Executive Perspectives

War in Ukraine: Risk Impact

BCG Global Advantage and Risk & Compliance Practice Areas

Prepared: 31 March 2022

Introduction to this document

The war in Ukraine is above all a political and humanitarian crisis…

Russia's invasion of Ukraine has led to a serious **humanitarian crisis**. BCG condemns this attack and the violence that is killing, wounding, and displacing so many people.

The top priority in moments like these must be the **safety and security of people**. Corporates, governments, and non-for-profit organizations should focus on supporting the people in Ukraine, Russia, Europe, and globally affected (physically and mentally).

It is the duty of political, societal, and business leaders to navigate through this crisis. **The intent of this document is to inform discussions and decisions on the global economic impact as well as the sanctions, regulatory and risk impact of the war in Ukraine.**

The situation surrounding Ukraine is dynamic and rapidly evolving - this document reflects information and analysis as of **31 March 2022.** It is not intended as a prediction of future events and is shared only as a resource for BCG and client conversations.

IMPACT ON RISK

The war in Ukraine marks a tectonic shift in the global business landscape, one with multiple short- and long-term strategic implications for companies.

Leaders must not only mitigate the risks to their business models caused by price shocks, supply disruptions, and sudden shifts in demand. They must also navigate the risks to their corporate reputations as they comply with sanctions and grapple with whether to suspend Russian operations or pull out entirely—as well as the potential consequences for their personnel and assets in Russia.

In addition, companies should weigh risks that could arise under several scenarios if the conflict broadens. What if sanctions are extended to third countries or business partners that decide to assist Russia, for example?

As the war unfolds, companies will need to shift their focus from managing the emergency to reassessing the risk and sanctions compliance landscape. This assessment should cover customers and connected third parties. Companies should review their global operations and businesses under a range of scenarios, as well as their preparedness for potential cyberattacks. In addition to immediate tactical moves, companies need a strategic action plan to mitigate risks and make their organizations more resilient to future disruption.

War in Ukraine: Risk Impact

AGENDA

Perspective on risk impact

- Sanctions and policy actions
- Risks for companies
- Implications for companies

Risks rooted in global tectonic shift arising from the war

War in Ukraine has elicited unprecedented international response, including sanctions and policy actions that generate uncertainty for the global economy. Drivers of company risk arise from this context

Sanctions & policy actions

Measures targeting Russia | Increasing number of trade controls on strategic imports/exports (e.g., dual-use military-civilian items), ~3,650 sanctions targeting Russian individuals, corporations, and financial system. Further policy actions disrupting business, diplomatic and cultural ties

Retaliation by Russia | Russia restricting exports of agriculture, industrial equipment, social media (e.g., Facebook). Companies with Russian operations have limited options to protect assets and operations

Uncertainty | Risk of further escalation (e.g., secondary measures, asset seizures), accelerated long-term decoupling (e.g., parallel financial, energy & tech systems) and potential actions taken by other countries (e.g., Eurasian Economic Bloc)

Risks for companies

Strategic | Risks to business models and reputational concerns, with significant impact on portfolio decisions (e.g., localization) and short to medium-term priorities (e.g., company decarbonization targets and initiatives)

Business & Operational | Potential top-line disruptions from price and demand shocks, supply shortages and cyber attacks

Financial | Increasing financial distress, but remains below COVID levels given the lower direct systemic impact – yet uncertainty from 2nd order risk implications

Implications for companies

Regulatory compliance | Map exposures to new and escalating trade compliance requirements, sanctions and policy actions across footprint, financial transactions, and supply chain. Identify and implement proactive controls against potential liabilities

Scenario-based planning | Shift to continuous stress testing and trigger-based actions to rapidly adapt to new contexts, ensuring comprehensive coverage of direct and indirect risk exposure

Build resilience | Build buffer to secure critical services (e.g., dual sourcing)

Note: BCG does not provide legal or regulatory advice; Source: BCG analyses and experience

