BCG

Executive Perspectives

War in Ukraine: Global Update & Perspective on Reconstruction

BCG Global Advantage, Financial Institutions, Social Impact, Public Sector, and Travel, Cities & Infrastructure Practice Areas

Prepared: 21 Feb 2023 – Confidential: Limited Distribution

Introduction to this document

The war in Ukraine (UA) is above all a political, social and humanitarian crisis…

As we enter the second year of war, it is impossible not to reflect on the enormous loss and suffering it has wrought. The top priority for all continues to be the safety and security of people.

The scale and duration of the war has had a profound economic impact, both within Ukraine and globally.

The one-year mark provides an occasion to reflect on the growing extent of physical and economic damage to Ukraine and the scale of rebuilding required.

It is the duty of political, societal, and business leaders to navigate through this crisis. **The intent of this edition is to document and analyze the impact of the war over the past year and to discuss the reconstruction of Ukraine.**

The situation surrounding Ukraine is dynamic and rapidly evolving - this document reflects information and analysis as of **21 February 2023.** It is not intended as a prediction of future events and is shared only as a resource for BCG and client conversations.

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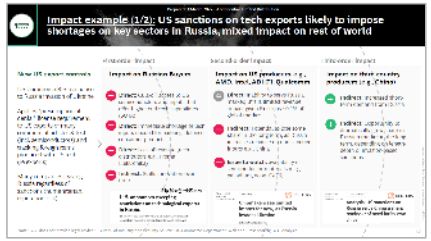
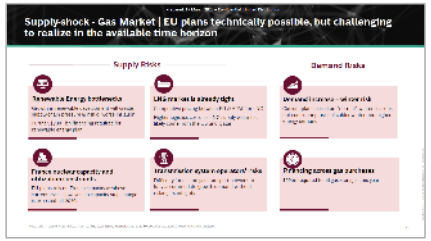
This edition follows 12 prior Executive Perspectives on Ukraine in 2022

#1 Global impact (Mar 3)

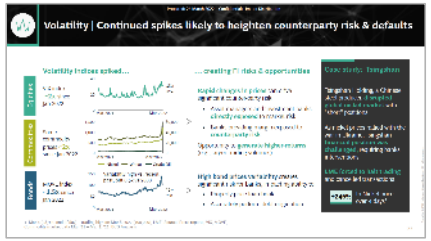


#2 Supply Chain (Mar 11)

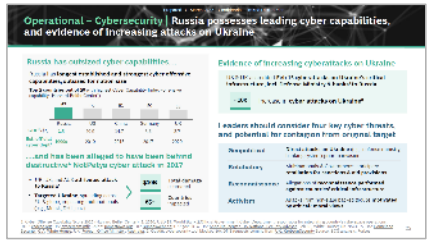
#3 Energy (Mar 18)



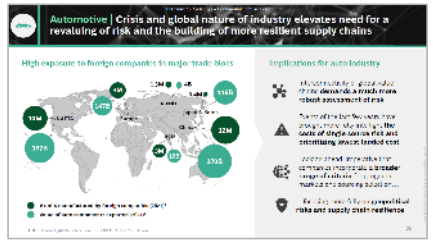
#4 Finance (Mar 24)



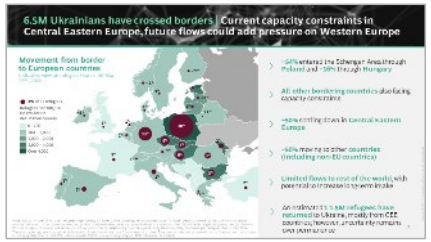
#5 Risk (Mar 31)



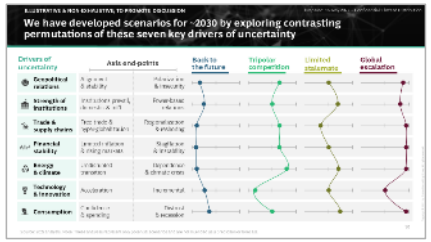
#6 Industry (Apr 14)



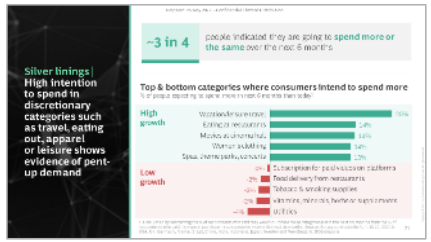
#7 Refugees (Apr 27)



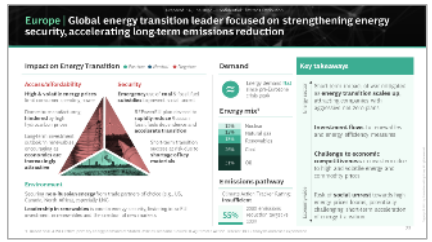
#8 Scenarios (May 16)



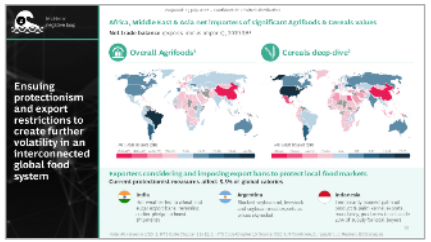
#9 Consumer Sentiment (May 26)



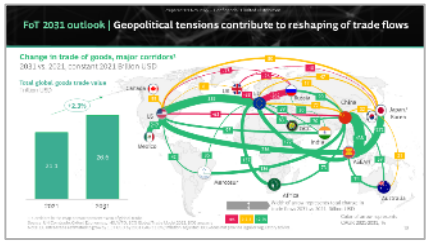
#10 Energy Transition (June 15)



#11 Food Crisis (July 14)



#12 Future of Trade (Nov 3)



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Summary | Global impact - Year at a glance

War impact on Ukraine

Refugee crisis grew worse as the year progressed
- 27M Ukrainian citizens directly affected, incl. 13M refugees and internally displaced; 300k+ casualties

Impact of war exceeded initial expectations
- "Immediate" victory has not materialized for Russia, impact now cross-sectoral and well beyond Eastern Europe

Economic impact

Global economy averted recession in 2022 but most growth forecasts dampened for 2023
- World GDP 2023 growth forecast at 2.1%, Eurozone at 0.2%, US at 0.6%, Russia GDP to contract by 3%

Most nations faced significant inflation, with pressures easing into 2023
- High energy and commodity prices were among the factors causing 9.8% global inflation in 2022; forecast is 7.3% for 2023

After initial spike, most commodity prices eased, but many stabilizing at higher levels
- Most agriculture, metals, energy prices now between 2022 max level and pre-2022 average; some products trending up (e.g., nickel)

Europe survived immediate energy crisis and cut Russia gas reliance
- Diversified imports (esp. to US LNG), spent €800B on energy subsidies, fast-tracked LNG infrastructure, cut back on consumption

Sanctions

Multiple waves of sanctions by Allies, approaches evolving to raise impact
- 6k+ sanctions actions by 20+ countries; EU's 10 packages comprise diverse measures -- price cap on oil now taking effect

Russia's trade is seeing a shift away from West toward large emerging markets (EMs)
- Gas exports sustained at high prices, but large advanced economies importing 37% less in non-energy; EMs picking up trade flow

Companies took actions to exit Russia market or reduce exposure
- 1k+ major companies in most sectors have reduced Russia presence

Implications & scenarios

Profound second- and third-order impacts
- Fundamental impact on food security, LNG, defense industry, EU fiscal health; plus, disruptive impacts (e.g., space travel)

Most scenarios will require reconstruction by Ukraine and Allies
- Five major scenarios across escalation / de-escalation

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War in Ukraine: Global Update & Perspective on Reconstruction

