia-Pacific region does not trickle down to other perils, such as sovereign creditworthiness, political violence, and currency transfer and convertibility risk, all of which deteriorated.

Even after vaccines and boosters became available in some areas, the environment in which businesses and financial institutions operate remains fragile; even a small threat may produce planetary effects. A variety of tools exist to manage political and credit risk, from both public and private sources. In addition to government-backed export credit agencies and multilateral organizations, a robust private political risk insurance market has developed to help investors and businesses weather political and economic crises. Solutions to protect against non-payment risks, improve supply chain resilience, and protect people and assets in various countries can involve public programs, private insurance, or a combination of both.

Traditional borders between countries remain key delineators of political risk. However, as the world moves ahead with the energy transition and digitalization — while at the same time recovering from a global pandemic — it's worth considering the impact of other types of boundaries. The extension of sea-based borders into EEZs, underground deposits of strategic minerals, and the all-but-unregulated arena of space are three environments whose boundaries will shape the future of trade, geopolitics, and political risk. Companies that understand how these environments influence existing tensions between countries and regions will be better placed to benefit from the potential rewards they hold.

Find out how we can support your business to proactively address these risks, email us on creditspecialties@marsh.com or via your Marsh representative for a confidential discussion.

4| Tiger Cub Economies refers to Indonesia, Malaysia, the Philippines, Thailand and Vietnam, as they attempt to follow the same export-driven model of technology and economic development already achieved by the rich, high-tech, industrialized, and developed countries and wealthy financial centers of Hong Kong, Singapore, South Korea and Taiwan, which had all been collectively referred to as the Four Asian Tigers.

About Marsh

Marsh is the world's leading insurance broker and risk advisor. With over 45,000 colleagues operating in 130 countries, Marsh serves commercial and individual clients with data-driven risk solutions and advisory services. Marsh is a business of Marsh McLennan (NYSE: MMC), the world's leading professional services firm in the areas of risk, strategy and people. With annual revenue nearly $20 billion, Marsh McLennan helps clients navigate an increasingly dynamic and complex environment through four market-leading businesses: Marsh, Guy Carpenter, Mercer and Oliver Wyman. For more information, visit marsh.com, follow us on LinkedIn and Twitter or subscribe to BRINK.