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4 types of sanctions and policy actions applied on Russia, increasing risk across industries

"Western" Allies

NON-EXHAUSTIVE

Sanctions/policy actions	Types of measures	Selected applied measures
Trade Policies	Impose **export and import** controls with severe penalties/prosecution Limit investment and public or private sector business relations	Halted sale of **dual-use components** Banned imports of **Russian energy** Cancelled certification of **Nord Stream II** Banned Russia ships from **docking**
Individual/ Corporate	Bar individuals from **travel, and access to funds/assets**[1] Bar or limit companies' operations	**Seized assets** (e.g., yachts, houses) from sanctioned oligarchs and lawmakers **Froze bank accounts** linked to sanctioned oligarchs & lawmakers
Financial Institutions	**Freeze bank accounts and funds** Ban transactions in **foreign currency** Block FIs from **financial system infrastructure**	Removed selected Russian banks from **SWIFT** **Froze assets** of Russia's Central Bank *For details, see V4.0 of Ukraine Perspectives: FI Impact*
Diplomatic/ Other[2]	**Reduce/cut diplomatic relations** Block participation in **sporting and cultural events**	**Closed access to airspace** for Russian flyovers Barred Russia from most **sporting competitions,** incl. Paralympics, FIFA, UEFA, etc. (global) Russia **expelled from Council of Europe**

Note: BCG does not provide legal or regulatory advice; information is non-exhaustive 1. US extends sanctions on companies that are ≥50% owned by sanctioned individuals/entities 2. Sanctions laws are complex; not all countries' legal regimes follow the above categories strictly e.g., US comprehensive sanctions on the Ukrainian regions of Crimea, Donetsk, and Luhansk essentially preventing all business dealings Source: Tony Blair Institute for Global Change (As of March 22nd, non-comprehensive); Government reports; Press clippings; BCG analysis

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Measures applied on Russia expected to have far-reaching risk impact

"Western" Allies

NON-EXHAUSTIVE

Sanctions/policy actions	First-order impact	Second-order ramifications
Trade Policies	Inability to **import strategic products** (e.g., repair parts) **Inability to export** key products (e.g., oil & gas, agricultural output) Difficulty to **circumvent** measures (e.g., shipping via 3rd countries)	**Supply chain shortages** at global scale (e.g., palladium, nickel) Long-term **risk of losing competitiveness** for critical sectors deploying imported tech (e.g., O&G exploration, Auto) **"No business"** long-term stance by risk-averse companies Foreign currency **reserves drainage** (mainly USD)
Individual/ Corporate	Sanctioned individuals and corporates **unable to access capital, foreign assets or travel to certain destinations**	Sanctions affecting **companies owned** by targeted individuals (e.g., Chelsea FC) Effects on **entities supporting transactions** related to sanctioned individuals (e.g., international banks) **Cryptocurrencies** under closer scrutiny
Financial Institutions	Financial Institutions based in Russia **unable to access foreign currency, assets and capital markets**	Pivoting of Russian financial system to **alternative currencies** (e.g., RMB) **Western banks operating in Russia** closing operations and risking assets seizure
Diplomatic/ Other[2]	Diplomatic and cultural **isolation** Strategic **government-to-government relations halted**	Ceasing **cultural and intellectual exchanges** (e.g., sports, R&D, academics) Inability to align on **long-term global challenges** (e.g., Climate Change, space exploration)

Note: BCG does not provide legal or regulatory advice; information is non-exhaustive. Source: Government reports; Press clippings; BCG analysis

Retaliation is under way; limited choice for companies operating in Russia

Russia

NON-EXHAUSTIVE

Focus | Selected Russian actions

Banned exports of machinery, equipment and agricultural products to certain countries

- Pressuring Western consumers and companies

Re-registered foreign-leased planes from Bermuda to Russian registry

- Exposing Western lessors to $ billions of write-offs

Proposed legislation allowing **seizure or expropriation of foreign-owned assets** in Russia