AGENDA

Global economic impact of the war in Ukraine

Ukraine reconstruction & strategic rationale for businesses to engage

Implications for leaders

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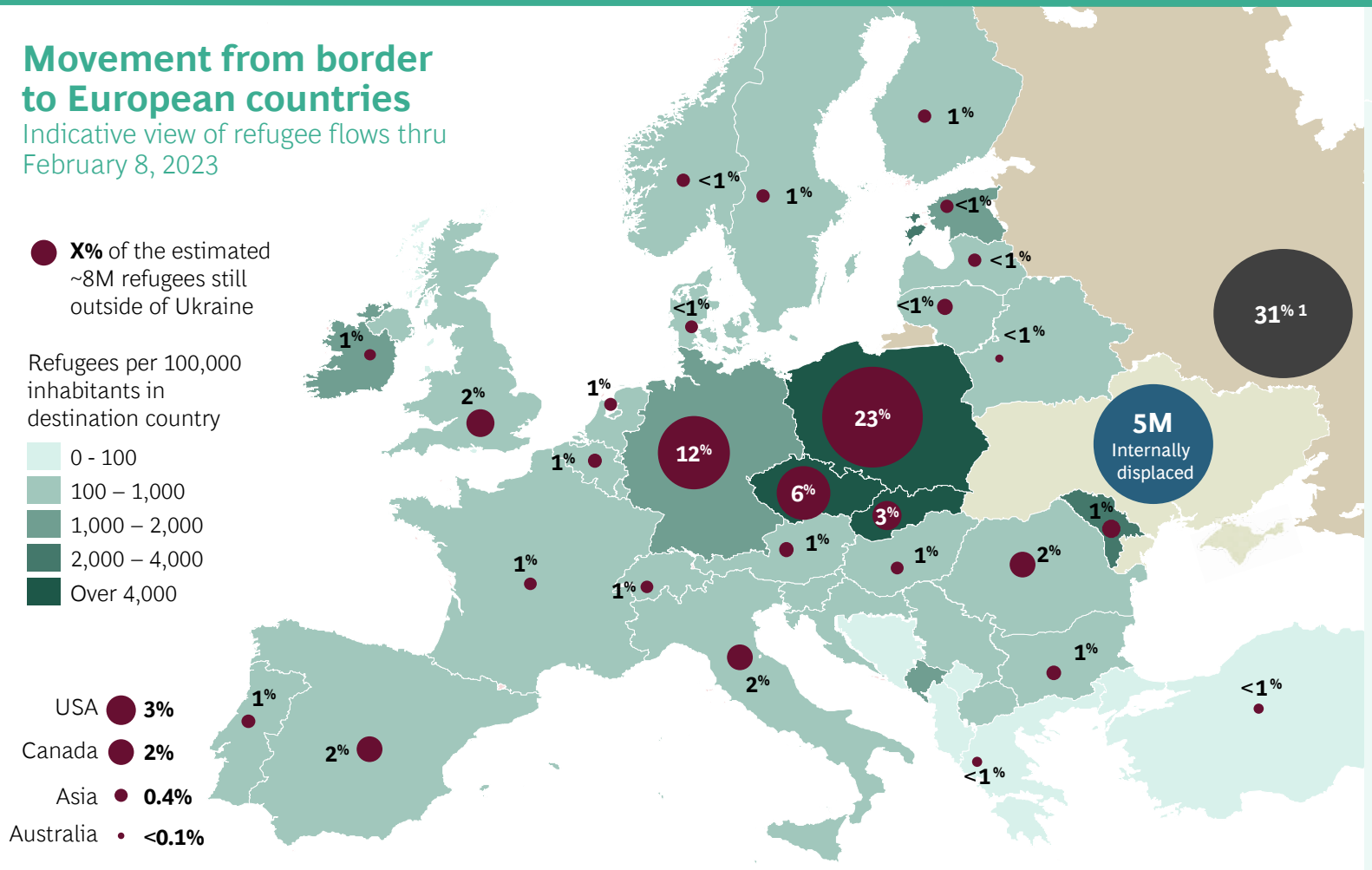
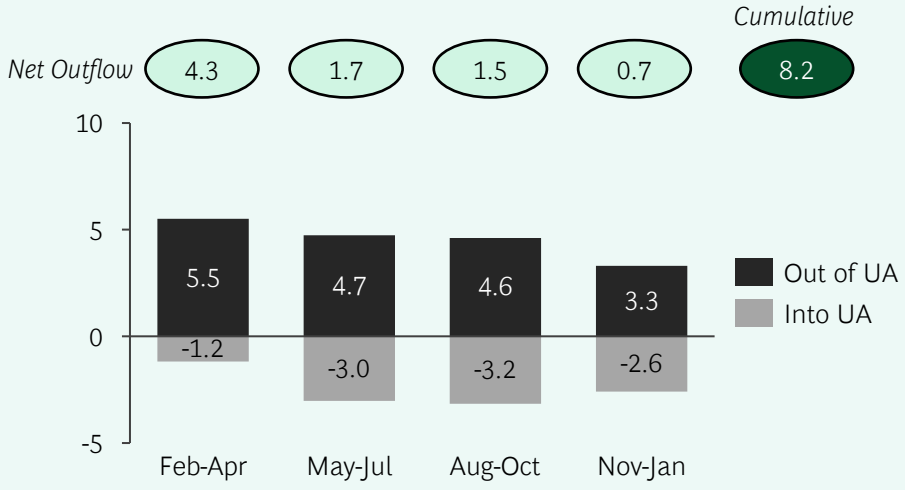
13M Ukrainians still displaced, but meaningful return trend observed

Movement from border to European countries

Indicative view of refugee flows thru February 8, 2023



Flow of Refugees (M people)



27M — Population directly affected by war (living in stranded areas, refugees, internally displaced, injured and killed)

13M — Refugees + internally displaced people

300k+ — Casualties (UA civilians and soldiers)[2]

1. Including forced migration and travelers from occupied territories; 2. Based on estimates of civilian & military killed & wounded in UA & RU | Note: Actual number might be slightly lower as the crossing are not counted as per "unique" person, however at this point it is uncertain whether the return is permanent or temporary. Note: Indicative view; onward travel from directly neighboring countries (particularly PL, HU, SK) and hence also inflow to not directly neighboring countries (particularly DE, IT, FR) might be higher than stated. Source: UNHCR (archives); IOM; interviews with NGOs; Government websites and statistics; CEPR; NYT; BBC; OHCHR; BCG analysis

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Impact of war continues to broaden, well beyond initial expectations

Interrelated dimensions	Narrower impact → Broader impact	Initial Expectation	Current Reality
Duration	Days — *Weeks* — *Months* — *Years* — Decades	Russia announces "decisive and immediate" action to remove gov't in Kyiv, predicts victory within weeks[1]	Protracted stalemate which most political and military experts believe will persist
Geographic scope & materiality	Russia & Ukraine — *Central & Eastern Europe* — *EU* — *NATO+* — Global	Limited geographic scope and direct economic impact, few 2nd order impacts	Broad/deep sanctions regime, NATO+ allies military assistance, 2nd order impacts (growth, inflation)
Sectoral scope & materiality	Energy, Metals, Agrifoods — *e.g., Autos, Semis* — *Many sectors* — Whole economy	Small subset of commodities with high share of Russia/Ukraine supply to suffer shortage, volatility	Near-crisis in energy and agrifoods, impacts on wider range of sectors, incl. T&L, machinery, defense, retail

3 Mar 2022 ◆ Mar – Nov 2022 ◆ 20 Feb 2023

1. Putin states before airstrikes begin that Russia is taking "decisive and immediate action" to remove Ukraine's leaders. Experts interviewed by Izvestia, as reported by Russia's TASS News Agency, believed that the Russian military could complete the operation in five days.| Source: TASS, Wall Street Journal; BCG analysis. Note: BCG does not provide legal or regulatory advice.

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Summary snapshot | War impacts continue to be felt in global economy

Macro Outlook

GDP Forecasts[1]

	2021	World Bank 2022		Leading FIs 2023F
	Actual	Jan'22 Forecast	Actual[3]	Feb'23 Forecast
Global	5.9%	4.1%	2.9%	2.1%
Euro Zone	5.3%	4.2%	3.3%	0.2%
US	5.9%	3.7%	1.9%	0.6%
Russia	4.8%	2.4%	-3.5%	-3.0%
Ukraine	3.4%	3.4%[2]	-33.0%	2.0%

Inflation[4]

	2021	2022	2023F	Interest rates
	Actual	Actual[5]	Forecast	+/- vs pre-war
Global	6.8%	9.8%	7.3%	-
Euro Zone	2.8%	9.1%	6.7%	+2.5 pp
US	4.7%	8.0%	3.5%	+3.0 pp
Russia	6.7%	13.2%	5.1%	-2.0 pp
Ukraine	9.4%	20.2%	13.5%	+15.0 pp

Commodity Prices[6]

Commodity	Commodity price (actual, $) Jan 3 '22	Feb 6 '23	Change
Crude Oil ($/bbl)	79.0	81.0	3%
Gas ($/MWh)	80.4	58.1	-28%
Coal ($/t)	157.5	252.0	60%
Wheat (€/bu)	274.0	288.5	5%
Rapeseed (€/t)	728.5	549.8	-25%
Nickel ($/t)	20430.0	29110.0	42%
Palladium ($/oz)	1826.0	1579.4	-14%

Supply Chain Metrics

Deep Sea Cargo Port Calls (Avg. #/day)[7]				Deep Sea Cargo Bosporus Straits Transits (Avg. #/day)[7]			
	Pre-War (Jan '22)	Current (Jan '23)	ΔCW-PreWar		Pre-War (Jan '22)	Current (Jan '23)	ΔCW-PreWar
Ukraine	3.1	1.1	-64%	N-bound	8.2	7.6	-7%
Russia	21.4	22.3	4%	S-bound	8.2	7.9	-3%

Sanctions & Policy Actions

Year-in-review

- 6K+ sanctions actions taken to date by US, UK, EU and other allies
- EU has issued 9 sanctions packages, planning the 10th – inclusion of price caps on energy in 8th package an important step
- Sanctions now imposed by 20+ countries beyond EU, but still uneven
- Some sanctions require more time to demonstrate effect, if any

Cumulative # Sanctions[8] in-place

Corporate Actions in Russia Market[9]

1.GDP forecasts from World Bank and FIs per Bloomberg database (15-56 FIs per forecast period). Source for actual GDP figures for 2021 changed from Bloomberg to World Bank since the previous edition. 2. Ukraine 2022 GDP forecast - World Bank, October '21 report. 3. Values are World Bank estimates from 2023. 4. Consumer price % change, pa, average – Economist Intelligence Unit. 5. 2022 values for the Eurozone, Russia and World are Economist Intelligenct Unit's estimates. 6. S&P Capital IQ 7. Deep Sea Cargo: oil tankers MR & up, bulkcarriers Panamax & up, containerships 3,000+ TEU, VLGCs, LNG carriers 60,000+ cbm & PCTCs 6,000+ ceu. Clarksons Research (https://www.clarksons.com/) Clarkson Research Services Limited ("Clarksons Research"). © Clarksons Research 2021. All rights in and to Clarksons Research services, information and data ("Information") are reserved to and owned by Clarksons Research. Clarksons Research, its group companies and licensors accept no liability for any errors or omissions in any Information or for any loss or damage howsoever arising. No party may rely on any Information contained in this communication. Please also see the disclaimer at https://www.clarksons.net/Portal/disclaimer, which also applies. No further distribution of any Information is permitted without Clarksons Research's prior written consent. Clarksons Research does not promote, sponsor, or endorse the content of this communication 8. Total sanctioned actions worldwide, excl. Russia, incl. duplication. Source: corrective.org 9. Yale Chief Exec Leadership Institute

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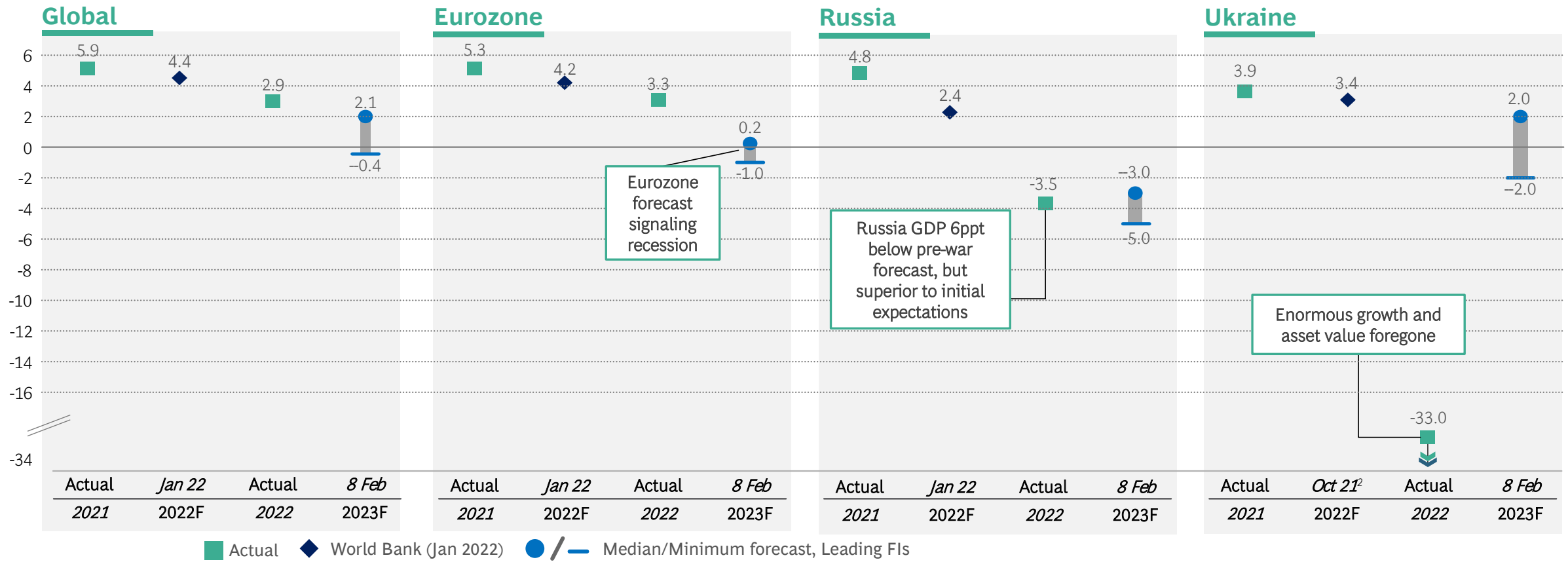
Global economy underperforming pre-war forecasts, 2023 continues trend

GDP Growth (%), Selected Regions, 2021A–2023F



1. Analysis by Carnegie Endowment, Wilson Center 2. Latest pre-war forecast (Oct 21) for Ukraine by World Bank
Note: 15 November '22-08 February '23 forecast of 27 FIs for Russia, 57 FIs for Eurozone, 36 FIs for Global, 12 Fis for Ukraine.
GDP change in 2022 are World Bank's estimates. Forecast for Ukraine for 2022 was published in October 21. Sources: World Bank; Bloomberg; BCG Analysis

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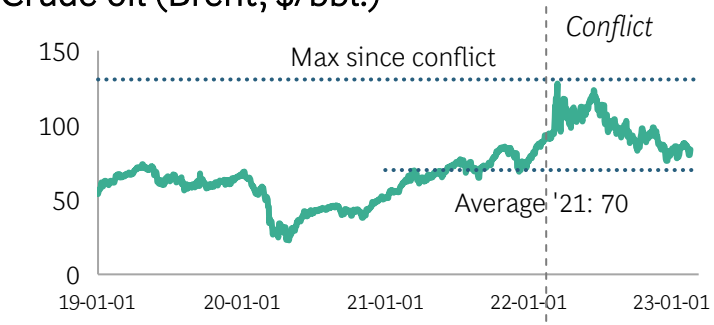
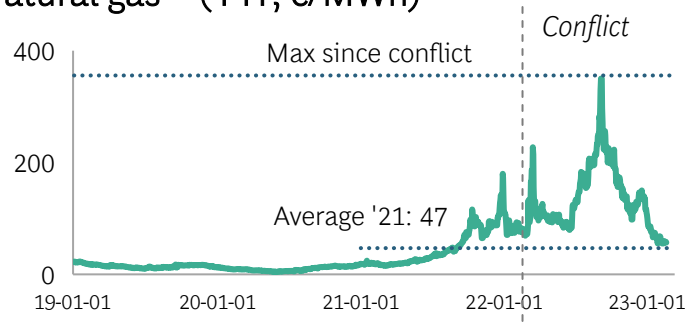
Most commodity prices stabilizing at higher levels than before the war

Hydro-carbons

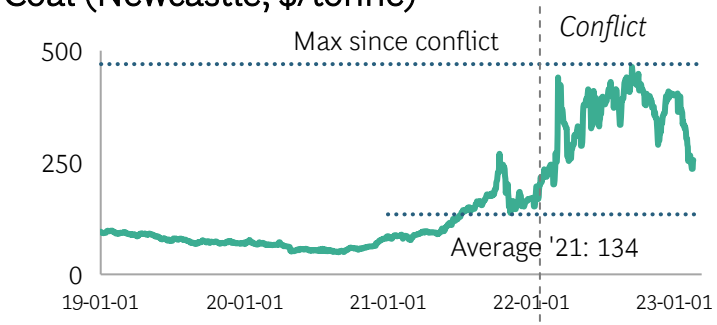
Crude oil (Brent, $/bbl.)



Natural gas – (TTF, €/MWh)

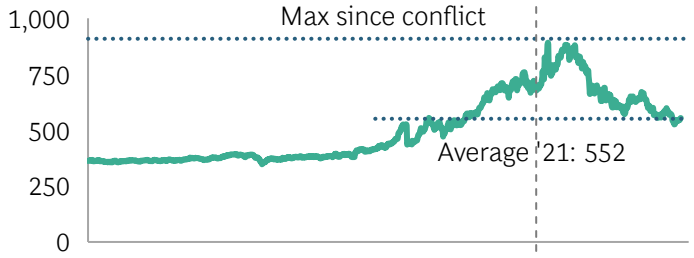


Coal (Newcastle, $/tonne)

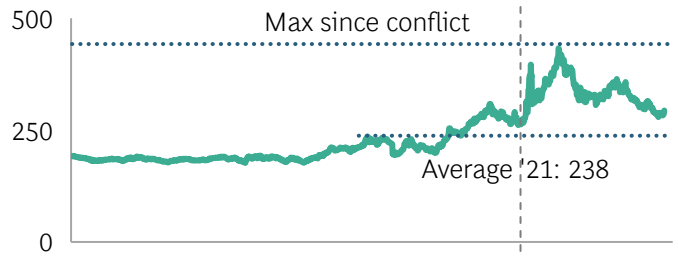


Food

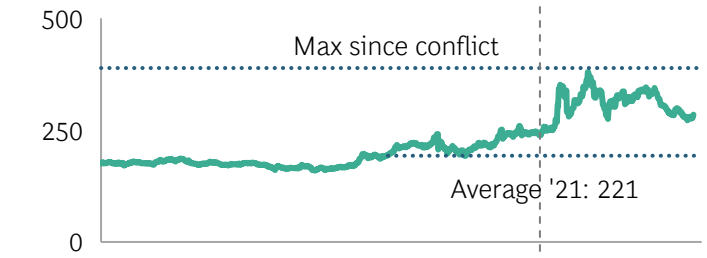
Rapeseed (MATIF, €/tonne)



Wheat (MATIF, €/bu.)



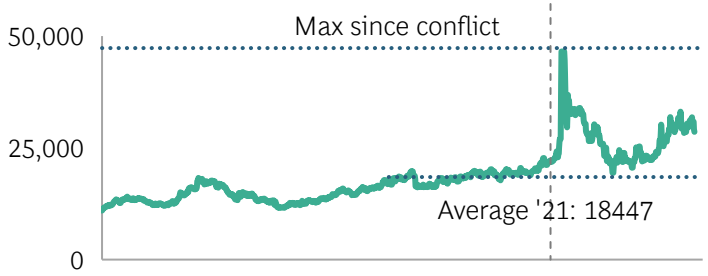
Corn (MATIF, €/tonne)



Metals

Palladium(NYMEX, $/troy oz.)