- Exposing owners to write-offs

Three options for foreign companies, all of which raise reputational risk

1. **Continue 'business-as-usual'** operation
2. **Cease operations**
   - Potentially, face risk of expropriation and/or criminal charges
3. **Transfer assets** to a local 'business partner' shareholder
   - Challenge to attain a fair market value for transferred assets
   - e.g., Major O&G players faced potential significant write-offs from the sale of Russian assets

Note: BCG does not provide legal or regulatory advice; information is non-exhaustive. Source: Government reports; Press clippings; BCG analysis

Outlook | Key uncertainties for sanctions, policy actions, and global decoupling

NON-EXHAUSTIVE, KEY QUESTIONS TO CONSIDER REGARDING MEASURES

Allied measures over Russia & others

How effectively will US/EU/Allies **enforce the sanctions, policy actions and anti-circumvention measures**? (e.g., transshipment via 3rd countries to Russia)

Will **secondary sanctions/policy actions** be imposed upon countries aligned with Russia?

Will the **scope of measures** intensify with escalation (e.g., EU ban on O&G imports)?

Will allies attempt to regulate **cryptocurrency** to prevent black market and evasion by sanctioned individuals/companies?

Would sanctions and policy actions **remain in place** after a diplomatic resolution to the conflict? If so, for how long?

Retaliatory measures by Russia & others

Will Russia **escalate its retaliatory measures**? E.g.,

- Seize assets of foreign firms that leave the country
- Restrict foreign ships from entering Russian ports
- Cut gas supplies to the EU

Will other countries retaliate? (e.g., Eurasian Economic Union bloc, incl. Kazakhstan, Belarus, Armenia)

Will Russian **sourcing be re-localized and parallel value chains** be created with aligned trading partners?

- Re-sourcing of critical materials, parts and equipment
- Alternative technology platform
- Parallel payments infrastructure and financial system

Note: BCG does not provide legal or regulatory advice; information is non-exhaustive. Source: Government reports; Press clippings; BCG analysis

Hypothetical scenario | If China provided 'material support' to Russia, it could face implications that would significantly impact the global economy

“[President Biden] described the **implications and consequences if China provides 'material support' to Russia**

White House press release
March 18, 2022

'Material support' could translate in the application of **secondary sanctions and policy actions**, impacting a larger, more globally-interlinked economy (e.g., China), which would put **much more pressure on the global economy**

		Russia	China
Macro fundamentals	Imports[1] ($T)	0.25	2.07
	Exports[2] ($T)	0.43	2.50
Financial flows	# of top 100 banks[3]	1	19
	Share of global banking revenue[4]	~1%	25%
	% of cross-border transaction value[5]	~1.4%	~12.0%
Corporate activity	% Fortune Global 500 revenue[6]	~1%	~28%
	# top 100 tech companies[7]	0	12
	R&D spend ($T)[8]	.04	.51

Note: BCG does not provide legal or regulatory advice; information is non-exhaustive. 1. Total value of 2019 imports (CIF), WITS 2. Total value of 2019 exports (FOB), WITS 3. Top 100 global banks based on '20 assets, S&P Global Based on '21 revenue per Fortune 4. In country (domestic) revenue (Retail + corporate + other banking) 5. 2019 data for Russia - based on outbound global payments only, excl. credit cards; value of Russia x-border payments/ value of x-border global payments BCG Trade Finance Model. 6. Fortune 2019 7. Thomason Reuters "Top 100 Global Tech Leaders" 8. Gross domestic spending on R&D, OECD Source: BCG Trade Finance Model; WITS; OECD S&P Global; Fortune; China State Administration of Foreign Exchange; BCG analysis

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Three broad types of risks for companies with potential widespread impact

NON-EXHAUSTIVE – MOST RELEVANT RISKS

BCG Risk Practice Taxonomy – Contact for further detail

Strategic & Reputational

Risk to achieve business objectives over the long-term

Business model viability threats from long-term changes in demand patterns

Strategy adjustments **imposed by reputational concerns** over conflict

Change of strategic priorities with **long-term impact** (e.g., CO_2 targets)