Nickel (LME, $/tonne)

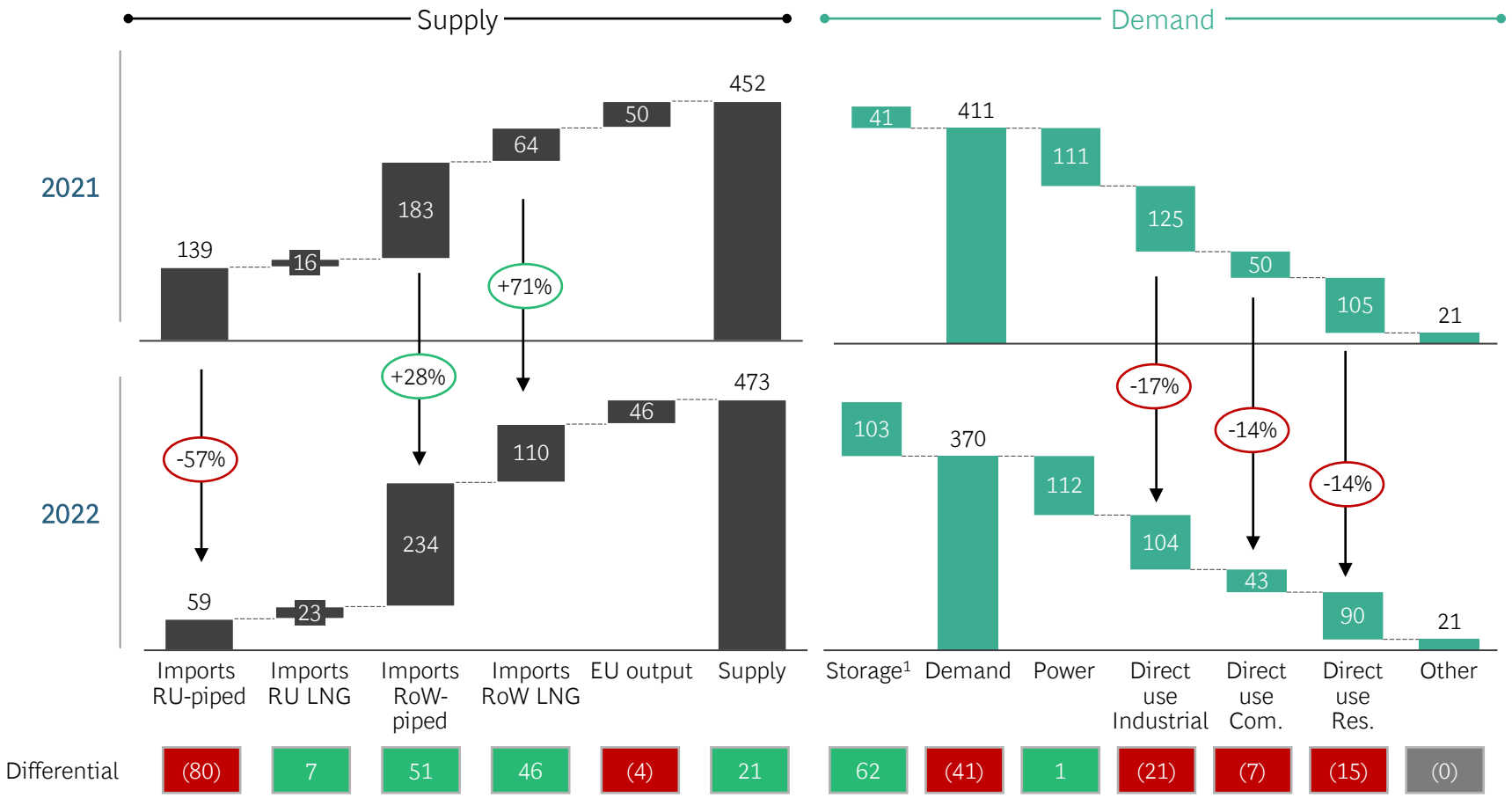


Aluminum (LME, $/tonne)

Europe has avoided immediate energy crisis, at significant cost of ~€800B

EU Gas supply and demand, 2022 vs. 2021

Billion cubic meters equivalent



1. Inferred as difference between supply and demand
Source: GasMarketCube; BCG analysis

Price paid by EU

- EU energy subsidies near €800B
  - High gas prices offset by price caps, payments to households, tax cuts
- Policy support for >80% storage level

EU RePower ambitions directionally met

- Russia gas imports reduced by 73 bcm, from 38% to 19% share of EU imports
- Bulk of diversification via US (LNG), UK, Norway, Netherlands (pipeline)

Mix of demand and supply levers

- Efficiency and warm winter dampen demand
- Change in power fuel mix (coal +9%, solar +26%, wind +11%)
- China factory lockdown frees up LNG
- Rapid LNG infra buildout (e.g., +4-5 floating terminals in Germany <1yr)

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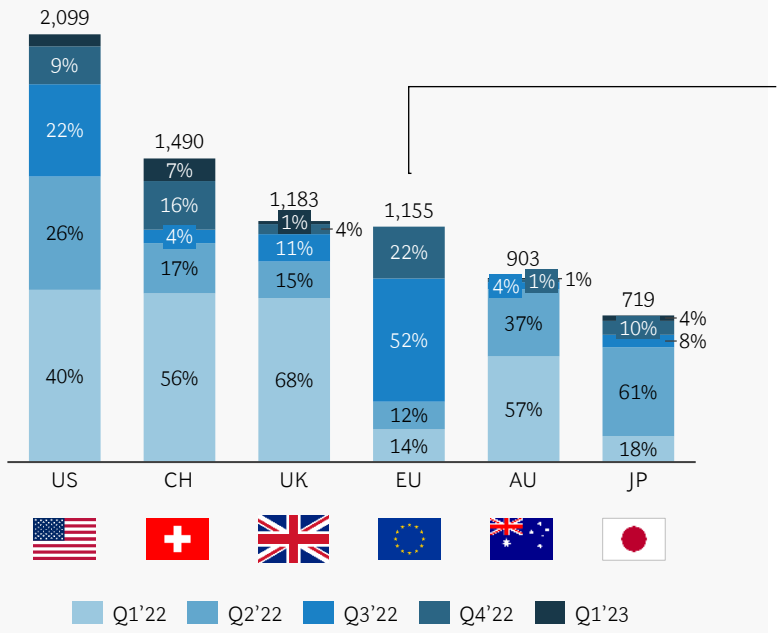
Global coalition increasing sanctions on RU; EU packages steadily evolving

Tally of sanction actions

Sanction actions[1] by imposing government



- At least 17 other sanctioning countries imposing measures, across Asia-Pacific, LatAm, Africa, and ex-EU Europe

Q1'22 (1) (2) (3) (4)	Q2'22 (5) (6)	Q3'22 (7)	Q4'22 (8) (9)	Q1'23 (10) expected

Type	Package	Key elements	Impact on Russia
Individual	1, 2, 4, 5, 6, 7, 9, 10	• Travel bans and financial sanctions on Putin and family, senior gov't and military officials, oligarchs, and military personnel involved in Bucha/Mariupol atrocities	• Potential to isolate / divide Russian elites
Technology controls	1, 2, 4, 5, 7, 8, 9	• Restrictions on semiconductors, quantum computers, other ICT products • Drone engines and dual-use technology	• Limits access to strategic tech inputs
Financial & FDI	1, 3, 4, 5, 6, 9	• Removal of 10+ RU financial institutions from SWIFT • Full transactions ban on select Russian banks and SOEs • Exclusion of Russian entities from EU public procurement, investments in mining	• Not all RU FIs covered, many transactions still feasible
Trade bans	1, 4, 5, 7, 9, 10	• Import ban for products incl. gold, coal, wood, fertilizers, seafood, liquor, import restrictions on iron and steel • Export bans on jet fuel, inputs for Russian energy sector, luxury goods and other products	• Reduces Russia export revenue • Limits access to key inputs
Logistics bans	5	• Prohibition on Russian vessels from accessing EU ports • Prohibition on Russian and Belarusian vehicles from using EU roads	• Reduces ability to ship products, but other options exist
Media & services	4, 6, 9	• Broadcasting suspension for 7 Russian media outlets • Prohibition on provision of credit-rating services, polling and advertising services	• Mainly symbolic assertion of EU values
Curbs on energy	6, 8	• Eventual ban on Russian crude oil and petroleum products, with limited exceptions • Price cap on imports of Russian oil	• Targets Russia key source of foreign currency revenue

1. Tracked by https://correctiv.org, as of 11 Feb 2023.
Sources: Correctiv.org, Peterson Institute for International Economics

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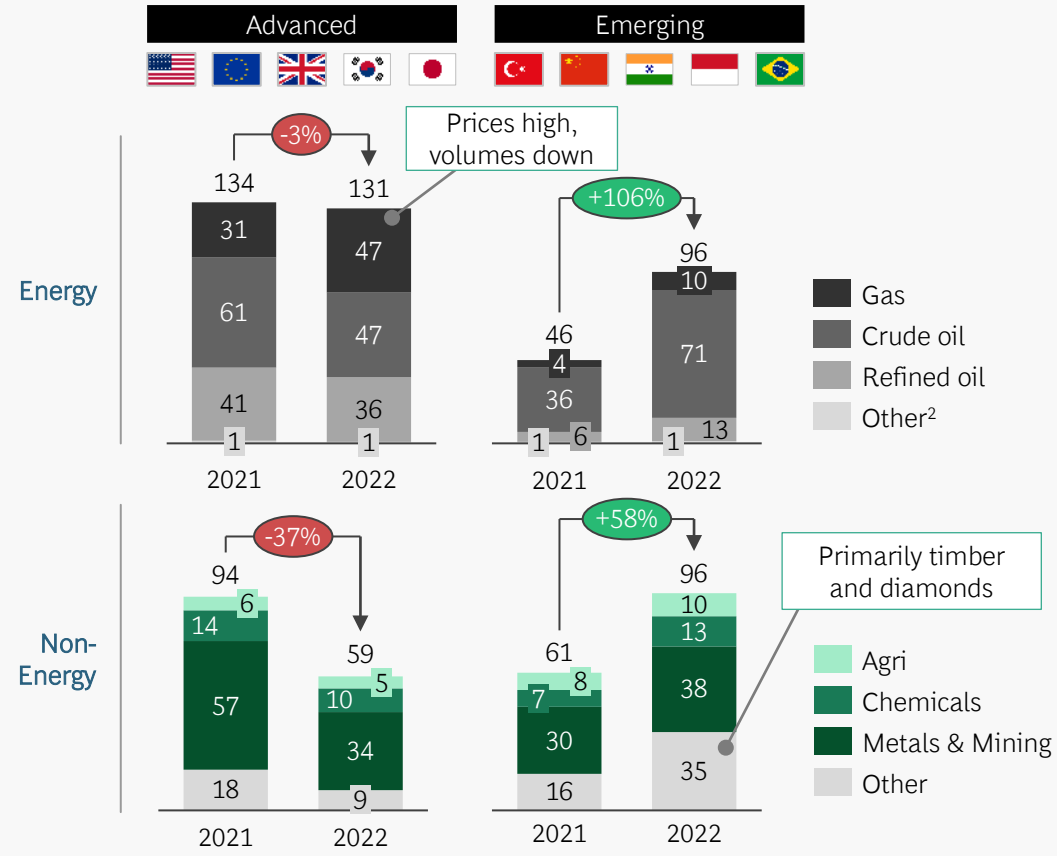
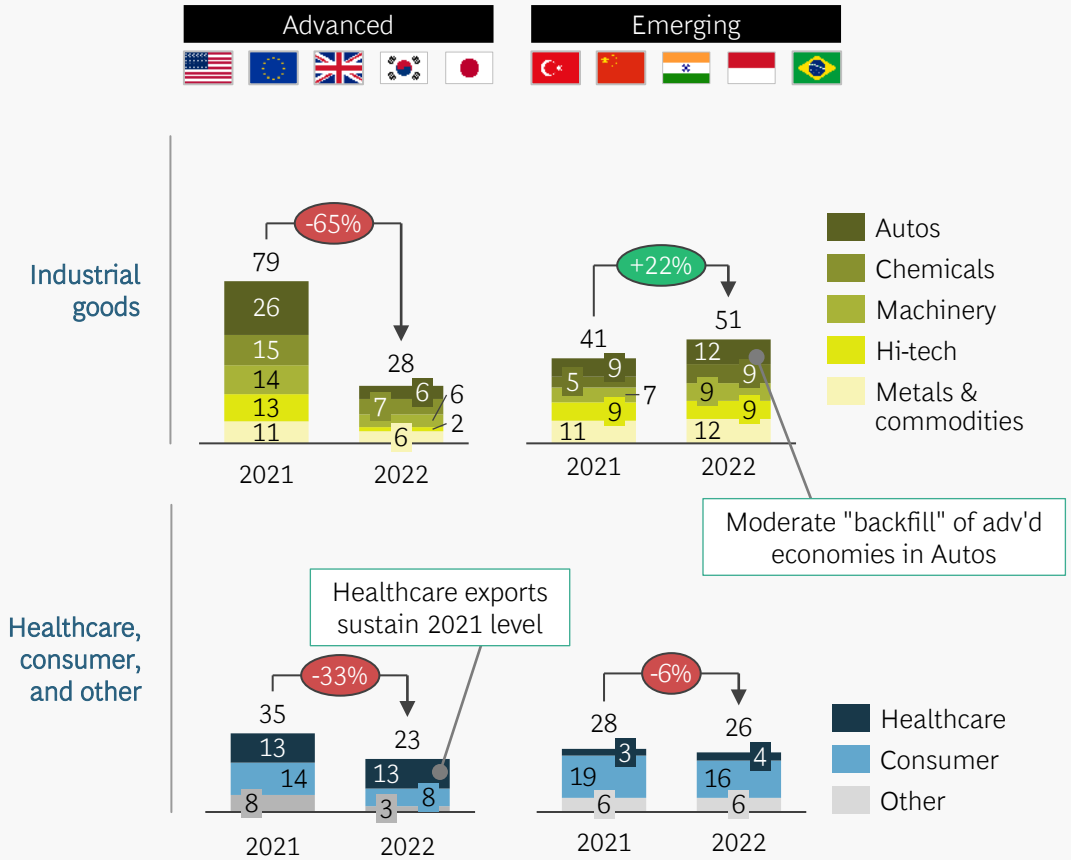
Russian exports shifting to emerging markets, imports down in most sectors

Trade with Russia by major economies[1] by value ($B), 2022 vs. 2021 (Mar-Dec)

Russia exports | Declining to advanced economies except for gas, surging to emerging markets in all major categories



Russia imports | Plummeting from advanced economies except for healthcare, growing from emerging markets in industrial goods



1. Advanced economies comprise US, EU, UK, Japan, Korea; emerging markets comprise China, Turkey, India Brazil, Indonesia. Together these countries account for ~3/4 of Russia trade in 2021. Data compiled from trading partner sources due to lack of Russia data availability 2. Includes coal, petroleum products, electrical energy. Source: IHS Markit; BCG analysis

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Second- and third-order impacts of conflict | Fundamental

Russia share of EU gas imports halved from 38% to 19% in 2022, while EU imports of US LNG rise by 143%

Europe LNG prices elevate to Asian levels for first time

Number of hungry people around the world rose from 282M to 345M in 2022

Ukraine conflict has increased fertilizer prices, with knock-on effects for harvest volumes and food prices, as well as reducing global supplies of corn and wheat

US will spend a record $858B on defense in 2023

French military budget for 2024-2030 set to be 40% higher than for 2019-2025

NATO + Allies military assistance to Ukraine set to increase spending further

EU energy policy response costs ~€800B, shielding households and businesses from higher gas prices

May reduce EU capacity to spend on other policy initiatives and increase debt financing costs

Sanctions/trade compliance now a top corporate concern

Sudden emergence and impact of "unlikely" conflict has raised geopolitical risk to top of corporate agendas

Note: Select examples, not exhaustive
Source: BCG Analysis

Second- and third-order impacts of conflict | Disruptive

500+ foreign owned aircrafts worth ~$10B at risk of re-registration due to new Russian laws and foreign sanctions

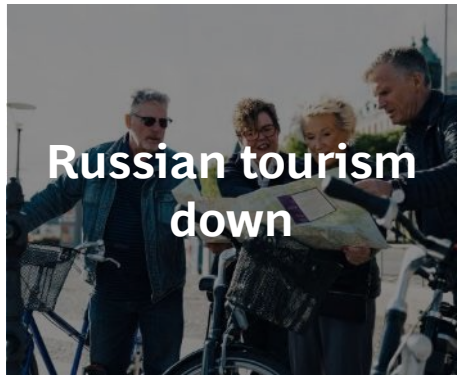
Could lead to large revaluation for aircraft leasing industry

Remittances of foreign workers in Russia as a % of GDP are 30% in Tajikistan, 28% in Kyrgyzstan, 12% in Uzbekistan

In the region, remittance flows are vulnerable to Russia economic slowdown forecast for 2023

~14.5% of world's seafarers come from Russia and Ukraine

Ukraine decided in September 2022 to allow its seafarers to leave the country despite wartime restrictions, to free up vital manpower for Ukrainian grain exports and the wider global shipping industry



90% drop in Russian tourists to Europe in 2022, with major impact on Greece and Spain

Key reason is increasing flight time/cost due to need to fly transit flights

Drop in Russian tourism **removes $7B from global tourism** spend

Suspension until 2026 or later of the ExoMars program, which relies on Russian cooperation

Roscosmos refuses to launch some European commercial satellites

European launchers depend on **Vega engines made in Ukraine –** production now disrupted

Note: Select examples, not exhaustive
Source: BCG Analysis

Most scenarios imply need for Allies-supported reconstruction effort

Main factors driving conflict

- Balance of **military power**, and choice of tactics and weapons
- **Sanctions** & policy actions by "West," and Russia's response
- Military **aid & support** from third countries ("West" & other)
- **Peacemaking** (bilateral, multi-lateral or third-country brokering)
- Domestic **political & economic conditions** in Russia

Potential conflict evolutions / Key impacts for business

		Key impacts for business
Military conflict ceases	**Fall of Ukraine** Russian forces control full country	• Sanctions remain indefinitely • Sustained isolation of Russia • Re-build by Russia
	David defeats Goliath Ukraine repels Russian forces	• Sanctions remain indefinitely • Major re-build required by Allies
	Freeze in-place (Korea 2.0) Negotiated peace / *de facto* partition	• Certain sanctions lifted • Major re-build required by Allies
Military conflict persists	**No end in sight (Afghanistan 3.0)** Protracted stalemate	• Sanctions remain indefinitely • Significant socioeconomic impact • Sustained isolation of Russia • Major re-build required by Allies
	Global spillover Further conflicts in other theatres	• Sanctions expand to other nations engaged in aggression • Major re-build required by Allies

Global scenarios required to go beyond war evolutions and navigate an uncertain medium term

Source: BCG analysis. Note: These analyses represent only potential scenarios and are not intended as a prediction or forecast.