Business & Operational

Risk to company's operations, including supply chain and delivery of products/service

Top line risk driven by shocks to price and demand

Risk of critical commodities **supply shortages** causing business continuity issues/disruptions and cost increases

Threat to **cybersecurity** driven by conflict tensions or boycott attempts

Financial

Risk of investment losses, business & financial deterioration (e.g., solvency)

Liquidity risks driven by cash shortages rooted in business/ operational disruptions

Risk of **financial disruption** due to stress propagation along own business network

Uncertain **financial markets outlook** (e.g., commodities, currency risk, etc.)

Risks are interconnected, reinforcing each other in a highly uncertain context

High uncertainty for companies – Details in next pages

Source: BCG analysis and experience

Strategic & Reputational | Business portfolio and long-term strategic priorities potentially affected by reputational risks

Russian operations not only a financial concern, but also a reputational one

BCG Investor Survey[1]

United States - March 2022

Investor perspectives on companies that continue operations in Russia

73% — **Unwilling to invest** in companies with operations in Russia

+

20% — Would invest only if **exposure to Russia is marginal** (e.g., <3% of revenues)

+460 — Companies **suspending or scaling down business** ties with Russia[2]

Direct risks and indirect reputational ramifications for companies

First-order risks

Western consumers & business partners boycotting companies with Russian presence

- *e.g., Renault decided to suspend activities in Russia after public opinion reacted to its presence*[3]

Investors potentially halting investment or divesting from companies with Russian operations

- *e.g., Norway's Sovereign Wealth Fund, with c. $3B invested in Russian stocks, to exit Russian holdings*[4]

Ties with sanctioned entities/ individuals forcing divestments or business strategy shifts

- *e.g., Manchester United F.C. cancel their sponsorship deal with Russian state-owned airline Aeroflot*[5]

Second- & third-order ramifications

Companies adopting a **"no business" policy** with Russia and/or aligned countries to prevent future reputational issues

Insecurity of assets and personnel in Russian territory following suspension of operations

Players from non-sanctioning countries **may seize opportunity to gain market share** in Russia, strengthening competitive position

Disruption to international supply chains given loss of production capacity

1. BCG Investor Perspective Series, pulse check #19; n=150 companies, representing investment firms with +$5T in combined assets under management. 2. Company Announcements re: Russia Market per Yale School of Management tracking (30 March 2022). 3. Renault Press Release & Deutsche Welle; 4. WSJ 5. Daily Mail. Source: BCG analysis and experience