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War in Ukraine: Global update Perspective on Reconstruction

AGENDA

Global economic impact of the war in Ukraine

Ukraine reconstruction & strategic rationale for businesses to engage

Implications for leaders

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Summary | War impact on Ukraine & reconstruction opportunities

Economic impact on Ukraine	**Ukraine economy contracted by ~30%, or ~$60B, in 2022** • Severe impact across all sectors: industry and retail/services GDP declined by ~60% and ~45% respectively **Damage highest in the East, West/Central regions with scale to become a foundation for future recovery** • Less affected West/Central regions contributing ~2/3 of pre-2022 GDP
Reconstruction needs	**Estimate required funding up to ~$800B, with most immediate needs of ~$150B** • Allied governments and IFIs expected to provide ~2/3 of financing, with private sector contributing the remaining Reconstruction possible in some regions even during a lower-intensity protracted conflict • Power grid in continuous repair, ~500 km of rail reconstructed with improved connectivity to the West
Private sector participation	**Global enterprises critical for reconstruction to co-fund and execute** • Given limitations of local businesses, most acute needs in logistics and industrial sectors (e.g., construction, materials) **Some players restored their UA operations, several starting to build-out capabilites & announcing new investments** • E.g., Nestlé to invest ~$43M in a new noodles production site, Kingspan to invest $214M in new building technology campus
Strategic rationale for businesses to engage	**Strategic rationale exists for long-term engagement in Ukraine** • 43M population, significant STEM talent pool, cost competitive, proximity to EU **Key FDI challenges remain, but Allies and IFIs working to address them** • Structure & financing of the reconstruction programs to help tackle challenges with rule of law and connectivity to EU **Regional & global trends could be favorable for Ukraine** • EU-UA relations boost, RU backfill, decarbonization, near-shoring
Implications	**Leaders should evaluate and act according to the fit of their organizations' objectives with reconstruction effort**

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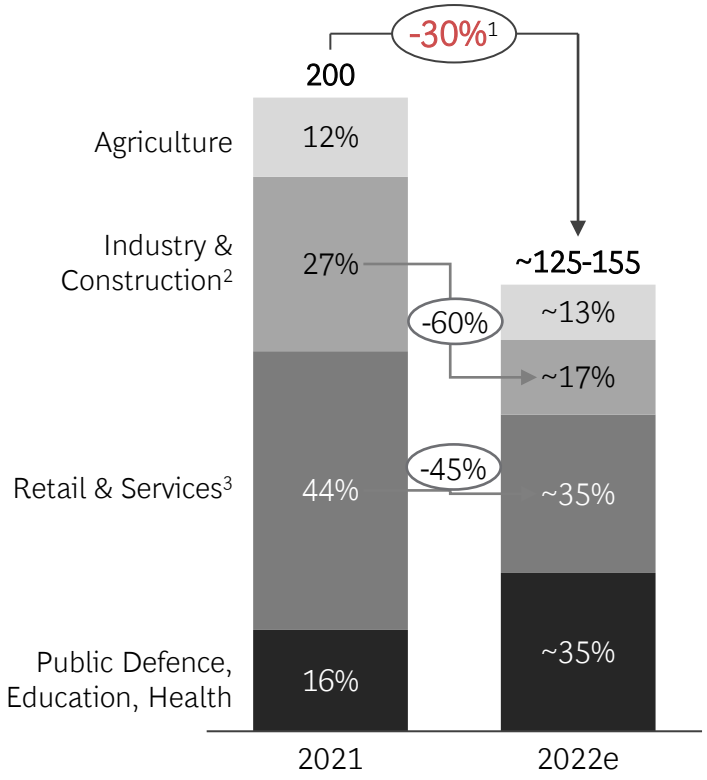
UA economy shrank by 1/3, driven by industry and retail/services decline

Economy changes - overview

GDP by sector and expected decrease, $B



Key sectors

Select consequences of the war

Key sectors	Select consequences of the war	
Agriculture	30% of agricultural land affected by the war	90% reduction in grain exports
Industry	80% reduction in metallurgy & mining production	
Energy	100% of domestic refining capacity destroyed	40% decrease of electricity production
Retail & Services	50% of SMEs stopped or substantially reduced operations	
Logistics	65% of seaport capacity blocked	
Municipality	130k housing units damaged	33% of Ukrainians lack access to drinking water

1. EIB, -33% according to World Bank; 2. Including Metallurgy, Manufacturing, Energy; 3 incl. Logistics | Source: EIBxBCG Supporting UA: A Study on Potential Recovery Strategies for UA; KSE; public sources (e.g., IEA); expert interviews; BCG analysis

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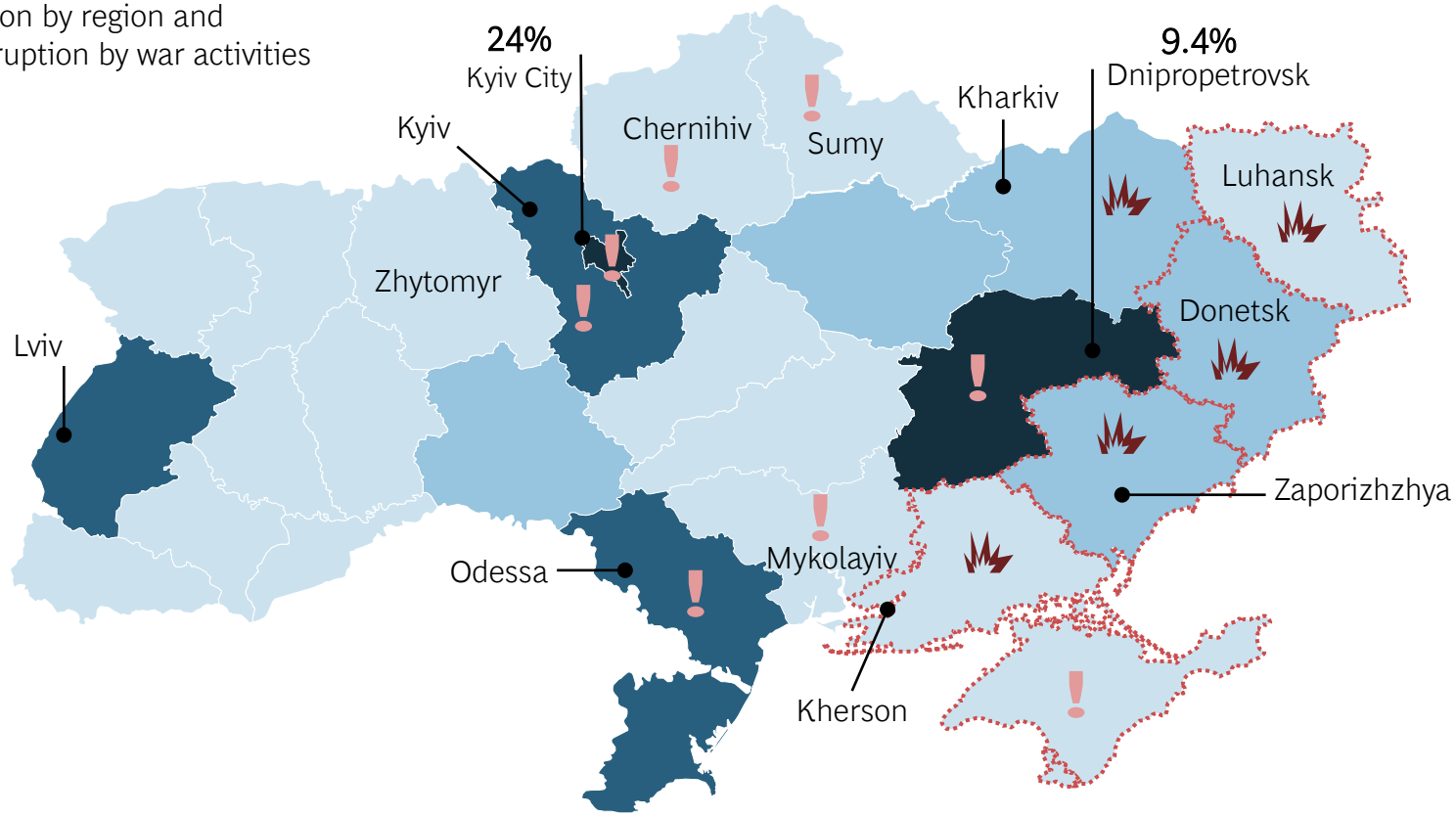
Damage highest in the East, regions driving ~2/3 of pre-2022 GDP less affected

GDP contribution by region and the level of disruption by war activities



Contribution to GDP by Region before Feb '22[1]

0-3% 3-5% 5-9% >9%

Active war zone

Level of disruption by war activities

Major destruction

Substantial disruption

Moderate disruption (all remaining regions)

1. 2020 regional GDP data, excluding territories temporarily occupied after 2014 invasion - Crimea and a part of Donetsk and Luhansk. In 2013, those regions contributed 3.7%, 10.8%, 3.6% respectively
Source: EIBxBCG Supporting Ukraine: A Study on Potential Recovery Strategies for UA 01/23; Verkhovna Rada on GDP; State Statistics Service of Ukraine; BCG analysis

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Three steps on the journey to reconstruct and transform Ukrainian economy