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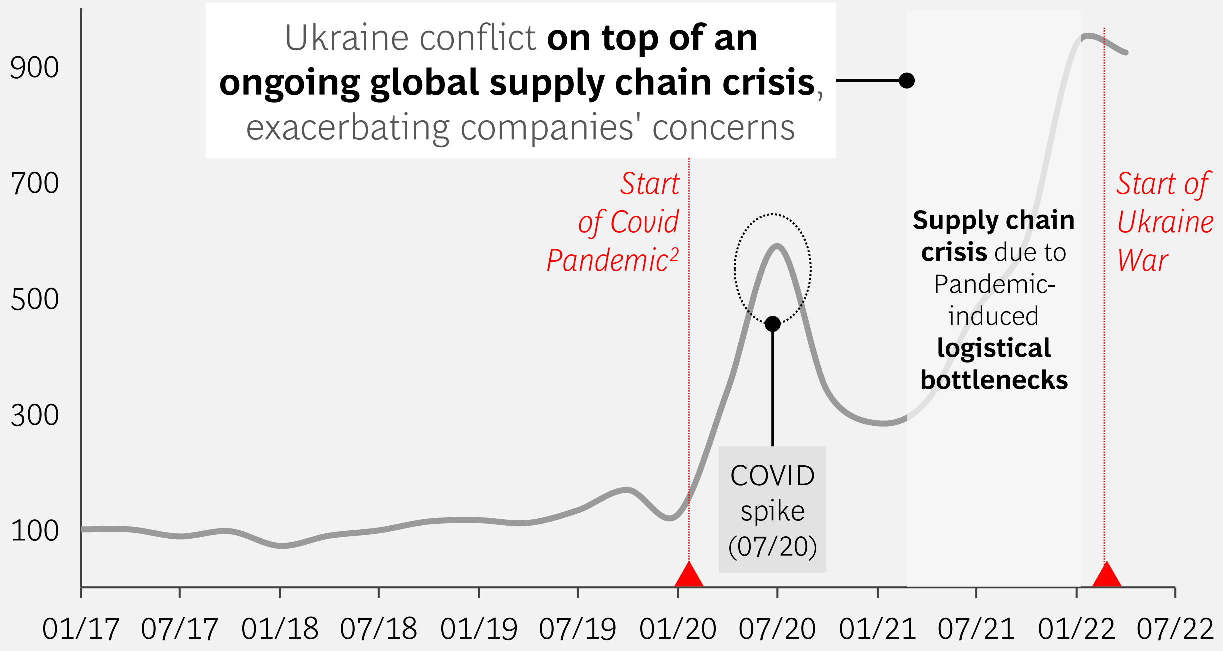
Operational – Supply Chain | War in Ukraine to create further impacts in an already stressed supply chain post-COVID context

Companies highly concerned with supply chains

Companies' sentiment on supply chain risk: proportion of references to supply chain risk per earning call transcript[1]

Values Indexed for Jan 2017



4 key supply chain risks boosted by the war

Commodity shortages & price volatility	Difficulty sourcing and higher key commodities prices	~2x	Increase in key commodities[3] prices since Jan/22
Product sourcing	Inability to source manufactured goods and inputs	3.5M	Potential fewer vehicles produced in the world in 2022[4]
Demand 2nd order effects	Slowdown in manufacturing / inability to import	7.6%	Russia, Ukraine and Belarus share of EU imports[5]
Logistics	Higher logistics costs due to capacity and fuel impact	27%	Increase in jet fuel prices[6] month by month

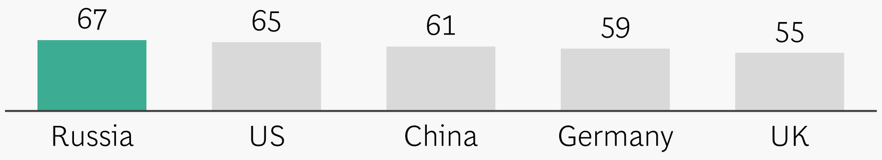
1. BCG investor and company sentiment measurement proprietary tool, NL Analytics and BCG Center for Growth and Innovation Analytics. Measured as % of referents to supply chain in context of risk per earning call transcript. 2. Estimated – official data of pandemic start could differ among countries. 3. Nickel, Wheat, Crude Oil data Mar/2001 – Mar 7, 2022. 4. IHS Market global vehicles forecast. 5. IHS for Jan-Dec 2021. 6. IATA: Europe-Asia, Asia-North America most heavily hit by airspace closure, Based on CTKs (cargo ton kilometers) over the past 12 months.
Source: BCG analysis and experience.

Operational – Cybersecurity | Russia possesses leading cyber capabilities, and evidence of increasing attacks on Ukraine

Russia has outsized cyber capabilities…

Russia has **longest-established and strongest cyber-offensive capabilities, outsized for nation size**

Top 5 countries out of 50 with highest Cyber Capability Index - offensive capability (Harvard Belfer Center[1])



	Russia	US	China	Germany	UK
GDP[2] ($T)	1.5	20.9	14.7	3.8	2.7
Est. official cyber dept[3]	1990s	2010	2015	2017	2020

…and has been alleged to have been behind destructive[4] NotPetya cyber attack in 2017

- UK, US, and AUS **attributed attack to Russia**[5]
- **Targeted Ukraine**, spreading across EU & globe, impacting multinationals (e.g., Merck, DHL, etc.)

$10B — **Total damage** estimated

65+ — **Countries** impacted

Evidence of increasing cyberattacks on Ukraine

US & UK accredited **Feb 15 cyberattacks on Ukraine's critical infrastructure, incl. Defense Ministry & banks[4] to Russia**

~10x — Increase in **cyber attacks on Ukraine**[6]

Leaders should consider four key cyber threats, and potential for contagion from original target

Geopolitical	**Direct attacks on Ukraine** (e.g., defense ministry, banking system) prior to invasion
Retaliatory	Multinationals & Governments anticipate **retaliation for sanctions & aid provisions**
Reconnaissance	Allegations of **reconnaissance performed against countries' critical infrastructure**
Activism	Attacks from non-state backed groups **motivated by ethical/ moral views**

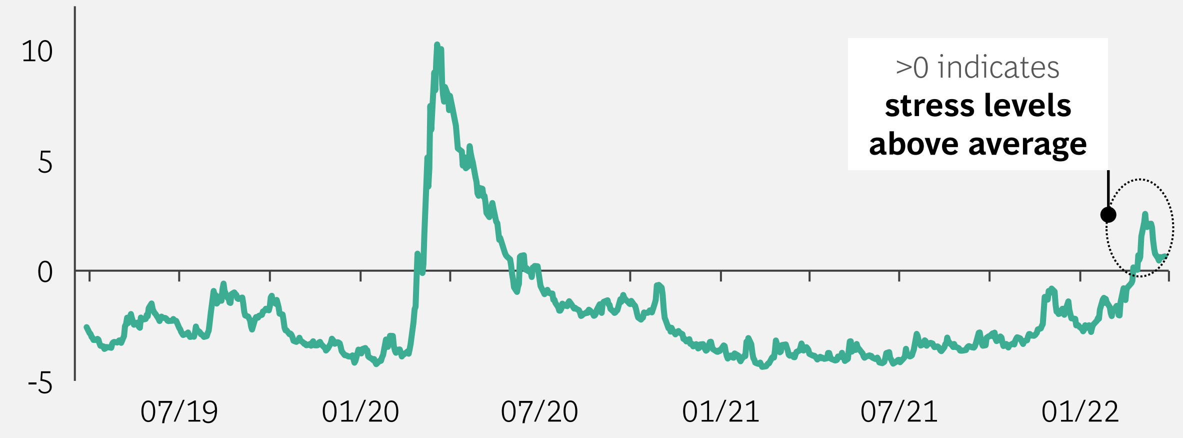
1. Cyber Offense Capability Score 2020 (Harvard Belfer Center). 2. 2020, USD $T, World Bank 3.Official Government Cyber Department responsible for integrating country's cyberspace operations; RUS: ccdcoe.org; US: cybercom.mil; China: Jamestown.org; DE: Bundeswehr.de; UK: gov.uk. 4. US: Anne Neuberger, US National Security Advisor, Feb 18, White House; UK NSCC. 5. US: Homeland Security, CIA, White House; UK: Foreign Office Minister; Australia. 6. Quad9, cybersecurity tool blocked 10x DNS requests coming from UK, KrebsonSecurity Source: BCG analysis, Forbes

Financial | Distress growing but below COVID levels because of a lower direct systemic impact – uncertainty from second-order risk implications

Increasing financial stress, but below COVID levels

Elevated global financial stress[1]

Global FSI index, Mar 2019 – Mar 2022



Index incorporates 5 indicators: credit, equity, funding, safe assets & volatility

Deteriorating credit for Russia & Russian entities

- Fitch downgraded Russian Sovereign Debt to **"C"**[2] and Ukrainian to **"CCC"**[2]
- Moody credit agency downgraded at least **95** **Russian**[3] & **3 Ukrainian** corporates[3]