Humanitarian Aid & Resilience → **Reconstruction** → **Transformation & Modernization**

War outbreak → Ongoing active stage of conflict[1] (Today) → Resolution[1] (Depending on the de-escalation trajectory (Cold War, negotiated peace, victory of Ukraine)) → EU Single Market alignment

Humanitarian Aid & Resilience

- Humanitarian aid
- Securing military supplies
- Ensuring macro-financial stability

Reconstruction

- Review of war damage
- Estimation of critical reconstruction needs & identification of funding sources
- Facilitation of private sector participation
- Reinforcement of strategic rationale for int'l businesses to engage in the long-term

Focus of this Executive Perspective

Transformation & Modernization

- Stronger role of private sector, esp. SMEs
- Increasing share of modern industries/services
- Green transformation (beyond reconstruction)
- Political & economic reforms
- ... and more

Note: Incrteasnig # of UA reconstruction-focused international conferences and forums: URC 2022 (Lugano; 07/22), Ukrainian Infrastructure Forum (London; 12/22), Rapid Recovery of Ukraine (Luxembourg; 01/23), Rebuild Ukraine (Warsaw; 02/23) | Note: Ukraine has defined a 3-stage recovery plan with Resilience, Reconstrution and Transformation & Modernization phases | 1. Illustrative scale, not based on duration or resources | Source: NRC Ukraine's National Recovery Plan 07/22; BCG analysis

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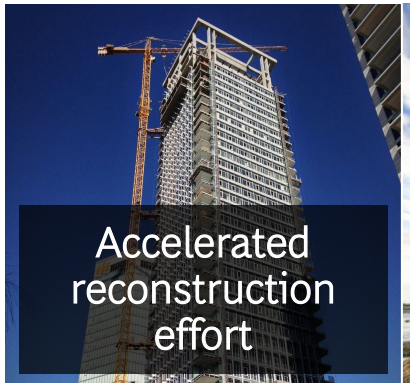
Strategic assumptions for an early and successful reconstruction effort

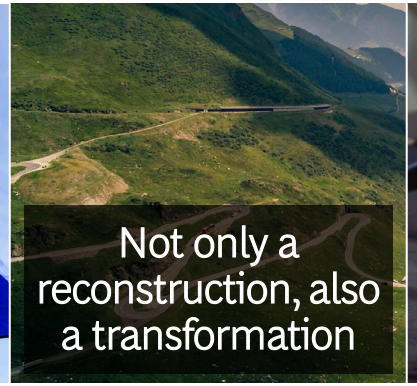


Accelerate reconstruction to jumpstart UA economy, quick actions vital to enable recovery of already long-disrupted disrupted local businesses

Strengthen protection measures (e.g., denser anti-missile coverage) to increase stability even if peace is not achieved in the short-term

Leverage IFIs and banking sector to ensure transparency, legal protection and proper risk management

Strengthen ties to neighboring countries (e.g.,through logistics and value chain integration); attract private sector investments



Increase rule of law to protect investors; rebuild in spirit of green transformation

Take advantage of lessons learned through transition to full market economy after CEE breakup with RU in the 90's - esp. PL (similar size, economic structure, 30Y GDP CAGR of 4.1%)

Source: BCG analysis; World Bank; GUS Poland

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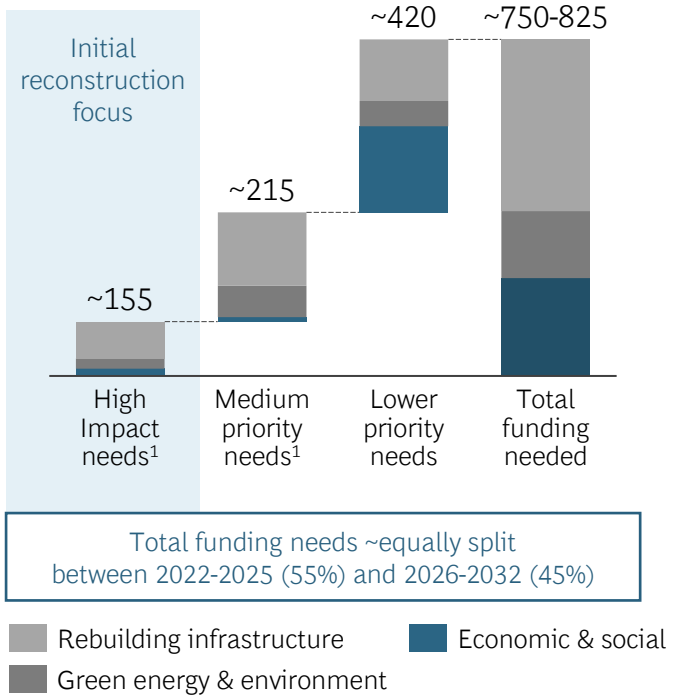
Allied govts & IFIs to provide a bulk of funding, reducing risks for business

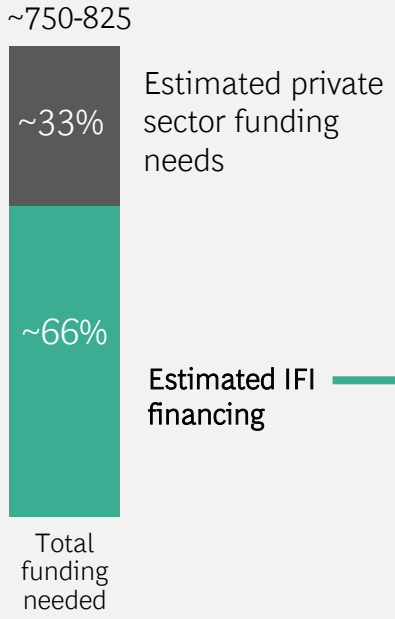
Estimated required funding at up to ~$800B, with most immediate needs of ~$150B

Distribution of financial needs by priority and domain, $B



Allies & IFIs expected to provide a bulk of financing and to reduce risk for private capital (e.g., legal protection, favorable financial instruments)

Distribution of financial needs by source, $B



IFIs' and Allies' select declarative commitments and support as of Feb'23

- **~$100B total[3]** mobilized and budgeted for military & economic support
- **~€50B** assistance made available by EU
- **More than $18B of assistance,** incl. up to $880M for reconstruction efforts[4] being mobilized
- **~€6.5B of financing provided and committed**, aiming to raise up to **~€100 B** for reconstruction
- **~$1.3B of emergency assistance**, with **$14-16B** expected later via 3-4-year lending program

1. EIB classification (abbreviated & simplified): high impact - jumpstarting the economy, addressing accute needs; medium impact - restoring UA economy to the pre-2022 state; total funding needed includes the holistic transformation effort to EU-aligned economy; all est. excluding "Defense and security topic"; 2. Based on NRC Ukraine's National Recovery Plan and EIBxBCG report; 3. Excluding $13B of support provided through World Bank; 4. World Bank's RELINC project and URTF, incl. envisaged funding; | Source: NRC Ukraine's National Recovery Plan 07/22; EIBxBCG Supporting Ukraine: A Study on Potential Recovery Strategies for UA 01/23; Reuters; EU Council; EIB; World Bank; CRFB; BCG analysis

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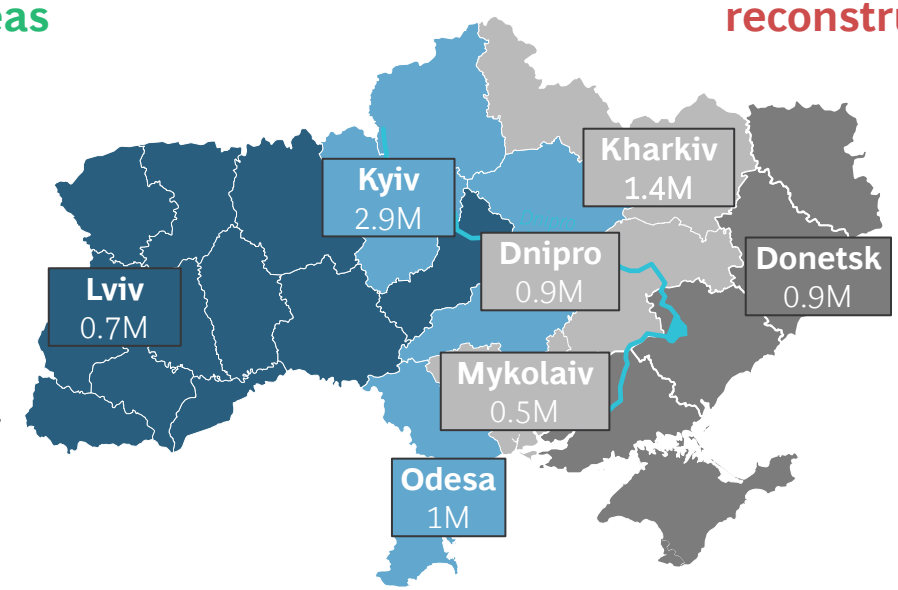
Reconstruction possible even during a lower-intensity protracted conflict

Western / central regions have lower war risk and are key to Ukraine's economy – reconstruction possible in some areas

- **Significant** pre-2022 **supply chains functioning in western/central Ukraine**
- Lviv is only 70km from the border with the EU single market
- While **residual war risk remains**, improved defenses & distance from the front line means that these **can be managed**
- **Improving connectivity with the EU and the wider world,** e.g., ~500 km of rail reconstruction, continuous power grid repair



Eastern regions have higher war risk, greater levels of damage, and less early potential for reconstruction