Impact varies based on exposure

First-order risks	Second- & third-order ramifications
Threat to liquidity buffers from hefty margin calls on derivatives and difficult receivables collection	**Solvency issues/default** following sustained liquidity drains from margin calls and/or unpaid receivables
Increased default risk on Russian/Ukrainian loans Potential for **Russia/ Ukraine sovereign debt default**	**Propagation of solvency/ credit issues** to network of financially distressed entities (e.g., suppliers)
Rising interest rates affecting banks' balance sheet and top line, as well as companies re-financing terms	**Lower money supply to the economy**, with potential effects on production, consumption and unemployment

1. Global OFR FSI index is a daily market-based snapshot constructed from 33 financial variables incorporating five categories of indicators: credit, equity valuation, funding, safe assets and volatility, FSI shows stress across US, other advanced economies & emerging markets 2. Fitch Ratings Agency 3. Moody's as of Mar 10 Source: Reuters, Bloomberg, BCG analysis and experience

War in Ukraine: Global Update and Risk Impact

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Perspective on risk impact

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Companies should re-assess their operational and risk environment to build resilience via scenario-based planning

Short-term → **Mid-to-long-term**

A — **Shift focus** from managing the emergency to **re-assessing the risk and sanctions landscape** (e.g., new/escalating trade requirements)

B — **Include customers and connected 3rd parties** in compliance screening and risk assessment

C — **Assess stress scenarios**, incorporating direct and indirect risks along company vulnerabilities (e.g., risk of **sanction evasion** via 3rd parties)

D — Adopt an agile approach in reviewing **decisions and implementing controls** against potential liabilities

E — **Review and assess scenarios on an ongoing basis** to address uncertainty and ensure trade and sanctions compliance

F — **Build a resilience buffer** by identifying and securing delivery of critical business services (e.g., dual sourcing)

Example in Banking

Payment network analysis to map cash flow interactions within company network/supply chain and identify indirect exposure to Russian/Ukrainian entities

Example in Manufacturing

Idiosyncratic scenarios to stress **supply chain vulnerability** – e.g., loss of suppliers due to conflict spillovers, risk of sanction evasion via transshipment, logistics costs disruption

Source: BCG experience & analysis

Mitigation actions can range from tactical to structural based on urgency or complexity

NON-EXHAUSTIVE

		Tactical actions	Structural actions
Sanctions	Current & potential	✓ Develop **action plan** to mitigate immediate impact on business network (e.g., suppliers) ✓ Verify denied-party screening and CDD[1] **data collection/storage processes** ✓ Verify/Remediate denied-party screening and CDD[1] **data quality** ✓ **Strengthen sanction clauses** on existing commercial agreements, and consider **certification** of higher-risk 3rd-parties	✓ Pressure test **denied-party screening and CDD[1] process** (e.g., larger screening scope, new screening logics) ✓ Conduct ongoing **connected parties screening** ✓ Consider **method to detect/prevent circumvention** via trade finance
Other risks	Strategic & reputational	✓ Include/Develop geo-political dimension in **risk management framework** (e.g., indicators, escalation mechanism)	✓ Implement **on-/near-shoring initiatives** ✓ Permanently **discontinue operations** in select geographies
	Business & operational	✓ **Increase inventory** of critical inputs/parts ✓ **Raise cyber awareness** at all org. levels and increase **monitoring frequency** ✓ Engage routinely in **tabletop exercises/ war-gaming** against cyber attacks	✓ **Diversify supply chain** (e.g., dual sourcing) ✓ Strengthen priority **cyber controls** against typical vectors and invest in **cyber resilience** ✓ Review **Incident Response**, **Business Continuity** and **Disaster Recovery** plans
	Financial	✓ **Increase liquidity/cash** conversion cycle ✓ **Re-assess hedging** strategy	✓ Increase **capital/equity buffers** ✓ Engage in **debt restructuring**

1. Customer Due Diligence. Source: BCG experience & analysis

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