Intense fighting continues in eastern Ukraine and bordering regions:

- **Russia continues to occupy** Crimea and most of the four Eastern regions
- **Economic infrastructure in Donetsk & Luhansk destroyed** in 2014, not operational since
- **Substantially higer reconstruction needs for the Eastern regions**, however it is unlikely to start unless deescalation is achieved

Major cities
Population

Regions to be considered for investment in early reconstruction stage

Focused investment activity possible mindful of military risk

Considerable risk – focused investments to be closely discussed with UA, scaling possible once the conflict cools down / ends

Active war zone - no investment advised unless circumstances change

Source: ISW; expert interviews; BCG analysis based on State Statistics Service of Ukraine data and media reports

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A number of private sector players restored Ukrainian operations; some began scaling capabilities

Resuming operations in Ukraine

In September 2022 **resumed production** of Skoda for UA local market **in Solomonovo plant (Western UA)**, almost reaching pre-2022 levels

In September 2022 **resumed operations focusing on Kyiv and Western regions**

In December 2022 **started to export crops** from Ukraine's 2022 harvest

Decoupling Ukraine operations from Russia-centric structures

Removed UA from RU-centric regional organizational and **supply-chain structures**, moved to newly formed Poland, Baltics & Ukraine

Scaling pre-2022 capabilities

PKO BP, one of the few EU-based (PL) banking groups with Ukrainian subsidiary announced an **expansion of UA-focused capabilities to support corporate clients** in their participation in the reconstruction

Source: company websites and press releases; Bloomberg; NYTimes; BCG analysis

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Private sector actors announcing new investments and launching reconstruction-focused financing vehicles

Planned investments

Kingspan.	In June 2022 announced the investment of **$214M in a new Building Technology campus** in Ukraine
Nestlé	In December 2022 announced the investment of **~$43M in a new noodle production site** in Western Ukraine, aiming to grow its regional hub for food & culinary products up to 1500 employees
BAYER	In January 2023 announced **$35M investments in rebuilding Ukraine agricultural sector,** aiming to boost seed processing capacity
ArcelorMittal	In February 2023 expressed **interest in continuing investments** in Ukraine

Dedicated financing vehicles for reconstruction

Horizon Capital	In September 2022 raised **$125M** from international investors **to back Ukraine's high-growth tech and export-oriented firms**
A. Forrest BLACKROCK	In November 2022 announced **$0.5B seed investment** in **a $25B fund for reconstruction of primary infrastructure**
CROSSBOUNDARY	Announced **$40M round for the development of Ukraine-focused debt and equity funds**, targeting SMEs

Source: company websites and press releases; State Property Fund of Ukraine; USAID; BBC; FT; BCG analysis

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International partners needed in all sectors, especially in logistics & industry

For a number of sectors, key investment needs are already defined

Industry | **Building capacity in reconstruction-oriented materials**, in line with green transformation principles

Logistics | **Increasing transport capacity to EU economies**, securing and increasing sea transport capacity, esp. through routes to Constanta port (RO)

Construction | **Reorientation towards reconstruction**, international companies likely to be essential to ensure effective use of reconstruction and recovery funds

Retail and services | **Supporting liquidity** through capital investments/M&A, **compensating for lost domestic demand & supply**

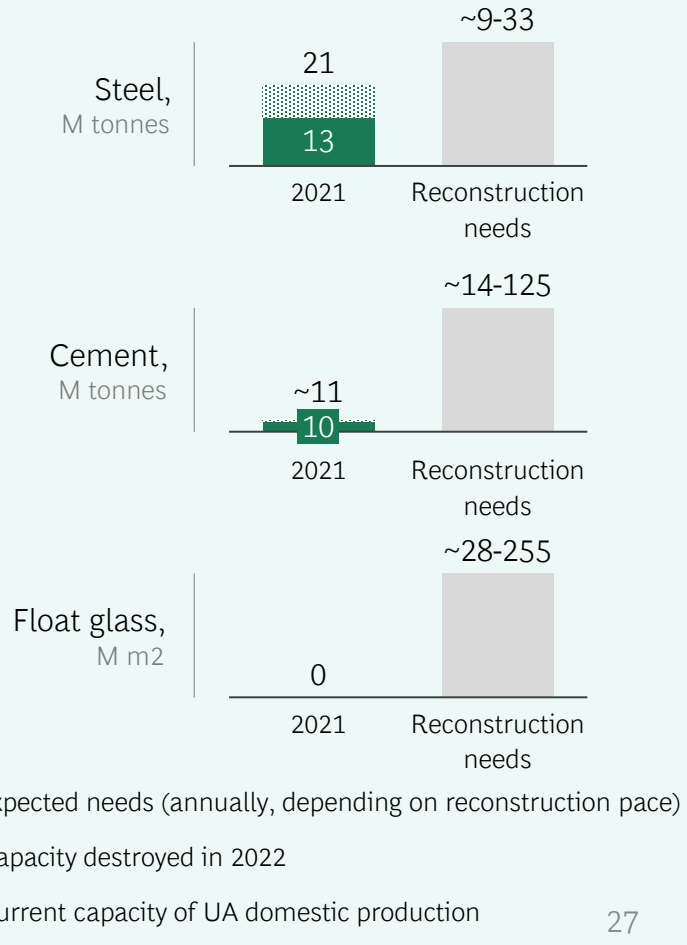
Agriculture | **Investments in harvest storage, processing, and sowing**; supporting military with recovery of land areas (removal of land mines)

Municipal | **Wide-scale reconstruction of housing units**, restoration of water/sewage networks & power connectivity

Fuel | **Increasing transport of refined fuels** and **reconstruction of domestic refining** capacity

Energy | **Grid and generating capacity repair** and improvement

Reconstruction effort likely to drive up prices of construction raw materials



Source: NRC Ukraine's National Recovery Plan 07/22; 2022 World Steel in Figures; BCG analysis

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Opportunities and challenges exist for long-term engagement

	Talent & innovation	Market size	Cost competitiveness	Business environment	Connectivity
Opportunities	• 130K STEM graduates annually, more than in PL, DE, or FR • 250k developers (leading IT hub in CEE)	• Total population of 43M (4x larger than most regional peers) • 7th largest European country (similar to PL) • High convergence potential with CEE	• Labor cost 3x times lower than in PL • Electricity cost for business customers 16% lower than in PL	• Allies and IFIs investing in strengthening governance and transparency as a part of reconstruction programme	• More proximate to EU than most other emerging markets
Challenges	• Significant talent lost due to war	• Reduced buying power per capita due to war • Geo distribution of population in flux due to war	• Short-term rise in transport costs until new infrastructure completed • Labor shortages may increase wage costs	• Low rule of law ratings • Among highest levels of corruption in Europe	• 3-day lead time to export (vs. 1 day for PL) • Bottlenecks on EU border due to lack of standard gauge rail • Constrained access to sea due to RU

Source: BCG analysis

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Changing global and regional trends with impact on UA economy

Hypercharged relationship with EU | EU being a main trade partner for UA (55%), Ukraine officially recognized as an EU Candidate country

Infrastructure re-orientation to the West | Agreement for construction of standard gauge railroad from Lviv to Warsaw (PL) signed in January 2023

Near-shoring | As the EU seeks to improve supply chain resilience, Ukraine's proximity to European manufacturers could be an advantage

EU seeking new import sources | With investment, Ukraine could increase exports of key products such as iron, titanium and cereals, replacing Russian trade blocked by sanctions

A decarbonized economy | International reconstruction funds will focus on supporting Ukraine's transformation to a green economy while rebuilding

Example:

A major green steel supplier could be built in the Kryvyi Rih close to the EU borders. Ukraine already has key factors needed to support such an investment

- **Access to raw materials**: 6th iron ore producer globally, 90% mining capacity near Kryvyi Rih
- **Water supply**: Large river (Dnipro) nearby
- **Know-how** and **skilled workforce** from, among others, destroyed Azovstal
- **Access to low-carbon power** (nuclear)

Source: Literature and media review; BCG analysis

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War in Ukraine: Global update Perspective on Reconstruction

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Global economic impact of the war in Ukraine

Ukraine reconstruction & strategic rationale for businesses to engage

Implications for leaders

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Leaders should determine if organizations' objectives fit with reconstruction

Shorter Term

- **Consider changes to your earlier evaluations of Ukraine,** accounting for war-related disruption and also favorable trends for operations and investment
- **Integrate Ukraine westward** into your EU operations
- **Ensure supplies of key products to Ukrainian customers** by strengthening and building distribution
- **Identify specific opportunities in your industry** to engage in reconstruction plans and scale local/regional operations
- **Engage with political leaders, IFIs, and other public sector stakeholders early** – to gauge policy support for investment, risk mitigators, etc.

Longer Term

- **Embed scenario planning into your business planning processes.** Test resiliency of business plans, and develop contingency plans as necessary
- **Understand how investments in Ukraine can enhance your global footprint** and become a platform for exports to Europe
- **Test local FDI conditions,** starting with smaller investments and safer options, with continual evaluation and adaptation
- **Work with IFIs on financing support** needed (e.g., guarantees) to maximize your Ukraine investments

Source: BCG case experience & analysis

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The Motherland Monument, Kyiv, UA

Explore the topic further: EIB x BCG report Supporting Ukraine: A Study on Potential Recovery Strategies for Ukraine

Teams across BCG are actively monitoring the situation

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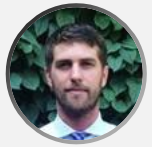

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